DRAFT ENVIRONMENTAL IMPACT REPORT FOR GENERAL WASTE DISCHARGE REQUIREMENTS FOR COMMERCIAL VINEYARDS IN THE NORTH COAST REGION

Prepared by:
North Coast Regional Water Quality Control Board
5550 Skylane Blvd., Ste. A
Santa Rosa, CA 95403

CALIFORNIA
Water Boards
STATE WATER RESOURCES CONTROL BOARD
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I. Executive Summary

The California Regional Water Quality Control Board, North Coast Region (Regional Water Board) is responsible for the protection of water quality in the North Coast Hydrologic Region, which includes approximately 65,000 acres of agricultural land planted to commercial wine-grape vineyards (hereafter "vineyards"). The Regional Water Board does not currently regulate all commodities under a singular Irrigated Lands Regulatory Program (ILRP) and intends to regulate non-point source discharges from agriculture through commodity-specific general waste discharge requirements (WDRs) hereafter referred to as the Vineyard Order (or the Proposed Project) and included as Attachment A.

The Regional Water Board prepared this Draft Environmental Impact Report (DEIR) to provide a transparent and comprehensive evaluation of the environmental effects that could occur from implementing the Proposed Project. The DEIR has been prepared in compliance with the California Environmental Quality Act (CEQA) of 1970 (as amended) and the CEQA Guidelines (Title 14, California Code of Regulations Section 15000 et seq.).

For the purpose of this DEIR and the Vineyard Order:

- The term 'vineyard' is limited to commercial winegrape vineyards.
- A commercial vineyard is land planted in winegrapes including vineyard avenues and appurtenant agricultural roads/structures with one or more of the following characteristics: (1) The landowner or operator holds a current Operator Identification Number/Permit Number for pesticide use reporting; (2) The crop and/or its product is sold, including but not limited to: (a) an industry cooperative, (b) harvest crew/company, or (c) a direct marketing location, such as Certified Farmers Markets; or (3) the federal Department of Treasury Internal Revenue Service form 1040 Schedule F Profit or Loss from Farming is used to file federal taxes.
- "Landowner/Operator" is defined as a landowner and/or operator of a Vineyard.

The proposed Vineyard Order would regulate (1) discharges of waste from commercial vineyards producing a marketable crop; and (2) discharges of waste from appurtenant agricultural roads[1]. The proposed Vineyard Order would establish a regulatory mechanism, in the form of General WDRs with requirements, prohibitions, and provisions that would require: (1) enrollment and payment of fees; (2) implementation and adaption of Management Practices; and (3) monitoring and reporting.

The proposed Vineyard Order is consistent with the State Water Resources Control Board (State Water Board) 2004 Policy for Implementation and Enforcement of the

[1] Appurtenant Agricultural Road-an agricultural road used for vineyard operations which connects or is used to access vineyard blocks under the ownership or control of the vineyard landowner or operator.

Nonpoint Source Pollution Control Program (NPS Policy), which requires that all sources of nonpoint source (NPS) pollution that could affect water quality be regulated through waste discharge requirements (WDRs), waivers of WDRs, and/or prohibitions. The Vineyard Order will regulate discharges from vineyards in order to implement the plans, policies, and requirements set forth in the Water Quality Control Plan for the North Coast Basin (Basin Plan) including the sediment and temperature Total Maximum Daily Loads (TMDLs), and the State Water Board Irrigated Lands Regulatory Program objectives and precedents. Compliance with the Vineyard Order would ultimately meet the implementation plan goals identified in the Total Maximum Daily Load Implementation Policy Statement for Sediment-Impaired Receiving Waters in the North Coast Region and the Policy for the Implementation of the Water Quality Objectives for Temperature in the North Coast Region adopted by the Regional Water Board on November 29, 2004 and November 20, 2012, respectively.

A. Project Objectives

Objective #1 - Protect and restore beneficial uses and achieve water quality objectives specified in the Basin Plan for areas in the North Coast Hydrologic Region planted to vineyards by:

1) Minimizing or preventing nitrate and pesticide discharges to groundwater.

2) Minimizing or preventing nutrient and pesticide discharges surface water.

3) Minimizing or preventing sediment discharges to surface water.

4) Minimizing or preventing temperature impacts to surface water from loss of riparian shade.

Objective #2 - Effectively track and quantify achievement of the stated objectives over a specific, defined time schedule.

Objective #3 - Comply with the NPS Policy, the State Antidegradation Policy, the precedential language in the State Water Resources Control Board's Eastern San Joaquin Agricultural Order, the North Coast Basin Plan, and other relevant statutes and water quality plans and policies, including the Temperature Implementation Policy, the Sediment TMDL Implementation Policy, and TMDLs in the North Coast Hydrologic Region.

B. Summary of Impacts and Mitigation Measures

The analysis provided within this DEIR considers reasonably foreseeable Management Practices as examples of how the Vineyard Order could be implemented and the associated potential impacts to the environment. However, the analysis does not constitute an absolute outcome or certainty in the determinations made. Some impacts may not be identified or mitigated through the Vineyard Order, because it is not possible to exactly predict who will take action in response to the Vineyard Order, or what

action(s) they will take. Therefore, this analysis is set at a programmatic level and is more general in nature to consider impacts from implementing reasonably foreseeable Management Practices. The types of actions that would be undertaken on vineyards subject to the Vineyard Order would be consistent with Management Practices commonly employed on vineyards in the North Coast Region. In some cases, implementation of Management Practices might be subject to another regulatory process which would entail identification and mitigation of any significant environmental effects. Therefore, other regulatory mechanisms can be expected to provide additional opportunities for minimizing and avoiding significant environmental effects. In some cases, it may not be possible to mitigate impacts of the Vineyard Order to a less-than-significant level.

The adoption of the Vineyard Order may result in adverse effects on the environment from the potential conversion of Important Farmland to a non-agricultural use and may result in conflicts with existing zoning for agriculture use or a Williamson Act contract. These two impacts may occur as a result of Streamside Management Area setbacks (riparian buffers) which implement the Policy for Implementation of the Water Quality Objectives for Temperature. Through adoption of Resolution R1-2014-0006, the Regional Water Board found the potential conversion of Important Farmland to a non-agricultural use and the potential conflict with existing zoning for agriculture use or a Williamson Act contract from implementing riparian buffers as significant and unavoidable. The Proposed Project has the potential to significantly impact Agricultural Resources with no feasible mitigation. Impacts of the Proposed Project on Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, and Tribal Cultural Resources are less than significant with mitigations. No Impact or Less than Significant Impacts from the Proposed Project to Aesthetics, Land Use/Planning, Mineral Resources, Noise, Population/Housing, Public Services, Recreation, Transportation/Traffic, and Utilities/Service Systems were determined. This DEIR describes changes in the design of the Proposed Project and additional analysis which reduced some impacts to Less than Significant with Mitigation or to No Impact.

II. Introduction

The California Regional Water Quality Control Board, North Coast Region (Regional Water Board has prepared this Draft Environmental Impact Report (DEIR) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the proposed General Waste Discharge Requirements for Discharges from Commercial Vineyards in the North Coast Region (Proposed Project or Vineyard Order).

The proposed Vineyard Order would regulate non-point source discharges from vineyards planted to produce wine-grapes for commercial purposes including vineyards that are planted but not yet marketable. The proposed Vineyard Order would establish a regulatory mechanism, in the form of General WDRs with requirements, prohibitions, and provisions that would require: (1) enrollment and payment of fees; (2) implementation and adaption of Management Practices; and (3) monitoring and reporting.

The Proposed Project involves adoption of an order governing the discharge of waste (to surface waters and groundwaters) from vineyards in the North Coast Region. In accordance with Regional Water Board authority and mandates under the California Water Code, the purpose of the Proposed Project is to improve water quality conditions and protect and restore beneficial uses in the region by preventing or minimizing discharges of waste from vineyards.

The Proposed Project does not address site development activities associated with the establishment of a new vineyard. Impacts associated with the development of new vineyard operations would be subject to project-specific CEQA analysis, conclusions, and development of mitigation measures by local land use authorities and other public agencies. New vineyard operations are expected to comply with conditions of the Vineyard Order upon enrollment and this DEIR examines impacts that may occur related to vineyard operations in compliance with the Order.

This DEIR has been prepared in compliance with the California Environmental Quality Act of 1970 (CEQA (as amended; California Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (Cal. Code Regs. tit. 14, section 15000 et seq.). The primary purpose of this DEIR is to provide comprehensive and transparent discussion and analysis of the Proposed Project's environmental impacts.

A. General Overview

California Water Code Section 13260 requires a person discharging waste or proposing to discharge waste that could affect the quality of waters of the state to file a report of waste discharge with the Regional Water Board. Based on review of the report of waste discharge, the Regional Water Board prescribes waste discharge requirements (WDRs) for the protection of water quality (California Water Code Section 13263) that implement applicable water quality control plans (e.g., Basin Plans) and take into consideration the beneficial uses to be protected and the water quality objectives reasonably required for

that purpose, and the need to prevent nuisance. In certain circumstances, a Regional Water Board may waive the requirement to file a report of waste discharge or waive the prescription of WDRs. The State or Regional Water Boards may issue WDRs or a waiver of WDRs to individual dischargers in an individual order.

The State or Regional Water Boards may also adopt general orders to authorize certain types of similar discharges from many dischargers, based on the proposed discharge meeting certain criteria and conditions. The issuance of WDRs or a waiver of WDRs through either an individual or general order is considered a permit action.

The Proposed Project is necessary to protect high-quality waters and restore impaired and degraded waters in the North Coast Region from non-point source discharges of waste from vineyards. Impairments to surface waters include excess sedimentation/siltation and elevated temperature along with the threat of nutrient and pesticide discharge to groundwater and surface waters. These threats and impairments not only threaten human health, but also adversely affect aquatic life and achievement of beneficial uses.

B. Overview of Activities

The Proposed Project would involve adoption of the Vineyard Order, which would initiate the regulatory program and establish general WDRs for vineyards in the North Coast Hydrologic Region. Refer to Attachment A for the proposed Draft Vineyard Order. Key elements of the Vineyard Order include the following:

1) Sediment and Erosion Management for Surface Water Protection

2) Streamside Management Areas for Surface Water Protection

3) Storm-proofing Appurtenant Agricultural Roads for Surface Water Protection

4) Irrigation and Nutrient Management for Groundwater Protection

5) Monitoring and Reporting Requirements

The Proposed Project would not require specific Management Practices to protect and restore surface water and groundwater quality, but rather would allow Dischargers flexibility to implement practices that are appropriate for their specific situation to comply with requirements in accordance with the time schedules therein. For the purposes of this document, “Management Practices” refers to any number of actions, facilities, or practices that vineyards may undertake, construct/install, or implement to reduce their discharges. Examples include cover crop, vegetative filter strips, sediment basins, and road drainage disconnection. Refer to the Project Description Chapter for discussion of the reasonably foreseeable Management Practices that may be implemented in compliance with the Vineyard Order. A list of reasonably foreseeable Management Practices is included as Attachment B.

C. Overview of CEQA Requirements

The basic purposes of CEQA is to:

1) Inform governmental decision-makers and the public about the potential significant environmental effects of proposed activities.

2) Identify the ways that environmental damage can be avoided or substantially reduced.

3) Prevent significant, avoidable damage to the environment by requiring the implementation of feasible mitigation measures or alternatives that would substantially lessen any significant effects that a project would have on the environment.

4) Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

As described in the CEQA Guidelines (Cal. Code Regs., tit. 14, section 15121 (a])), an environmental impact report (EIR) is an informational document that assesses potential environmental effects of a proposed project and identifies mitigation measures and alternatives to the project that could reduce or avoid potentially significant environmental impacts. Other key CEQA requirements include developing a plan for implementing and monitoring the success of the identified mitigation measures and carrying out specific public notice and distribution steps to facilitate public involvement in the environmental review process. As an informational document, an EIR is not intended to recommend either approval or denial of a project. An EIR does not expand or otherwise provide independent authority for the lead agency to impose mitigation measures or avoid project-related significant environmental impacts beyond the authority already within the lead agency's jurisdiction. The Regional Water Board is the lead agency under CEQA for preparation of the EIR for adopting the Vineyard Order that regulates discharges of waste from commercial vineyard operations.

D. Scope and Intent of this Document

Adoption of an order constitutes a "project" subject to CEQA (see Cal. Code Regs., tit. 14, section 15378 (a)(3)). The Regional Water Board will use the analysis presented in this DEIR, public and regulatory agency comments received on the DEIR, and the entire administrative record to evaluate the Proposed Project's environmental impacts, as well as to inform and support Regional Water Board modifications, approval, or denial of the Proposed Project.

E. Public Involvement Process

CEQA mandates two periods during the EIR process when public and agency comments on the environmental analysis of a proposed project are to be solicited: during the scoping comment period and during the review period for the DEIR. CEQA and the CEQA Guidelines also allow for lead agencies to hold public outreach meetings

or hearings to obtain scoping comments and review both the draft and final versions of an EIR. Brief descriptions of these milestones, and other opportunities for public involvement/input afforded by the Regional Water Board, are provided below, as they apply to this document.

1. Notice of Preparation, Initial Study, and Initial Scoping Notice & Meetings

On August 8, 2022, the Regional Water Board sent a Notice of Preparation (NOP), which included an attached Initial Study, to public agencies and persons with potential interest in the project. Copies of the NOP and Initial Study were available for review at the Regional Water Board Santa Rosa office. Additionally, the NOP and attached Initial Study were posted at the Regional Water Board's webpage (http://www.waterboards.ca.gov/santarosa/publicnotices) and an announcement of its availability was sent to individuals that subscribed to electronic mailing lists relevant to the proposed Vineyard Order. The NOP and the attached Initial Study are available online at: https://ceqanet.opr.ca.gov/2022080129.

On September 1, 2022, the Regional Water Board held an in-person scoping meeting and on September 8, 2022, a virtual scoping meeting to solicit input from agencies and interested parties on issues to be addressed in the EIR. The scoping meeting included a description of the meeting purpose, proposed requirements, presented an overview of the environmental review process and preparation of the EIR, and included a public comment period.

During the scoping period, six written comment letters were received from the following entities:

1) California Farm Bureau Federation

2) Sonoma County Farm Bureau

3) Mendocino County Farm Bureau

4) The Wine Institute

5) Jackson Family Wines

6) Californians for Alternatives to Toxics

7) Native American Heritage Commission

Table II-1 summarizes primary comments and concerns expressed in written scoping comment letters and during the public outreach meetings.

Table II-1: Summary of CEQA Scoping Comments

Commenter	Summary of Comments
California Farm Bureau Federation	Overly expansive and duplicative regulations may conflict with the State environmental and agricultural policy to sustain the long-term productivity of the State's agriculture by conserving and protecting the soil, water, and air, Consider all pollutant sources when establishing baseline conditions for the Proposed Project.
Sonoma County Farm Bureau	Certain definitions should be clarified. Narrow applicability to planted areas and appurtenant roads. Streamside Area BMPs should consider seasonal hydrologic conditions. Farm plans developed under existing voluntary conservation programs should be accepted. Concerns about redundant regulation and water quality control responsibilities of other parties. Provide flexibility to farmers in selecting BMPs. Consider potential impacts from loss of agricultural land directly or indirectly as a result of the Order.
Mendocino County Farm Bureau	Consider all pollutant sources when analyzing impacts of the Proposed Project.
Wine Institute	Consider existing monitoring and reporting requirements for wineries discharging wastewater to vineyards. Aim to incentivize actions instead of requirements. Consider all existing voluntary conservation programs especially around development of Third-Party Program requirements. Consider potential impacts from loss of agricultural land directly or indirectly as a result of the Order.
Jackson Family Wines	Recognize how existing voluntary programs reduce and minimize water

Commenter	Summary of Comments
	quality impacts from vineyards and consider all pollutant sources when establishing baseline conditions for the Proposed Project. Baseline conditions should be contemporaneous with the environmental analysis. Consider need for coordination with other agencies in developing requirements.
Californians for Alternative to Toxics	It is unclear from the Initial Study if the Proposed Project will address pesticide use.
Native American Heritage Commission	Instructions related to the need and process for tribal consultation, and recommendations for cultural resources assessments.

2. Technical Advisory Group Input on Preliminary Draft Regulatory Requirements

From July 20, 2022, to March 15, 2023, the Regional Water Board convened a Technical Advisory Group (TAG) to advise on conceptual options and preliminary draft regulatory language. The TAG was comprised of 34 stakeholders representing industry, environmental interests, technical service providers, partnering agencies and community organizations. The TAG provided feedback on regulatory concepts through distributed surveys and in monthly Focus Group meetings. Survey and Focus Group meeting topics included farm plans, sediment and erosion control requirements, streamside area requirements, requirements for Third-Party Groups and the Monitoring and Reporting Program.

3. DEIR Public Review and Comment Period

The Regional Water Board is now circulating this DEIR for public review and comment. The Regional Water Board issued a notice of availability of an EIR to provide agencies and the public with formal notification that the DEIR is available for review. The notice of availability was sent to all trustee agencies, any person or organization requesting a copy, and to county clerk offices for all ten counties within the Regional Water Board jurisdictional area (i.e., Del Norte, Modoc, Trinity, Glenn, Siskiyou, Humboldt, Lake, Mendocino, Sonoma, and Marin) for posting. A legal notice was also published in a number of general-circulation newspapers. The Regional Water Board also submitted the notice of availability and a notice of completion (NOC) to the State Clearinghouse.

Publication of the notice of availability initiated a 45-day public review period, during which the Regional Water Board will receive and collate public and agency comments on the Proposed Project and the DEIR. During the public review period, Regional Water Board staff will host a public workshop in Santa Rosa as indicated in the notice of

availability. The purpose of the DEIR circulation and the public outreach meetings is to provide public agencies, other stakeholders, and interested individuals with opportunities to comment on the content of the DEIR.

4. Preparation of the Final Environmental Impact Report

CEQA requires the lead agency to prepare a final environmental impact report (FEIR), which addresses all substantive comments received on the DEIR, before approving a project. The FEIR must include a list of all individuals, organizations, and agencies that provided comments on the DEIR and must contain copies of all comments received during the public review period along with the lead agency's responses.

Written and oral comments received in response to this DEIR will be addressed in a FEIR. The FEIR will be a responses-to-comments document that, together with the DEIR and any related changes to the substantive discussion in the DEIR, will constitute the EIR in its entirety. In turn, the EIR (when certified by the Regional Water Board) will inform the Regional Water Board's exercise of its discretion as a lead agency under CEQA in deciding whether to approve, approve with modifications, or deny the Proposed Project.

If the Regional Water Board chooses to approve the Proposed Project, and if significant impacts are identified in the DEIR that cannot be mitigated, a statement of overriding considerations must be included in the record of project approval and mentioned in the notice of determination (NOD). The statement of overriding considerations would describe the Regional Water Board's reasons for approving the Proposed Project despite its significant impacts. If the Proposed Project is approved, the NOD will be filed with the California Governor's Office of Planning and Research and at the offices of the relevant county clerks (Cal. Code Regs., tit. 14, section 15093 (c)).

F. Organization of this DEIR

The DEIR is organized into the following chapters so the reader can easily obtain information about the Proposed Project and its specific environmental issues:

Chapter I: Executive Summary. Presents a summary of the Vineyard Order, a description of impacts and mitigation measures presented in a table format, and impact conclusions.

Chapter II: Introduction. Introduces the Proposed Project; discusses the relevant CEQA requirements, the public outreach and review process, and the purpose and organization of the DEIR.

Chapter III: Project Description. Describes the Proposed Project, including the location, purpose, and Project Objectives; proposed Vineyard Order requirements; the reasonably foreseeable Management Practices that could be implemented under the Vineyard Order; and the intended uses of the EIR.

Chapter IV: Environmental Analysis. Discusses assumptions, parameters, and methodology used for analyzing potential impacts.

Chapters V through XIII: Discusses environmental factors provided in the CEQA Guidelines Environmental Checklist. Each of these chapters describes environmental settings, a range of potential impacts, including significant environmental effects and unavoidable significant environmental effects that would result from the Vineyard Order, and potential mitigation measures.

Chapter XIV: Cumulative Impacts. Summarizes cumulative impacts when combined with those of other past, present, and probable future projects; and the potential for the Proposed Project to result in growth-inducing impacts.

Chapter XV: Alternatives Analysis. Presents project alternatives (including the No-Project Alternative) and provides an evaluation of each alternative in comparison with the project.

Chapter XVI: Other CEQA Required Sections. Presents growth-inducing impacts, significant irreversible environmental effects, and significant and unavoidable environmental impacts of the proposed project.

Appendix I Abbreviations, Acronyms, and Definitions.

Appendix II: References.

Attachment A: Draft General WDRs for vineyards

Attachment B: Management Practices

Attachment C: Mendocino and Sonoma County General Plan Goals and Policies

Attachment D: Special Status Species

Attachment E: Estimated Costs of Compliance with Vineyard Order

G. Submittal of Comments

The purpose of circulating the DEIR is to provide agencies and interested individuals with opportunities to comment on or express concerns regarding the DEIR's contents and analysis. During the public review period, the Regional Water Board will hold a public workshop which will have the same purpose. The date, time, and location of the public workshop will be provided on the Regional Water Board website (https://www.waterboards.ca.gov/northcoast/).

For those interested, written comments or questions concerning this DEIR should be submitted (preferably via email in Microsoft Word or Adobe PDF format) and directed to the following:

Attention: Vineyard Order Team

North Coast Regional Water Quality Control Board
5550 Skyland Blvd, Suite A
Santa Rosa, CA 95403-1072

Email: NorthCoast@waterboards.ca.gov
Email subject line: Comments on Draft Vineyard EIR

This CEQA document is available for review at the Regional Water Board website (see above). In addition, hard copies can be reviewed at the Regional Water Board office in Santa Rosa, California. To arrange to view documents during business hours, call (707) 576-2220. This DEIR also can be reviewed electronically at libraries throughout the North Coast Region.

Written comments received in response to the DEIR during the public review period will be addressed in the Responses to Comments chapter of the FEIR. Comments submitted to the Regional Water Board, and the commenter's name, are considered public information.

III. Project Description

The California Regional Water Quality Control Board, North Coast Region (Regional Water Board) is responsible for the protection of water quality in the North Coast Hydrologic Region, which includes approximately 65,000 acres of agricultural land planted to vineyards (DWR, 2019). The Regional Water Board does not currently regulate non-point source discharges from vineyards under its Agricultural Lands Regulatory Program and intends to regulate these non-point source discharges using General Waste Discharge Requirements (WDRs) for Commercial Vineyards hereafter referred to as the Vineyard Order (or the Proposed Project) and included as Attachment A.

For the purpose of this DEIR and the Vineyard Order:

- The term 'vineyard' is limited to commercial winegrape vineyards.
- A commercial vineyard is land planted in winegrapes including vineyard avenues and appurtenant agricultural roads/structures with one or more of the following characteristics: (1) The landowner or operator holds a current Operator Identification Number/Permit Number for pesticide use reporting; (2) The crop and/or its product is sold, including but not limited to: (a) an industry cooperative, (b) harvest crew/company, or (c) a direct marketing location, such as Certified Farmers Markets; or (3) the federal Department of Treasury Internal Revenue Service form 1040 Schedule F Profit or Loss from Farming is used to file federal taxes.
- "Landowner/Operator" is defined as a landowner and/or operator of a Vineyard.

The Proposed Project would include the issuance of an order regulating non-point source discharges from Commercial Vineyards and the activities that would result from compliance with such an order. This section provides: a description of background and need for the proposed project, project area; project objectives; the requirements of the Vineyard Order; project characteristics; agencies that will use this document; and anticipated conditions following adoption of the Vineyard Order.

A. Need for the Proposed Project

The Regional Water Board has a statutory obligation under the Federal Clean Water Act (Federal CWA) and the State's Porter-Cologne Water Quality Control Act (Porter-Cologne Act) to regulate discharges of waste to waters of the state, restore water quality in impaired waters, and maintain existing high-quality waters. The State Water Resources Control Board's (State Water Board) Non-Point Source Management Plan and the Policy for Implementation and Enforcement of the Non-Point Source Pollution Control Program (NPS Policy) explain how non-point source (NPS) discharges are to be addressed (e.g., through WDRs, waivers of WDRs or prohibitions), thus fulfilling the requirements of the Federal CWA and Porter-Cologne Act.

The Water Quality Control Plan for the North Coast Basin (Basin Plan) includes Programs of Implementation to control discharges and restore water bodies impaired from excess sediment and temperature. In 2004, the Regional Water Board adopted the Total Maximum Daily Load (TMDL) Implementation Policy Statement for Sediment Impaired Receiving Waters in the North Coast Region, which is also known as the Sediment TMDL Implementation Policy. The Sediment TMDL Implementation Policy was incorporated into the North Coast Basin Plan and states that Regional Water Board staff shall control sediment pollution by using existing permitting and enforcement tools. The goals of the Policy are to control sediment waste discharges to impaired water bodies so that the TMDLs are met, sediment water quality objectives are attained, and beneficial uses are no longer adversely affected by sediment.

In 2012, the Regional Water Board adopted the Policy Statement for Implementation of the Water Quality Objective for Temperature in the North Coast Region, which is known as the Temperature Implementation Policy. The Temperature Implementation Policy was incorporated into the North Coast Basin Plan in 2014 through Resolution R1-2014-0006 and states that the Regional Water Board shall address sources of elevated water temperature region-wide but on a case-by-case basis in the context of a given order or other action as appropriate and necessary to reduce impairments and prevent further impairment. The water quality objectives for temperature shall be implemented through a combination of riparian management and other temperature controls as appropriate in nonpoint source control programs; orders and waivers, grants and loans, and enforcement actions; support of restoration projects; and coordination with other agencies with jurisdiction over controllable factors that influence water temperature. Controllable water quality factors affecting water temperature include, but are not limited to, any anthropogenic activity which results in the removal of riparian vegetation that provides shade to a waterbody, sediment discharges, impoundments and other channel alterations, the reduction of instream summer flows, and the reduction of cold-water sources.

Non-point source discharges from the approximately 65,000 acres of agricultural land planted to vineyards (including appurtenant agricultural roads) in the North Coast Region (99 percent of which are within Sonoma and Mendocino Counties) can contain pollutants such as sediment, pesticides, and nutrients; and can affect stream temperature from loss of riparian shade. The Vineyard Order will regulate non-point source discharges of waste to both impaired and unimpaired/high quality waters. Most watersheds within the viticultural areas of the North Coast Region are on the 303(d)[2] list

[2] State and Regional Water Boards assess water quality monitoring data for California's surface waters every two years to determine if they contain pollutants at levels that exceed protective water quality standards. Water bodies and pollutants that exceed protective water quality standards are placed on the State's 303(d) List. In California, this determination is governed by the Water Quality Control Policy for developing California's Clean Water Act Section 303(d) list. U.S. EPA must approve the 303(d) List before it is considered final. Placement of a water body and pollutant on the 303(d) List requires the development of a Total Maximum Daily Load

due to impairment from excess sediment and temperature, including the Navarro, Gualala, and Russian River watersheds which contain approximately 95[3] percent of land planted to vineyards in the North Coast Region. In contrast to the TMDL programs, a 303(d) listing is not a precondition for the development of a regulatory measure.

Circa 2010, Regional Water Board staff-initiated scoping for the development of an Agricultural Lands Regulatory Program. In 2013, regulation of commercial wine-grape vineyards through region-wide general waste discharge requirements was selected based on feedback from multiple public workshops and surveys, and finally direction from the Regional Water Board.

B. Existing Physical Conditions

Viticulture is the predominant form of irrigated agriculture in the Navarro, Russian, and Gualala River watersheds. Commercial Vineyards include: (1) planted areas; (2) vineyard-related buildings and storage areas; (3) irrigation and drainage systems; and (4) vineyard road networks and avenues. Although there is a long history of wine-grape cultivation in the Mendocino and Sonoma Counties dating to the mid-nineteenth century, most vineyard development has occurred since the early 1980s which included expansion into hillslope areas.

Once a vineyard is planted, ground covers may be implemented following the fall harvest with limited farming operations until spring. In the spring, planted areas are accessed for pruning, ground covers may be tilled, mowed, or sprayed with herbicides, fertilizer may be applied, in some cases over-head sprinklers are operated for frost-protection, and sulfur (or other fungicides) may be applied to budding vines. During the growing season, water is applied to vines depending on soil moisture but typically less than 1-acre foot per acre over the growing season and planted areas are accessed to apply pesticides and for pruning/canopy management. In the late summer and fall, planted areas are accessed for harvesting.

1. Planted Areas

Vineyards are typically planted in blocks with interior and perimeter seasonal roads known as vineyard avenues. Perimeter roads in many cases are located adjacent to streams and riparian areas and have the potential to discharge sediment to surface waters. When ground covers are inadequate, sheet and rill erosion are common and may contribute excess sediment to surface waters. On hillslope vineyards, slope failures and gullies may develop with the potential to deliver sediment to surface waters. In Sonoma County, the Vineyard and Orchard Erosion and Sediment Control Ordinance

(TMDL), a water quality improvement plan. In some cases, other regulatory programs will address the impairment instead of a TMDL, or the water quality may improve as a result of remedial actions or implementation of control measures.

[3] Vineyard acres from DWR Statewide Crop Mapping (2019) were clipped to the named watershed boundaries from the National Hydrography Dataset as well as the North Coast Region boundary. The statistic is the ratio of the two respective boundaries' acreages.

(VESCO) includes a permitting process requiring new vineyard planting and replanting require to comply with permit standards through Management Practices authorized by the Agricultural Commissioner. Voluntary programs in Sonoma and Mendocino County use Farm Plans to identify and track implementation of Management Practices to limit erosion and sediment discharges.

2. Agricultural Drainage Structures

Some hillslope vineyards employ agricultural drainage structures to collect and convey stormwater runoff to surface waters and have the potential to discharge excess sediment. Through the Sonoma County VESCO permitting process, agricultural drainage structures require compliance with permit standards such as dissipating flows and minimizing erosion through Management Practices authorized by the Agricultural Commissioner.

3. Agricultural Road Networks

Many vineyards include road networks to access and transit between vineyard blocks. Roads can change drainage patterns and the distribution of runoff along a hillslope. Inboard ditches and compacted road surfaces substantially increase the rate, volume, and locations of direct runoff from these areas, which can cause the road surfaces and ditches to rapidly erode. Road cuts and fills alter drainage pathways and the distribution of mass on the hillslope, often contributing to greater rates of landslide activity. Road stream crossings may be undersized for the conveyance of peak runoff rates, and/or may be easily plugged by large debris during storms causing overtopping and/or diversion of channel flows, with resulting road crossing erosion, and/or gully erosion through diversion of channel flows to another channel or hillslope location.

C. Relevant Policies and Orders

Several existing policies and orders govern the Proposed Project. The Regional Water Board must implement the precedential requirements of State Water Board Order WQ 2018-0002 (Eastern San Joaquin Agricultural Order or ESJ Order), which established certain precedential elements that must be included in irrigated lands regulatory programs throughout the state. Additionally, the Regional Water Board must comply with the State's Non-Point Source Policy, Antidegradation Policy, and the Order must be consistent with the Basin Plan and established TMDLs as well as the Sediment and Temperature Policies of the North Coast Basin Plan and the Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program

The federal Clean Water Act (CWA) requires states to develop a program to protect the quality of water resources from the adverse effects of NPS water pollution (SWRCB 2019). The NPS Policy is the State Water Board framework for addressing NPS pollution and requires each of the nine Regional Water Quality Control Boards (Regional Water Boards) to regulate NPS pollution, including agricultural discharges. The NPS Policy states that Regional Water Board implementation programs for NPS pollution control must include five key elements (SWRCB 2004), as follows:

- Key Element 1: An NPS control implementation program's ultimate purpose shall be explicitly stated. Implementation programs must, at a minimum, address NPS pollution in a manner that achieves and maintains water quality objectives and beneficial uses, including any applicable antidegradation requirements.

- Key Element 2: An NPS control implementation program shall include a description of the Management Practices and other program elements that are expected to be implemented to ensure attainment of the implementation program's stated purpose(s), the process to be used to select or develop Management Practices, and the process to be used to ensure and verify proper MP implementation. The Regional Water Board must be able to determine that there is a high likelihood that the program will attain water quality requirements. This will include consideration of the Management Practices to be used and the process for ensuring their proper implementation.

- Key Element 3: Where the Regional Water Board determines it is necessary to allow time to achieve water quality requirements the NPS control implementation program shall include a specific time schedule, and corresponding quantifiable milestones designed to measure progress toward reaching the specified requirements.

- Key Element 4: An NPS control implementation program shall include sufficient feedback mechanisms so that the Regional Water Board, dischargers, and the public can determine whether the program is achieving its stated purpose(s) or whether additional or different Management Practices or other actions are required.

- Key Element 5: Each Regional Water Board shall make clear, in advance, the potential consequences for failure to achieve an NPS control implementation program's stated purposes.

1. Eastern San Joaquin Agricultural Order Precedential Requirements

The California Regional Water Quality Control Board, Central Valley Region (CVWB) adopted WDRs for agricultural discharges in the eastern San Joaquin River watershed in 2012. The State Water Board reviewed the CVWB WDRs and subsequently adopted its own order modifying the CVWB-adopted WDRs in February 2018. The State Water Board order (WQ 2018-0002) is referred to as the Eastern San Joaquin Order, or ESJ Order. The State Water Board designated portions of the ESJ Order as "precedential" and directed the Regional Water Boards to revise their irrigated lands regulatory programs within the next five years to be consistent with the precedential direction in the ESJ Order (CVWB 2019). Key elements of the ESJ Order deemed precedential are listed in Table III-1.

Table III-1: Key ESJ Elements

Topic / Element	Precedential Language	Page No.
Outreach	"The requirement for participation by all growers in outreach events shall be precedential for irrigated lands regulatory programs statewide."	28
Management Practice Reporting	"The requirement for submission by all growers of management practice implementation information shall be precedential for irrigated lands regulatory programs statewide…"	29
Field Level Management Practice Implementation Data	"The requirement to submit grower-specific field-level management practice implementation data to the regional water board shall be precedential statewide."	32
	Individual field-level data will support analyses to identify "effective and ineffective management practices."	32
Sediment and Erosion Control Practices	"The requirement for implementation of sediment and erosion control practices by growers with the potential to cause erosion and discharge sediment that may degrade surface waters shall be precedential for irrigated lands regulatory programs statewide…"	32
Irrigation Management	"The requirement for incorporation of irrigation management elements into nitrogen management planning shall be precedential for irrigated lands regulatory programs statewide."	35
	"The requirement for all growers to submit summary data from the plans shall be precedential statewide."	36
Nitrogen Applied and Nitrogen Removed Reporting	"The requirement for field-level AR data submission to the regional water board consistent with the data sets and analysis of those data sets described in this section shall be precedential for irrigated lands regulatory programs statewide."	51
	"The requirement for calculation of annual and multi-year [nitrogen applied] A / [nitrogen removed] R ratio and A-R difference parameters for each grower by field shall be precedential for irrigated lands regulatory programs statewide…"	40

Topic / Element	Precedential Language	Page No.
Removal Coefficients	"The requirement for use of coefficients for conversion of yield to nitrogen removed values shall be precedential for irrigated lands regulatory programs statewide."	42
AR Outlier Follow Up	"The requirement for the third party to follow up with and provide training for AR data outliers and for identification of repeated outliers as set out above shall be precedential for irrigated lands regulatory programs statewide…"	53
Exemption from Nutrient Management Requirements	"We recognize that there may be categories of uniquely-situated growers for whom the specific nitrogen management requirements made precedential in the following sections of this order are unnecessary because applied nitrogen is not expected to seep below the root zone in amounts that could impact groundwater and is further not expected to discharge to surface water. Any category of Members (such as growers of a particular crop or growers in a particular area) seeking to be exempted from the precedential nitrogen management requirements in the following sections of this order shall make a demonstration, for approval by the relevant regional water board, that nitrogen applied to the fields does not percolate below the root zone in an amount that could impact groundwater and does not migrate to surface water through discharges, including drainage, runoff, or sediment erosion. These criteria for determining categories of growers that may be exempted from the nitrogen management requirements shall also be precedential statewide."	34-35
Recordkeeping	"This recordkeeping requirement [for third-party programs to maintain required reports and records for ten years and to back up certain information in a secure offsite location managed by an independent entity] shall be precedential statewide for all third-party irrigated lands regulatory programs."	53
Drinking Water Well Sampling	"The requirement for on-farm drinking water supply well monitoring, in accordance with the provisions described above, shall be precedential for irrigated lands regulatory programs statewide."	62

Topic / Element	Precedential Language	Page No.
Groundwater Trend Monitoring	"The requirement for groundwater quality trend monitoring shall be precedential for irrigated lands regulatory programs statewide…"	64
Groundwater Protection Formula, Values and Targets	"The development of the Groundwater Protection Formula, Values, and Targets shall be precedential for the third parties that proposed the methodology. Even if the programs do not require [groundwater quality monitoring plans], all of the regional water boards shall apply this methodology or a similar methodology, designed to determine targets for nitrogen loading within high priority townships or other geographic areas, for the remaining irrigated lands regulatory programs in the state." "The Groundwater Protection Formula, Values, and Targets are subject to Executive Officer approval following public review and comment."	66

2. Antidegradation Policy

The Anti-Degradation Policy (SWRCB Resolution No. 68-16) requires that the Regional Water Boards maintain high quality waters of the state unless they determine that any authorized degradation is (1) consistent with maximum benefit to the people of the state, (2) will not unreasonably affect present and anticipated beneficial uses, and (3) will not result in water quality less than that prescribed in state and regional policies (SWRCB 1968). Authorized waste discharges to high quality waters must meet waste discharge requirements that result in the best practicable treatment or control of the discharge necessary to ensure nuisance or pollution will not occur and the highest water quality consistent with the maximum benefit to the people of the state will be maintained. The Vineyard Order must be consistent with the Anti-Degradation Policy.

3. Total Maximum Daily Loads (TMDL)

A TMDL is the calculation of the maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet and continue to meet water quality standards for that particular pollutant. TMDLs are established in accordance with Section 303(d) of the Federal CWA, which requires states to identify waters not attaining applicable water quality standards, establish a priority ranking for identified impaired waters, and establish the TMDL for priority- ranked impaired waters.

The Regional Water Board complies with Section 303(d) by periodically assessing the condition of rivers, lakes, and bays within their jurisdiction and identifying the waterbodies as "impaired" if they do not meet water quality standards. These waters,

and the pollutant or condition causing the impairment, are placed on the 303(d) List of Impaired Waters, and ranked according to factors such as the severity of the problem, potential to restore beneficial uses, availability of data, etc. TMDLs are then developed based on a schedule that accounts for priority ranking, availability of resources, and other considerations. Once adopted by the Regional Water Board and approved by the State Water Board, Office of Administrative Law, and the U.S. Environmental Protection Agency (USEPA), TMDLs establish:

1) an allowable amount of a pollutant to a waterbody,

2) proportional responsibility for controlling the pollutant,

3) numeric indicators of water quality; and

4) implementation to achieve the allowable amount of pollutant loading.

The Regional Water Board has established TMDLs for numerous pollutant and waterbody combinations within its jurisdiction. For a map of 303(d)-listed waterbody segments for target pollutants (sediment and temperature) in the North Coast Region, please refer to the North Coast Basin Plan interactive web map application[4].

The Agricultural Lands Regulatory Program is one of the mechanisms by which the Regional Water Board addresses TMDL pollutants. Where a TMDL provides that it will be implemented by the agricultural order, the Vineyard Order must be consistent with that TMDL.

4. Sediment TMDL Implementation Policy

The Sediment TDML Implementation Policy was adopted as an amendment to the Basin Plan and describes actions the Regional Water Board shall take to address sediment waste discharges. The following are relevant to the Proposed Project:

1) Rely on the use of existing permitting and enforcement actions. These actions are consistent with the NPS Policy.

2) Rely on the use of existing prohibitions, including any future amendments.

5. Policy for the Implementation of the Water Quality Objectives for Temperature

The Temperature Implementation Policy was adopted as an amendment to the Basin Plan and describes actions the Regional Water Board shall take to achieve temperature objectives and implement temperature TMDLs, including USEPA-established TMDLs. The following are relevant to the Proposed Project:

[4] North Coast Basin Plan Web Application (https://gispublic.waterboards.ca.gov/portal/apps/webappviewer/index.html?id=3c441d71e7034227b776cae2f32c8d28).

1) Restore and maintain riparian shade, as appropriate, through nonpoint source control programs.

2) Continue to implement the Sediment TMDL Implementation Policy as a means of addressing elevated water temperature associated with excess sediment discharges. Implement sediment controls consistent with the approach articulated in the Sediment TMDL Implementation Policy to address temperature concerns associated with sediment in areas not impaired by sediment.

3) Examine and address temperature impacts when developing and implementing orders or programs for nonpoint source activities. Consider and implement, where applicable, all available measures to prevent and control the elevation of water temperatures in order or program development. Such measures shall include, but are not limited to, sediment best management practices and cleanups, memoranda of understanding or agreement with other agencies, prohibitions against waste discharges, management of riparian areas to retain shade, and control and mitigation of tailwater and impoundments. Where appropriate, include monitoring requirements for incorporation into permits, programs, and other orders to confirm management actions required to prevent or reduce elevated temperatures are implemented and effective.

4) Address factors that contribute to elevated water temperatures when issuing CWA Section 401 certifications, National Pollutant Discharge Elimination System permits, WDRs, or waivers of WDRs, or prohibitions.

5) Use other regulatory, executive, and enforcement tools, as appropriate, to address elevated water temperatures and preserve existing cold-water resources.

6) Support and encourage restoration projects that are designed to eliminate, reduce, or mitigate existing sources of temperature impairments. Administer, encourage, and support the use of grant funds to facilitate projects that address elevated water temperature concerns. Pursue non-regulatory actions with organizations, landowners, and individuals to encourage the control of elevated water temperatures, watershed restoration, and protection activities.

The Substitute Environmental Document[5] prepared for the Temperature Implementation Policy analyzed potential environmental impacts of the Policy. Impacts on Agricultural Resources include the potential conversion of Important Farmland to a non-agricultural use from riparian buffers which are considered compliance measures to preserve and maintain shade.

[5] Staff Report Supporting the Policy for the Implementation of the Water Quality Objectives for Temperature and Action Plan to Address Temperature Impairment (https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/140516_temp/140327_Temp_Policy_Staff_Report_ADOPTED.pdf).

D. Project Location

The Proposed Project would be implemented throughout Regional Water Board jurisdictional area which is shown on Figure 1. The North Coast Hydrologic Region includes a wide diversity of landscapes, climatic conditions, and land use types. The region includes urban areas such as the Santa Rosa plain and the Eureka/Arcata area coastline; Commercial vineyards in the Russian and Navarro River watersheds; rugged timberlands of the coast range and Klamath mountains; and the arid valleys of Siskiyou and Modoc Counties. Although the Vineyard Order would be in effect throughout the region, the majority of Management Practices and activities that would occur as a result of the Vineyard Order would be concentrated in high density areas of existing vineyards in Mendocino and Sonoma Counties (see Figure 2).

E. Existing Regulatory and Voluntary Programs

The Regional Water Board has not previously adopted general waste discharge requirements for non-point source discharges from commercial vineyards in the North Coast Region. Over the past 25 years, the Regional Water Board has issued Cleanup and Abatement Orders and Administrative Civil Liability Orders related to erosion and sediment discharges from vineyard and agricultural road developments. Certain aspects of new vineyard planting and replants are regulated through Sonoma County VESCO program which is discussed below. Implementation of Management Practices to minimize or prevent erosion and discharges of sediment in addition to protection of riparian areas occur as a result. In addition to the VESCO program, voluntary programs have been implemented at a large scale under the leadership of Resource Conservation Districts, the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service, and private nonprofit groups to provide another mechanism for implementation of erosion and sediment control Management Practices. The following sections provide general descriptions of the contributions of these existing programs.

1. Sonoma County Vineyard and Orchard Erosion and Sediment Control Ordinance (VESCO)

Adopted in 2000 (and amended several times since), VESCO applies to all new vineyard and orchard development, vineyard and orchard replanting, and agricultural grading and drainage occurring in the unincorporated area of Sonoma County (Sonoma County Code, Chapter 36). New vineyard and orchard planting and replanting require a ministerial local permit prior to commencing any vineyard or orchard planting, replanting or related work, including preparatory land clearing, vegetation removal, or other ground disturbance. VESCO establishes setbacks requirements for streams, wetlands, areas of slope instability, and ridgetops. VESCO prohibits new vineyards on slopes greater than 50 percent. VESCO includes standards for the proper conduct of new vineyard and orchard development, vineyard and orchard replanting, and agricultural grading and drainage. All new vineyard and orchard development, vineyard and orchard replanting, and agricultural grading and drainage shall comply with best management practices adopted by the Sonoma County Agricultural Commissioner. No analog to VESCO is currently in place in Mendocino County.

2. Voluntary Water Quality Protection Programs

Voluntary programs have been implemented at a large scale under the leadership of the Gold Ridge, Sonoma, and Mendocino County Resource Conservation Districts, the USDA Natural Resources Conservation Service, the California Land Stewardship Institute, and the Sonoma County Winegrowers. These programs include implementation of Management Practices with similar objectives and activities as the Proposed Project and are estimated to have implemented sediment and erosion control Management Practices on more than 80 percent of land planted to vineyards in the North Coast Region. The following section provides a general description of these programs.

a. Fish Friendly Farming Program

The Fish Friendly Farming Program (FFF) is a voluntary program developed by the California Land Stewardship Institute (CLSI), a non-profit organization that provides technical assistance to Vineyard owners to help them develop and implement Management Practices to protect water quality and riparian areas (California Land Stewardship Institute, 2009). FFF was established within the project area in 2004. The CLSI certification process involves enrollment by vineyard operators, participation in educational workshops, and preparation of a Farm Conservation Plan. Photo documentation is used to check that the plan is being implemented. Plans are updated regularly and recertified by CLSI every 5-7 years. As of spring 2023, approximately 37,691 acres of Commercial vineyards had been certified (FFF unpublished data, 2022).

b. LandSmart

The Resource Conservation Districts (RCDs) have developed, a technical assistance program for grape growers and other farmers to help them to develop plans to protect and/or restore water quality and habitat conditions throughout their property. This farm water quality and habitat protection program has multiple goals, including helping landowners to comply with existing regulations and the proposed Vineyard Order. Similar to FFF, the LandSmart program provides technical assistance with inventory of agricultural and natural resources, and with documentation and/or implementation of practices property-wide that are effective for control of fine sediment discharge and for protection and/or enhancement of stream and riparian habitat conditions. Like FFF, it also evaluates and provides technical assistance related to water resources management; agricultural chemical management; control of invasive species; fish passage; and other resource management issues. As of spring 2023, farm plans have been developed covering approximately 12,000 acres of Commercial vineyards in Sonoma County (Sonoma RCD unpublished data, 2023).

c. California Sustainable Winegrowing Alliance (CSWA)

The California Sustainable Winegrowing Alliance (CSWA) administers the Certified California Sustainable Winegrowing program (CCSW) which uses the California Code of Sustainable Winegrowing Workbook as the foundation of their certification. Growers

must do an annual self-assessment of management practices which cover soil, water, pest, ecosystem, air quality, materials handling, and energy efficiency management as well as human resources and business practices. Vineyards must meet prerequisite requirements for soil, water use, and pest management practices and receive annual third-party audits to maintain certification. Vineyards must also demonstrate continuous improvements, meet performance metrics for water, energy, nitrogen and greenhouse gas emissions, and comply with pesticide restrictions. Sonoma County has 1,041 vineyards and 43,061.7 acres certified with 139 vineyards and 6,989.95 acres certified in Mendocino County (CSWA unpublished data, 2022).

d. Sustainability in Practice (SIP)

Sustainability in Practice (SIP) Certified is sustainability certifying program which requires growers to document and enhance a measurable and recordable set of practices that encompass vineyard conservation and enhancement of biological diversity, vineyard establishment and management, vineyard soil conservation, water conservation and quality, energy conservation and efficiency, pollution and waste, and business practices. The certification program third party verifies that its participants are implementing practices that include cover crops, low nitrogen, nutrient budgets, and irrigation practices. As of fall 2022, SIP has certified 2,630 acres in Sonoma County and 675 acres in Mendocino County (SIP unpublished data, 2022).

e. Lodi Rules

Lodi Rules is a sustainable viticultural certification program established in 1992. The program focuses on a progressive implementation of integrated pest management practices and farming practice standards. The Lodi Rules Standards includes 150 sustainability practices which cover soil management, water management, ecosystem management, pest management, business management and human resources management. Protected Harvest, an independent third-party, provides accreditation and auditing. As LandSmart (http://www.landsmart.org)of 2022, there are approximately 2,097 acres certified through Lodi Rules in Sonoma and Mendocino Counties (Lodi Winegrape Commission unpublished data, 2023).

f. Sonoma County Sustainability Program

The Sonoma County Winegrowers is a marketing organization that provides grower education, resources, and promotion of agricultural best practices within the Sonoma County wine-grape region. Sonoma County Winegrowers promotes sustainable certification among four accepted sustainability programs (Fish Friendly Farming, California Sustainable Winegrowing Alliance, Sustainability In Practice, or Lodi Rules). In 2019, Sonoma County Winegrowers announced that 99 percent of Sonoma County vineyards were certified sustainable by a third-party auditor under one of the four programs (Sonoma County Winegrowers, 2023)

F. Project Purpose and Objectives

The purpose of the Vineyard Order is to:

Objective #1 - Protect and restore beneficial uses and achieve water quality objectives specified in the Basin Plan for areas in the North Coast Hydrologic Region planted to vineyards by:

1) Minimizing or preventing nitrate and pesticide discharges to groundwater.

2) Minimizing or preventing nutrient and pesticide discharges surface water.

3) Minimizing or preventing sediment discharges to surface water.

4) Minimizing or preventing temperature impacts to surface water from loss of riparian shade.

Objective #2 - Effectively track and quantify achievement of the stated objectives over a specific, defined time schedule.

Objective #3 - Comply with the State Nonpoint Source Policy, the State Antidegradation Policy, the precedential language in the Eastern San Joaquin Agricultural Order, the North Coast Basin Plan, and other relevant statutes and water quality plans and policies, including the Temperature Implementation Policy, the Sediment TMDL Implementation Policy, and TMDLs in the North Coast Hydrologic Region.

G. Summary of the Proposed Vineyard Order

The Proposed Project would involve adoption of the Vineyard Order, which would initiate the regulatory program and establish GWDRs for Commercial Vineyards in the North Coast Hydrologic Region. Refer to Attachment A for the proposed Draft Vineyard Order. Refer to Attachment B for a list of reasonably foreseeable Management Practices. Key elements of the Vineyard Order include the following:

1) Sediment and Erosion Management for Surface Water Protection,

2) Streamside Management Areas for Surface Water Protection,

3) Storm-Proofing Appurtenant Agricultural Roads for Surface Water Protection,

4) Irrigation and Nutrient Management for Groundwater Protection, and

5) Monitoring and Reporting Requirements.

1. Sediment and Erosion Management for Surface Water Protection

Dischargers would be required to implement Management Practices to minimize and control their discharges of sediment to surface waters. The Vineyard Order would include a minimum requirement to implement ground cover Management Practices during the winterization period (add dates) but does not mandate specific Management Practices. The reasonably foreseeable Management Practices with the greatest potential for environmental impacts (i.e., those involving ground disturbance during

construction/installation) include the following:

Runoff management features: This includes buffer strips, vegetated filter strips, or swales. Construction/installation of these features may include light disking, use of a “no till” or grass drill for seeding the proposed vegetated area, and associated transport of materials and equipment. Minor excavation and off-haul of soils may be required for construction of swales. Maintenance of runoff management features may include general vegetation management (e.g., mowing, weeding, etc.).

Sediment basins: This includes basins constructed from an embankment or excavation to capture and retain sediment-laden runoff. Construction of sediment basins requires use of heavy equipment, such as dozers, hydraulic excavators, trenchers, dump trucks, scrapers, etc. Engineered fill material may need to be imported to the site for construction of the embankment and/or excavated material may need to be hauled off from the site and disposed of at a landfill. Maintenance activities may include periodic inspections of the basin, removal of accumulated sediment, removal of debris/trash, replacement of damaged parts, and vegetation management.

2. Streamside Management Area for Surface Water Protection

Dischargers would be required to implement Streamside Management Area requirements including setbacks based on type of waterbody. Table III.2 includes setback requirements by water body type. Refer to Section II.C.1.a of the Vineyard Order (Attachment A) for descriptions and definitions of each waterbody type. Requirements include allowing natural succession of riparian vegetation and possibly installing vegetative buffers. In cases where the current width of Streamside Management Area is less than the required, the timeline for compliance is at the time of vineyard replanting.

Table III.2: Streamside Area Vegetated Buffer Minimum Horizontal Width (feet) in Vineyard Order

Perennial Stream	Ephemeral/ Intermittent Stream	Hydrologically Connected Undesignated Channel	Wetland	Lake, Pond, or On-Stream Reservoir
50	25	10	50	50

3. Storm-Proofing Appurtenant Agricultural Roads for Surface Water Protection

Dischargers with appurtenant agricultural roads would be required to implement storm-proofing Management Practices generally consisting of drainage improvements to minimize erosion and control discharges of sediment to surface waters in addition to ensuring existing stream crossings have low potential to plug and overtop. The compliance timeline for completion of Management Practice implementation is 10 years from the adoption date of the Vineyard Order. The reasonably foreseeable Management

Practices with the greatest potential for environmental impacts (i.e., those involving ground disturbance during construction/installation) include the following:

Rolling Dips: Shallow, rounded dip in the road where road grade reverses for a short distance and surface runoff is directed in the dip or trough to the outside or inside of the road. Rolling dips are drainage structures used primarily on gravel surfaced, out-sloped roads designed to drain the road surface and constructed to remain effective while allowing passage of motor vehicles at normal or slightly reduced road speed.

Critical Dips: A dip in the roadbed at a culverted stream crossing, preferably at the down-road hinge line of the fill, that prevents stream diversion. The dip is designed to act as an overflow structure if the main culvert were to plug and ponded water overtopped the fill. Although somewhat like a rolling dip, it must have sufficient capacity (width and depth) to carry flood flows from the stream without itself overtopping and diverting down the road.

Out-sloping: converting an in-sloped road to an out-sloped road. Out-sloping can also refer to the act of excavating the fill along the outside of the road and placing and grading it against the cut-bank, thereby creating an out-sloped surface where the roadbed once existed. In road decommissioning, partial or full out-sloping (recontouring) are two methods for providing permanent drainage dispersal from the former roadbed.

4. Irrigation and Nutrient Management for Groundwater Protection

Dischargers would be required to implement irrigation and nutrient Management Practices to minimize and control discharges of nitrate to groundwater. The Vineyard Order would not specify or prescribe specific Management Practices that enrollees must undertake to reduce discharges. Dischargers would have the flexibility to implement the Management Practices that are most suitable for their specific situation or otherwise choose how they would comply with discharge prohibitions of the Vineyard Order. General agricultural Management Practices implemented in other Regional Irrigated Lands Orders offer a good indication of the reasonably foreseeable types of irrigation and nitrogen efficiency practices that may be implemented under the Vineyard Order. These could include, but are not limited to micro-irrigation (e.g., drip), cover crops, use of soil moisture probe or evapotranspiration (ET) to schedule irrigation, foliar nitrogen application, fertigation, and petiole tissue testing. Enrollees would be required to prepare and implement an Irrigation and Nitrogen Management Plan (INMP) for each field which budgets all sources of nitrogen applied and removed during the growing season and harvest. INMP reporting drives adaptive management of irrigation and nutrient practices on the farm level by identifying statistical outliers of nitrogen application vs. removal. Dischargers designated as statistical outliers would be required to obtain nitrogen management training or work with a nitrogen management planning specialist for certification of their next INMP.

5. Monitoring and Reporting Requirements

Dischargers would be required to either individually or through a Third-Party Group

implement the Monitoring and Reporting Program. The Monitoring and Reporting Program consists of (1) annual surface and groundwater monitoring; (2) annual compliance reporting and (3) water quality trend monitoring reporting every five years.

Surface water quality monitoring includes: (1) agricultural drainage structure and off-farm discharge monitoring to evaluate temporal changes in sediment discharges to surface waters and trigger on-farm adaptive management, (2) tributary turbidity monitoring (as a proxy for suspended sediment concentrations) as a method of tracking progress towards sediment conditions which are supportive of beneficial uses, and (3) streambed monitoring to measure streambed conditions (fine sediment and surface roughness) as a method of tracking progress towards sediment conditions which are supportive of beneficial uses.

Groundwater monitoring includes: (1) drinking water well monitoring to identify drinking water wells with nitrate concentrations that exceed the Maximum Contaminant Level for nitrate, identify wells with California Department of Pesticide Regulation 6800(a)[6] listed pesticide concentrations over the human health reference level, and notify any well users; and (2) groundwater trend monitoring to determine current water quality conditions of groundwater relevant to vineyard cultivation, and to develop long-term groundwater quality information to evaluate regional effects of vineyard practices.

Dischargers would be required to report relevant Management Practices relating to sediment and erosion control, streamside area management, irrigation and nutrient management and appurtenant road storm-proofing annually. Water quality monitoring results would be reported annually and evaluated every five years for trends. Management Practice and water quality monitoring reporting would be used to evaluate the impact of vineyard practices on water quality conditions and inform regulatory decisions over time.

H. Activities that Could Occur Under the Vineyard Order

A wide array of Management Practices could be implemented under the Vineyard Order to minimize or prevent erosion; sediment, nutrient, and pesticide discharges; and temperature impacts from Commercial vineyards in the North Coast Region. Management Practices that could be implemented are listed in Attachment B and are based on review of Management Practices implemented through existing regulatory and voluntary programs in Mendocino and Sonoma Counties.

I. Intended Use of this EIR

The Regional Water Board will use this EIR to inform its decision as to whether to adopt and implement the Proposed Project (Vineyard Order) requirements. In addition, the EIR may be used by other agencies to support their issuance of permits or approvals in

[6] California Code of Regulations (Title 3. Food and Agriculture), Division 6. Pesticides and Pest Control Operations, Chapter 4. Environmental Protection, Subchapter 1. Groundwater Article 1. Pesticide Contamination Prevention.

relationship to activities conducted pursuant to Vineyard Order compliance. Agencies that may use this EIR include, but are not limited to, the following:

1) Cities and counties throughout the North Coast Region
2) California Air Resources Board
3) California Coastal Commission
4) California Department of Fish and Wildlife
5) California Department of Forestry and Fire Protection
6) California Department of Pesticide Regulation
7) California Office of Historic Preservation
8) California State Lands Commission
9) State Water Resources Control Board
10) U.S. Army Corps of Engineers
11) National Marine Fisheries Service

IV. Environmental Analysis

This DEIR presents the North Coast Regional Water Quality Control Board's (Regional Water Board) analysis of potential impacts on the physical environment that may result from adoption and implementation of the Proposed Project. Project impacts are related to the potential environmental impacts resulting from actions that Dischargers are expected to take to comply with the Vineyard Order.

The Vineyard Order would require actions to minimize or prevent control water quality impacts from Commercial vineyards in the North Coast Region. Such actions may include the implementation of the following:

1) Sediment and Erosion Management for Surface Water Protection

2) Streamside Management Areas for Surface Water Protection

3) Storm-proofing Appurtenant Agricultural Roads for Surface Water Protection

4) Irrigation and Nutrient Management for Groundwater Protection

5) Monitoring and Reporting Requirements

The EIR also identifies potential mitigations that could feasibly be implemented to alleviate, minimize, or avoid any significant environmental impacts.

A. Scope of Analysis

This section provides introductory information related to the evaluation of environmental impacts associated with the California Regional Water Quality Control Board, North Coast Region's General Waste Discharge Requirements for Discharges from Commercial Vineyard (Proposed Project or "Vineyard Order"). It describes the overall approach to the impact analyses, including key terminology and a description of how the significance of environmental impacts is evaluated. It also discusses resource topics eliminated from detailed analysis in the DEIR. Subsequent sections in this chapter describe and evaluate potential impacts to environmental resources from the Proposed Project.

1. Introduction to the Resource Sections

Chapters V through XII topical sections that describe the environmental resources and potential environmental impacts of the Proposed Project. Each Chapter contains the following information about each respective resource topic:

- A description of the regulatory setting related to the resource topic.

- A description of the environmental setting and background information related to the resource topic, to help the reader understand the resources that could be affected by the Proposed Project.

- A discussion of the thresholds used in determining the significance of the Proposed Project's potential environmental impacts.

- A discussion of the potential environmental impacts of the Proposed Project on the resource, including the significance of each potential impact.

- A description of any mitigation measures to be adopted by the Regional Water Board that would avoid or minimize impacts.

2. Significance of Environmental Impacts

The California Environmental Quality Act (CEQA) requires that an environmental impact report (EIR) define a threshold of significance for each impact that may occur on the physical environment. A threshold of significance, or significance criterion, is an identifiable quantity, quality, or performance level of a particular environmental effect. In general, potential impacts are identified as either significant (i.e., above threshold) or less than significant (i.e., below threshold).

Under CEQA, the impacts of a proposed project are assessed relative to the environmental baseline, which is defined as the existing physical conditions in the affected area as they existed at the time the notice of preparation (NOP) was published (Cal. Code Regs., tit.14, section 15126.2 (a)). Impacts of a proposed project are limited to changes in the baseline physical conditions of the environment (State CEQA Guidelines Section 15125[a]) that would result directly, indirectly, or cumulatively from the proposed project. CEQA does not require the lead agency to consider impacts that are speculative (State CEQA Guidelines Section 15145).

For the purposes of this DEIR, significance criteria are generally drawn from the State CEQA Guidelines, Appendix G: Environmental Checklist Form. The State CEQA Guidelines including Appendix G were updated in January 2022, which was subsequent to the publication of the NOP (August 2022). This DEIR uses the updated Appendix G criteria adopted in January 2022.

3. Environmental Baseline of Analysis

Commercial vineyards in the North Coast Region are not currently covered by an irrigated lands regulatory program. However, both local regulatory and voluntary programs have been implemented at a large scale in the Region. Voluntary programs have been implemented under the leadership of the Gold Ridge, Sonoma County, and Mendocino County Resource Conservation Districts, the US Department of Agriculture (USDA) Natural Resources Conservation Service, the California Land Stewardship Institute, and the Sonoma County Winegrowers Association. These programs include implementation of Management Practices with similar objectives and activities as the Proposed Project, are estimated to have implemented sediment and erosion control Management Practices on more than 80 percent of land planted to vineyards in the North Coast Region and these ongoing activities are a part of the baseline environmental conditions.

The Vineyard and Orchard Erosion and Sediment Control Ordinance (VESCO) is a county regulatory program administered by the Sonoma County Department of Agriculture that is applicable to all new vineyard and orchard development, vineyard and orchard replanting, and agricultural grading and drainage occurring in the unincorporated area of Sonoma County (Sonoma County Code, Chapter 36). New vineyard and orchard planting and replanting require a permit prior to commencing any vineyard or orchard planting, replanting or related work, including preparatory land clearing, vegetation removal, or other ground disturbance. VESCO establishes setbacks requirements for streams and wetlands (similar to setbacks required by the Proposed Project), areas of slope instability, and ridgetops. VESCO prohibits new vineyards on slopes greater than 50 percent. VESCO includes standards for the proper conduct of new vineyard and orchard development, vineyard and orchard replanting, and agricultural grading and drainage including implementation of best Management Practices adopted by the Sonoma County Agricultural Commissioner.

The impact analysis in this DEIR focuses on the increment of change that would result from implementation of the Vineyard Order, considering both ongoing and new compliance activities. For example, the extent to which the Vineyard Order may require commercial vineyards to implement additional Management Practices, which could result in environmental impacts through their implementation, and therefore could result in new environmental impacts as a result of the Proposed Project. Any ongoing environmental effects associated with compliance activities with local ordinances and voluntary programs are considered part of the baseline.

The baseline differs for each resource topic and is described in the “Environmental Setting” section within each topical resource section. While the NOP was issued in August 8, 2022, the environmental analysis for the Proposed Project is considered to have commenced in spring 2022. Therefore, the baseline for this DEIR analysis is the physical environmental conditions that existed in spring 2022. In some cases, more or less recent data or information is used in this DEIR, as appropriate and based on data availability. As an example, it is appropriate to use a larger period of time for water quality data to account for seasonality and the dynamic nature of environmental data rather than one day.

B. Identifying Impact Significance

The analysis first determines the extent to which each of the resources could be affected by the Vineyard Order. The analysis then applies a set of specific significance criteria (Thresholds of Significance) based on the CEQA Guidelines Appendix G Environmental Checklist Form. The “threshold of significance” for a given environmental effect is that level at which the lead agency finds effects of the project to be significant. The threshold can be defined as a quantitative or qualitative standard, or a set of criteria, pursuant to which the significance of a given environmental effect may be determined.

The range of potential impacts is as follows:

No Impact – where the Vineyard Order is not expected to create a physical adverse change in the environment or the project would result in only a beneficial impact.

Less-Than-Significant Impact – where the Vineyard Order would not create a substantial adverse change in the environment and for which no mitigation measures are required.

Less than Significant Impact with Mitigation Incorporated– where the Vineyard Order is anticipated to create a substantial adverse effect on the environment but feasible mitigation measures are available to reduce it to a less- than-significant level.

Potentially Significant Impact – where the Vineyard Order is expected to create a substantial adverse effect on the environment and for which there are no feasible mitigation measures available to reduce it to a less-than-significant level.

Because the Vineyard Order would apply to both existing Commercial vineyards as well as new Commercial vineyards that might in the future enroll for coverage under the Vineyard Order, this EIR also assesses the impacts that would occur from a new vineyard's compliance with the Vineyard Order.

C. Impacts Determined to be Less Than Significant

On August 8, 2022, The Regional Water Board transmitted an NOP, which included an attached Initial Study, to public agencies and persons with potential interest in the project (available at: https://ceqanet.opr.ca.gov/2022080129). The Initial Study identified impacts that were determined to be less than significant including all impacts to: Land Use/Planning, Mineral Resources, Noise, Population/Housing, Public Services, Recreation, Transportation, and Utilities/Service Systems. This DEIR describes changes in the design of the Proposed Project and additional analysis which reduced impacts to Air Quality, Aesthetics, and Geology/Soils to Less than Significant or Less than Significant with Mitigation.

D. Mitigation Measures

Where significant adverse impacts are identified for the Vineyard Order, the EIR must "describe feasible measures which could minimize" those impacts to a less-than-significant level (Cal Code Regs., tit.14, section, 15126.4). For each significant impact, mitigation measures are identified. In some cases, the EIR includes a list of alternative mitigation measures, which could reduce the impact to a less-than- significant level, or contribute to doing so. Where multiple measures are required to reduce an impact to a less-than-significant level, the discussion clearly identifies which combination or permutation of measures would be necessary to achieve the appropriate level of mitigation.

Where measures are available that can reduce the magnitude of a potential significant impact of the Vineyard Order, but not to a less-than significant level, these are also identified. The EIR strives not to include measures that are clearly infeasible. Under

CEQA, “feasible means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors” Cal Code Regs., tit.14, Section 15364).

If, even with imposition of mitigation measures, the project will generate unavoidable significant effects, the Regional Water Board can only approve the project if it makes a written Statement of Overriding Considerations and finds that benefits of the project outweigh the occurrence of those unavoidable effects (Cal Code Regs., tit.14, Sections 15092,15093).

V. Agriculture and Forestry Resources

This section presents the regulatory and environmental settings, and an overview of potential impacts of the Proposed Project related to agricultural and forestry resources. This section focuses on potential impacts to agricultural and forestry resources related to the CEQA Appendix G significance criteria, which includes potential for direct conversion of agricultural lands to non-agricultural use due to Proposed Project activities, conflicts with existing zoning for agricultural use or Williamson Act contracts, or changes to the environment that could result in conversion of agricultural use.

A. Regulatory Setting

1. Federal Laws, Ordinances, Regulations, and Policies

No federal laws, regulations, policies, or programs are applicable to agriculture and forestry resources and the Proposed Project.

2. State Laws, Ordinances, Regulations, and Policies

a. Farmland Mapping and Monitoring Program

The California Department of Conservation (CDOC), Division of Land Resource Protection, established the Farmland Mapping and Monitoring Program (FMMP) in 1982 to provide a consistent analysis of agricultural land use and land use changes throughout California (CDOC, DLRP, No Date(a)).

Land that defined as Agricultural Land (collectively Important Farmland) (Public Resources Code, Section 21060.1(a)) is mapped as one of the following three categories, with the FMMP mapping a fourth category for land of local importance for the purposes of CEQA analysis (CDOC, DLRP, No Date(b)).

1. **Prime Farmland.** Farmland that has the best combination of physical and chemical features to sustain long term agricultural production. This land has the soil quality, growing season, and moisture content needed to sustain high yields and long-term agricultural production. The land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

2. **Farmland of Statewide Importance.** Farmland that is similar to Prime Farmland but has minor shortcomings, such as greater slopes or lower moisture content. The land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

3. **Unique Farmland.** Farmland with lesser quality soils but still used for the production of the state's leading agricultural crops. This land is usually irrigated but may include land that supports non-irrigated orchards or vineyards, as found in some climatic zones in California. The land must have been used for crop production at some time during the four years prior to the mapping date.

4. **Farmland of Local Importance.** Land that is important to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.

b. Land Conservation Act (Williamson Act)

The California Land Conservation Act of 1965, typically referred to as the Williamson Act (Gov. Code Sections 51200–51297.4), enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. Landowners participating in these contracts receive a 30 percent reduction in property tax assessments because they are based upon farming and open space uses rather than full market value.

In 1998, an option was added in the Williamson Act Program to create Farmland Security Zones, which are areas within an agricultural preserve that offer private landowners a greater property tax reduction than the regular Williamson Act assessment. The Farmland Security Zone option was passed by California legislature to guarantee long-term preservation of farmland throughout the State. A board, on behalf of a landowner currently under a Williamson Act contract, may apply for Farmland Security Zone status by entering into a contract with a city or county. The Farmland Security Zone classifications renew annually for a minimum 20-year period. In return for an additional 35 percent reduction in the taxable value of the land and improvements (in addition to Williamson Act tax benefits), the owner of the property agrees not to convert the property to non-agricultural uses (Gov't Code Sections 51200–51297.4).

3. Local Laws, Ordinances, Regulations, and Policies

General plans are long-range comprehensive plans developed for cities and counties to govern growth and development. Many county General Plans include goals and policies to preserve agricultural land and forest resources through a variety of mechanisms, such as creation of urban growth boundaries, designation of agricultural overlay zones, requirement of buffers between agricultural and other uses, and mitigation fees for conversion of agricultural land associated with development. Relevant goals, objectives, and policies of the Sonoma and Mendocino County general plans are included as Attachment C. Farmland of Local Importance is identified by County and used by DOC FMMP. Glenn, Lake, Marin, Modoc, Siskiyou, and Sonoma County are counties that identify Farmland of Local Importance in the Project Area.

B. Environmental Setting

1. Regional Viticultural Production

There are approximately 65,000 acres of land planted to vineyards (DWR, 2019) in the North Coast Region which are nearly all found in the Mendocino and Sonoma County American Viticultural Areas (AVA). Within the North Coast Region, approximately 48,000 acres of Sonoma County and approximately 17,000 acres of Mendocino County are planted to wine-grapes (DWR, 2019). Since 2014, expansion of land planted to vineyards within North Coast Region has progressed at a rate of one to two percent

annually with most new vineyard planting occurring in the Sonoma County portion of Russian River watershed as determined through analysis of available crop data.

Sonoma County borders Napa Valley along the Mayacamas Range to the east and the Pacific Ocean to the west. Sonoma County borders Mendocino County in the north and Marin County in the south. A vastly diverse range of topography, including numerous small valleys with distinct microclimates, the Russian River and the Pacific Ocean, all characterize Sonoma County. A moderate climate with a cooling maritime influence, Sonoma County embodies ideal and diverse wine-grape growing weather: from valley to hillside, moist ocean coast to dry inland, and cool southern regions that complement the warmer, more northern areas.

Mendocino County is directly north of Sonoma County and about 90 miles north of San Francisco. The Mendocino County AVA is bounded by the Coast Range and the Pacific Ocean. Most of the vineyards are located in the inland valleys in the south and east areas of the County. The vineyards growing white wine grape varieties are located on flood plains and alluvium along the Navarro and Russian Rivers. Most of the red varieties are grown on the bench lands above. Land planted to vineyards in Mendocino County increased from just under 13,000 acres in 2000 to over 16,000 acres by 2009 reflecting a shift from fruit and nut crops to wine-grapes (Mendocino County, 2009). Since 2009, expansion of vineyard planting has slowed and typically occurred as conversion of orchards to vineyards.

Slightly more than one-half of one percent of land (approximately 200 acres) planted to vineyards within the North Coast Region is located outside of Mendocino and Sonoma County (DWR, 2019). These northern vineyards are typically planted within inland river valleys of the Mad, Trinity, and Eel River watersheds and are a minor land use activity within forestry dominated watersheds.

2. Important Farmland

The North Coast Region of Mendocino and Sonoma Counties contains approximately 110,000 acres of irrigated farmland (i.e., areas designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland) with more than 50 percent planted to vineyards. More than 99 percent of the 65,000 acres planted to vineyards within the North Coast Region is designated as Important Farmland.

3. Forestry Resources

Forestry resources are located throughout the North Coast Region, particularly in the northern counties, as well as along the coast. Forest lands do not typically contain planted vineyards and would not be subject to the Vineyard Order. Any potential development of these lands would be required to go through a separate CEQA analysis with another state agency or local jurisdiction acting as the Lead Agency.

C. Environmental Analysis

1. Impact Analysis Methods

The analysis of the potential effects of the Proposed Project on agriculture and forestry resources was quantitative in nature. Because the Proposed Project includes specific streamside management area setbacks, Regional Water Board staff was able to perform a quantitative analysis to determine approximately how much land planted to vineyards would be taken out of production as a result of the proposed setbacks. This quantitative analysis used the Department of Water Resources 2019 land use GIS data for vineyards and computed planted vineyard area within the Proposed Project setbacks. The analysis did not extend to Important Farmland not currently planted in vineyards. However, considering the one to two percent annual growth rate in new vineyard planting over the last decade, the potential future impact can be estimated. The Proposed Project requires compliance with Streamside Management Area setbacks at the time of new vineyard planting and replanting.

2. Thresholds of Significance

For the purposes of this analysis, based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would:

1) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to non-agricultural uses.

2) Conflict with existing zoning for agricultural use, or a Williamson Act contract.

3) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)).

4) Result in the loss of forest land or conversion of forest land to non-forest use.

5) Involve other changes in the existing environment, which due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

3. Impacts and Mitigation Measures

Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmland), as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use. (*Significant and Unavoidable*)

Conversion Due to Streamside Management Area Setback Requirements:

As shown in Table III.2 in the Project Description Chapter and described in Attachment A, the Vineyard Order would require Commercial vineyards to implement streamside management area setbacks from planted areas (including vineyard avenues and seasonal agricultural roads) based on the type of waterbody. Implementing setback requirements under the Vineyard Order may result in conversion of Important Farmland to non-agricultural use. Approximately 300[7] acres of Important Farmland currently planted to vineyards could potentially be taken out of production due to the setback requirements. Given the approximately 65,000 acres of Important Farmland in Mendocino and Sonoma County within the North Coast Region, this equates to a potential conversion of less than one percent of Important Farmland currently planted to vineyards.

The majority of agricultural land conversion would occur to allow natural succession of riparian vegetation to provide shade, reduce discharges of sediment, pesticides, and nutrients to surface waters, and reduce stream bank erosion. As compliance with setbacks is tied to development of a new vineyard, or the replanting of an existing vineyard, the potential conversion of approximately 300 acres of agricultural land to non-agricultural use would not be expected to occur immediately after Order adoption or all at the same time; rather, the period of conversion may extend for 20 to 30 years after Order adoption.

While Farmland could be taken out of production under the Vineyard Order due to the streamside management area setback requirements, it is important to note that it would be converted to riparian vegetation (which is generally considered beneficial for water quality and the ecosystem) and not urban land uses.

Through Resolution No. R1-2014-0006 Amending the Water Quality Control Plan for the North Coast Region to include the Policy for the Implementation of the Water Quality Objectives for Temperature, and Action Plans to Address Temperature Impairments in the Mattole, Navarro, and Eel River Watersheds, the Regional Water Board made CEQA findings under California Code of Regulations, title 14, section 15091 (a)(3) that certain compliance measures such as riparian buffers as having a potentially significant and unavoidable impact on agricultural resources from conversion of Important Farmland to a non-agricultural use and/or a conflict with Williamson Act contracts, and adopted a statement of overriding considerations pursuant to California Code of Regulations, title 14, section 15093.

The Regional Water Board considered alternative methods for reducing potentially significant impacts associated with the setback requirements analyzing Reduced Streamside Area Setback and Offsite Riparian Restoration alternatives (the Alternatives

[7] "Important Farmland" is the sum of land area classified as Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance as defined by CA Dept. of Conservation's Farmland Mapping & Monitoring Program in cooperation with NRCS. Acres calculated from geospatial intersection of Important Farmland, DWR-mapped Vineyards, and riparian setbacks.

Analysis Chapter). The Reduced Setback Alternative (50 percent reduction in setbacks) would reduce but not eliminate the environmental impact to Agricultural Resources, but it would not achieve some of the Proposed Project's water quality protections. The Reduced Setback Alternative would not achieve the same level of reductions in sediment discharges and temperature impacts compared to the Proposed Project and would not fully comply with Riparian Management provisions of the Regional Water Board's Policy for the Implementation of the Water Quality Objectives for Temperature (Temperature Implementation Policy) to implement site-specific potential effective shade.

Site-specific potential effective shade is equal to the shade provided by topography and full potential vegetation conditions at a site, with an allowance for natural disturbances such as floods, wind throw, disease, landslides, and fire. The establishment of riparian buffers for temperature protection is an effective and important management measure for the control of some types of sediment discharges. Maintenance of a vegetated buffer provides a control on the discharge of sediment mobilized by surface erosion. Also, the retention of mature trees (and their roots) along a stream bank provides bank stability, reducing the discharge of sediment associated with stream bank landslides and debris flows. Maintenance of a vegetated buffer along streams also can ensure a supply of large woody debris to the stream channel, which is critical for metering of sediment, channel forming processes, and fish habitat.

The Offsite Alternative would reduce but not eliminate the environmental impact to Agricultural Resources. In this alternative, commercial vineyards would be given the option to mitigate the difference in area available for natural succession of riparian vegetation between existing conditions and proposed requirements. Mitigation would be accomplished through restoration and protection of riparian vegetation at another location within the same sub-watershed. However, the Offsite Alternative would not achieve the same level of reductions in sediment discharges and temperature impacts compared to the Proposed Project and would not fully comply with Riparian Management provisions of the of Temperature Implementation Policy to implement site-potential effective shade. The Offsite Alternative may not achieve the same level of reductions in pollutant discharges compared to the Proposed Project due to the lesser control of sediment and temperature discharges at commercial vineyards and the likelihood that mitigation sites would not have the same pollutant discharges as a vineyard. Mitigation sites would have to be in a location not already subject to waste discharge requirements or another regulatory action. Thus, the Offsite Alternative would do less to correct the existing adverse impacts of commercial vineyards on water quality in the North Coast Region.

While the flexibility of Streamside Area setback compliance options could be helpful for some existing vineyards, it is not possible to predict with any certainty whether the considered alternatives would sufficiently mitigate the agricultural land conversion that could occur under the Proposed Project. The alternatives considered would not fully achieve objectives of the Proposed Project and/or would not be sufficient to reduce the impact to Agricultural Resources to less than significant. As such, no feasible mitigation

was identified to reduce these adverse effects. Therefore, this impact would be ***significant and unavoidable.***

Conversion Due to Economic Impacts of Compliance Costs

In addition to agricultural land conversion from Streamside Management Area setbacks, there is also potential for indirect conversion of agricultural lands due to the economic costs and impacts associated with complying with the Vineyard Order.

The Regional Water Board analyzed potential costs associated with the Proposed Project – see Attachment E. The overall cumulative costs of Management Practice implementation for a specific vineyard are speculative though because it is unknown which Management Practices will be implemented or are already being implemented. Based on information provide from existing voluntary programs, on the order of 80 percent of land currently planted to vineyards in the North Coast Region is part of a program that already implements Management Practices similar to those which would be implemented under the Vineyard Order. The primary costs of compliance could be for drainage improvements to appurtenant agricultural roads and farm area ground cover. However, the investment to improve road drainage and prevent farm area soil loss, yields long-term cost savings through reduced road maintenance and soil conservation. Monitoring and Reporting costs are expected to be relatively similar to other irrigated lands regulatory programs.

The Regional Water Board understands that profit margins may be slim for some business owners in the vineyard industry and any increased administrative/regulatory costs could adversely affect profitability. However, the potential effects of increased costs would depend specific to an individual vineyard as well as current and future markets forces. The Regional Water Board does not find that the anticipated increased costs would be large enough to necessarily cause any existing vineyard to go out of business, render it economically unviable, or otherwise choose to abandon their operations.

In the unique circumstance where the cost of compliance may be too great or the loss of production of displaced planted areas would make the operation unprofitable, neither scenario would permanently nor irretrievably convert the affected Farmland to non-agricultural use. The land would still be available for non-vineyard agricultural uses and therefore implementation of Management Practices would be considered a less than significant impact. Furthermore, successful implementation of Management Practices could enhance agricultural productivity by strengthening erosion control methods already in place, resulting in a beneficial impact through the increased retention of topsoils. Attaining and sustaining stream temperatures that support the cold freshwater habitat beneficial use, the beneficial use most sensitive to temperature, is also vital to supporting the socioeconomic background of the region due to the role that cold freshwater streams play in supporting recreational, commercial and subsistence fishing. These benefits are not only supportive of several threatened and endangered species, but also of local economies, communities, and cultures throughout the North Coast.

As a result, that the overall cost of complying with the proposed Vineyard Order would not indirectly contribute to a significant conversion of Prime farmland, Unique Farmland, and/or farmland of Statewide Significance to a non-agricultural use, this impact would be ***less than significant.***

Conversion Due to Implementation of Management Practices

Certain Management Practices (apart from Streamside Management Area setbacks) also could result in some amount of agricultural land to non-agricultural uses. For example, installation of sediment retention basins or vegetated filter strips could require that a commercial vineyard take a portion of their field(s) out of production to make room for these new features. The amount of land that could be taken out of production would depend on the specific vineyard layout and the design of specific Management Practices. Because the Vineyard Order would not specify the manner of compliance, it is not possible to determine which commercial vineyards will implement which Management Practices in which locations. As a result, it cannot be determined how many acres of agricultural land may be taken out of production due to implementation of Management Practices (other than setbacks). However, it is not anticipated that the implementation of management practices will result in a significant number of acres being taken out of vineyard production. Therefore, this impact is speculative and ***less than significant.***

Conclusion

Overall, due to the anticipated potential conversion of Farmland resulting from compliance with the Streamside Management Area setbacks and the lack of feasible mitigation to lessen these impacts, this impact would be ***significant and unavoidable***.

Impact AG-2: Conflict with existing zoning for agricultural use, or a Williamson Act contract. (*Significant and Unavoidable*)

As described in Impact AG-1, the Proposed Project effect on agricultural land, including Important Farmland and land that may be under a Williamson Act contract may result in the conversion of farmland to non-agricultural (i.e., riparian habitat) uses from implementation of the proposed Streamside Management Area setback requirements. The requirements would only apply to vineyards that are adjacent to streams or other waterbodies and would vary based on the adjacent watercourse classification.

Much of the land that could be taken out of production as a result of the Vineyard Order is zoned for agricultural use by the applicable county government and/or is under a Williamson Act contract. Although zoning regulations vary by jurisdiction, in general, agricultural zoning districts encourage conservation of agricultural lands and continuation of agricultural uses. Riparian vegetation/habitat is not a use that would typically be specifically prohibited in an agricultural zoning district, but it also would not further the purpose of the district by conserving agriculturally productive lands. The Proposed Project could result in the conversion of as much as 200 acres of agricultural

land currently planted to vineyards with a Williamson Act contract to a non-agricultural use. Assuming most of this land is zoned for agricultural use, this conversion would conflict with the spirit of the existing zoning for agricultural use and may in some rare instances affect the eligibility of a vineyard for a Williamson Act contract.

The Williamson Act is California's primary program to protect agricultural land and is fundamentally intended to prevent the conversion of agricultural lands to non-agricultural uses. Although specific Williamson Act contracts between landowners and the state could differ to some degree in their language and clauses, generally the conversion of existing agricultural land to non-agricultural uses (even for open space or riparian vegetation/habitat purposes) would be assumed to conflict with the spirit of the contract.

Prevailing case law states that as long as 50 percent or more of the land under a Williamson Act contract is in agricultural use, the remainder can be used for open space. While it is unlikely that the Streamside Management Area setback requirements would result in more than 50 percent of a specific Vineyard land area under Williamson Act contract being converted to riparian habitat uses, this possibility cannot be entirely ruled out. As such, this impact is considered to be potentially significant. For the reasons stated under Impact AG-1, no feasible mitigation is available to reduce these potential effects. Therefore, this impact would be ***significant and unavoidable***.

Impact AG-3: Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. (*No Impact*)

The Proposed Project would only apply to vineyards. Because forest land and timberland are not developed with vineyards prior to a zoning change, these areas would not be subject to the Vineyard Order and would have no potential to be adversely affected by the Proposed Project. No lands currently zoned for forest land, timberland, or timberland zoned Timberland Production are anticipated to be subject to the Vineyard Order. As such, ***no impact*** would occur.

Impact AG-4: Result in the loss of forest land or conversion of forest land to non-forest use. (*No Impact*)

As described in Impact AG-3, the Vineyard Order does not apply to forest lands because the Vineyard Order would only apply to vineyards and conversion of forest lands to vineyard is not a requirement of the Proposed Project. Therefore, it would have no potential to result in the loss of forest land or conversion of forest land to non-forest use. ***No impact*** would occur.

Impact AG-5: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use. (*Less than Significant*)

The Proposed Project would not result in any other changes in the existing environment

(apart from the effects described in Impact AG-1 and AG-2). The Proposed Project would be limited to vineyards and would not include any new urban or residential development, or any other land uses or infrastructure which could directly or indirectly result in agricultural land conversion. As such, this impact would be ***less than significant***.

VI. Air Quality

This section discusses the potential impacts of the implementation of the Proposed Project (Vineyard Order) on air quality. Specifically, it summarizes relevant federal, State, and local policies; describes existing environmental conditions in the Project area with respect to air quality and identifies significant impacts that may result from implementation of the Project.

A. Regulatory Setting

1. Federal Laws, Regulations, and Standards

a. Clean Air Act

The federal Clean Air Act (CAA) and the 1990 CAA Amendments govern air quality in the United States and are administered by U.S. Environmental Protection Agency (USEPA). The CAA authorizes USEPA to set limits on the concentrations in the air of certain air pollutants and grants it the authority to place limits on emission sources. USEPA implements a variety of programs under the CAA that focus on reducing ambient air concentrations of pollutants that cause smog, haze, acid rain, and serious health effects and on phasing out ozone-depleting chemicals.

i. National Ambient Air Quality Standards

As required by the CAA, USEPA has established National Ambient Air Quality Standards (NAAQS) for six major air pollutants. These pollutants, known as criteria air pollutants, are ozone (O3); particulate matter (PM), specifically PM10 (PM with aerodynamic radius of 10 micrometers or less) and PM2.5 (PM with aerodynamic radius of 2.5 micrometers or less); carbon monoxide (CO); nitrogen dioxide (NO2); sulfur dioxide (SO2); and lead. California also has established ambient air quality standards, known as the California Ambient Air Quality Standards (CAAQS), which generally are more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide (H2S), vinyl chloride, and visibility-reducing particles. CAAQS are discussed in more detail below in “State Laws, Regulations, and Standards.” The federal and state standards for criteria air pollutants are shown in Table VI-1.

A basic measure of air quality is whether an air basin is meeting the NAAQS and CAAQS. Areas that do not exceed these standards are designated as being in attainment; areas that exceed these standards are designated as nonattainment areas (NAAs), and areas for which insufficient data are available to make a determination are designated unclassified. As part of its enforcement responsibilities, USEPA requires each state with NAAs to prepare and submit a State Implementation Plan (SIP) that demonstrates the means by which it will attain the federal standards and requires that a maintenance plan be prepared for each former NAA for which the state subsequently has demonstrated attainment of the standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce

pollution, using a combination of performance standards and market-based programs, within the time frame identified in the SIP.

Table VI-1: Federal and State Ambient Air Quality Standards

Contaminant	Averaging Time	Federal Primary Standards	State Standards
Ozone (O3)	1-hour	—	0.09 ppm
	8-hour	0.070 ppm	0.070 ppm
Carbon Monoxide (CO)	1-hour	35 ppm	20 ppm
	8-hour	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO_2)	1-hour	0.100 ppm	0.18 ppm
	Annual arithmetic mean	0.053 ppm	0.030 ppm
Sulfur Dioxide (SO_2)	1-hour	0.075 ppm	0.25 ppm
	24-hour	0.14 ppm	0.04 ppm
	Annual arithmetic mean	0.030 ppm	—
Particulate Matter (PM10)	24-hour	150 µg/m^3	50 µg/m^3
	Annual arithmetic mean	—	20 µg/m^3
Fine Particulate Matter (PM2.5)	24-hour	35 µg/m^3	—
	Annual arithmetic mean	12 µg/m^3	12 µg/m^3

Contaminant	Averaging Time	Federal Primary Standards	State Standards
Sulfates	24-hour	—	25 µg/m^3
Lead	30-day average	—	1.5 µg/m^3
	Rolling 3-month average	0.15 µg/m^3	—
Hydrogen Sulfide (H_2S)	1-hour	—	0.03 ppm
Vinyl Chloride (chloroethene)	24-hour	—	0.010 ppm
Visibility-reducing Particles	8 hour (10 am to 6 pm)	—	Visibility equivalent to 10-mile visual range

Notes: ppm = parts per million; µg/m^3 = micrograms per cubic meter

Sources: CARB 2016a, USEPA 2018

b. National Emission Standards for Hazardous Air Pollutants

The National Emission Standards for Hazardous Air Pollutants, contained in two parts (Part 61 and 63) of Title 40 of the Code of Federal Regulations (CFR), regulate major sources of hazardous air pollutants (HAPs). HAPs include asbestos, beryllium, mercury, vinyl chloride, benzene, arsenic, radon/radionuclides, and various types of pesticides, herbicides, and other chemicals. A "major source" is defined as a source having the potential to emit 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs.

c. Non-road Emission Regulations

USEPA has adopted emission standards for different types of non-road engines, equipment, and vehicles. The Tier 4 (currently in effect) standards require that emissions of PM and nitrogen oxides (NO_x) from non-road diesel engines are reduced compared to previous engines. Such emission reductions can be achieved through the use of control technologies, including advanced exhaust gas after-treatment.

2. State Laws, Regulations, and Standards

a. California Ambient Air Quality Standards and the California Clean Air Act

The State of California initiated its own air quality standards, the CAAQS, in 1969 under the mandate of the Mulford-Carrell Act. The CAAQS are goals for air quality within the state, which generally are more stringent than the NAAQS. In addition to the six criteria pollutants covered by the NAAQS, CAAQS also regulate sulfates, H_2S, vinyl chloride, and visibility-reducing particles. These standards are listed in Table VI.1.

The California Clean Air Act (CCAA), enacted in 1988, provides a comprehensive framework for air quality planning. The CCAA requires NAAs to achieve and maintain the health-based CAAQS by the earliest practicable date. The CCAA requires NAAs in the state to prepare attainment plans, which are required to achieve a minimum five percent annual reduction in the emissions of nonattainment pollutants unless all feasible measures have been implemented. All air basins in California are either unclassified or in attainment of the NAAQS and CAAQS for CO, SO_2, and NO_2. Some air basins are classified as NAAs for the NAAQS and CAAQS for O_3, PM10, and PM2.5.

The California Air Resources Board (CARB) is responsible for ensuring implementation of the CCAA, meeting state requirements for the federal CAA, and establishing the CAAQS. CARB oversees activities of local air districts and is responsible for incorporating air quality management plans for local air basins into a SIP for USEPA approval. It is also responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB also establishes passenger vehicle fuel specifications (see discussion of CARB rules below).

The California Department of Pesticide Regulation (CDPR) is responsible for regulating agricultural and commercial structural pesticide products as sources of volatile organic compounds (VOCs) as part of the California SIP to meet the O3 standard. CDPR, in collaboration with CARB, implements several activities related to air monitoring, evaluating health risk of pesticides in air, mitigating and controlling health risks of pesticides, and tracking and reducing pesticide VOC emissions.

b. California Air Resources Board Rules, Regulations, and Programs

As noted above, CARB has established a number of rules and regulations for the purpose of meeting the standards in the federal and state CAAs. The relevant CARB rules, regulations, and programs are discussed briefly below.

i. Commercial Vehicle Idling Regulation

CARB adopted an Airborne Toxic Control Measure (ATCM) to limit idling of diesel-fueled commercial motor vehicles. This regulation requires heavy-duty diesel engines of model years 2008 and newer to be equipped with a non-programmable system that automatically shuts down the engine after five minutes of idling or, optionally, meets a stringent NO_X idling emission standard (CARB 2019a).

ii. Diesel Fuel Program

CARB established regulations which require that diesel fuel with sulfur content of 15 parts per million (ppm) or less (by weight) be used for all diesel-fueled vehicles that are operated in California. The standard also applies to non-vehicular diesel fuel, other than diesel fuel used solely in locomotives or marine vessels. The regulations also contain standards for the aromatic hydrocarbon content and lubricity of diesel fuels.

iii. In-use Off-road Diesel Vehicle Regulation

CARB adopted a regulation to reduce diesel PM and NO_X emissions from in-use, off-road, heavy- duty diesel vehicles in California. The regulation imposes limits on vehicle idling and requires fleets to reduce emissions by retiring, replacing, repowering, or installing exhaust retrofits to older engines. Personal-use vehicles and vehicles used solely for agriculture are exempt from this regulation (CARB 2016b).

iv. Portable Engine Airborne Toxic Control Measure

The Portable Engine ATCM is designed to reduce the PM emissions from portable diesel-fueled engines rated at 50 brake horsepower or larger. Based on their cumulative horsepower, fleets must follow a phase-out schedule or meet fleet-average emission rates.

vi. Portable Equipment Registration Program

The statewide Portable Equipment Registration Program (PERP) establishes a system to uniformly regulate portable engines and portable engine–driven equipment units. After being registered in this program, engines and equipment units may operate throughout the state without the need to obtain separate permits from individual air districts. Owners or operators of portable engines and certain types of equipment can voluntarily register their units to operate their equipment anywhere in the state, although the owners and operators may still be subject to certain district requirements for reporting and notification. Engines with less than 50 brake horsepower are exempt from this program.

c. California Toxic Air Contaminant Act

The California Toxic Air Contaminant Act created the statutory framework for the evaluation and control of chemicals as toxic air contaminants (TACs). A TAC is “an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health (California Health and Safety Code Section 39655).” CDPR is responsible for evaluating chemicals, including pesticides, to determine whether the chemical should be listed as a TAC. Once a chemical is listed as a TAC, CDPR investigates the need for, and appropriate degree of, control for the TAC, including potential measures to reduce emissions to levels that adequately protect public health.

3. Regional and Local Laws, Regulations, and Policies

a. Air Pollution Control District Rules and Regulations

California is divided into 15 air basins, which are managed by 35 air districts. Air districts establish rules and regulations governing emissions, consistent with federal and state laws, including those pertaining to portable equipment registration, odor, fugitive dust, solvents (i.e., VOCs), and visible emissions. Air district rules and regulations generally require that individuals limit emissions (e.g., fugitive dust, VOCs, TACs, etc.) during construction activities. Many air districts also limit emissions of odor-causing substances and particulate matter that adversely affects visibility. Agricultural activities are often exempt from air district rules and regulations.

b. General Plans

Many city and county general plans contain goals, policies, and strategies related to air quality and air pollutant emissions. Applicable policies and strategies from these general plans may include limiting idling time of vehicles and equipment and encouraging the installation of emission control devices. Attachment C shows applicable goals and policies for Mendocino and Sonoma County general plans.

B. Environmental Setting

1. Criteria Air Pollutants

a. Ozone

O3 is formed by photochemical reactions between NO_X and reactive organic gases (ROGs) in the presence of sunlight rather than being directly emitted. O3 is a pungent, colorless gas that is a component of smog. Elevated O3 concentrations can result in reduced lung function, particularly during vigorous physical activity. This health problem can be particularly acute in sensitive receptors such as the sick, seniors, and children. O3 levels peak during the summer and early fall months.

b. Carbon Monoxide

CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, fatigue, and impairment to central nervous system functions. CO passes through the lungs into the bloodstream, where it interferes with the transfer of oxygen to body tissues.

c. Nitrogen Oxides

NOX contribute to other pollution problems, including a high concentration of fine PM, poor visibility, and acid deposition. NO_2, a reddish-brown gas, and nitric oxide, a colorless, odorless gas, are formed from fuel combustion under high temperature or pressure. These compounds are referred to collectively as NO_X. NO_X is a primary component of the photochemical smog reaction. NO_2 can decrease lung function and may reduce resistance to infection.

d. Sulfur Dioxide

SO_2 is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels in California. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine PM, and reduces visibility and the level of sunlight.

e. Reactive Organic Gases

ROGs are formed from combustion of fuels and evaporation of organic solvents. ROGs are the fraction of VOCs that are a prime component of the photochemical smog reaction. Individual ROGs can be TACs.

f. Particulate Matter

PM is the term used for a mixture of solid particles and liquid droplets suspended in the air. PM ranges from particles that can be seen with the naked eye, such as dust or soot, to particles that can only be seen with an electron microscope. Respirable PM of 10 microns in diameter or less is called PM10. Fine particulate matter is a subgroup known as PM2.5 and is defined as particles with a diameter of 2.5 microns or less.

PM can be emitted directly from primary sources or formed secondarily from reactions in the atmosphere. Primary sources include windblown dust, grinding operations, smokestacks, and fires. Secondary formation of PM occurs from reactions of gaseous precursors within the atmosphere, such as the formation of nitrates from NO_X emissions from combustion activities.

PM can accumulate in the respiratory system and aggravate health problems. These health effects include cardiovascular symptoms; cardiac arrhythmias; heart attacks; respiratory symptoms; asthma attacks; bronchitis; alterations in lung tissue, lung structure, and respiratory tract defense mechanisms; and premature death in people with heart or lung disease. Those at particular risk of increased health decline from exposure to PM include people with preexisting heart or lung disease, children, and seniors.

g. Lead

Lead is a metal that can be found naturally in the environment and also is released from metal production processes and manufactured products. In the past, motor vehicles were the major contributor of lead emissions to the air. However, because of increased regulations, air emissions of lead from vehicles have declined. The major sources of lead emissions to the air today are ore and metal processing and piston-engine aircraft operating on leaded aviation gasoline. Lead can accumulate in the bones and adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and cardiovascular system. Lead exposure also affects the oxygen-carrying capacity of the blood.

2. Air Basins and Air District Jurisdictions

Most vineyards subject to the Vineyard Order are located within the following air districts: Bay Area Air Quality Management District, Northern Sonoma County Air Pollution Control District, and the Mendocino County Air Quality Management District.

3. Meteorology and Climate

The North Coast Region, like the rest of California, is typified by a Mediterranean climate pattern, with distinct wet (November to April) and dry seasons (May to October). Portions of the region near the coast exhibit more moderate temperature ranges, staying warmer during the winter and cooler during the summer than inland areas. Coastal mountainous areas of the region also often experience substantially greater levels of precipitation compared to inland valleys.

Wind patterns are also seasonal and marine-influenced. In the summer, a high-pressure system over the Pacific Ocean is dominant and causes persistent west and northwest winds over the entire California coast. The onshore wind brings fog and relatively cool air into the coastal valleys. In the fall, the surface winds become weak. The airflow is occasionally reversed in a weak offshore movement and the relatively stationary air mass is held in place. During winter periods when the Pacific High becomes dominant, inversions become strong and often are surface-based; winds are light and pollution potential is high.

4. Sensitive Receptors

Sensitive receptors are those segments of the population that are most susceptible to the effects of poor air quality, such as children, the elderly, and individuals with preexisting health problems (e.g., asthma) (CARB 2005). Examples of locations that may contain sensitive receptors include residences, senior living complexes, schools, parks, daycare centers, nursing homes, and medical facilities. These types of facilities are located throughout the viticulture lands of the North Coast Region.

5. Existing Air Quality

Existing air quality in Mendocino and Northern Sonoma County viticultural areas are currently in attainment for state criteria pollutants and are either unclassified or in attainment for federal criteria pollutants. Mendocino County was previously designated as non-attainment for the state standard for matter less than 10 microns (PM10). In 2005, the Mendocino County Air Quality Management District adopted a Particulate Matter (PM) Attainment Plan that recommended measures to reduce PM levels. (MCAQMD 2005).

South Sonoma County is currently in nonattainment for state ozone, PM2.5 and PM10 standards and in nonattainment for federal 8-hour O3 and PM2.5 standards. Table VI-2 shows attainment status for criteria pollutants for viticulture areas within the north central coast region. Table VI-2 shows ambient air quality monitoring data for air basins in the region.

Table VI-2: Criteria Pollutant Attainment Status in the North Coast Region

County	Pollutant	National	State
Mendocino	1-hour O3	--	Attainment
	8-hour O3	Unclassified/Attainment	Attainment
	CO	Unclassified/Attainment	Attainment
	PM10	Unclassified	Attainment
	PM2.5	Unclassified/Attainment	Attainment
	NO_2	Unclassified/Attainment	Attainment
Northern Sonoma	1-hour O3	--	Attainment
	8-hour O3	Unclassified/Attainment	Attainment
	CO	Unclassified/Attainment	Unclassified
	PM10	Unclassified	Attainment
	PM2.5	Unclassified/Attainment	Attainment
	NO_2	Unclassified/Attainment	Attainment
Southern Sonoma	1-hour O3	--	Nonattainment
	8-hour O3	Nonattainment-Moderate	Nonattainment
	CO	Unclassified/Attainment	Attainment
	PM10	Unclassified	Nonattainment
	PM2.5	Nonattainment-Moderate	Nonattainment
	NO_2	Unclassified/Attainment	Attainment

Source: CARB 2022.

Definitions for area designations:
CARB designates all areas within the state as either **attainment** (having air quality better than the CAAQS **nonattainment**, or **nonattainment-transitional** as defined in California Code of Regulations Title 17, Sections 70300-70306. Likewise, the EPA designates all areas of the U.S. as either being in **attainment** of the NAAQS or **nonattainment** if pollution concentrations exceed the NAAQS. Because attainment/nonattainment is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and national standards differ, an area could be classified as attainment for the federal standard of a pollutant while it may be in nonattainment for the state standard of the same pollutant. Some areas are unclassified, which means no monitoring data is available. Unclassified areas are considered to be in attainment.

Table VI.3: Ambient Air Quality Monitoring Data for Air Basins in the North Coast Region.

	North Coast Air Basin*			San Francisco Bay Air Basin**		
Pollutant Standards	**2019**	**2020**	**2021**	**2019**	**2020**	**2021**
1-Hour O3						
Maximum 1-hour concentration (ppm)	0.066	0.088	0.073	0.106	0.116	0.113
1-hour California designation value	0.08	0.08	0.08	0.1	0.1	0.1
1-hour expected peak day concentration	0.069	0.073 7	0.075	0.0997	0.0972	0.1004
Number of days standard exceeded						
CAAQS 1-hour (>0.09 ppm)	0	0	0	0	3	3
8-Hour O3						
National maximum 8-hour concentration (ppm)	0.061	0.062	0.063	0.085	0.092	0.086
8-hour high national designation value	0.053	0.054	0.057	0.073	0.069	0.071
Number of days standard exceeded						
NAAQS 8-hour (>0.070 ppm)	0	0	0	7	4	9
Particulate Matter (PM10)***						
National Maximum 24-hour concentration (µg/m3)	85.6	189.8	61.9	75.4	165.4	42.8
State maximum 24-hour concentration (µg/m3)	86.6	196.2	61.5	77.1	167	45.1
State high annual average concentration (µg/m3)	13	16.3	14.3	19.1	23.3	20.1
National high annual	15.1	21.3	20.3	18.4	24.6	19.6

Pollutant Standards	North Coast Air Basin*			San Francisco Bay Air Basin**		
	2019	2020	2021	2019	2020	2021
average concentration (µg/m3)						
Number of days standard exceeded						
NAAQS 24-hour (>150 µg/m3)	0	2.1	0	0	2.9	0
CAAQS 24-hour (>50 µg/m3)	1	6.4	1	26.2	23	0
Particulate Matter (PM2.5)***						
National maximum 24-hour concentration (µg/m3)	24.7	433.8	104.3	35.9	167.7	45
State maximum 24-hour concentration (µg/m3)	40.3	433.8	685.5	35.9	167.7	45
National annual designation value (µg/m3)	8.9	9.2	8.4	11.7	11.3	10.3
National annual average concentration (µg/m3)	6.7	12.4	9	9.3	12.4	10.9
State annual designation value (µg/m3)	11	13	13	14	14	13
State annual average concentration (µg/m3)	6	12.7	6.9	9.3	12.5	10.9
Number of days standard exceeded						
NAAQS 24-hour (>35 µg/m3)	0	21	5.4	1.1	17.3	2

*North Coast Air Basin includes Mendocino and North Sonoma Counties.
**San Francisco Bay Area Air Basin includes South Sonoma County.
***PM10 and PM2.5 statistics may include data that are related to an exceptional event. USEPA defines Exceptional Events as: "events for which the normal planning and regulatory process established by the CAA is not appropriate." Federal Register: March 22, 2007 (Volume 72, Number 55)
Source: CARB 2021a

C. Environmental Analysis

1. Impact Analysis Methods

As the Vineyard Order would not specify or prescribe specific Management Practices that vineyards must undertake, it is impossible to know which types of Management Practices will be implemented in which locations pursuant to the Vineyard Order. Therefore, it was not possible to perform a quantitative analysis of the potential impacts of the Proposed Project. Instead, potential impacts were evaluated qualitatively. The qualitative analysis considered the typical air pollutant emission sources associated with vineyards, the existing air quality conditions throughout the north coast region, and the additional emissions that reasonably could occur due to activities conducted under the Proposed Project.

2. Thresholds of Significance

For the purposes of this analysis, based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would:

1) Conflict with or obstruct implementation of an applicable air quality plan.

2) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.

3) Expose sensitive receptors to substantial pollutant concentrations.

4) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

3. Impacts and Mitigation Measures

Impact AQ-1: Conflict with or obstruct implementation of an applicable air quality plan, and/or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. ***(Less than Significant)***

The Proposed Project would not involve the construction of new housing and would not result in the creation of substantial numbers of new permanent jobs. Management Practice construction and monitoring/reporting requirements in the Vineyard Order could result in some new jobs, but this additional employment would not be substantial. As such, the Proposed Project would not result in substantial population or employment growth exceeding estimates found in applicable plans, and therefore would cause or contribute to additional air quality pollutant loading and would not conflict with or obstruct implementation of any applicable air quality plans in the North Coast Region.

Construction of certain Management Practices (e.g., storm-proofing agricultural roads, sediment retention basins, vegetated filter strips, riparian buffer areas, etc.)

implemented as a result of the Vineyard Order could result in emissions of air pollutants, such as exhaust from diesel-powered equipment and fugitive dust. Construction activities would require operation of equipment which would generate ozone precursors (i.e., NO_X, ROG), CO, and particulate matter (i.e., PM10 and PM2.5). Additionally, activities such as excavation, tilling, or vehicle or truck trips on unpaved roads could generate fugitive dust emissions. Due to the nature of the Proposed Project and flexibility afforded to growers, precise quantities of these emissions are unknown, and would depend on a number of site-specific factors. Additionally, some level of Management Practice implementation is ongoing under existing conditions; however, the emissions associated with these baseline activities also are not known.

In general, the emissions associated with construction of Management Practices and/or implementation of the setback requirements (e.g., storm-proofing agricultural roads, removal of existing crops and planting of new vegetation) are not expected to be substantial. In comparison to many other common, ongoing projects in the North Coast Region, such as housing developments, commercial and industrial construction, transportation projects, etc., the Management Practices implemented under the Proposed Project would be relatively minor in scale and associated emissions. Additionally, compliance timelines built into Vineyard Order would allow vineyards time to implement changes in their Management Practices and undertake earthmoving projects (e.g., sediment basins and storm-proofing agricultural roads). This would likely result in individual projects/activities being spaced out over time across the region, thereby reducing the likelihood of any daily or annual significance thresholds being exceeded.

While construction-related air pollutant emissions are not anticipated to be substantial and are essentially speculative in nature, compliance with applicable local air district rules and regulations would further reduce potential for impacts. Three air districts have jurisdiction over the primary viticulture lands parts of the north coast region; as such, specific rules and regulations applicable to individual vineyards may differ based on their location.

Compliance with local air district rules, including any construction-related Best Management Practices (BMPs) or mitigation measures required by the air district, would serve to minimize emissions of various harmful air pollutants during construction. Implementation of other measures, such as Mitigation Measure HWQ-1, could also help to minimize certain emissions (e.g., dust).

During operation, the Vineyard Order would not substantially increase emissions over existing conditions. New and additional monitoring requirements/activities under the Vineyard Order could increase emissions to some degree from vehicle trips to and from monitoring locations, as well as operation of monitoring wells. Additionally, to the extent that storm-proofing agricultural roads and sediment basins require periodic maintenance or repair, these activities could result in some emissions (e.g., from operation of equipment). However, some reasonably foreseeable Management Practices, such as storm-proofing appurtenant agricultural roads, limiting bare soil, Streamside Management Area setbacks, and improving fertilizer/nutrient management could also

potentially reduce emissions of criteria pollutants relative to baseline conditions.

As identified in Table VI-3, the southern portion of Sonoma County is a nonattainment federal area designation for the criteria pollutants 8-hour O3 and PM2.5. Southern Sonoma County is a nonattainment state area designation for the criteria pollutants O3, PM10 and PM2.5. Operation of construction equipment and vehicle trips for monitoring and maintenance activities could add some amount of O3 precursors and PM (e.g., from diesel exhaust). However, for the reasons described above, these emissions would not be significant or cumulatively considerable, and are fundamentally speculative in nature. Particularly when considering (1) the short-term nature of construction emissions; (2) the small-scale of most reasonably foreseeable Management Practices; (3) the length of compliance timelines in the Proposed Project; (4) the relatively minimal likely emissions from monitoring and maintenance activities, and (5) the existing emissions occurring under baseline conditions, the Proposed Project would not result in a cumulatively considerable net increase in a criteria pollutant for which the primary project region is in nonattainment. This impact would be ***less than significant*.**

Impact AQ-2: Expose sensitive receptors to substantial pollutant concentrations. *(Less than Significant)*

As discussed under Impact AQ-1, the Proposed Project could result in implementation of various Management Practices including storm-proofing agricultural roads and establishment of new setback areas, which would require use of heavy construction equipment that would emit air pollutants (e.g., diesel particulate matter [DPM] and naturally occurring asbestos). Additionally, monitoring and reporting activities could involve vehicle trips to monitoring sites, which could directly and indirectly emit air pollutants. Routine maintenance and/or repair of certain Management Practices also could involve the use of equipment that emits potentially hazardous pollutants.

Sensitive land uses and receptors occur throughout the North Coast Region and may be located in close proximity to vineyards in some cases. Although it cannot be known precisely where individual vineyards will implement Management Practices or conduct other Proposed Project activities, it is possible that some activities may occur near sensitive receptors. While the risks associated with such activities/emissions cannot be quantitatively assessed, based on the reasonably foreseeable activities under the Proposed Project, this is not likely to result in sensitive receptors being exposed to substantial pollutant concentrations.

In general, the types of equipment (and associated emissions) that may be used during Proposed Project activities are not fundamentally dissimilar from those used during normal irrigated viticulture activities. Tilling, harvesting, and other activities on vineyards often involves use of diesel-powered tractors and equipment, which could result in the same types of emissions as may occur during construction of Management Practices or other Proposed Project activities. Similarly, relatively routine road, utilities, or development projects that occur throughout the region, presumably many times in proximity to potential sensitive receptors, would generate similar types of construction-

related emissions.

In most cases it is assumed that Proposed Project activities would occur in rural areas (where vineyards are often located), but where activities may occur in proximity to sensitive receptors (e.g., residence, school, hospital, etc.), there likely would be at least some distance between the activity and the receptor. Impacts from emissions of pollutants are most severe directly adjacent to the emission source and decrease rapidly with increasing distance. For example, concentrations of mobile-source DPM emissions are typically reduced by 70 percent at approximately 500 feet (CARB 2005a). As such, it is likely that potential impacts from pollutant emissions would be mitigated by typical distances between vineyards and any sensitive receptors in the area. Compliance with any applicable local air district rules and regulations also would serve to further reduce potential impacts.

Naturally occurring asbestos (NOA) is a type of hazardous emission that could potentially occur during ground-disturbing activities under the Proposed Project. NOA can be found in ultramafic rock outcrops (often occurring on ridges and in hilly terrain) and in serpentine soils (typically thin soils that are inhospitable to plant growth). Contact with NOA is possible in many locations within the Project region. Agricultural road construction/maintenance and agricultural grading projects are required to comply with the CARB Naturally Occurring Asbestos Airborne Toxic Control Measures (CARB No Date), which would reduce this potential impact to less than significant.

The Proposed Project would not create any substantial new permanent sources of pollutant emissions that could subject sensitive receptors to excessive concentrations of these pollutants. Operational emissions associated with the Proposed Project would likely be relatively minor, and vineyards would be subject to all applicable local air district rules and regulations. Further, some of the reasonably foreseeable Management Practices under the Proposed Project could potentially decrease emissions of TACs relative to baseline conditions. Practices such as cover cropping, reducing tillage, and applying less fertilizer could all decrease equipment usage or (in the case of pesticides) potentially result in the direct reduction of TAC emissions compared to baseline conditions. This impact would be ***less than significant***.

Impact AQ-3: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. *(Less than Significant)*

In addition to the criteria pollutants and TACs (discussed under Impacts VI-1 and VI-2), certain Proposed Project activities could result in emission of odor-causing substances. Diesel exhaust from operation of equipment during construction or operation (e.g., maintenance or repair) activities may temporarily generate odors in the immediate area where the equipment is operated. Disturbance of soil generally, such as during construction of certain Management Practices, also could potentially release odors in the immediate area. Application of fertilizers and pesticides can generate odors, although these activities are ongoing under existing conditions and would not be substantially increased under the Proposed Project (if anything, fertilizer and pesticide

applications would be expected to decrease under the Proposed Project). Apart from these potential effects, and the emissions discussed under Impacts VI-1 and VI-2, the Proposed Project would not result in any other emissions that could adversely affect a substantial number of people.

Any odors generated due to Proposed Project activities would be short-lived and/or would occur intermittently. These odors also would not affect a substantial number of people. Although the locations of individual activities under the Proposed Project are not known, in most cases it can be assumed that Project activities would occur in rural areas with relatively few people or receptors in the area. Even in instances where activities may occur near more populated areas, the odors and other emissions would be highly localized and potential effects would likely be limited to workers in the immediate area. As a result, this impact would be ***less than significant***.

VII. Biological Resources

This section presents the environmental setting and potential impacts of the Proposed Project related to biological resources. Biological resources considered in this section include special- status plant, wildlife, and fish species; sensitive natural communities, including jurisdictional wetlands and other waters; and wildlife movement corridors.

A. Regulatory Setting

Some of the regulatory setting relevant to biological resources is described in the Hydrology and Water Quality Chapter. Refer to that section for descriptions of the following laws, regulations, and policies:

1) Porter-Cologne Water Quality Control Act,

2) Clean Water Act of 1972, Sections 303, 401, 402, and 40, and

3) Water Quality Control Plan for the North Coast Region.

1. Federal Laws, Regulations, and Standards

a. Endangered Species Act of 1973

The Endangered Species Act (ESA) (16 U.S. Code [USC] Section 1531 et seq.; 50 Code of Federal Regulations [CFR] Parts 17 and 222) provides for conservation of species that are endangered or threatened throughout all or a substantial portion of their range, as well as protection of the habitats on which they depend. The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA. In general, USFWS manages terrestrial and freshwater species, whereas NMFS manages marine and anadromous species. Section 9 of the ESA and its implementing regulations prohibit the “take” of any fish or wildlife species listed under the ESA as endangered or threatened, unless otherwise authorized by federal regulations. The ESA defines the term “take” to mean “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct” (16 US Code [USC] Section 1532). Section 7 of the ESA (16 USC Section 1531 et seq.) outlines the procedures for federal interagency cooperation to conserve federally listed species and designated critical habitats.

b. Magnuson-Stevens Fishery Conservation and Management Act (Sustainable Fisheries Act)

The amended Magnuson-Stevens Fishery Conservation and Management Act of 1996 (16 USC Chapter 38 Section 1801–1891), also known as the Sustainable Fisheries Act, provides for the conservation and management of all fish resources within the exclusive economic zone of the United States. It requires that all federal agencies consult with NMFS on activities or proposed activities authorized, funded, or undertaken by that agency that may adversely affect Essential Fish Habitat of commercially managed marine and anadromous fish species.

c. Migratory Bird Treaty Act

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

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

d. Bald and Golden Eagle Protection Act

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

2. State Agencies, Laws, and Programs

a. California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code [CFGC] Sections 2050–2098) declares that state agencies should not approve projects that would jeopardize the continued existence of a species listed under CESA as endangered or threatened or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if reasonable and prudent alternatives are available consistent with conserving the species or its habitat that would prevent jeopardy. CESA prohibits the take of any species that is state-listed as endangered or threatened, or designated as a candidate for such listing. "Take" is defined by CFGC Section 86 as "hunt, pursue, catch, capture, or kill, or attempt to hunt,

pursue, catch, capture, or kill" an individual of a listed species. Under CESA, the California Department of Fish and Wildlife (CDFW) may issue an incidental take permit authorizing the take of listed and candidate species that is incidental to an otherwise lawful activity, subject to specified conditions.

b. California Fully Protected Species

CDFW has designated 37 fully protected species and prohibited the take or possession of these species at any time, and no licenses or permits may be issued for their take except for necessary scientific research or relocation of certain bird species for the protection of livestock.

c. Nesting Bird Protections

Several sections of the CFGC provide protections for nesting birds. CFGC Section 3503 states that it is unlawful to take, possess, or destroy the nest or eggs of any bird, except as otherwise provided by code or any regulation made in accordance with the code. Section 3503.5 prohibits the take, possession, or destruction of any nests, eggs, or birds in the orders Falconiformes (New World vultures, hawks, eagles, ospreys, and falcons, among others) or Strigiformes (owls). Section 3513 prohibits the take or possession of any migratory nongame bird or part thereof, as designated in the MBTA. To avoid violation of the take provisions, projects are generally required to reduce or eliminate disturbances at active nesting territories during the nesting cycle.

d. Lake and Streambed Alteration Program

CDFW administers the Lake and Streambed Alteration Program (CFGC Section 1600 et seq.), which provides for protection and conservation of fish and wildlife resources with respect to any project that may substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of any river, stream, or lake. Under the program, an applicant must notify and enter into an agreement with CDFW before undertaking any activity that would substantially divert or obstruct the natural flow of any river, stream, or lake; or would substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or would deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

e. California Native Plant Protection Act

The California Native Plant Protection Act (CNPPA) (CFGC Sections 1900-1913) requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of this act prohibit the taking of listed plants from the wild and require notification, by the landowner undertaking a land use change action, of the CDFW at least 10 days in advance of that land use change on lands in California. This allows CDFW to salvage listed plant species that otherwise would be destroyed.

f. California Wetlands Conservation Policy of 1993

The California Wetlands Conservation Policy established a policy framework and strategy that sought to:

1) Ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California in a manner that fosters creativity, stewardship and respect for private property.

2) Reduce procedural complexity in the administration of state and Federal wetlands conservation programs.

3) Encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetlands conservation and restoration.

The policy established a number of statewide initiatives, including: a statewide wetlands inventory, wetlands conservation planning, improvement of wetland regulatory programs, landowner incentives, wetlands mitigation banking, and development of new wetland programs. Practically, there are a number of state and federal programs and permitting processes that serve to implement the California Wetlands Conservation Policy, including U.S. Army Corps of Engineers' Clean Water Act section 404 dredge and fill permitting process and State Water Board's Clean Water Act section 401 water quality certification process.

g. Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) requires local agencies to form Groundwater Sustainability Agencies (GSAs) to prepare Groundwater Sustainability Plans (GSPs) for the sustainable local management of groundwater. The components of SGMA related to water use and hydrology are described in the Hydrology and Water Quality Chapter. With respect to biological resources, SGMA includes requirements to identify and consider impacts to groundwater dependent ecosystems (GDEs) (The Nature Conservancy 2018). GDEs are generally defined as the plants, animals, and natural communities that rely on groundwater to sustain all or a portion of their water needs (The Nature Conservancy 2018). GDEs within the viticultural areas of the North Coast Region are discussed further in this Chapter.

3. Local and Regional Laws and Plans

a. Local Ordinances and General Plans

Within the Proposed Project area, numerous regional, county, and city ordinances and policies exist for the protection of biological resources. Examples include ordinances and local zoning that specify setbacks for wetlands, streams, and lakes and regulate the removal of trees. Because of the broad geographic scope of the study area, it was not feasible to specifically consider individual ordinances and policies in this analysis. Additionally, actions by the Regional Water Board (a state agency) are not required to comply with county, city, or local ordinances. However, the activities that could occur

under the Proposed Project are expected to generally align and be consistent with such local ordinances and policies. Refer to Attachment C for Sonoma and Mendocino County general plan goals and policies potentially applicable to the Proposed Project.

b. Habitat Conservation Plans and Natural Community Conservation Plans

Habitat Conservation Plans (HCPs) are planning documents required as part of an application for an incidental take permit from USFWS. HCPs describe the anticipated effects of the proposed taking; how those impacts will be minimized or mitigated; and how the HCP is to be funded (USFWS 2011). No HCPs were identified within the existing lands planted to vineyards in North Coast Region based on review of online resources. Natural Community Conservation Planning (NCCP) was added to CESA in 1991 (Fish & Game Code Section 2800-2840). These provisions provide for voluntary cooperation among CDFW, landowners, and other interested parties to develop natural community conservation plans which provide for early coordination of efforts to protect listed species or species that are not yet listed. The primary purpose of an NCCP is to preserve species and their habitats, while allowing reasonable and appropriate development to occur on affected lands. NCCPs are grounded in a number of basic principles that frame the outcome of the planning process for future conservation, land use and governance. No NCCPs were identified within existing lands planted to vineyards in the North Coast Region based on review of online resources.

B. Environmental Setting

This section describes existing biological resources in the North Coast Region, focusing on lands currently planted to vineyards or areas that otherwise may be affected by Proposed Project activities. Please refer to the Hydrology and Water Quality Chapter for a description of the regional topography, climate, hydrology, and watersheds within the North Coast Region. Figure 3 shows the land cover types found in the North Coast Region. Land cover types most directly related to the Proposed Project are described below.

1. Agricultural Land

Agricultural land includes field row crops; truck, nursery, and berry crops; citrus and subtropical fruit orchards; deciduous fruit orchards; vineyards; grain and hay crops; irrigated pasture lands; and agricultural lands that are idle at any given time. In general, agricultural land does not support habitat for special-status species, and vineyards are typically managed to exclude wildlife to the extent possible. Nevertheless, some vineyard land may support rodent populations that could provide foraging opportunities for raptors.

2. Riparian

Riparian land cover occurs adjacent to perennial and intermittent streams. In many areas of the North Coast Region, vineyards are bordered by riparian vegetation/land cover, which provides a buffer between streams and vineyards. Mature riparian vegetation is typically woodland (i.e., tree-dominated), and its structural diversity

provides multiple vegetative layers that offer high-value habitat for numerous wildlife species, including foraging opportunities, escape cover, and nesting substrate. This land cover supports many species that occur in other woodlands and many species specific to riparian communities. Younger riparian vegetation can be more scrub-like in structural composition, with a dominant tree canopy typically of willow shrubs. Riparian corridors also serve as wildlife corridors for many common species, as this vegetation community offers unique habitat value from otherwise suboptimal habitat (e.g., tree-lined streams within or adjacent to developed areas).

Common dominant tree species in riparian areas of the North Coast viticultural region include California bay (*Umbellularia californica*), coast live oak (*Quercus agrifolia*), bigleaf maple (*Acer macrophyllum*), Fremont cottonwood (*Populus fremontii*), Oregon white oak (*Q. garryana*), and valley oak (*Q. lobata*). The mid strata and understory shrub layer includes chamise (*Adenostoma fasciculatum*), willow shrubs (*Salix spp.*), California rose (*Rosa californica*), California blackberry (*Rubus ursinus*), California scrub oak (Q. berberidifolia), manzanita (Arctostaphylos spp.), and poison oak (*Toxicodendron diversilobum*). Riparian vegetation cover in the North Coast Region is shown in Figure 4 (Sonoma County, 2014; USFS, 2004).

3. Wetland

Wetlands may occur near or within vineyards in the North Coast Region. In general, wetlands are areas that are seasonally or perennially inundated or saturated, i.e., where water covers the soil, or is present either at or near the surface of the soil all year or for varying periods of time during the year, including during the growing season (USEPA 2018). Water saturation (hydrology) largely determines how the soil develops and the types of plant and animal communities living in and on the soil. The prolonged presence of water creates conditions that favor the growth of specially adapted plants (hydrophytes) and promotes the development of characteristic wetland (hydric) soils (USEPA 2018). Table VII-1 shows information on the acreage and types of wetlands found in land planted to vineyards in the North Coast Region.

Table VII-1: Wetlands in Vineyards in the North Coast Region

Wetland Type	Acres	Density[8]
Freshwater Emergent Wetland	79.3	0.12%
Freshwater Forested/Shrub Wetland	121	0.19%
Freshwater Pond	15.6	0.02%
Riverine	63.6	0.10%
Total	279.6	0.43%

Different types of wetlands may include different specific species assemblages, but all types support facultative[9] plant species and provide potential breeding and foraging habitats for birds, amphibians, and other animals. Vernal pools, in particular, are known to support special-status branchiopods[10], such as longhorn fairy shrimp (*Branchinecta longiantenna*) and vernal pool fairy shrimp (*B. lynchi*). California tiger salamander (*Ambystoma californiense*) can also utilize vernal pools and/or perennial marshes, particularly if predators (e.g., fish, bullfrogs) are absent and suitable upland habitat is nearby.

4. Aquatic

Aquatic land cover includes open water (i.e., lakes and ponds) and riverine (i.e., streams and drainages) habitats. Figure 5 in the Hydrology and Water Quality Chapter, shows the location of surface waterbodies in relation to land planted to vineyards in the North Coast Region. Although not pictured on Figure 5, many small ponds and reservoirs may occur on vineyards in the region, potentially providing open water habitat. Open water habitat is characterized by a water depth that is great enough (over 6.6 feet) to attenuate sunlight and prevent aquatic or emergent plant growth. Such habitat may support any number of resident or wintering bird species, such as western grebe (Aechmophorus occidentalis), double-crested cormorant (Phalacrocorax auritus), Canada goose (Branta canadensis), mallard (Anas platyrhynchos), common merganser

[8] Wetland density at the landscape level is equal to the wetland-type acres within land planted to vineyard divided by the total acres of land planted to vineyards multiplied by 100. Total area of land planted to vineyards in the North Coast Region is approximately 65,000 acres U.S. DWR, 2019).

[9] Facultative plants are those species that have an equal likelihood of occurring in wetlands and non-wetlands.

[10] A branchiopod is a small aquatic crustacean belonging to the class Branchiopoda. Such members of this group include the wide-spread, common water flea (Cladocera spp.) and several range-limited species, many of which are rare (e.g., vernal pool fairy shrimp [Branchinecta lynchi], tadpole shrimp [Lepidurus packardi], California clam shrimp [Cyzicus californicus], Riverside fairy shrimp [Streptocephalus woottoni]).

(Mergus merganser), northern shoveler (A. clypeata), lesser scaup (Aythya affinis), and bufflehead (Bucephala clangula). Amphibian species that may be found in lacustrine features include the Sierran chorus frog (Pseudacris sierra), American bullfrog, California newt, and California toad (Anaxyrus boreas halophilus).

Riverine features are found in proximity to land currently planted to vineyards in the North Coast Region, as shown in Figure 5. Many streams/drainages in the viticultural areas of the North Coast Region are characterized by highly seasonal flow patterns, in accordance with the seasonal precipitation pattern, with higher flows from roughly November to April and lower flows from roughly May to October. Many streams/drainages in the region experience very low or no flow during the dry summer months. Perennial waterbodies exhibit flow year-round and may act as migratory corridors for fish species and other animals.

Special-status species with the potential to occur in streams and drainages in the North Coast Region include California red-legged frog, foothill yellow-legged frog, western pond turtle (Emys [=Actinemys] marmorata), and steelhead (Oncorhynchus mykiss) (Southern California, South- Central California Coast, and Central California Coast Distinct Population Segments). Figure 6 shows critical habitat in the North Coast Region, including Essential Fish Habitat in streams near irrigated agricultural lands.

5. Groundwater Dependent Ecosystems

As noted in the Hydrology and Water Quality Chapter under the “Sustainable Groundwater Management Act” discussion, GDEs include the plants, animals, and natural communities that rely on groundwater to supply all or a portion of their water needs. GDEs provide a variety of ecosystem services that benefit people, such as water purification, soil preservation, carbon sequestration, flood risk reduction, and recreational opportunities (The Nature Conservancy 2018). Regional Water Board staff mapped GDEs in the North Coast Region based on their relative density at the sub-watershed scale, as shown in Figure 7.

6. Special-Status Species

As noted above, various special-status species have potential to occur in proximity to land currently planted to vineyards that may be affected by the activities conducted under the Proposed Project. A comprehensive list of special-status species determined to have potential to occur in areas within or near land currently planted to vineyards in the North Coast Region is provided in Attachment D. The determination of potential for such species to occur was based on the existence of species observation records (e.g., in the California Natural Diversity Database) within land currently planted to vineyards and/or whether suitable habitat for the species is reasonably likely to occur within or in immediate proximity to such lands.

Special-status species considered in this analysis include plant and animal species protected under the ESA, CESA, the CFGC, and the CNPPA, as well as those that are considered rare, threatened, or endangered under Section 15380 of the CEQA

Guidelines. Special-status species are classified as follows:

Federal endangered (FE): species designated as endangered under the ESA. An FE species is one that is in danger of extinction throughout all or a substantial portion of its range. Take of any individual of an FE species is prohibited except with prior authorization from USFWS or NMFS.

Federal threatened (FT): species designated as threatened under the ESA. An FT species is one that is likely to become endangered in the foreseeable future throughout all or a substantial portion of its range. At the discretion of USFWS or NMFS, take of any individual of an FT species may be prohibited or restricted.

Federal proposed (FP): species that have been proposed by USFWS or NMFS for listing as endangered or threatened under the ESA. Federal proposed species must be evaluated in Section 7 consultation for any federal action and normally are evaluated in the National Environmental Policy Act review of any action that may affect the species.

State endangered (SE): species designated as endangered under the CESA. These include native species or subspecies that are in serious danger of becoming extinct throughout all or a substantial portion of its range resulting from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (CESA Section 2062). Take, as defined by Section 86 of the CFGC, of any state-listed endangered species is prohibited, except as authorized by CDFW.

State threatened (ST): species designated as threatened under the CESA. These include native species or subspecies that, although not threatened currently with extinction, are likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts (CESA Section 2067). Take, as defined by Section 86 of the CFGC, of any state-listed threatened species is prohibited, except as authorized by CDFW.

State candidate (SC): species designated as a candidate for listing under the CESA. These are native species or subspecies for which the Fish and Game Commission has accepted a petition for further review under Section 2068 of the CESA, finding that sufficient scientific information exists to indicate that the petitioned action may be warranted. Take of any state-designated candidate species, as defined by Section 86 of the CFGC, is prohibited, except as authorized by CDFW.

State Species of Special Concern (SSC): a species, subspecies, or distinct population of a vertebrate animal native to California that has been determined by CDFW to warrant protection and management, intended to reduce the need to give the species formal protection as an SE, ST, or SC species.

State Fully Protected (FP): species designated as fully protected under Section 3511, 4700, 5050, or 5515 of the CFGC. FP species may not be taken at any time unless authorized by CDFW for necessary scientific research, which cannot include actions for

project mitigation.

California Rare Plant Rank (CRPR): The California Native Plant Society (CNPS) Inventory of Rare, Threatened, and Endangered Plants identifies groups of species that are commonly recognized as special-status plants:

1) Rank 1A plants are presumed extinct in California;

2) Rank 1B plants are considered rare, threatened, or endangered in California and elsewhere; and

3) Rank 2B plants are rare, threatened, or endangered in California but more common elsewhere.

Western Bat Working Group (WBWG): Bat species with regionally relevant designations of “high” or “moderate” by the WBWG are commonly considered under CEQA, as these designations could have a locally significant effect on a species already imperiled to some degree. A “high” designation indicates that the species is “considered the highest priority for funding, planning, and conservation actions. Information about status and threats to most species could result in effective conservation actions being implemented should a commitment to management exist. Species is imperiled or are at high risk of imperilment.” A “moderate” designation indicates that the species warrants “evaluation, more research, and conservation actions of both the species and possible threats. The lack of meaningful information is a major obstacle in adequately assessing species’ status and should be considered a threat.”

7. Effects of Existing Impaired Water Quality on Biological Resources

Under existing conditions, discharges from vineyards are adversely affecting water quality and biological resources in the North Coast Region. As described in the Project Description Chapter, water quality impairments from Vineyard discharges include elevated levels of turbidity and temperature. Additionally, many lands currently planted to vineyards in the North Coast Region occur too close in proximity to streams and other waterbodies such that riparian vegetation/buffer areas are insufficient or non-existent. In addition to causing or exacerbating water quality effects from Vineyard discharges, this lack of riparian vegetation also limits habitat for special-status species.

C. Impact Analysis

This section describes the methodology and significance criteria used in the analysis of potential impacts to biological resources from the Proposed Project. It also presents the analysis of the potential impacts of the Proposed Project and identifies mitigation measures to reduce or avoid potentially significant effects.

1. Impact Analysis

The analysis considered the potential impacts of reasonably foreseeable activities resulting from the Proposed Project on biological resources. As discussed throughout

this DEIR, to a certain extent, these impacts are speculative, as the specific locations and types of activities that may be conducted under the Proposed Project are not known. The proposed Vineyard Order would allow individual vineyards considerable discretion in how to comply with applicable requirements. As such, this analysis is qualitative in nature and makes reasonable assumptions regarding the potential for impacts, and includes conditional mitigation measures that may be applicable depending on the location and type of activity.

2. Significance Criteria

For the purposes of this analysis, based on Appendix G of the State CEQA Guidelines, the Proposed Project would result in a significant impact related to biological resources if it would:

1) 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.

2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS.

3) 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.

4) 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.

5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

6) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3. Impacts and Mitigation Measures

Impact BIO-1: 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. (*Less than Significant with Mitigation*)

The Proposed Project is expected to have a largely beneficial effect on biological resources, including special-status species and habitat. Among the primary objectives of the Proposed Project is to comply with the North Coast Basin Plan, and other relevant statutes and water quality plans and policies, including the Temperature

Implementation Policy, the Sediment TMDL Implementation Policy, and TMDLs in the North Coast Hydrologic Region. Compliance with order requirements including monitoring and reporting requirements in the Vineyard Order, is intended to reduce ongoing discharges of pollutants from vineyards and thus at least partially correct existing impacts on water quality and aquatic habitats. Further, implementation of the setback requirements will allow natural succession of riparian habitat which will benefit any number of special-status species that may use these areas.

Despite these largely beneficial effects, there is potential for some adverse impacts to occur from the Proposed Project from construction-related effects from installation of certain Management Practices. However, this potential effect is speculative, since it cannot be known which Management Practices will be implemented and in which locations (site-specific factors are important in determining the location of Management Practices). If special-status plant or animal species were to occur within areas where construction of certain Management Practices (i.e., those involving ground disturbance) were to take place, this could result in direct impacts to those species (e.g., mortality or injury of individuals by being crushed by vehicles and/or heavy equipment or loss of an active nest or burrow). In general, it is assumed that the majority of construction activities related to implementation of Management Practices under the Proposed Project would occur on existing vineyards. Based on the information available, construction-related effects are not likely to be substantial considering that many vineyards have already implemented Management Practices contemplated by the Proposed Project. Additionally, existing vineyards are subjected to repeated disturbance and human activities and thus any plants or animals that may be present in such areas would be accustomed to such disturbance.

Constructed-related effects from implementation of Management Practices could indirectly affect species through erosion and sedimentation, or accidental releases or improper management of hazardous materials. Proposed Project construction activities could loosen soils and allow for erosion and off-site discharge of sediments to occur (e.g., a precipitation event washing away loose soils/sediments to nearby waterbodies) if proper precautions are not taken. However, Mitigation Measure HWQ-1 would require construction Management Practices for erosion control for those activities not subject to another regulatory measure, which would reduce this potential impact. Further, Mitigation Measure HAZ-1 would require implementation of spill prevention, control, and countermeasures, which would avoid or minimize any potential impacts to special-status species from accidental releases of hazardous materials used in construction activities.

Establishment of new riparian vegetation in accordance with the proposed riparian setbacks could result in short-term adverse construction effects (e.g., erosion, hazardous materials impacts); however, these would be minimized through implementation of Mitigation Measures HWQ-1 and HAZ-1 as described in the Hydrology and Water Quality and Hazards and Hazardous Materials Chapters, respectively. Depending on a given Vineyard’s existing operations, construction activities for installation of the setback may also require authorization from CDFW (e.g., if construction activities were to occur within the bed and bank of a stream). In this case,

CDFW may impose requirements for the protection of biological resources and water quality during the construction activities. Additionally, implementation of Mitigation Measure BIO-1 would avoid or minimize impacts to biological resources during implementation of the setbacks.

The Vineyard Order includes a limits on disturbing existing, naturally occurring, and established native vegetative cover in the minimum riparian setbacks, as well as the requirement that all new plants and seeds used to establish the minimum riparian setback be native to California and naturally occur in the HUC-8 watershed where the vineyard is located, would minimize potential for adverse effects on native plants, including any special-status plant species that may be present in proposed setback areas. If non-native species were used to establish vegetative cover within the setback area and these non-native species aggressively propagated such as to crowd out or displace native species, including possible special-status species, this could result in a significant impact; however, this potential effect would be avoided due to the Vineyard Order requirements. Given compliance with existing laws and regulations, including obtaining any needed permits from other agencies, as well as implementation of mitigation measures HWQ-1, HAZ-1, and BIO-1, this impact would be ***less significant with mitigation***.

Mitigation Measure BIO-1: Avoid and Minimize Impacts on Sensitive Biological Resources

Where construction/installation or routine maintenance and repair of Management Practices could impact sensitive vegetation communities (e.g., riparian habitat or wetlands adjacent to the construction area) and special-status species, as defined and listed in in this Chapter and Attachment D, Dischargers must use the least impactful effective Management Practice to avoid impacts to such species and habitat. Where discharge, receiving water, or application limits cannot be achieved without incurring potential impacts, individual Dischargers, coalitions, or third-party representatives must implement the following measures to reduce potential impacts to levels that are less than significant.

1) Avoid and minimize disturbance to areas containing special-status plant or animal species.

2) Where construction in areas that may contain sensitive biological resources cannot be avoided through the use of alternative Management Practices, conduct an assessment of habitat conditions and the potential for presence of sensitive vegetation communities or special-status plant and animal species prior to construction. This may include the hiring of a qualified biologist to identify riparian and other sensitive vegetation communities and/or habitat for special-status plant and animal species.

3) When conducting maintenance or repair on facilities such as sediment basins or other facilities that may provide habitat for species, ensure that such activities will

not disturb any special-status species that may be present. If conducting maintenance or repair activities during the nesting season (generally February 1 to August 31), inspect the facilities to ensure that nesting birds are not present within or adjacent to areas where such activities will occur. If nests or young are identified in such areas, conduct the activities outside of the nesting season.

4) Where adverse effects on sensitive biological resources cannot be avoided, undertake additional CEQA review and develop a restoration or compensation plan in consultation with the California Department of Fish and Wildlife to mitigate the loss of the resources.

Impact BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS. (*Less than Significant with Mitigation*)

As discussed above under Impact BIO-1, the Proposed Project would have a largely beneficial impact on biological resources by reducing discharges of pollutants from irrigated agricultural lands. Additionally, the riparian setback requirements would result in the creation/restoration of substantial riparian habitat adjacent to irrigated agricultural lands throughout the north coast region. As discussed in the Agriculture and Forestry Chapter, the setback requirements could result in approximately 300 acres of Important Farmland currently planted to vineyards being taken out of production and converted to setback areas. While this would result in an impact on agricultural resources, these setback areas would allow natural succession of riparian vegetation to occur and would benefit biological resources by providing riparian habitat.

During construction of Management Practices involving ground disturbance, there would be potential for adverse effects on biological resources, including riparian habitat, through erosion and sedimentation caused by operation of heavy construction equipment and/or accidental releases or improper management of hazardous materials used during construction (e.g., fuel, oil, lubricants, etc.). If eroded soils or leaked hazardous materials were to wash off site to riparian areas or sensitive natural communities adjacent to agricultural areas, this could adversely impact these biological resources. Depending on the amount of cut and fill involved, certain Management Practices also may be subject to local grading ordinances, which would typically require erosion control measures. For construction activities that are not subject to a local grading ordinance, implementation of Mitigation Measures HWQ-1 and HAZ-1 would avoid or minimize potential impacts to water quality and biological resources by requiring erosion control and hazardous materials spill prevention, control, and countermeasures.

Overall, the effect of the Proposed Project on riparian habitat and sensitive natural communities would be largely beneficial, as it would result in the creation of open space for natural succession of riparian vegetation adjacent to agricultural land currently planted to vineyards and would provide greater separation between vineyard activities and existing sensitive natural communities (e.g., riparian areas, wetlands). Construction

activities for certain types of Management Practices would have potential to cause adverse impacts on riparian habitat and sensitive natural communities, but compliance with existing laws and regulations and/or implementation of mitigation measures HWQ-1, HAZ-1, and BIO-1 would reduce these potential impacts. Therefore, this impact would be ***less than significant with mitigation***.

Impact BIO-3: 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*)

One of the primary objectives of the Proposed Project is to protect and restore beneficial uses and achieve water quality objectives specified in the Basin Plan in part through compliance with Temperature Implementation Policy, the Sediment TMDL Implementation Policy, and watershed specific TMDLs in the North Coast Hydrologic Region (see Project Objective #3 in the Project Description Chapter). As discussed above, the Proposed Project would accomplish this through implementation of the setback requirements, which would provide greater separation between vineyard activities and existing riparian or wetland areas and would likely result in the creation of additional riparian habitat relative to baseline conditions.

As such, the effect of the Proposed Project on existing state or federally protected wetlands that may occur within or adjacent to vineyards in the North Coast Region would be largely beneficial. As shown in Table VII-1, there are roughly 279 acres of total wetlands within existing vineyards, which comprises 0.43 percent of the total land area planted to vineyards in the North Coast Region. The majority of these wetlands are freshwater forested/shrub wetlands (121 acres), although there are also riverine (63.6 acres); freshwater pond (15.6); and freshwater emergent (79.3 acres) wetlands (USFWS, 2018). In general, the Proposed Project would have a beneficial effect on these existing wetlands by increasing the setback distance of agricultural activities from these features, thus reducing potential discharges of agricultural pollutants (intervening vegetation in setback areas can provide passive filtration and detention of pollutants).

As discussed under Impact BIO-I and BIO-II, construction/installation of certain Management Practices involving ground disturbance (e.g., sediment basins, vegetative buffers, runoff management features, etc.) could result in adverse effects on biological resources, including wetlands, due to erosion/sedimentation and improper management of hazardous materials. Compliance with existing laws and regulations and implementation of Mitigation Measures HWQ-1 and HAZ-1 would reduce these potential impacts to a level that is less than significant. Overall, this impact would be l***ess than significant with mitigation.***

Impact BIO-4: 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. (*Less than Significant with Mitigation*)

Streams, associated adjacent wetlands, and riparian habitat are important fish and wildlife movement corridors, as they provide water and food sources, cover refugia, prey hunting opportunities, and other benefits to aquatic and terrestrial species. Several common and special-status fish species rely on streams within the north coast region, many of which run adjacent to irrigated agricultural lands, as migration corridors and for

spawning habitat, seasonal movements, or the completion of critical lifecycle stages.

The Proposed Project would largely benefit these important areas by increasing the setback distance of vineyard activities. This would reduce the potential for human activities (e.g., operation of farm equipment) to disturb migratory fish or wildlife species that may be passing through the adjacent habitat areas. Further, the additional vegetation that will likely establish in riparian setback areas would provide habitat for migratory wildlife species and allow for improved use of migratory wildlife corridors. The reduced pollutant discharges afforded by the Proposed Project through the setback requirements and compliance with the requirements also would benefit water quality in streams and wetlands that may serve as wildlife corridors. In particular, implementation of Management Practices to minimize erosion and delivery of sediment to surface waters. would reduce potential ongoing impacts to spawning habitats (e.g., through discharge of fine sediments) in streams adjacent to vineyards.

The Proposed Project would not involve construction of any new large structures or establish new impassible land uses that would substantially inhibit wildlife movement. Construction activities for certain Management Practices (e.g., sediment basins, vegetated filter strips), depending on the location of such facilities on individual vineyards, could temporarily impact wildlife movement (e.g., wildlife species could avoid construction areas and associated human activity), but this potential impact would not be significant. Implementation of Mitigation Measures HWQ-1 and HAZ-1 as described in the Hydrology and Water Quality and Hazards and Hazardous Materials Chapters, respectively, would prevent adverse impacts on spawning habitat in adjacent waterbodies due to discharge of fine sediments or hazardous materials during construction activities. This impact would be ***less than significant with mitigation***.

Impact BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (*Less than Significant)*

County and city ordinances and policies exist for the protection of biological resources within the North Coast Region. Examples include ordinances and local zoning that specify setbacks for wetlands, streams, and lakes and regulate the removal of trees. The Streamside Area setback requirements included in the Vineyard Order are not expected to have an adverse impact on trees and other biological resources that are protected through local policies or ordinances. Actions by the Regional Water Board (a State agency) are not required to comply with county, city, or other local ordinances. However, the activities that could occur under the Proposed Project are expected to generally align and be consistent with such local ordinances and policies. Further, the implementation of the setback requirements is expected to result in improved habitat values, functions, and increased numbers of trees. As such, this impact would be ***less than significant***.

Impact BIO-6: Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. (*Less than Significant with Mitigation*)

As described in this Chapter, no known HCPs or NCCPs are in effect in the viticultural areas of the North Coast Region. In general, these plans do not cover activities on vineyards; however, they may cover streams and riparian areas that may be indirectly affected by discharges from vineyards. It is unlikely that the implementation of Management Practices under the Vineyard Order would conflict with the provisions of future adopted HCPs, NCCPs or other approved local, regional, or state habitat conservation plans. More likely are Management Practices to be consistent with the goals of these types of plans. HCPs in the region would generally support protection of special-status species and habitat, maintaining wildlife movement and habitat connectivity, and protecting and restoring water quality for aquatic ecosystem health. Applicable HCPs also may promote maintenance of surface water flows at acceptable levels for special-status fish species movement and spawning. The potential construction-related impacts discussed in previous impact discussions would all be temporary and would be less than significant given compliance with existing laws and regulations and implementation of Mitigation Measures BIO-1, HWQ-1, and HAZ-1. Therefore, this impact would be ***less than significant with mitigation***.

VIII. Greenhouse Gas Emissions

This section presents the environmental setting and potential impacts of the Proposed Project related to greenhouse gas (GHG) emissions.

A. Regulatory Setting

1 Federal Laws, Ordinances, Regulations, and Standards

At the federal level, the U.S. Environmental Protection Agency (USEPA) has developed regulations to improve the efficiency of, and reduce GHG emissions from, motor vehicles and has developed permitting requirements for large stationary emitters of GHGs. On April 1, 2010, USEPA and the National Highway Traffic Safety Administration (NHTSA) established a program to reduce GHG emissions and improve fuel economy standards for new model year 2012–2016 cars and light trucks. On August 9, 2011, USEPA and the NHTSA announced standards to reduce GHG emissions and improve fuel efficiency for heavy-duty trucks and buses. In August 2016, USEPA and the NHTSA jointly finalized Phase 2 Heavy-Duty National Program standards to reduce GHG emissions and improve fuel efficiency of medium- and heavy-duty vehicles for model year 2018 and beyond (USEPA 2019a).

2. State Agencies, Laws, and Programs

In recent years, California has enacted a number of policies and plans to address GHG emissions and climate change. Efforts on a statewide level to regulate and reduce GHG emissions are detailed below but include establishing GHG emission goals, developing vehicle emission standards, and promoting sustainable land use and transportation planning. As with federal requirements, agriculture is not one of the industrial sectors regulated due to the relatively small scale of total emissions compared to other large emission sources.

a. Statewide Greenhouse Gas Emission Targets

In 2006, the California State Legislature enacted Assembly Bill (AB) 32, the Global Warming Solutions Act, which set the overall goals for reducing California's GHG emissions to 1990 levels by 2020. Subsequent executive orders have revised the overall goal to statewide carbon neutrality by 2045 and net negative emissions thereafter. The First Update to the AB 32 Scoping Plan (approved in 2014) defined climate change priorities for the next five years from its adoption and set the groundwork for reaching the state's long-term GHG emissions reduction goals, including aligning those goals with other state policy priorities for water, waste, natural resources, clean energy, transportation, and land use.

A subsequent 2017 Scoping Plan Update was released to reflect the updated emissions reductions targets (CARB 2017). This Scoping Plan Update includes recommendations such as improving manure management, boosting soil health, generating renewable power, electrifying operations, utilizing waste biomass, and increasing water, fertilizer, and energy use efficiency.

b. Low Carbon Fuel Standard

The Low Carbon Fuel Standard (LCFS) requires a reduction of at least ten percent in the carbon intensity of California's transportation fuels by 2020 and 20 percent by 2030 (CARB 2019a). The LCFS regulation includes annual performance standards for fuel producers and importers, applicable to all fuels used for transportation in California (CARB 2019a). Electricity and fuels such as hydrogen, biodiesel, and biogas have lower carbon intensities than traditional gasoline and diesel. As such, increasing use of these fuels lowers the average carbon intensity of the state's transportation fuels.

c. State Water Resources Control Board's Greenhouse Gas Emission Reduction Actions

The State Water Resources Control Board (State Water Board) is undertaking a number of actions to reduce GHG emissions in the state, including issuing grants to agricultural operations for improvements to irrigation systems that both save water and reduce greenhouse gas emissions (CalEPA 2018). Other State Water Board emission reduction strategies include promoting the use of methane capture and stormwater detention and infiltration (SWRCB 2017).

3. Local Laws, Plans, Policies, and Regulations

Many city and county general plans contain goals, policies, and strategies related to air quality and GHG emissions. In addition, some cities, counties, and air districts in the North Coast Region have adopted or drafted CAPs (climate action plan) or GHG emission reduction plans. General plans and CAPs may include policies and strategies applicable to agriculture and the Proposed Project such as encouraging the use of low-carbon fuels and alternative energy, limiting idling time of vehicles and equipment, recommending best Management Practices for agricultural operations and construction, and supporting heavy-duty fleet conversions. For example, in 2005, nine cities and the County of Sonoma pledged to reduce GHG emissions to 25 percent below 1990 levels by 2015. The Regional Climate Protection Authority (RCPA) was created in 2009 to help each jurisdiction reach its goal. The RCPA includes representatives from each of the nine cities in Sonoma County and the Board of Supervisors.

Climate Action 2020 is a collaborative effort led by the RCPA and including all nine cities and the County of Sonoma and several partner entities to take further actions to reduce GHG emissions community-wide and respond to the threats of climate change. RCPA will work with each jurisdiction to develop a Community Climate Action Plan that will provide a comprehensive assessment of GHG emission sources as well possible measures that jurisdictions can take to reduce GHG emissions and/or adapt to climate change.

B. Environmental Setting

1. Global Climate Change

"Global climate change" and "global warming" are terms that describe changes in the

Earth's climate. A global climate change could be, for example, an increase or decrease in temperatures, the start or end of an ice age, or a shift in precipitation patterns. The term global warming is more specific and refers to a general increase in temperatures across the Earth.

Although global warming is characterized by rising temperatures, it can cause other climatic changes, such as a shift in the frequency and intensity of rainfall or hurricanes. Global warming does not necessarily imply that all locations will be warmer. Some specific locations may be cooler even though the Earth, on average, is warming. All of these changes fit under the umbrella of global climate change.

It is widely acknowledged that GHGs play a significant role in the global warming trend that has been observed over the last several decades. GHGs, such as carbon dioxide (CO2), methane, and nitrogen oxide (N20), trap heat that is emitted from the earth's surface, creating a "greenhouse effect" (National Aeronautics and Space Administration [NASA] 2019). Water vapor is the most abundant GHG, but it functions more as a "feedback" since it changes physically or chemically in response to temperature. By contrast, GHGs such as CO2, methane, N20, and others may remain semi-permanently in the atmosphere and thereby act as a "forcing" of climate change (NASA 2019). In general, about half the light reaching the Earth's atmosphere passes through the air and clouds to the surface, where it is absorbed and then radiated upward in the form of infrared heat (NASA 2019). About 90 percent of this heat is then absorbed by the GHGs and radiated back toward the surface.

Other potential causes of global climate change include changes in the irradiance of the sun, which is thought to have been the primary cause for the Little Ice Age between approximately 1650 and 1850 (NASA 2019). However, this is not thought to have played a role in the recent warming observed in the 20th and 21st centuries for several reasons (NASA 2019): (1) since 1750, the average amount of energy coming from the sun either remained constant or increased slightly; (2) if the warming were caused by a more active sun, then scientists would expect to see warmer temperatures in all layers of the atmosphere (instead, they have observed cooling in the upper atmosphere and a warming at the surface and in the lower parts of the atmosphere); and (3) climate models that include solar irradiance changes cannot reproduce the observed temperature trend over the past century or more without including a rise in greenhouse gases.

Taken together, the scientific consensus is that present-day global warming is primarily the result of human activity on the planet, and specifically, is the result of increased concentrations of GHGs in the atmosphere due to human activities (International Panel on Climate Change [IPCC] 2014). According to the IPCC's Fifth Assessment Report: Climate Change 2014, the globally averaged combined land and ocean surface temperature data as calculated by a linear trend show a warming of 0.85 degrees Celsius over the period 1880 to 2012. It is extremely likely that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic

factors together (IPCC 2014).

2. Greenhouse Gas Emissions

GHG emissions typically are measured in terms of mass of CO2 equivalents (CO2e). CO2e is calculated as the product of the mass of a given GHG and its specific Global Warming Potential (GWP). Worldwide emissions of GHGs in 2017 were more than 36 billion metric tons of CO2e, with 15 percent of those coming from the United States (Global Carbon Project 2018). In 2017, the U.S. emitted about 6.5 billion metric tons of CO2e, which was an increase of about 1.3 percent since 1990, but a reduction of about 13 percent from 2005 inventories (USEPA 2019b). Fossil fuel combustion accounts for approximately 76 percent of the U.S.'s GHG emissions (USEPA 2019b).

In 2017, sources within the State of California emitted approximately 424 million metric tons of CO2e, which is a reduction of about 14 percent since 2004 (despite the population growing by about 12 percent during that period) (CARB 2019b). On a per capita basis, California emits about 10.7 metric tons per person, which is among the lowest of the 50 states.

Agricultural activities are responsible for approximately 9 percent of California's GHG emissions and the majority of its methane emissions (CARB 2019b, CARB 2017). Crop production accounted for 20 percent of total agricultural emissions in 2017 (CARB 2019b). Emissions from growing and harvesting crops have generally been declining since 2000 due to reductions in crop acreage and synthetic fertilizer use along with changes in irrigation practices (CARB 2019b).

3. Global Climate Change and Greenhouse Gas Emissions in the North Coast Region

As described above, climate change is a global phenomenon, and GHG emissions do not act on a local level, but rather contribute to global processes, regardless of where they occur. Therefore, GHG emissions in Santa Rosa, California, act on the same scale as those in Europe, Africa, or any other part of the world. Likewise, the climate in the North Coast Region of California could be affected by global processes driven by GHG emissions and other forces that occur around the world.

a. Existing Greenhouse Gas Emissions

Currently, approximately 65,000 acres of vineyards are in production in the North Coast Region (DWR, 2019). GHG emissions associated with vineyards include:

1) N2O emissions from application of fertilizers,

2) CO2 emissions from operation of tractors and other on-farm machinery,

3) CO2 emissions from electricity generation for operation of pumps for irrigation systems and groundwater wells,

4) CO2 emissions from transportation of harvested grapes to wineries and other transportation-related activities,

5) CO2 emissions from tilled soils,

6) CO2 emissions from burning of crop residues; and

7) Methane emissions from flooded/saturated vineyards and anoxic decomposition of biological material.

Quantitative data are not available regarding the specific quantities of GHG emissions attributable to the 65,000 acres of land planted to vineyards within the North Coast Region (0.27 percent of the 24.2 million acres[11] of farm and ranch land in California in 2022). Assuming equal rates of GHG emissions from statewide agricultural activities (9 percent of statewide GHG emissions), GHG emissions associated with vineyards in the North Coast Region are 0.02 percent of statewide GHG emissions, which are the equivalent of 0.074 MMT CO2.

4. Vulnerability to Climate Change

Viticulture is an industry that is particularly dependent on the climate. The primary inputs to wine-grapes include the sun, soil, irrigation, temperature, and humidity. Although it is unclear precisely how global climate change will manifest itself in any given location, there is reason to believe that future climate change in the North Coast Region could have deleterious effects on viticulture. Although increased concentrations of CO2 are a possible benefit to plant growth, increased temperatures could be harmful to some wine-grape varieties, as could more frequent or extreme droughts or otherwise more variable precipitation patterns.

C. Environmental Analysis

1. Impact Analysis Methods

Because the Vineyard Order provides vineyards with flexibility regarding the which potential Management Practices to implement to comply with limits and requirements, it is not possible to quantify the GHG emissions that will result from activities under the Proposed Project. Thus, this section qualitatively analyzes the potential impacts of the Proposed Project with regard to GHG emissions and climate change. Effects are evaluated with respect to the anticipated changes from baseline conditions in vehicle and equipment usage, fertilizer and pesticide application, and other GHG emitting activities due to the Proposed Project.

Note that many of the products and equipment that could be used during Proposed Project implementation could include “embedded” GHG emissions, which are not directly evident from their end uses. For example, extraction and processing of raw

[11] Department of Food and Agriculture: California Agricultural Statistics Review 2021-2022 (https://www.cdfa.ca.gov/Statistics/PDFs/2022_Ag_Stats_Review.pdf)

materials used in the manufacturing of construction equipment used during Management Practice installation may involve fossil fuel combustion and GHG emissions. Likewise, transporting equipment parts and other agricultural inputs/products to markets and ultimately to the consumer could generate GHG emissions. These relationships are complex but were generally considered in this qualitative analysis.

2. Thresholds of Significance

For the purposes of this analysis, based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would:

1) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Several of the air districts with jurisdiction in the North Coast Region have drafted or adopted GHG emission significance thresholds for analysis of GHG impacts under CEQA. A quantitative analysis of GHG emissions is not possible for the Proposed Project, and it is thus not possible to compare emissions to these thresholds.

3. Impacts and Mitigation Measures

Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. ***(Less than Significant)***

A number of the reasonably foreseeable Management Practices that could occur under the Proposed Project would have negligible or beneficial effects related to GHG emissions. Practices such as cover cropping, applying pesticides in accordance with label instructions, removal of vines to allow natural succession of riparian vegetation, and excluding people and vehicles from areas to protect riparian vegetation would emit negligible amounts of GHGs. Construction of certain types of Management Practices would generate GHG emissions due to operation of gasoline- or diesel-fueled equipment (e.g., excavators, bulldozers, etc.). Management Practices such as sediment basins, vegetated filter strips, and agricultural road storm-proofing would all involve some amount of excavation/ground-disturbance, and thus construction of these features would require use of GHG-emitting equipment. Additionally, any worker vehicle trips to and from individual construction sites would add some amount of GHGs. Implementation of setback requirements also may require removal of existing vines (if present within setback areas), disposal of organic debris, and planting of riparian or other vegetation, all of which could involve operation of equipment and/or vehicles and emission of GHGs. However, implementation of the riparian setback requirements that results in additional riparian vegetation may also help sequester GHGs and therefore reduce their emissions, and therefore have a net beneficial effect (UCCE 2015).

While the specific characteristics of individual Management Practices are unknown,

such individual projects would have no potential, on their own, to exceed applicable GHG emission significance criteria. In comparison to the types of construction projects that regularly occur throughout the North Coast Region (e.g., housing projects, commercial and industrial development), the Management Practices that could be constructed at individual vineyards as a result of the Proposed Project rank relatively low in terms of GHG emission potential.

From a cumulative standpoint, if all vineyards within the region were to construct sediment basins, vegetated filter strips, or storm-proof agricultural roads *at the same time*, there could be some potential for annual GHG emissions significance thresholds to be exceeded (although, still, this is somewhat speculative). However, this is not likely to occur, particularly given the fact that many of the discharge, receiving water, and application limits (which would drive Management Practice implementation) and setback requirements would be implemented over time.

It also should be noted that some amount of GHG emissions is occurring under existing conditions. Many vineyards are implementing, or have implemented, various Management Practices (see Attachment B). As such, while the Proposed Project is anticipated to result in increased Management Practice construction (and associated GHG emissions) relative to existing conditions, the GHG emissions that occur from the Proposed Project should be considered in light of the existing, ongoing GHG emissions that are occurring under existing conditions.

During Project operation, certain Management Practices or monitoring equipment/facilities could generate some amount of GHG emissions. Routine maintenance and repair of Management Practices (e.g., periodic clearing of accumulated sediment from sediment basins) may require operation of fossil fuel-powered equipment, which may generate GHG emissions.

Due to the nature of the Proposed Project and the discretion afforded to vineyards in how to comply with the proposed requirements, the net increase in GHG emissions due to the Proposed Project cannot be quantified. Based on the reasonably foreseeable activities, the emissions are not expected to be substantial. The Proposed Project would not create any new substantial stationary sources of GHG emissions and many of the routine maintenance and repair and monitoring activities would be relatively infrequent. GHG emissions from construction activities likely would be relatively minor overall (particularly compared to other common types of construction projects) and would most likely be spread out over time due to the compliance timeline built into the Proposed Project. Therefore, this impact would be ***less than significant***.

Impact GHG-2: Potential to conflict with an applicable plan, policy, or regulation adopted to reduce the emissions of GHGs. *(Less than Significant)*

The Proposed Project does not conflict with strategies discussed in the First Update to the AB 32 Scoping Plan or the 2017 Climate Change Scoping Plan (CARB 2017). The implementation of many reasonably foreseeable Management Practices in response to

the Proposed Project, including actions to improve nutrient management, would align with strategies mentioned in the Scoping Plan and ultimately reduce emissions of some GHGs. As discussed above in Impact GHG-1, while construction of some Management Practices would generate short-term GHG emissions, these would likely be spaced out over time and would not be significant. Routine maintenance and repair of certain Management Practices, as well as monitoring activities, could generate some amount of GHG emissions, but these emissions would not be significant and would not conflict with applicable state plans, policies, or regulations.

For similar reasons, the Proposed Project is generally in line with local general plan policies regarding land use, transportation, air quality planning goals, and local CAPs. Therefore, this impact would be ***less than significant***.

IX. Cultural Resources

This section presents the environmental setting and potential impacts of the Proposed Project related to cultural resources. Cultural resources include prehistoric archaeological sites, historic-era archaeological sites, historic-era buildings, structures, landscapes, districts, and linear features. Prehistoric archaeological sites are places where Native Americans lived or carried out activities during the prehistoric period, which in California is generally defined as being before the arrival of Spanish explorers in 1542. Historic-era archaeological sites reflect the activities of people after initial exploration and settlement, generally beginning in the mid-1500s. Apart from brief visits by sea-going explorers in the mid-1500s, for counties in the Project area, exploration and settlement began by Europeans during the early 1800s. Native American sites can also reflect the historic-era. Prehistoric and historic-era sites contain artifacts, cultural features, subsistence remains, and human burials.

Tribal cultural resources (TCRs), specifically, are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe. TCRs are given special status under California law, so although TCRs may include some of the resource types discussed in this section, they are addressed in the Tribal Cultural Resources Chapter.

A. Regulatory Setting

1. Federal Laws, Ordinances, Regulations, and Policies

Projects that require federal permits, receive federal funding, or are located on federal lands must comply with 54 US Code (USC) section 306108, formally and more commonly known as Section 106 of the National Historic Preservation Act (NHPA). To comply with Section 106, a federal agency proposing a federal or federally assisted project must consider whether the project has the potential to affect historic properties and if so, must "take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places (NRHP). The implementing regulations for Section 106 are found in Title 36 Code of Federal Regulations (CFR), Part 800, as amended (2004).

The implementing regulations of the NHPA require the federal agency to identify cultural resources that may be affected by the project and determine whether the cultural resources are listed or eligible for listing on the NRHP. Resources listed or eligible for NRHP listing are called *historic properties*. To evaluate if a site, district, structure, object, and/or building is significant and historic, and eligible for NRHP listing, the NRHP Criteria for Evaluation are applied. A resource is significant and considered a historic property when it:

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

2) Is associated with the lives of persons significant in our past; or

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

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

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

2. State Laws, Ordinances, Regulations, and Policies

a. California Environmental Quality Act

Section 21083.2 of CEQA (Public Resource Code [PRC] Section 21000 et seq.) requires that the lead agency determine whether a project or program may have a significant effect on unique archaeological resources. A unique archaeological resource is defined in CEQA as an archaeological artifact, object, or site about which it can be clearly demonstrated that there is a high probability that it:

Contains information needed to answer important scientific research questions, and there is demonstrable public interest in that information;

1) Has a special or particular quality, such as being the oldest of its type or the best available example of its type; or

2) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Measures to conserve, preserve, or mitigate and avoid significant effects on these resources are also provided in CEQA Section 21083.2. The State CEQA Guidelines also provide criteria and processes/procedures for minimizing harm to historical and paleontological resources.

b. California Health and Safety Code Section 7050.5

Section 7050.5 of the Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the Coroner must then contact the Native American Heritage Commission (NAHC), which has jurisdiction pursuant to Section 5097 of the PRC. When human remains are discovered or recognized in any location other than a dedicated cemetery, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains may take place until the county coroner has been informed and has determined that no investigation of the cause of death is required, and, if the remains are of Native American origin, either the

descendants of the deceased have made a recommendation to the landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98 or the NAHC was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the Commission.

c. California Register of Historical Resources

The California Register of Historical Resources (CRHR) is established in PRC Section 5024.1. The register lists all California properties considered to be significant historical resources, including all properties listed in, or determined to be eligible for listing in, the NRHP. Resources listed in, or eligible for listing in, the CRHR are referred to as historical resources. The criteria for listing are similar to those of the NRHP. Criteria for listing in the CRHR include resources that:

1) Are associated with the events that have made a significant contribution to the broad cultural historical patterns of California's history and cultural heritage,

2) Are associated with the lives of persons important in our past,

3) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or

4) Have yielded, or may be likely to yield, information important in prehistory or history.

The California Code of Regulations (CCR) Section 4852 sets forth the criteria for eligibility as well as guidelines for assessing historical integrity and resources that have special considerations.

3. Local Laws, Ordinances, Regulations, and Policies

Many city and county general plans contain goals, policies, and strategies related to cultural resources. Applicable policies and strategies from these general plans generally include requirements to identify cultural resources within a proposed project area through archival research and a field study, and to preserve any significant resources, if feasible. Mitigation is often required before a permit will be granted. Many cities and counties have appointed boards or committees to review projects that have the potential to affect cultural resources, but few have requirements to consult with Native American tribes about impacts on Native American sites or include Native American individuals on their cultural resources review boards. Specific applicable general plan goals and policies for counties within the North Coast Region are shown in Attachment C.

B. Environmental Setting

This section describes existing conditions for cultural resources within the Project area and evaluates the potential impacts to these resources resulting from project implementation. The primary sources of information for this section are the US Bureau of Land Management Cultural Resources Overview for Northwestern California (2016), Mendocino County General Plan EIR Cultural Resources Section (2009), Humboldt County General Plan Final EIR (2017), Humboldt County Cannabis Program Final EIR (2018) Sonoma County General Plan Housing Element Update Draft EIR (2022), and Trinity County Cannabis Program Final EIR (2020).

1. Prehistory

Several cultural historical units (patterns) have been defined for the North Coast Region. Periods are temporal units that facilitate the grouping of specific cultures based on an adaptive mode (e.g., economics or social structure). Temporal units are referred to as calibrated years before present (cal BP).

The **Paleoindian Period (approx. 13,400–12,800 cal BP)** The Paleoindian Period is the earliest cultural manifestation along the North Coast and Klamath Mountains/North Coast Ranges and is illustrated by the fluted (Clovis-like) projectile points and chipped stone crescents. These have been found at the Borax Lake site near Clear Lake; however, well-defined assemblages have not been found elsewhere in northwest. California. Fluted points have been discovered near the coast in Mendocino County and in Siskiyou County, but in isolated contexts lacking strong associations with well-dated strata or other artifacts.

The **Post Pattern (12,000-8,000 cal BP)** represents the earliest occupation of Mendocino County and is characterized by fluted, concave-base projectile points and crescents. There is scant archaeological data regarding the settlement and subsistence strategies associated with the Post Pattern, but it appears that the strategies focused on hunting and gathering.

The **Borax Lake Pattern (10,000–4,500 BP)** Much more is known about the Borax Lake Pattern, as archaeological manifestations have been discovered and studied throughout the interior of northwest California. Borax Lake Pattern sites extend from Clear Lake Basin north into Humboldt and Trinity Counties, with many located in upland habitats. These assemblages include serrated bifaces, ovoid flake tools, handstones, millingslabs, and edge-flaked spalls. This diversified assemblage is commonly found in sites located across a wide range of environmental contexts, including ridgetops between 4,500 and 6,000 feet along Pilot Ridge and South Fork Mountain, in upland areas within Mendocino County, and along terraces adjacent to the Trinity River. Obsidian hydration data collected from both upland and lowland settings indicate that the pattern may have persisted in Humboldt and Trinity Counties until roughly 5,000 cal BP. Borax Lake Pattern sites are rare on the coast, largely because of sea level rise that has inundated most near-shore habitats dating to this interval. One exception is a site located near McKinleyville about one mile from the coast, where Borax Lake Pattern

artifacts have been found. The artifacts consist of both flaked and ground stone tools, but no evidence of marine resource use (e.g., no shellfish remains). Due to the widespread prairie and marshland habitats in the area, and the large number of projectile points and butchering tools found, hunting and processing of large game (predominately Roosevelt elk) was probably a major activity at the site.

The **Mendocino Pattern (4500–1500 BP**) The Mendocino Pattern first appears around 5,000 years ago in a limited number of places in northwest California, but it is not common until after about 4,000 cal BP. Common artifacts include side-notched, corner-notched, and concave-base dart points (of the Willits and Mendocino series), handstones and millingslabs, various types of flake tools and cobble tools, and, in some cases, a limited number of cobble mortars and pestles. The earliest manifestations of the Mendocino Pattern in the more northerly areas come from a variety of coastal and interior settings. Coastal evidence is available from Point St. George, Humboldt Bay, and the King Range of southern Humboldt County, but none of these sites pre-date 2,500 cal BP. The sites appear to represent temporary hunting camps or seasonal encampments by people with a terrestrial orientation. Up in the northern mountains, most of the sites are specialized hunting camps, which is significantly different from the earlier Borax Lake Pattern where the uplands were dominated by residential sites. The Mendocino Pattern hunting camps represent logistical forays from more substantial residential sites in the lowlands. Rather than representing a mobile system of settlement like the more southerly areas, a sedentary settlement system supported by the intensive harvest and storage of salmon and acorns emerged at about 2,500 B.P.

The Berkeley Pattern (2,500-1,500 cal BP) highlights the expansion of collecting and the incorporation of other resource acquisition strategies (e.g., fishing and exploitation of other aquatic resources, such as shellfish). Artifacts typically associated with this pattern include the atlatl; dart-sized, non-stemmed projectile points primarily made from obsidian; mortars and pestles; and bone tools. Flexed (knees to chest) burials are also characteristic of the Berkeley Pattern.

The Augustine Pattern (2,000-1,500 cal BP) is characterized by a change in technology and subsistence strategies. These changes include the introduction of bow and arrow technology, as evidenced by small projectile points, acorns becoming the staple food resource, and the use of fish harpoons. Pre-interment grave pit burning, flexed burials, and grave goods including shell beads and ornaments are also typical of the pattern. The Augustine Pattern is also highlighted by an intensification of trade, an increase in sociopolitical complexity, and social stratification. In addition, the Augustine Pattern appears to be associated with the Pomo Indians occupation of the area and is the cultural pattern encountered by Russian, Spanish, and subsequent European explorers that entered the area.

The **Tuluwat Pattern (post-1500 cal BP)** After 1,500 cal BP, several major changes occurred in northwestern California and southwestern Oregon, especially along the coast on Humboldt Bay and areas to the north. Site frequency increases dramatically, and many locations were used as permanent villages for the first time. Artifact

assemblages are increasingly diverse and include many specialized woodworking tools (e.g., adzes, mauls, and wedges) used for the construction of substantial plank houses and canoes. Excavations at multiple sites north of Cape Mendocino, where offshore rocks and islands are plentiful, have yielded high frequencies of Tuluwat barbed projectile points and thin concave-based points used to tip composite harpoons used for taking both marine mammals and fish. Ground and polished stone artifacts are also quite abundant, some exhibiting a great deal of artistic elaboration. Flanged pestles, well-made mauls (used with antler wedges), and notched net sinkers are common, while steatite bowls, zoöform clubs, and polished stone adze handles have also been found. Fishing gear is common, represented by various bone and antler spears, harpoons, and hooks. Shellfish were also important contributors to the diet but, unlike central and southern California, species from relatively deep in the intertidal like red abalone are essentially absent from the archaeological record.

2. History

Due to the programmatic and high-level nature of the Vineyard Order, a records search at the Northwest Information Center has not been conducted. However, archaeological sites are present throughout the North Coast Region. Areas most likely to be sensitive for archaeological sites include landforms near freshwater sources, flat mountainous areas or prairies, mines and quarry tailings, dams, railroad grades, and other built-environment features (e.g., building foundations, bridges, etc.). Additional areas of cultural resources are known to local Native American tribes, but their locations are considered proprietary. According to guidance from the California Office of Historic Preservation, built-environment features over 45 years of age may be considered for federal, state and/or local designation.

a. First Contact

i. Coastal

The non-native history of California began first with sporadic visits by Spanish and English mariners and then by explorers and fur trappers from Spain, Russia, England, and the United States. The search for a northern sea route between the Old World and the New, and for safe harbors along the way, became a primary objective for Spain and England within half a century of the European “discovery” of North America. In 1579 Sir Francis Drake landed in what was most likely San Francisco Bay and in 1595 Sebastian Cermeño landed in Drake’s Bay before returning south to Mexico. For some 250 years, mariners from both nations traveled along the coast, apparently without ever making landfall in Mendocino, Humboldt, or Del Norte County. Finally, in 1775, Spanish sailors under the command of Lieutenant Bruno de Heceta and Juan Ferdinand de Bodega y Quadra came ashore at Trinidad Head on Cape Mendocino. Unfortunately, there is little evidence of these activities in the surviving archaeological record of the region.

In 1806 an American vessel under the command of Captain Johnathan Winship and a party of Aleut sea otter hunters “discovered” Humboldt Bay. Within a decade the fur trappers of the North West Company, the Russian-American Company, and the

Hudson's Bay Company in northern California had greatly diminished the sea otter population on the coast (despite Spanish regulations), and the Russian-American Company withdrew, leaving the region to the British and American trappers. The loss of sea otters also must have deprived the region's Native populations of an important source of food and pelts.

The most common and readily identified archaeological markers of this period (1700s–1850s) are glass trade beads. Glass beads were introduced by the first European mariners, and distributed widely by the Spanish mission system, used by the Russian-American Fur Company to purchase the land for Colony (Fort) Ross, and continued to be traded to native people in California by fur trappers, gold miners, settlers, and merchants well into the 19th century.

ii. Interior

The overland parties of trappers and explorers who traveled into northern California in the 1820s and 1830s were the first non-native people to visit the interior of the state. Many overland parties entered from British territory to the north, and from American lands to the east. Both Peter Ogden and Jedediah Smith traveled through the upper Sacramento Valley and into Trinity County in the 1820s. In April and May 1828, Smith and his party ventured through southern Trinity County near Hyampom. His route probably followed Hayfork Creek from the present location of Wildwood to the South Fork of the Trinity River to the Klamath River. There were so few non-native settlements at that time (1832–1833) that some of the trappers had to go all the way to Colony (Fort) Ross on the Sonoma coast to buy ammunition.

b. Spanish Period

In 1775 the Spanish established the presidio and Mission Dolores at San Francisco where Spanish colonial activity in the Bay Area was concentrated. During the early 1800s, Russians also began to explore and establish settlements in the Pomo territory of Sonoma and Mendocino Counties. A Russian trading expedition entered Bodega Bay in 1809 and by 1811 a settlement was established at Colony Ross (Fort Ross).

By 1817 the Spanish established a mission a San Rafael and began recruiting Native Americans as far north as Santa Rosa. The purpose of this expansionist plan was for missionaries to establish missions, convert Native Americans to Catholicism, recruit soldiers to found frontier outposts, and enable settlers to start farming communities. The inability to secure traditional sources of food and medicine coupled with exposure to European diseases virtually ended the traditional life of Native Americans in Sonoma and Mendocino Counties. In 1823 the Mission San Francisco de Solano was founded in Sonoma during the Mexican Period and was the last California mission established.

c. Mexican Period (1822-1848)

The Mexican Period commenced when news of the success of the Mexican Revolution (1810-1821) against the Spanish crown reached California in 1822. This period saw the privatization of mission lands in California with the passage of the Secularization Act of

1833. This Act enabled Mexican governors in California to distribute mission lands to individuals in the form of land grants. Successive Mexican governors made more than 700 land grants between 1822 and 1846, putting most of the state's lands into private ownership for the first time. The United States declared war on Mexico in May 1846, the war lasted less than two years, and in 1848 Mexico ceded more than half a million square miles of western territory to the United States.

d. American Period (1848-present)

Following the war many ranchos in Sonoma County were sold or otherwise acquired by Americans, and most were subdivided into agricultural parcels or towns. Most of the construction during the first half of the nineteenth century in Sonoma County was adobe and wood. These construction methods drew on the Mexican tradition while incorporating some of the features and floor plans of the Anglo Americans.

While Mexico's surrender of land significantly increased the size of the United States, it was overshadowed by another event that would affect not only California but the entire country: the discovery of gold. Gold was discovered at Johann Sutter's sawmill on the American River in Coloma, El Dorado County. The Gold Rush changed every aspect of northern California: the social, cultural, and ethnic makeup; philosophies of land use and ownership; hydrology and vegetation patterns; governmental legislation; even the physical landscape itself.

i. Mining

More than any other historic-era activity, mining physically left its mark on the landscape as archaeological sites and features: prospect pits, ditches and flumes, adits, shafts, placer tailings, dredge tailing fields, hydraulicly mined hillsides, miners' camps, and settlements. Many mining camps and supply centers evolved into permanent settlements (e.g., Weaverville in Trinity County).

In Trinity County, the Island Mountain sulfide deposit, discovered in 1897, yielded nine million pounds of copper between 1915 and 1930 (as well as 144,000 ounces of silver and 8,600 ounces of gold). Copper mining and smelting released poisonous fumes that degraded nearby agricultural lands and forests. In addition, small amounts of platinum were mined in Humboldt and Del Norte Counties and on the Klamath River. The Trinity region was the second highest gold producing area of California with the placer deposits along the Trinity and Klamath River drainages producing the most gold overall. It has been estimated that (as of 1970) $35 million worth of gold had been mined from the Trinity River placers alone.

Trinity and neighboring areas of Shasta and Tehama Counties saw some of the earliest gold mining activity outside the Mother Lode region. Fur trapper and explorer-turned Army paymaster Pearson B. Reading and his Indian laborers discovered gold at what would become Readings Bar on Clear Creek, near Douglas City, in July 1848. Before long the region would be overrun by placer miners, forcing the Native peoples to abandon their villages along the creeks and rivers.

The first mining in the Klamath River region was in 1849 along Beaver Creek and the Klamath and Scott Rivers. Within a year, the mines were drawing prospectors from all corners of the earth. Without roads, they traveled by foot or mule train, staying for only a short time in any one place. The Klamath River Gold Rush came principally in 1852, when 500 to 1,000 miners were working near its junction with the Salmon River. Although some placer mining took place along the Scott and Shasta Rivers, the mountainous region of the Upper Klamath River did not see the kind of large-scale mining boom that would transform areas like the Trinity basin.

Mining had (and has) an enormous impact on the physical environment, everything from scattered prospect pits to huge tailings fields to the washing away of entire hillsides with hydraulic monitors. Placer mining, perhaps the most innocuous method, still caused lasting damage: miners literally moved streambeds, redirecting them into ditches, and removed, sifted, and redeposited the stream gravels looking for the free gold. "Booming," where water was dammed up and then released all at once, cut huge channels into the hillsides. Hard-rock or lode mining left adits, tunnels, shafts, and waste rock in its wake. The most destructive method, however, was hydraulic mining, followed by large-scale dredging. The largest and best-known of the hydraulic mines in the Trinity region (and one of the largest in California) was the LaGrange Mine, located in Oregon Gulch just west of Weaverville, marked today by a large hydraulic monitor on Highway 299 pointed at the face of the LaGrange fault which was daylighted by the washing away of overlying auriferous material. The LaGrange mine was said to have produced $3,500,000 in gold between 1893 and 1918. By 1898, there were 327 hydraulic mines "working or claimed" in Trinity County.

In nineteenth- and early twentieth-century California, mining, logging, and settlement went hand-in-hand. Logging camps were necessarily set up, and might include shanties for housing workers, a cookhouse, a storehouse, a repair shop, and a barn for the animal teams. Much of the lumber was used to build flumes in the river canyon, to carry water to the placers, and to power hydraulic monitors. Sawmills were established along the Klamath, Scott, Salmon, and Trinity Rivers and their larger tributaries. In 1858 a total of 44 sawmills existed in Trinity County, of which 18 water-powered.

The discovery of gold had a more indirect effect on the coastal region. Although there was a short lived "rush" at Gold Bluffs, where gold existed in the auriferous sands on the beach, no one was ever able to find a practical, cost-effective way to separate it out. Instead, the mining "pay dirt" for early coastal towns like Trinidad, Union (now Arcata), and Eureka were entry points and supply centers for the remote Trinity and Klamath River mines.

Overseas Chinese Influence

According to the 1852 California census there were 20,391 individuals who gave their birthplace as China (Overseas Chinese). These immigrants proved to be hard and steady workers, and thousands were hired to build the California to Utah section of the first transcontinental railroad; many of the railroad workers then turned to mining once

the railroad was completed in 1869. By 1870, Overseas Chinese owned a large number of placer mines that had been abandoned by other miners. Their archaeological signatures—porcelain bowls, Chinese Brown-glazed Stoneware storage vessels, wen (Chinese coins), gaming pieces, opium paraphernalia, and other artifacts—are much more distinct and recognizable than those of other ethnic groups. Another class of artifacts often found at Overseas Chinese sites are items modified for adaptive reuse, especially in hinterland areas (e.g., tin cans cut, flattened, and punched with nails to make sieves or steamers; wire handles attached to cans to create buckets; wen or rounds of cut tin used as wick holders). Many of the stone fences, flume/ditch systems, and other features on the landscape have been attributed to the Overseas Chinese due to their familiarity with agricultural irrigation techniques that could easily be adapted to hydraulic engineering for mining. In hinterland regions of California, the landscape is dotted with mining sites, railroad workers' camps, colliers' camps, and other types of sites with Chinese archaeological signatures that have survived largely because of their remoteness.

Depression Area Mining

During the Great Depression a large number of mining claims in northwestern California were taken up, when many unemployed miners and other workers returned to abandoned mine sites and dredger operations to make a living. During the depression years of the 1930s, gold output in the state was nearly as high as it had been during the gold rush. Unlike the Gold Rush, however, the 1930s claims were worked not just by male miners, but by families who saw an opportunity to survive by making a living reworking the placers of the 19th century miners. Building cabins and homes in the hydrologically mined areas, they also planted orchards and gardens and raised livestock to supplement their mining activities. These Depression-era mining sites are often marked by abandoned orchard trees, household refuse, and 1920s–1930s-era artifacts.

ii. Ranching and Agriculture

Agriculture began in the region even before the Gold Rush, with the Mexican land grants awarded to a number of early settlers. The young Mexican government began accepting private applications for grants of land under the jurisdiction of the pueblos and presidios. After California was granted statehood in 1850, many in the United States government began to push for the opening of western lands to independent farmers. Passage of the first Homestead Act, in 1862 would result in nearly 10.5 million acres of land granted in California alone. The United States government's forced relocation of Native people from their ancestral territories in northwestern California opened the region to large-scale agriculture. Eventually farming and ranching (particularly overgrazing) would contribute to dramatic changes in grassland plant species in many areas, and the fenced-range system increasingly cut off the Native American inhabitants from their traditional hunting and gathering grounds. As with mining and logging, the scale of environmental change brought on by Euro-American agriculture in northern California was immeasurable. Within a few generations, native plants were largely replaced by grains, orchards, and row crops. The extensive networks of mining ditches

built in the 1850s–1860s also provided irrigation water for the early farmers and ranchers in and near the mining regions, further encouraging settlement there.

Settlements expanded outward from coastal enclaves like Humboldt Bay and the heavily cultivated regions of southern Mendocino and northern Sonoma Counties into more hinterland areas. The 1860s saw the expansion of small farms and dairies into the fertile valleys and prairie lands of Humboldt and Mendocino Counties, especially along the Eel, Bear, and Mattole Rivers. Settlers along the Smith River in Del Norte County planted fruits, raised cattle, sheep, and chickens, sold butter, and lived a self-sufficient life. Stock raising was the main agricultural activity for much of Humboldt and Mendocino Counties, as cattle and sheep ranchers expanded into the upland prairies and mountains east of the redwood belt. In the nineteenth century, ranchers had essentially free and unregulated access to grazing lands. Although small family farms and dairies were the norm in the early years, a few large ranching operations were established. Ranching also stimulated other, related businesses like tanneries, creameries, and woolen mills. By the early 1900s agricultural land in Mendocino began to be converted from hops to fruit crops (e.g., pears), to vineyards.

In Sonoma County, after California's statehood, logging along the coast hills, cattle ranching, wheat and potato farming, and the early development of the wine industry supported the sparsely settled county. Later the railroads facilitated the movement of goods and people leading to the establishment of processing plants and factories along the rail lines. During this time, commercial and industrial buildings used local stone or brick, while most residences were built of wood. Between the 1850s and the early 1900s, boosted by railroad access, cool temperatures at the rivers and coast, and the potent promise of fertile land, Sonoma County became a magnet for agriculture, forestry, and recreation. In addition to winegrapes, popular crops included apples, prunes, and hops (Sonoma County Tourism). Until World War II, the poultry industry, the processing of local fruit, and the production of hops sustained the economy throughout the County. In 1935, Sonoma County ranked tenth in the nation in overall agricultural production. Today the southwestern part of the County continues to support cattle grazing and dairy farms. Toward the north many of the ranches and orchards have been replaced with acres of vineyards and thriving winery operations.

iii. Viticulture

Sonoma County's first winegrapes were planted in 1817 at the fur-trading Russian-American Company's outpost at Colony (Fort) Ross. In 1832, the foundation for the region's wine industry was laid when Padre Jose Altimera, a Spanish Franciscan monk, planted several thousand grapevines at his order's northernmost mission, San Francisco de Solano in Sonoma (Sonoma County Tourism) for the production of sacramental wine. Mission wine was never produced on any large scale and was primarily restricted to mission use. In 1833, Mexico's Governor Figueroa sent General Mariano Vallejo north to establish a presidio and stake a firmer claim in the region. The site he chose in 1834 was San Francisco de Solano. Vallejo soon produced successful vineyards of his own in the Sonoma Valley. By June 1946, when the "Bear Flag Revolt"

saw 33 American settlers pound on Vallejo's door demanding Mexico's surrender of its territory, the general's own vineyard was providing an annual income of $20,000, the 21st-century equivalent of $700,000. During this mid-1800s period of political upheaval, cuttings from mission vineyards were carried throughout Sonoma County to start new vineyards. For instance, Cyrus Alexander planted grapes in his namesake Alexander Valley, and the county's first female vineyardist, Senora Maria de Carrillo, tended 2,000 of her own vines in what would become Santa Rosa (Sonoma County Tourism).

Unlike in most of California, winegrape vines were not introduced to Mendocino via the Spanish. Spain's missionaries only made it as far north as Sonoma before losing California to Mexico in 1821. Because of this, wine grapes didn't arrive until the Gold Rush, when a population of predominantly Italian settlers began cultivating in the various valleys of Mendocino. In 1890, there were only 20 vineyards in all of Mendocino County, totaling only 204 acres of vines. By 1891, only two wineries were registered with the state. Mendocino's first major viticultural push came after 1906 and by 1909, 2,700 acres of vines had been planted, mostly for the Italian Swiss Colony. Prohibition brought another bump in development, when a rush of vines were planted in service of home winemakers all around the country. By 1925, over 8,300 acres of vines were in the ground. Though Prohibition expanded vine acreage, Mendocino's wine producers were slow to recover. Only 14 wineries sprang back to life upon repeal, with Parducci the sole survivor in modern times. With home winemaking on the decline and a limited local market, most of Mendocino's fruit was shipped out of the county and used as a blending component for wineries in Napa and Sonoma, as well as operations in the Central Valley. The nationwide urbanization that followed World War II saw a significant portion of the local population, especially in the more rural reaches, leave for the cities. Mendocino experienced its first jump in production in the 1970s, as the boutique winery movement that had already transformed Napa and Sonoma slowly spread northward (White, 2018).

According to the U.S. Department of Agriculture's 2021 crop report data (U.S. Department of Agriculture, 2022) there are approximately 200 acres of winegrapes outside of Sonoma and Mendocino counties. Humboldt County currently boasts 111 acres of winegrapes, with Trinity River Vineyards in Willow Creek containing some of the oldest vines in Humboldt County, planted in 1973 (Trinity River Vineyards, no date). Trinity County currently boasts 79 acres of wine grapes with one of the oldest operating vineyards being Alpen Cellars with vines planted in 1981 on the family ranch, established in 1855 to produce food for gold rush miners in the area (Alpen Cellars, 2023). Siskiyou County currently contains 11 acres of winegrapes.

C. Environmental Analysis

This discussion describes the methodology and significance criteria that were used to analyze cultural resources. It then presents the analysis of the potential environmental impacts of the Proposed Project on cultural resources.

1. Impact Analysis Methods

This impact analysis uses a qualitative approach to evaluate the potential direct and indirect impacts to cultural resources and/or archaeological resources that could result from Proposed Project activities. As described in Chapter III, Project Description, the precise locations and timing of individual actions (e.g., management practice construction/implementation) that could occur under the Vineyard Order are not known and cannot be known at this time. Additionally, it is not known which management practices might be implemented at which vineyards.

Therefore, the analysis considers generally the impacts to cultural resources that could occur at vineyards in the North Coast Region based on the various reasonably foreseeable management practices described in Chapter III, Project Description and Attachment B.

2. Thresholds of Significance

For the purposes of this analysis, based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would:

1) Cause a substantial adverse change in the significance of historical resource as defined in CEQA Guidelines section 15064.5,

2) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines section 15064.5, or

3) Disturb any human remains, including those interred outside of dedicated cemeteries.

3. Impacts and Mitigation Measures

Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 (*Less than Significant with Mitigation*)

In general, the Proposed Project is designed to address discharges of pollutants from vineyards. The activities that could occur under the Proposed Project would be limited to implementation of management practices to reduce agricultural runoff/pollutant discharges, and the monitoring and reporting activities that would be required under the Vineyard Order. Refer to the Project Description Chapter for a detailed discussion.

Many of the activities that could occur under the Proposed Project would have no potential to adversely affect historical resources and/or unique archaeological resources. For example, reasonably foreseeable management practices such as applying less fertilizer, applying pesticides in accordance with label instructions, minimizing tillage and bare soils, etc., would not affect cultural resources. However, construction/installation of management practices that would involve new ground disturbance and excavation could potentially cause damage to, disrupt, or otherwise adversely affect historical resources and unique archaeological resources if they are

present. By disturbing subsurface soils (particularly those soils that have previously been undisturbed), these activities could result in the loss of integrity of cultural deposits, loss of information, and the alteration of a site setting.

Although the majority of Proposed Project activities are expected to occur within existing vineyards (i.e., where soils have generally been repeatedly disturbed), it is possible that some management practices could be installed adjacent to existing vineyards. For example, sediment basins could be installed on the periphery of existing vineyards in areas where previous soil disturbance has not occurred. Likewise, certain management practices that are installed within vineyards could involve excavation to a depth of soil that has not previously been disturbed (e.g., a sediment basin or vegetated swale could require excavation to five feet deep, whereas prior tilling/ground disturbance has only occurred to two feet deep). These types of activities would have the potential to adversely affect buried historic or pre-historic archaeological resources that may be within such previously undisturbed soils.

In general, it is considered unlikely that the Proposed Project would result in any direct impacts on built environment historical resources, as the proposed Vineyard Order would not require or encourage any physical alterations to existing built structures; however, it is possible that built resources may be removed in order to implement a management practice under the Vineyard Order. In this instance, if the structure(s) to be affected were listed or eligible for listing in the CRHR (i.e., were historical resources), this could result in a significant impact.

Implementation of **Mitigation Measure CUL-1** would address these potential impacts by requiring that Dischargers inventory and evaluate potential resources that may be present within the proposed disturbance area, and employ avoidance and/or minimization measures for any significant resources. Provisions must also be made by growers for the accidental discovery of unknown buried cultural resources. Given implementation of this mitigation measure for applicable activities, this impact would be ***less than significant with mitigation***.

Mitigation Measure CUL-1: Cultural Resources Inventory, Evaluation of Resources for Significance, and Implementation of Avoidance and/or Minimization Measures.

For proposed actions or management practices that involve modifications to previously undisturbed soils (i.e., below the levels of current agricultural practices, or in areas that have not previously been cultivated or developed) or a structure that may qualify as a historical resource, the following steps must be taken to avoid and/or reduce potential impacts on significant cultural resources:

The enrollee or third party must retain an archaeologist who meets the U.S. Secretary of Interior's professional standards as an archaeologist to conduct a records search at the regional Information Center of the California Historical Resources Information System (CHRIS). The record search must determine if cultural resources have previously been

identified in the proposed disturbance area and whether the proposed disturbance area has previously been subject to archaeological pedestrian survey.

The professional archaeologist must contact the NAHC to request a search of the Sacred Lands files and a list of tribes with a traditional and cultural affiliation with the proposed disturbance area. The archaeologist must contact the tribes identified by the NAHC to request information about sites and resources that may not have been identified during the record search process, including TCRs, and whether the tribes have any concerns about the proposed action.

If a pedestrian survey has not previously been conducted on the property, a survey must be conducted by a qualified archaeologist. All identified archaeological sites and historic buildings and structures must be recorded on California Department of Parks and Recreation 523 Site Record forms. A Historic Resources Identification Report must be prepared to document the findings of the study; the report must be submitted to the Regional Water Board and the CHRIS Information Center. If the property has been subject to previous study, additional survey is not required if no cultural resources, including TCRs, were identified during the study and the age and adequacy of the report are considered sufficient by the consulting archaeologist for the purposes of the present project. The report from the previous survey can then be used to satisfy the CEQA requirements for historical resources. If the property has been subject to previous survey and a cultural resource has been identified within the proposed disturbance area, a qualified archaeologist must conduct a pedestrian survey to assess the current condition of the resource relative to the proposed action.

If cultural resources are identified either by the record search or pedestrian survey, the qualified archaeologist must evaluate the significance of archaeological resources, per the State Water Board Resources Control Board guidelines[12] (2019). Note that buildings that would be impacted by the proposed action would require evaluation for CRHR eligibility by a qualified architectural historian. If the cultural resource(s) are determined to be historical resource(s) (i.e., listed or eligible for listing in the CRHR), the enrollee or third party, in coordination with the qualified archaeologist, must avoid impacting the resource(s) to the extent feasible. This would include relocating or redesigning proposed management practice(s) such as to avoid the resource or leaving structures in place in setback areas or otherwise preserving structure(s) that are listed or eligible for listing. If the historical resource(s) cannot be completely avoided, the qualified archaeologist must develop and implement a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the historical resource(s) that may be impacted by the proposed activity. The data recovery plan must be prepared and submitted to the Regional Water Board for

[12] Guidelines for Applicants and their Consultants on Preparing Historic Property Identification Reports for the Clean and Drinking Water State Revolving Fund Programs. Revised 9/12/19. While these guidelines were developed for other State Water Board programs, they provide protocols that can generally be applied to other programs where cultural resources must be addressed.

approval, and the data recovery plan must be approved by Regional Water Board prior to any excavation taking place that may impact the resource(s). Regional Water Board must ensure that data recovery plans for Native American archaeological sites have the opportunity be reviewed by consulting tribes. Archaeological sites known to contain human remains must be treated in accordance with the provisions of Section 7050.5 of the Health and Safety Code (see Mitigation Measure CUL-3). For any artifacts removed during project excavation or testing, the professional archaeologist must provide for the curation of such artifact(s). For structure(s) evaluated as a historical resource(s) that cannot be avoided, reconstruction of the structure(s) at an off- site location, consistent with the Secretary of the Interior's Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings, may be an appropriate minimization measure that may be implemented in addition to, or as part of, the data recovery plan.

1) Provisions must be made by the enrollee or third party for the accidental discovery of historical or unique archaeological resources during construction of applicable management practices, pursuant to CEQA Guidelines 15064.5(f). If cultural resources[13] are uncovered during construction, work must immediately cease within 50 feet of the finds and the materials must be evaluated by a qualified archaeologist. If the finds are determined to be a historical or unique archaeological resource, avoidance measures or appropriate mitigation (e.g., data recovery, documentation, and curation) must be implemented.

Impact CUL-2: Cause a substantial adverse change in the significance of archaeological resources pursuant to section 15064.5. (*Less than Significant with Mitigation*)

See Impact CUL-1, above.

Mitigation Measure CUL-2.

See Mitigation Measure CUL-1, above.

Impact CUL-3: Disturb Any Human remains, including those interred outside of dedicated cemeteries. *(Less than Significant with Mitigation)*

Similar to the potential impacts to historical and archaeological resources discussed under Impact CUL-1 and CUL-2, activities conducted under the Vineyard Order that involve ground disturbance have the potential to disturb previously undocumented human remains. In general, it is considered unlikely that human remains would be

[13] Native American archaeological materials or indicators may include, but are not limited to, arrowheads and chipped stone tools; bedrock outcrops and boulders with mortar cups; ground stone implements (grinding slabs, mortars, and pestles) and locally darkened midden soils containing some of the previously listed items plus fragments of bone, fire affected stones, shellfish, or other dietary refuse. Historic era archaeological materials may include, but not be limited to: adobe or fired brick; metal objects such as nails, hinges, machine parts, etc.; household wares such as pottery or glass artifacts or shards; tin cans; milled lumber, etc.

present in previously disturbed soils within existing irrigated agricultural fields; however, this possibility cannot be entirely ruled out and human remains must be addressed in accordance with state law regardless of their context in disturbed or undisturbed ground. If human remains were uncovered during ground-disturbing activities, this could result in a significant impact.

Implementation of **Mitigation Measures CUL-1** and **CUL-3,** the latter of which would require compliance with existing state laws pertaining to the discovery of human remains (e.g., Health and Safety Code Section 7050.5), would reduce such impacts to a less-than-significant level. As such, this impact would be ***less than significant with mitigation***.

Mitigation Measure CUL-3: Comply with State Laws Pertaining to the Discovery of Human Remains.

If human remains are discovered during construction, the requirements of Health and Safety Code Section 7050.5 must be followed. Potentially damaging excavation must halt on the construction site within a minimum radius of 100 feet of the remains, and the county coroner must be notified. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, the NAHC must be contacted by phone within 24 hours of making that determination (California Health and Safety Code Section 7050[c]). Pursuant to the provisions of PRC Section 5097.98, the NAHC must identify a most likely descendent (MLD). The MLD designated by NAHC must have at least 48 hours to inspect the site and propose treatment and disposition of the remains and any associated grave goods. The enrollee must work with the MLD to ensure that the remains are removed to a protected location and treated with dignity and respect. Ground disturbing activities must not resume until these requirements are met.

X. Geology and Soils

This section describes the basic geologic setting in the Proposed Project area, the regulatory framework, and provides information regarding potential impacts related to geological hazards, earthquakes, soils, and induced seismicity and unique geological features.

A. Regulatory Setting

1. Federal Laws, Regulations, and Policies

Paleontological Resources Protection Act

The Paleontological Resources Protection Act of 2009 requires the Secretaries of the Interior and Agriculture to manage and protect paleontological resources on federal land. The Federal Highway Act of 1935 (20 United State Code [USC] 78) addresses paleontological resources. Section 305 of the Act (20 USC 78, 78a) gives authority to

use federal funds to salvage archaeological and paleontological sites that are impacted by highway projects. There are several other laws and regulations that also address paleontological resources either directly or indirectly, such as the Antiquities Act of 1906 (16 USC 431-433), Archeological and Paleontological Salvage (23 USC 305), and the National Environmental Policy Act of 1969 (42 USC 138; 49 USC 1653).

2. State Laws, Regulations, and Policies

Alquist Priolo Earthquake Fault Zoning Act

Surface rupture is the most easily avoided seismic hazard. The Alquist Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. In accordance with this act, the state geologist established regulatory zones, called “earthquake fault zones,” around the surface traces of active faults and published maps showing these zones. Within these zones, buildings for human occupancy cannot be constructed across the surface trace of active faults. Each earthquake fault zone extends approximately 200 to 500 feet on either side of the mapped fault trace, because many active faults are complex and consist of more than one branch. This statute is not applicable to the project because it does not involve structures for human occupancy or critical infrastructure.

Seismic Hazards Mapping Act

The California Geological Survey (CGS) provides guidance with regard to seismic hazards. Under the CGS Seismic Hazards Mapping Act, seismic hazard zones are to be identified and mapped to assist local governments for planning and development purposes. The intent of this act is to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other types of ground failure, and other hazards caused by earthquakes. CGS Special Publication 117, Guidelines for Evaluating and Mitigating Seismic Hazards in California, provides guidance for evaluation and mitigation of earthquake-related hazards for projects within designated zones of required investigations. This statute is not applicable to the project because it does not involve structures for human occupancy or critical infrastructure.

Paleontological Resources

Paleontological resources are afforded consideration under CEQA (Title 14, Division 6, Chapter 3, California Code of Regulations: 15000 et seq.). The Public Resources Code (PRC) Section 5097.5 specifies that any unauthorized removal of paleontological remains is a misdemeanor. Further, the California Penal Code Section 622.5 sets the penalties for damage to or removal of paleontological resources.

3. Local Law, Regulations, and Policies

County grading ordinances may apply to Management Practices involving grading and road construction activities implemented under the Proposed Project. Impacts from erosion and sediment discharges are covered in the Hydrology and Water Quality Chapter. County ordinances related to onsite wastewater treatment systems are not

applicable to the Proposed Project because it does not involve wastewater systems.

B. Environmental Setting

Valley bottoms, rolling hills, and steep canyons characterize the viticultural area of the North Coast Region. The geology is highly variable and includes alluvial deposits, highly erodible soils, stable metamorphic blocks surrounded by weak soils, volcanic tuffs, expansive clays, fractured sandstones, and highly sheared shales. Slopes over a 30 percent gradient are prone to downward movement under the force of gravity and contribute to a widespread landslide hazard. Landslides are also a secondary hazard of seismic shaking and can occur during large storms when soils are saturated. Extended periods of intense rainfall during the winter months is the primary cause of landslides in viticultural areas. While the hazard is highest on slopes of 30 percent or greater, landslides can occur on flatter slopes depending on geology, vegetation, and ground disturbance. Natural factors that contribute to landslides include: (1) soil/rock strength; (2) the orientation of weakness in rock formations; (3) the steepness of slopes; (4) degree of ground saturation; and (5) type and density of vegetation.

Regarding paleontological resources, a search of the Global Biodiversity Information Facility[14] database identified 1,875 occurrences in the North Coast Region with tracheophyta (vascular land plants) comprising 70 percent of occurrences.

C. Environmental Analysis

1. Impact Analysis Methods

The Initial Study determined that the Proposed Project would have a Less than Significant Impact with Mitigations in the following areas: (1) exposing people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides; (2) substantial soil erosion or the loss of topsoil; and (3) be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. In response to the Initial Study determination the potential impacts were reanalyzed. This impact analysis uses a qualitative approach to evaluate the potential impacts that could result from Proposed Project activities.

As described in the Project Description Chapter, the precise locations of individual actions that may result from implementation of the Vineyard Order (e.g., Management Practice construction/implementation) are not known and cannot be known at this time. Additionally, it is not known which Management Practices might be implemented on which vineyards. Therefore, the analysis considers generally the impacts to geology and soils that could potentially occur on vineyards in the North Coast Region based on the reasonably foreseeable Management Practices described in the Project Description Chapter and Attachment A. In general, potential impacts were assessed based on the

[14] Global Biodiversity Information Facility (https://www.gbif.org/).

degree to which the Proposed Project could cause landslides or destroy a unique paleontological resource or site or unique geologic feature using the significance criteria described below. Potential impacts that could cause erosion or loss of topsoil are discussed in the Hydrology and Water Quality Chapter.

2. Thresholds of Significance

For the purposes of this analysis, based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact related to hazards and hazardous materials if it would:

1) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

    a) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

    b) Strong seismic ground shaking?

    c) Seismic-related ground failure, including liquefaction?

    d) Landslides?

2) Result in substantial soil erosion or the loss of topsoil?

3) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

4) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

5) 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?

6) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

3. Impacts and Mitigation Measures

Impact GEO-1 Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: a) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology

Special Publication 42; b) Strong seismic ground shaking?; c) Seismic-related ground failure, including liquefaction?, and d) Landslides? (*Less than Significant*)

The Initial Study indicated potential impacts to GEO-1 (landslides, substantial soil erosion, and/or unstable locations) from implementation of Management Practices as Less than Significant with Mitigation. In response, the design of the Proposed Protect was changed to minimize or prevent erosion and sediment discharges for Controllable Sediment Discharge Sources (CSDS) which may include landslides, areas of slope instability, areas of headward erosion, rills and gullies, soil stockpiles, seasonal vineyard roads/avenues, equipment staging areas, agrochemical mixing sites, or any other site discharging or threatening to discharge sediment to surface water. The Proposed Project is more likely to reduce existing geology and soils impacts from vineyards. Furthermore, the Proposed Project does not involve structures for human occupancy or critical infrastructure which would be subject to the seismic safety regulations. Therefore, this impact would be ***less than significant***.

Impact GEO-2 Result in substantial soil erosion or erosion of topsoil (*Less than Significant)*

As noted in GEO-1, design of the Proposed Protect was changed to minimize or prevent erosion and sediment discharges for CSDS which may include landslides, areas of slope instability, areas of headward erosion, rills and gullies, soil stockpiles, seasonal vineyard roads/avenues, equipment staging areas, agrochemical mixing sites, or any other site discharging or threatening to discharge sediment to surface water. The Proposed Project is more likely to reduce soil erosion or erosion of topsoil from vineyards. Therefore, this impact would be ***less than significant***.

Impact GEO-3 Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? (*Less than Significant*)

As noted in GEO-1, design of the Proposed Protect was changed to minimize or prevent erosion and sediment discharges for CSDS which may include landslides, areas of slope instability, areas of headward erosion, rills and gullies, soil stockpiles, seasonal vineyard roads/avenues, equipment staging areas, agrochemical mixing sites, or any other site discharging or threatening to discharge sediment to surface water. In the context of this reanalysis, the Proposed Project is more likely to reduce the potential for landslides from vineyards. Therefore, this impact would be ***less than significant***.

Impact GEO-4 Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? (*No Impact*)

The Proposed Project does not involve structures for human occupancy or critical infrastructure which would be subject to the UBC or hazards from expansive soils.

Therefore, there is **no impact**.

Impact GEO-5 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? (*No Impact*)

The Proposed Project does not involve wastewater systems. Therefore, there is **no impact**.

Impact GEO-6 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (*Less than Significant with Mitigation*)

Many of the reasonably foreseeable Management Practices that vineyards may implement to comply with the Vineyard Order would involve construction activities/ground disturbance. Specifically, storm-proofing agricultural roads and construction/maintenance of sediment retention basins would involve some amount of ground disturbance and construction activity. Likewise, establishment of vegetated buffers could require removal of existing vines, tilling, and planting of new vegetation.

While these Proposed Project activities would have limited to no potential to directly, or indirectly destroy a unique paleontological resource or site or unique geologic feature, certain activities could potentially affect these resources. Construction/installation of reasonably foreseeable management practices that involve ground disturbance could potentially destroy a unique paleontological resource or site or unique geologic feature. The majority of Management Practices under the Proposed Project would occur within existing vineyards and agricultural roads. In general, these areas are subject to repeated disturbance and thus the likely disturbance of unique paleontological resources or site or unique geologic feature has already occurred.

However, while most activities would occur within existing vineyards and agricultural roads, it is possible that certain Management Practices could be constructed/installed in areas adjacent to existing vineyards and agricultural roads that have not been subject to prior disturbance. Facilities such as sediment basins could be installed on the periphery of fields to receive runoff and could be placed in undisturbed areas. Additionally, certain management practices, although located within existing vineyards, could be installed to depths below the prior disturbance limits (e.g., excavation for construction of a sediment basin could disturb soil to five feet deep, whereas routine disturbance from tilling and other activities only reaches to three feet deep). These types of activities could potentially impact unique paleontological resources or a sites unique geologic feature if they were present within the proposed disturbance area and proper protocols were not followed.

Implementation of Mitigation Measure GEO-1 would avoid or reduce potential impacts to unique paleontological resource or site or unique geologic feature by requiring that vineyards retain a qualified paleontologist in the event that proposed management practices or other actions would involve modifications to previously undisturbed soils.

Therefore, this impact would be ***less than significant with mitigation***.

Mitigation Measure GEO-1: Comply with State Laws Pertaining to the Discovery of Paleontological Resources during Land Disturbance Activities

If any items of paleontological interest are discovered during construction of management practices or other activities (e.g., installation of monitoring wells), work must be immediately suspended within 50 feet of the discovery site, or to the extent needed to protect the site. Discovered paleontological resources must be evaluated by a qualified paleontologist who meets the Society for Vertebrate Paleontology's professional requirements. If it is determined that the activities could damage a unique paleontological resource, mitigation must be implemented in accordance with PRC Section 21083.2 and Section 15126.4 of the State CEQA Guidelines. If avoidance is not feasible, the paleontologist must develop a treatment plan in consultation with the Regional Water Board. Work must not be resumed until authorization is received from the Regional Water Board and any recommendations received from the qualified paleontologist are implemented.

XI. Hazards and Hazardous Materials

This section presents the environmental setting and potential impacts of the Proposed Project related to hazards and hazardous materials. Under federal and state laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such, or if it is toxic (i.e., causes adverse human health effects), ignitable (i.e., has the ability to burn), corrosive (i.e., causes severe burns or damage to materials), or reactive (i.e., causes explosions or generates toxic gases). The term “hazardous material” is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a substantial present or potential hazard to human health and safety or to the environment if released into the workplace or the environment (California Health and Safety Code, Chapter 6.95, Section 25501[o]).

A. Regulatory Setting

1. Federal Laws, Regulations, and Standards

a. Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also called the Superfund Act) (42 USC Section 9601 et seq.) was established to protect the public and the environment from the effects of past hazardous waste disposal activities and new hazardous material spills. CERCLA created a tax on the chemical and petroleum industries to generate funds to clean up abandoned or uncontrolled hazardous waste sites in which no responsible party could be identified (U.S. Environmental Protection Agency [USEPA] 2019a). CERCLA also granted authority to USEPA to respond directly to hazardous waste spills and required those responsible for a spill or accidental release of hazardous materials to report the release to USEPA.

The Superfund Amendments and Reauthorization Act of 1986 (SARA) (Public Law 99-499) amended some provisions of CERCLA (USEPA 2019b). SARA increased the focus on human health problems posed by hazardous waste releases, stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites, and encouraged greater citizen participation in making decisions on how sites should be cleaned up (USEPA 2019b).

b. Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) (42 USC Section 6901 et seq.) was enacted in 1976 to address the increasing problems the nation faced from the growing volume of municipal and industrial solid waste. The RCRA sets national goals for protecting human health and the environment from the potential hazards of waste disposal, conserving energy and natural resources, reducing the amount of waste generated, and ensuring that wastes are managed in an environmentally sound manner. To achieve these goals, RCRA established three interrelated programs: the solid waste program, the hazardous waste program, and the underground storage tank

program.

The hazardous waste program established a system for controlling hazardous wastes from the time they are generated to the time they are disposed ("cradle-to-grave" management). Under RCRA, owners and operators of hazardous waste treatment, storage, and disposal facilities must follow a set of standards (e.g., facility design and operation, contingency planning and emergency preparedness, and recordkeeping) to minimize risk and impacts on human health and the environment, codified in Title 40 of the CFR Part 264.

c. Federal Insecticide, Fungicide, and Rodenticide Act

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 USC Section 136 et seq.) was enacted in 1947, but has since been amended by the Federal Environmental Pesticide Control Act of 1972 and the Food Quality Protection Act of 1996. In its current form, FIFRA provides for federal regulation of pesticide distribution, sale, and use. All pesticides distributed or sold in the United States must be registered (licensed) by USEPA. Before USEPA may register a pesticide under FIFRA, the applicant must show that, among other things, using the pesticide according to specifications "will not generally cause unreasonable adverse effects on the environment" (USEPA 2019c).

FIFRA also includes worker protection standards codified in 40 CFR Part 170 that are designed to reduce the risks of illness or injury resulting from occupational exposures to pesticides used in agricultural production activities. The FIFRA standards include a number of different requirements for protection of agricultural workers, including:

1) Pesticide safety training,

2) Informing workers of the location of pesticide safety information, pesticide application and hazard information, decontamination supplies,

3) Excluding unauthorized persons from areas subject to pesticide applications, including enforcing a restricted-entry interval following applications,

4) Providing oral and posted notice regarding worker entry restrictions, and

5) Providing decontamination supplies for routine washing and emergency decontamination of pesticides.

d. Occupational Safety and Health Administration Regulations

The Occupational Safety and Health Act of 1970 created the Occupational Safety and Health Administration (OSHA) to ensure safe and healthful conditions for workers by setting and enforcing standards and by providing training, outreach, education, and assistance. To fulfill this purpose, OSHA develops and enforces mandatory job safety and health standards.

These standards, codified in 29 CFR Part 1910, address issues that range in scope

from walking and working surfaces, to exit routes and emergency planning, to hazardous materials and personal protective equipment (PPE) (i.e., protective equipment for eyes, face, or extremities; protective clothing; respiratory devices). They include exposure limits for a wide range of specific hazardous materials, including pesticides, as well as requirements that employers provide PPE to their employees wherever it is necessary (29 CFR Section 1910.132).

2. State Laws, Regulations, and Policies

a. California Health and Safety Code—Hazardous Waste and Hazardous Materials

Several sections of the California Health and Safety Code deal with hazardous waste and hazardous materials. Division 20, Chapter 6.5 addresses hazardous waste control and contains regulations on hazardous waste management plans, hazardous waste reduction, recycling and treatment, and hazardous waste transportation and hauling. Under Chapter 6.5, Article 6, persons generating hazardous wastes that are to be transported for off-site handling, treatment, storage, or disposal must complete a hazardous waste manifest before transport, indicating the facility to which the waste is being shipped for treatment, disposal, or other purposes.

b. Pesticides and Pest Control Operations (3 CCR Division 6)

Detailed implementing regulations for the California Department of Pesticide Regulation's (CDPR's) pesticide regulatory program are codified in 3 CCR Division 6. CDPR is the state agency with primary responsibility for regulating pesticide use in California. CDPR oversees state pesticide laws, including pesticide labeling, and is vested by USEPA to enforce federal pesticide laws in California. CDPR also oversees the activities of the county agricultural commissioners (CACs) related to enforcement of pesticide regulations and related environmental laws and regulations locally.

As identified in 3 CCR Division 6, CDPR evaluates proposed pesticide products and registers those pesticides that it determines can be used safely. In addition, CDPR's oversight includes:

1) licensing of pesticide professionals,

2) site-specific permits required before restricted-use pesticides may be used in agriculture,

3) strict rules to protect workers and consumers,

4) mandatory reporting of pesticide use by agricultural and pest control businesses,

5) environmental monitoring of water and air, and

6) testing of fresh produce for pesticide residues.

The regulations require that employers of pesticide workers provide protective clothing,

eyewear, gloves, respirators, and any other required protection, and also requires employers to ensure that protective wear is worn according to product labels during application. The regulations require that employers provide field workers with adequate training in pesticide application and safety; communicate pesticide-related hazards to field workers; ensure that emergency medical services are available to field workers; and ensure adherence to restricted- entry intervals between pesticide treatments (3 CCR Section 6764).

c. Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

The Safe Drinking Water and Toxic Enforcement Act, or Proposition 65, requires the Governor to maintain and publish a list of chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm. Once a chemical has been listed, businesses are responsible for providing a warning before knowingly or intentionally exposing their employees or the public to an amount of the chemical that poses a significant risk. The California Office of Environmental Health Hazard Assessment (OEHHA) is the lead agency responsible for implementing Proposition 65, with input from CDPR and other agencies so that the best scientific information is used in listing chemicals. In its current state, the Proposition 65 list contains a wide variety of chemicals, including pesticides (OEHHA 2019).

d. California Occupational Safety and Health Administration Regulations

The California Occupational Safety and Health Administration (Cal/OSHA) regulations contain requirements for agricultural operations related to pesticide application. The regulations require that a notice providing precautionary instructions be attached to all storage tanks larger than 100 gallons in capacity that are used for pesticides, and that controls be placed on the tanks to minimize exposure to employees from ruptured or breaking lines (8 CCR Section 3453).

Machines, applicators, and other equipment used for pesticide application must be decontaminated before they are overhauled or placed in storage (8 CCR Section 3451).

The Cal/OSHA regulations also contain various provisions that require safe operation of equipment, safety instructions provided in a language that employees understand, and access to first aid.

e. Fire Prevention (California Government Code Sections 51175–51181)

Sections 51175–51181 of the California Government Code outline the responsibilities of the California Department of Forestry and Fire Protection (CAL FIRE) and local agencies with respect to fire prevention. CAL FIRE is legally responsible for providing fire protection on all State Responsibility Area (SRA) lands. SRA lands do not include lands within city boundaries or under federal ownership.

f. CAL FIRE Defensible Space Requirements

California law requires that homeowners in SRAs maintain defensible space[15] around their buildings to 100 feet. This requirement is designed to halt the progress of an approaching wildfire, as well as to keep firefighters safe while defending the structure (CAL FIRE 2019). The law also requires that new homes be constructed with fire-resistant materials, such as fire- resistant roofing, enclosed eaves, and dual-paned windows.

3. Local Laws, Regulations, Plans, and Policies

a. Pesticide Regulatory Program—County Agricultural Commissioners

Although CDPR is responsible for managing California's statewide pesticide regulatory program, the local enforcement of pesticide use regulations is delegated to County Agricultural Commissioners (CACs). With oversight by CDPR, CACs plan and develop county programs and regulate pesticide use to ensure that applicators comply with label directions and pesticide laws and regulations (CDPR 2017). CACs oversee pesticide use reporting, promote best management practices, and monitor field applications, and they may assist in cleanup of accidental pesticide spills.

CACs inspect operations and records of growers, pest control dealers, agricultural pest control advisers (PCAs), farm labor contractors, and government agencies for compliance with worker protection standards and other pesticide safety requirements. CACs, assisted by CDPR, investigate incidents in which pesticides harm agricultural workers, people nearby, and the environment, including environmental damage (such as fish or wildlife kills) and water quality pollution. When an enforcement action is needed, CACs have the option to revoke or suspend the right of a company to do business in their county or to issue civil or criminal penalties (CDPR 2017).

b. Unified Program—Certified Unified Program Agencies

The Unified Program consolidates and coordinates several regulatory programs in California related to hazardous wastes and materials (California Environmental Protection Agency [Cal/EPA] 2012). Codified in 27 CCR Division 1 and Chapter 6.11 of the California Health and Safety Code, the Unified Program consolidates the following programs: Hazardous Materials Business Plans, California Accidental Release Program, Underground Storage Tank, Aboveground Petroleum Storage Act, Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting), and California Uniform Fire Code Hazardous Materials Management Plans.

The Unified Program also transfers responsibility for implementation of these hazardous waste and materials regulatory programs to local agencies, such as cities and counties (Cal/EPA 2012). After local agencies are certified by Cal/EPA as Certified Unified Program Agencies (CUPAs), they must establish a program that consolidates,

[15] Defensible space is generally defined as the natural and landscaped area around a structure that has been maintained and designed to reduce fire danger, such as through fire-resistant plant selection and pruning.

coordinates, and makes consistent the administrative requirements, permits, inspection activities, enforcement activities, and hazardous waste and hazardous materials fees associated with programs under the Unified Program. With oversight from Cal/EPA, CUPAs conduct inspections for all program activities according to the standards contained in the relevant statute or regulation (Cal/EPA 2012).

c. Local Jurisdiction General Plans

Sonoma and Mendocino Counties are the largest local jurisdictions located within the viticultural areas of the North Coast Region. The adopted general plans of the two counties include a Safety Element including goals and policies for minimizing potential exposure to hazardous materials. Attachment C lists general plan goals and policies related to hazardous materials and hazards for Mendocino and Sonoma County.

B. Environmental Setting

1. Proximity to Schools

Schools are distributed throughout the viticultural area of the North Coast Region, generally in relation to population. Urbanized areas tend to have a large number of schools commensurate with the denser populations, whereas rural/agricultural areas typically have fewer school facilities spaced farther apart.

Hazardous Waste Sites and Clean-up Sites

Hazardous waste cleanup sites are located throughout the state and the North Coast Region. The State Water Board's GeoTracker site identifies thousands of such sites, including leaking underground storage tank sites, military cleanup sites, and other types of hazardous waste contamination sites. These sites are commonly associated with certain types of historical land uses such as gas stations, dry cleaning facilities, and military bases that frequently use or store hazardous materials.

2. Airports

Several airports are located in the viticultural area of the North Coast Region. Local jurisdictions typically site airport uses in accordance with zoning and general plan land use designations, and regulate land uses that are permitted in close proximity to airports.

3. Fire Hazard

Wildland fire hazard varies in accordance with vegetation, climatic patterns, development, and other factors. Figure 8 shows fire hazard in the viticultural area of the North Coast Region, as mapped by CAL FIRE and under CAL FIRE jurisdiction. In general, vineyards are not particularly susceptible to wildland fire hazard, largely because these areas have a relatively low vegetation density with short vegetative cover, and vegetation is typically not dry and easily combustible.

4. Pesticide Usage and Exposure

Pesticides are commonly used in commercial agriculture in the North Coast Region and throughout California. The types of pesticides used in California include a wide variety of chemicals of varying levels of toxicity, persistence, fate and transport properties, and other characteristics. While pesticides are supposed to be applied in accordance with label requirements, this does not always occur. Table XI-1 shows a summary of reported cases of illness from ag-use pesticide exposure in viticultural area of the North Coast Region from 2016 to 2018. Three of these exposures were to pesticide applicators and were generally due to applicator error or lack of personal protective equipment (PPE). Four of these exposures were to field workers who were exposed during routine work either due to lack of PPE or working in proximity to active application areas.

Table XI-1: Reported Cases of Ag-Use Pesticide Exposure within the Viticultural Area of the North Coast Region

County	Reported Cases of Pesticide Exposure (2016-2018)
Sonoma County	7
Mendocino County	0

Source: CDPR 2022

C. Environmental Analysis

This section describes the methodology and significance criteria that were used to analyze impacts of the Proposed Project related to hazards and hazardous materials. It also presents the analysis of the potential environmental impacts of the Proposed Project.

1. Impact Analysis Methods

Impacts related to hazards and hazardous materials were analyzed qualitatively based on a review of the Management Practices and associated equipment and materials that may occur under the Vineyard Order. The analysis focused on the potential of the Proposed Project to create hazards to humans through the transport, use, exposure, or accidental release of hazardous materials and exposure to other hazards such as fires, as well as potential food safety impacts. These were analyzed in the context of applicable existing laws and regulations.

2. Thresholds of Significance

For the purposes of this analysis, based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact related to hazards and hazardous materials if it would:

1) Create a significant hazard to the public or the environment through the routine

transport, use, or disposal of hazardous materials;

2) 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;

3) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school;

4) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Section 65962.5 of the Government Code and, as a result, create a significant hazard to the public or the environment;

5) 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;

6) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or

7) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

3. Impacts and Mitigation Measures

Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. (*Less than Significant)*

Construction/installation of certain Management Practices may involve transport, use, and disposal of hazardous materials (e.g., fuel, oil, lubricants, etc.). Many pieces of construction equipment use hazardous materials in their operation and these hazardous materials may be stored on site during construction activities. During the construction period, these hazardous materials also may need to be replenished or disposed of and transported to the site or an appropriate disposal facility. Without adequate precautions, such routine transport, use, and disposal of hazardous materials could expose construction/agricultural workers, the public, or the environment to hazards.

Under existing federal and state law, Dischargers (or contractors conducting Management Practice installation/construction activities) would be required to ensure that construction workers are not exposed to hazardous materials in excess of established limits. Where appropriate, Dischargers or their contractors would need to provide workers with PPE to prevent potential exposure to hazards associated with any routine transport, use, or disposal of hazardous materials.

Over the long-term, the Vineyard Order would not create any new land uses that would involve substantial routine transport, use, and disposal of hazardous materials. If

anything, hazardous materials use under the Vineyard Order may decrease, as some reasonably foreseeable Management Practices include reducing pesticide applications, such as through an integrated pest management (IPM) strategy, using beneficial insects in lieu of chemical pesticides, spot-treating infestations, etc. As shown in Table XI-1, pesticide exposure cases have routinely occurred in the North Coast Region, some of which are associated with vineyards. Compliance with the Vineyard Order, which would serve to minimize discharges of pesticides to surface waters and groundwater, may also have the beneficial effect of reducing excessive pesticide use overall and thereby reducing pesticide exposure to agricultural workers.

Overall, routine transport, use, and disposal of hazardous materials under the Proposed Project would be relatively minor and would be primarily related to common materials (e.g., fuel, oil, lubricant, etc.) used in construction/installation of certain Management Practices. Pesticide use on vineyards under existing conditions, and, if anything, would be conducted more safely under the Vineyard Order. Therefore, this impact would be ***less than significant***.

Impact HAZ-2: 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. (*Less than Significant with Mitigation*)

As described in Impact HAZ-1, construction/installation of certain reasonably foreseeable Management Practices under the Vineyard Order would likely use hazardous materials, such as fuel, oil, lubricant, and other materials commonly used in construction equipment. These materials could be stored on site for the duration of construction activities and may need to be transported to an appropriate disposal facility at the end of, or during, construction. It is possible that these hazardous materials could leak from construction equipment or spill from storage containers, which, in the absence of appropriate countermeasures, could create a significant hazard to the public or the environment. Mitigation Measure HAZ-1 describes measures that Dischargers or their contractors could implement so as to minimize potential for hazards due to accidental releases of hazardous materials. Implementation of this mitigation measure would minimize potential impacts to a less-than-significant level.

Over the long term, the Vineyard Order would not introduce any new land uses or practices involving storage of substantial quantities of hazardous materials. Once installed, Management Practices such as sediment basins, vegetated filter strips, riparian buffer areas, etc. would not require or use hazardous materials in their operation, other than potentially applying herbicides for vegetation management. Herbicide and pesticide use occur on most vineyards within the North Coast Region under existing conditions, and nothing within the Vineyard Order would substantially increase existing herbicide/pesticide use or make accidental releases of such materials more likely. If anything, chemical use on vineyards in the North Coast Region could decrease as a result of the Vineyard Order due to implementation of reasonably foreseeable Management Practices designed to minimize pesticide applications. This

impact would be ***less than significant with mitigation***.

Mitigation Measure HAZ-1: Hazardous Materials Spill Prevention, Control, and Counter-Measures for Land Disturbance Activities

Dischargers or their contractors must maintain/implement the following:

A list of hazardous materials present on site during construction, to be updated as needed along with product safety data sheets and other information regarding storage, application, transportation, and disposal requirements;

A hazardous materials communication plan, which lists contacts for emergency services, hazardous materials spill response agencies, and wildlife agencies, as well as protocols for communication in the event of a spill;

Standards for secondary containment of hazardous materials stored on site;

Spill response procedures based on product and quantity. The procedures must include spill response/clean-up materials to be used, location of such materials within the construction site, and disposal protocols.

Impact HAZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. (*Less than Significant*)

Numerous schools are within 0.25-mile of existing vineyards. Because Management Practices could reasonably be implemented on any portion of an individual Vineyard, activities under the Vineyard Order could occur within 0.25-mile of a school. As discussed under Impact HAZ-1 and HAZ--2, construction/installation of certain Management Practices under the Vineyard Order would involve use, storage, transport, and disposal of hazardous materials (e.g., fuel, oil, lubricant, etc.) that are commonly used in construction. Operation of construction equipment also would likely emit diesel particulates and other potentially hazardous emissions.

Due to the nature of the Proposed Project, it is impossible to determine which Management Practices may be implemented in which locations within the North Coast Region. Therefore, it is not possible to evaluate impacts on specific schools or model emissions from specific Proposed Project activities. In general, however, the hazardous materials that would be used during Management Practice installation/construction would not be considered acutely hazardous and, even if they were to spill or be accidentally released, would not be expected to pose a substantial hazard to anyone outside of the immediate construction area. The construction activities/hazardous materials use under the Vineyard Order that may occur in proximity to schools also would not be substantially dissimilar from ongoing, existing activities that would typically occur on irrigated agricultural lands, such as use of diesel equipment for tilling, harvesting, etc.

Over the long term, the Proposed Project would not introduce any new land uses or practices that would involve substantial hazardous materials use or storage, and which could be located within 0.25-mile of a school. Pesticide use on vineyards occurs under existing conditions and may occur within 0.25-mile of a school. Nothing in Vineyard Order would serve to substantially increase pesticide/herbicide use, or increase the potential for accidental releases of hazardous chemicals from containment vessels on existing vineyards, which could impact a school. On the contrary, as discussed under Impacts HAZ-1 and HAZ-2, pesticide use may ultimately decrease on vineyards in the North Coast Region as a result of Vineyard Order due to reasonably foreseeable Management Practices designed to reduce pesticide applications. This impact would be ***less than significant***.

Impact HAZ-4: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Section 65962.5 of the Government Code and, as a result, create a significant hazard to the public or the environment. (*Less than Significant with Mitigation*)

Numerous hazardous materials contamination/cleanup sites exist in the North Coast Region in proximity to vineyards. In general, such sites would not be expected to occur on vineyards; however, it is possible that hazardous materials contamination could be located on vineyards under the Proposed Project. In such situations, Proposed Project activities (e.g., construction/installation of Management Practices involving excavation) could potentially encounter contaminated soils or materials, which could expose construction workers, the public, or the environment to significant hazards.

Implementation of Mitigation Measure HAZ-2 would minimize potential for adverse impacts from implementing Management Practices on existing hazardous materials sites. Given implementation of this mitigation measure, this impact would be ***less than significant with mitigation***.

Mitigation Measure HAZ-2: Review Proximity to Existing Known Hazardous Materials Cleanup Sites and Conduct an Environmental Site Assessment if Proposed Activity is Located on or in Close Proximity to an Area of Hazardous Materials Contamination.

Dischargers proposing construction/installation of Management Practices involving excavation or ground disturbance must evaluate the proximity of proposed Management Practices to existing known hazardous material cleanup sites. Prior to final design, Dischargers, or their contractors, must review the planned Management Practice facility footprint in relation to records of hazardous materials sites in the State Water Board's GeoTracker database and the California Department of Toxic Substances Control's EnviroStor database.

If the proposed Management Practice is located on or within 100 feet of a documented hazardous material contamination site, for which cleanup activities have not been completed or been successful, the enrollee or its contractor must commission a Phase I

environmental site assessment (ESA) to more fully characterize the past land uses and potential for soil and/or groundwater contamination to occur at or in close proximity to the site.

If the Phase I ESA demonstrates a reasonable likelihood that contamination remains within the Management Practice's area of disturbance, the enrollee or its contractor must commission a Phase II ESA, including soils testing, to characterize the extent of the contamination and develop ways to avoid the contaminated areas during Management Practice facility design and construction. The enrollee and/or its contractor must follow all recommendations of the Phase II ESA and, to the extent feasible, design the Management Practice to avoid areas of contamination. In the event that it is not feasible to avoid all areas of contamination, the enrollee and/or its contractor must follow all applicable laws regarding management of hazardous materials and wastes. This includes proper disposal of any contaminated soil in a hazardous waste landfill and ensuring that workers are provided with adequate personal protective equipment to prevent unsafe exposure.

Impact HAZ-5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area. (*No Impact*)

A number of public airports are located in the North Coast Region, many of which are located in relatively close proximity to vineyards in Sonoma and Mendocino Counties. The Proposed Project would not include any new housing or occupied structures that could be subjected to a safety hazard or excessive noise due to being located near an airport. As described in Chapter III, Project Description, the Proposed Project would be limited to General Wase Discharge Requirements (WDRs) for Commercial Vineyards. A number of reasonably foreseeable Management Practices may be implemented by growers on existing vineyards acreage in order to comply with the Vineyard Order requirements, but none of these Management Practices would place people within an airport land use plan area or within two miles of a public airport. Likewise, none of the reasonably foreseeable Management Practices would include tall structures or land use changes (e.g., land uses that could generate significant dust or smoke) which could interfere with aircraft, and thereby increase the risk to people living near the airport. As such, ***no impact*** would occur.

Impact HAZ-6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (*Less than Significant*)

Management Practices implemented under the Proposed Project would occur within existing irrigated agricultural lands and would not involve activities that would disturb an existing roadway or require closure of any roads. Usually, irrigated lands are in rural areas where traffic congestion (such as to potentially inhibit timely evacuation) is not a significant issue. Therefore, construction/installation of Management Practices, even if it were to temporarily impact a roadway (e.g., from delivery of materials or operation of

construction equipment on a public roadway), would not be anticipated to result in substantial congestion such as to significantly affect emergency response or evacuation. The Vineyard Order would not include any new housing or structures, land use changes, or other components that could potentially affect emergency response or emergency evacuation. Therefore, this impact would be ***less than significant.***

Impact HAZ-7: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. (*Less than Significant*)

The Proposed Project would not include any new housing or structures and would be limited to General WDRs for vineyards, which could result in a number of reasonably foreseeable Management Practices being implemented to comply with order requirements (see Chapter III, Project Description). As such, the Proposed Project would not place any new people or structures in locations where they could be exposed to loss, injury, or death involving wildland fires. As shown in Figure 8, there are many areas within the North Coast Region designated as High or Very High Fire Hazard Severity Zones by CAL FIRE; in some cases, these areas are in close proximity to, or overlap with, vineyards.

In general, vineyards are not particularly susceptible to wildland fire hazard, largely because these areas have a relatively low vegetation density with short vegetative cover, and vegetation is typically not dry and easily combustible. While the risk cannot totally be discounted, Vineyard Order would not include, or indirectly result in, new people or structures being located in fire hazard areas. Therefore, this impact would be ***less than significant***.

XII. Hydrology and Water Quality

This section presents the regulatory and environmental setting and potential impacts of the Proposed Project related to hydrology and water quality. Although the analysis focuses on the potential adverse effects of Proposed Project activities on hydrology and water quality, this section also describes the existing adverse impacts on hydrology and water quality being caused largely by vineyards, which are intended to be ameliorated through the Proposed Project.

A. Regulatory Setting

1. Federal Laws, Regulations, and Standards

a. Clean Water Act and Associated Programs

The Federal Water Pollution Control Act of 1972, also known as the Clean Water Act (CWA), is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." States, territories, and authorized Tribes establish water quality standards that describe the desired condition of a waterbody or the level of protection, which are then approved by the U.S. Environmental Protection Agency (USEPA); these standards form a legal basis for controlling pollution that enters the waters of the United States. Water quality standards consist of the designated beneficial uses of the waterbody, criteria to protect those designated uses, antidegradation requirements to protect existing uses and high-quality waters, and general policies regarding implementation.

USEPA is responsible for implementing the CWA, although some sections are implemented by other federal agencies under USEPA's oversight, such as Section 404 dealing with discharge of dredged and fill material into waters of the United States (which is implemented by the U.S. Army Corps of Engineers [USACE]). USEPA also has the option to delegate implementation of certain programs to a state agency. In California, the State Water Resources Control Board (State Water Board) and its nine regional water quality control boards (Regional Water Boards) administer various sections of the CWA.

The discussion below specifies provisions of the CWA that may relate to activities conducted under the Vineyard Order. Of particular relevance are CWA Sections 401, 402, 404, and 303. The CWA exempts from the Section 404 program discharges associated with normal farming, ranching, and forestry activities such as plowing, cultivating, minor drainage, and harvesting for the production of food, fiber, and forest products, or upland soil and water conservation practices (Section 404(f)(1)(A)). To be exempt, these activities must be part of an established, ongoing operation. For example, if a farmer has been plowing, planting and harvesting in wetlands, they can continue to do so without the need for a Section 404 permit, so long as they do not

convert the wetlands to dry land.[16]

i. Section 401

CWA Section 401 requires an evaluation of water quality when a proposed activity requiring a federal license or permit could result in a discharge to waters of the United States. In California, USEPA has delegated the authority to issue water quality certifications to the State Water Board and the Regional Water Boards. Each Regional Water Board is responsible for implementing Section 401 in compliance with the CWA and that region's water quality control plan (also known as a Basin Plan). Applicants seeking a federal license or permit to conduct activities that might result in a discharge to waters of the United States must also obtain a Section 401 water quality certification to ensure that any such discharge would comply with the applicable provisions of the CWA.

ii. Section 404

CWA Section 404 regulates the discharge of dredged and fill materials into waters of the United States, which include all navigable waters, their tributaries, and some isolated waters, as well as some wetlands adjacent to the aforementioned waters (33 CFR Section 328.3). Areas typically not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial waterbodies such as swimming pools, and water-filled depressions (33 CFR Part 328). Areas meeting the regulatory definition of waters of the United States are subject to the jurisdiction of USACE under the provisions of CWA Section 404.

Construction activities involving placement of fill into jurisdictional waters of the United States are regulated by USACE through permit requirements. No USACE permit is effective in the absence of state water quality certification pursuant to Section 401 of the CWA. Sections 404(f)(2) provides that discharges related to activities that change the use of the waters of the United States, including wetlands, and reduce the reach, or impair the flow or circulation of waters of the United States are not exempted. This "recapture" provision involves a two-part test that results in an activity being considered not exempt when both parties are met: (1) does the activity represent a "new use" of the wetland, and (2) would the activity result in a "reduction in reach/impairment of flow or circulation" of waters of the United States? Consequently, any discharge of dredged or fill material that results in the destruction of the wetlands character of an area (e.g., conversion to uplands due to new or expanded drainage) is considered a change in the waters of the United States, and by definition, a reduction of their reach and is not exempt under Section 404(f). In addition, Section 404(f)(1) of the Act provides that discharges that contain toxic pollutants listed under Section 307 are not exempted and

[16] Memorandum: Clean Water Act Section 404 Regulatory Program and Agricultural Activities https://www.epa.gov/cwa-404/memorandum-clean-water-act-section-404-regulatory-program-and-agricultural-activities#:~:text=The%20Clean%20Water%20Act%20exempts,f)(1)(A

must be permitted.

iii. Section 402

Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (NPDES). Under Section 402, a permit is required for point-source discharges of pollutants into navigable waters of the United States (other than dredge or fill material, which are addressed under Section 404). In California, the NPDES permit program is administered by the State Water Board and the Regional Water Boards. Permits contain specific water-quality-based limits and establish pollutant monitoring and reporting requirements. Discharge limits in NPDES permits may be based on water quality objectives designed to protect designated beneficial uses of surface waters, such as recreation or supporting aquatic life.

a. Pursuant to section 502 of the CWA, agricultural storm water discharges and return flows from irrigated agriculture are expressly excluded from the point source definition and permit program of the CWA. (See 33 U.S.C. section 1362.) General Order for Construction Activities

Most construction projects that disturb one acre or more of land are required to obtain coverage under the State Water Board's NPDES General Order for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ – "Construction General Order"). The Construction General Order requires the applicant to file a notice of intent to discharge stormwater and prepare and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must include a site map and a description of the proposed construction activities; demonstrate compliance with relevant local ordinances and regulations; and present a list of best management practices (BMPs) that will be implemented to prevent soil erosion and protect against discharge of sediment and other construction-related pollutants to surface waters.

Enrollees in the Construction General Order are further required to conduct monitoring and reporting to ensure that BMPs are implemented correctly and are effective in controlling the discharge of construction-related pollutants. Additionally, if a project that receives coverage under the Construction General Order is located in an area that is not subject to a municipal stormwater permit, the project must implement post-construction stormwater controls in accordance with Order Section XIII, Post-Construction Standards.

Municipal Stormwater Permitting Program

The State Water Board and Regional Water Boards regulate stormwater discharges from municipal separate storm sewers (MS4s), in accordance with Section 402 of the CWA and federal MS4 permitting regulations. The MS4 permitting requirements were developed in two phases: Phase I and II. MS4 permits continue to be issued under Phase I or Phase II depending on the size of the MS4 seeking authorization. Phase I permits for medium and large MS4s (i.e., serving 100,000 people or more) are issued

by the Regional Water Boards and require the discharger to develop and implement a storm water management plan/program with the goal of reducing the discharge of pollutants to the maximum extent practicable (MEP), including identifying what BMPs will be used to address specific program areas. The State Water Board has adopted a general order for Phase II MS4s that applies to small municipalities and other facilities (e.g., non-traditional MS4s, such as community service districts, military bases, state parks, water agencies, etc.). Among other requirements, the Phase II general order requires implementation of construction site storm water runoff control measures. Pollutants from nonpoint source agricultural activities are exempt from the NPDES storm water regulations.

iv. Section 303

Section 303 of the federal CWA (as well as the State-level Porter-Cologne Act, discussed further below) requires that states adopt water quality standards. In addition, under CWA Section 303(d), states are required to identify a list of "impaired waterbodies" (i.e., those not meeting established water quality standards), identify the pollutants causing the impairment, establish priority rankings for waters on the list, and develop a schedule for preparation of control plans to improve water quality. The 305(b)/303(d) Integrated Report documents a comprehensive review of surface water quality. Where available, data are examined for each waterbody to determine if the amount of a pollutant in a waterbody supports or impairs a broad range of uses of water. The 305(b) report assigns a USEPA approved Condition Category to all examined waterbody segments, dependent on the conclusions of this assessment. Waterbodies where a pollutant load impairs a beneficial use (Condition Categories 4 & 5) are placed on the 303(d) list of Impaired Waters. Placing a waterbody on the 303(d) List generally triggers the development of a Total Maximum Daily Load (TMDL).

In some cases, other regulatory programs will address the impairment instead of a TMDL. USEPA then approves or modifies the state's recommended list of impaired waterbodies. States must update their Section 303(d) list every two years. Generally, each Regional Water Board produces an Integrated Report every six years. The next comprehensive report for the North Coast Regional Water Quality Control Board is expected to be completed in 2026. Waterbodies on the list are defined to have no further assimilative capacity for the identified pollutant, and the Section 303(d) list identifies priorities for development of pollution control plans for each listed waterbody and pollutant.

The TMDL is a "pollution budget," designed to restore the health of a polluted waterbody and provide protection for designated beneficial uses. The TMDL also contains the target reductions needed to meet water quality standards and allocates those reductions among the pollutant sources in the watershed (i.e., point sources, nonpoint sources, and natural sources) (40 CFR Section 130.2). A TMDL is unique to a specific waterbody and its surrounding pollutant sources and is not applicable to other waterbodies. The current effective USEPA-approved Section 303(d) list for waterbodies in California is the 2012 list (USEPA 2019).

b. National Toxics Rule and California Toxics Rule

USEPA issued the National Toxics Rule (NTR) in 1992. The goal of the NTR is to establish numeric criteria for specific priority toxic pollutants to ensure that all states comply with the requirements in CWA Section 303.

In 2000, USEPA promulgated the California Toxics Rule (CTR), which contains additional numeric water quality criteria for priority toxic pollutants for waters in the state. The CTR fills a gap in California water quality standards that was created in 1994 when a state court overturned the state's water quality control plans containing water quality criteria for priority toxic pollutants. These federal criteria are legally applicable in California for inland surface waters, enclosed bays, and estuaries for all purposes and programs under the CWA.

c. Federal Antidegradation Policy

The federal antidegradation policy includes minimum criteria to protect existing beneficial uses, ensure that the level of water quality is offset to maintain existing uses, and prevent degradation of water quality. This policy stipulates that states must adopt the following minimum provisions and allows states to adopt more stringent rules (40 CFR Part 131):

1) Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

2) Where the quality of waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the state finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the state's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located.

3) Where high quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

Orders issued by the State Water Board and Regional Water Boards for waste discharges into navigable waters, including any permits for activities that may be conducted in accordance with the Vineyard Order, must incorporate provisions to ensure this policy is met. The state antidegradation policy described below complies with this requirement and incorporates the federal policy by reference.

d. Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) is intended to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and groundwater wells that serve more than

25 individuals. The goal of the SDWA is to ensure that drinking water is safe for human consumption and will not have adverse health effects on the typical person who drinks water. Under the SDWA, USEPA has set drinking water standards for chemical, microbiological, radiological, and physical contaminants in its National Primary Drinking Water Regulations (40 CFR Part 141). Runoff and discharges from vineyards has potential to contain water quality constituents that are regulated under the SDWA, such as nutrients, pesticides, sediment, and nitrate.

2. State Agencies, Laws, and Programs

a. Porter-Cologne Water Quality Control Act

Effective in January 1970, the Porter-Cologne Act (California Water Code Division 7) created water quality regulation on the state level, establishing the State Water Board, and dividing California into nine regions, each overseen by a Regional Water Board. The act established regulatory authority over waters of the state, defined as “any surface water or groundwater, including saline waters, within the boundaries of the state.” More specifically, the State Water Board and Regional Water Boards have jurisdiction over any surface water or groundwater to which a beneficial use may be assigned. Following enactment of the federal CWA in 1972, the Porter-Cologne Act assigned responsibility for implementing CWA Sections 303, 401, and 402 to the State Water Board and Regional Water Boards.

The Porter-Cologne Act requires the Regional Water Boards to adopt water quality control plans for the protection of surface water and groundwater quality. The act also authorizes the Regional Water Boards to issue waste discharge requirements (WDRs) for discharges of waste to waters of the state, including NPDES permits. Any activity, discharge, or proposed activity or discharge from a property or business that could affect California’s surface water, coastal waters, or groundwater will (in most cases) be subject to WDRs. The California Water Code authorizes the State Water Board and Regional Water Boards to conditionally waive WDRs if this is in the public interest. The Vineyard Order would establish WDRs for discharges from vineyards within the jurisdiction of the North Coast Water Board.

b. Water Quality Control Plan for the North Coast Region

The Water Quality Control Plan for the North Coast Region (Basin Plan) contains the regulations adopted by the North Coast Regional Water Quality Control Board to control the discharge of waste and other controllable factors affecting the quality of waters of the state within the boundaries of the North Coast Region. Porter-Cologne defines “Waters of the state” to mean any surface water or groundwater, including saline waters, within the boundaries of the state. The Basin Plan, as amended periodically, establishes the beneficial uses of water within the region; the water quality objectives necessary to protect those uses, including an antidegradation policy; the prohibitions, policies, and action plans, by which protections are implemented; and the monitoring, which is conducted to ensure attainment of water quality standards. Under the Clean Water Act, water quality standards include designated uses, water quality criteria, and

an anti-degradation policy. Porter-Cologne modifies the federal language to refer to designated uses as beneficial uses and water quality criteria as water quality objectives, which includes the State Water Board's anti-degradation policy (Resolution 68-16). Porter-Cologne also requires a program of implementation for water quality protection in California. A program of implementation includes actions necessary to achieve objectives, a time schedule for the actions to be taken, and monitoring to determine compliance with water quality objectives and protection of beneficial uses of water. The North Coast Water Board oversees the north coast region, which includes the Proposed Project area. The Basin Plan identifies beneficial uses for surface waters and groundwater within the North Coast Region and establishes narrative and numerical water quality objectives (WQOs) to achieve the beneficial uses for those waters. Beneficial uses represent the services and qualities of a waterbody (i.e., the reasons that the waterbody is considered valuable). WQOs reflect the standards necessary to protect and support those beneficial uses. Basin Plan standards are primarily implemented by regulating waste discharges so that WQOs are met.

c. State Drinking Water Standards

California Code of Regulations (CCR), Title 22, Division 4, Chapter 15 establishes parameters for safe drinking water throughout the state. These drinking water standards are similar to, but in many cases more stringent than, federal standards. Title 22 contains both primary standards, and secondary standards related to aesthetics (taste and odor).

d. Policy for Implementation of Toxics Standards in Inland Surface Waters, Enclosed Bays, and Estuaries of California

In 1994, the State Water Board and USEPA agreed to a coordinated approach for addressing priority toxic pollutants in inland surface waters, enclosed bays, and estuaries of California. In March 2000, the State Water Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, commonly referred to as the State Implementation Policy. This policy implements NTR and CTR criteria and applicable Basin Plan objectives for toxic pollutants. When a Regional Water Board issues any order allowing the discharge of any toxic pollutant(s) in accordance with the CWA or the Porter-Cologne Act, the Order's promulgation and implementation must be consistent with the State Implementation Policy's substantive or procedural requirements. Any deviation from the State Implementation Policy requires the concurrence of USEPA if a Regional Water Board is issuing any order under the CWA.

e. California Antidegradation Policy

The State Water Board enacted the Statement of Policy with Respect to Maintaining High Quality of Waters in California, which is also referred to as the California Antidegradation Policy. This policy is used to ensure that high-quality water is maintained, and it limits the discharge of pollutants into high-quality water in the state (Resolution Number 68-16), as follows:

1) Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.

2) Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.

f. California Department of Pesticide Regulation

i. California's Plan for Pesticide Water Quality Management

The California Department of Pesticide Regulation (CDPR) and State Water Board's 2019 Statewide Implementation Plan is a joint effort between the CDPR, county agricultural commissioners (CACs), State Water Board, and the Regional Water Boards to protect water quality from pesticide pollution. CDPR and the State Water Board also adopted a Management Agency Agreement (MAA) in 2019. A key goal of the MAA and implementation plan is for both agencies to respond to detections of pesticides in surface waters. To reduce the possibility of pesticides entering groundwater or surface water, a process for identifying and responding to general pesticide water quality issues and concerns was developed by CDPR and State Water Board (CDPR and SWRCB 2019). This process involves communication between the agencies at both a staff and management level. Communication includes planned projects, policies, and interagency requests related to pesticides and water quality. Specifically, CDPR has the authority to address potential adverse impacts to water caused by pesticide use by adopting regulations, designating a pesticide as a state-restricted material, recommending permit conditions for use of restricted materials, directing registrants to mitigate, or canceling registration where no mitigation is available.

The Water Boards have the regulatory authority to issue waste discharge requirements and conditional waivers of waste discharge requirements, take enforcement action, issue notice to comply, and develop TMDLs and other Basin Plan regulatory requirements for dischargers.

Regardless of approach, it is important to measure and report effectiveness of the regulatory action through executive communication channels (annual meeting or dedicated interagency meetings). Modeling tools may be used to evaluate the length of time expected for any particular regulatory approach to achieve the desired result.

Routine annual updates will provide a venue to measure and evaluate progress towards water quality improvements and discuss where additional regulatory controls may be

necessary.

Additionally, a new process for corresponding and responding to high priority surface water quality concerns is also outlined in the Implementation Plan. For high priority pesticide water quality issues, either locally or statewide, the State Water Board or Regional Water Board should prepare a formal transmittal summarizing the waterway(s) known to be impacted. The report must also include:

1) Pesticide concentrations in surface water or sediment that exceed specific adverse effects thresholds or threaten beneficial uses including habitat for sensitive aquatic organisms.

2) Toxicity results and other findings that support the determination where available.

3) Discussion of the full extent of the problem.

4) Discussion of the State or Regional Water Board's potential response to the issue.

In response to such a transmittal from a State Water Board or Regional Water Board, CDPR will prepare a timely response with CDPR staff's initial determination if the issue is likely to trigger agency action, what the likely extent of the issue is, and what CDPR's potential response could be.

Following the CDPR response, the Water Boards and CDPR will meet and evaluate regulatory and non-regulatory action to address the issue.

Development of regulatory action may occur in coordination or through individual efforts of either agency. Effective communication about pesticide-related water quality priorities and planned regulatory action will enable agencies to effectively direct resources. Therefore, for high priority issues, the agencies should attempt to agree on a general plan for coordinating actions including milestones, and for assessing progress and continuing communication.

ii. Surface Water Protection Program

CDPR protects surface waters from pesticides through its Surface Water Protection Program. The Surface Water Protection Program is designed to characterize pesticide residues, identify contamination sources, determine flow of pesticides to surface water, and prepare site-specific mitigation measures. The program addresses both agricultural and nonagricultural sources of pesticide residues in surface waters. It has preventive and response components that reduce the presence of pesticides in surface waters. The preventive component includes local outreach to promote Management Practices that reduce pesticide runoff. Prevention also relies on CDPR's registration process, in which potential adverse effects on surface water quality, and particularly those in high-risk situations, are evaluated. The response component includes mitigation options to meet water quality goals, recognizing the value of self-regulating efforts to reduce pesticides in surface water as well as regulatory authorities of CDPR, State Water

Board, and the Regional Water Boards (CDPR 2019).

iii. Pesticide Contamination Prevention Act

The Pesticide Contamination Prevention Act, approved in 1985, was developed to prevent further pesticide contamination of groundwater from agricultural pesticide applications. The act defines pesticide pollution as “the introduction into the groundwaters of the state of an active ingredient, other specified product, or degradation product of an active ingredient of an economic poison above a level, with an adequate margin of safety that does not cause adverse health effects.” CDPR has compiled a list of pesticide active ingredients on the Groundwater Protection List that have the potential to pollute groundwater. These various pesticides are reviewed, and their use is modified when they are found in groundwater (CDPR and SWRCB 2019).

g. State Water Rights System

The State Water Board administers a water rights system for the diversion of surface waters (springs, streams, and rivers), including diversion of water from subterranean streams flowing in known and definite channels. The granting of a water right provides permission to withdraw water from a river, stream, or groundwater source for a “reasonable” and “beneficial” use (e.g., irrigation). Water right permits and licenses identify the amounts, conditions, and construction timetables for a proposed diversion. Before issuing a water right permit, the State Water Board must take into account all prior rights and the availability of water in the basin, as well as the flows needed to preserve instream uses such as recreation and fish and wildlife habitat (SWRCB 2019). Water rights are administered using a seniority system based on the date of applying for the water right— commonly referred to as “first in time, first in right.” Junior water rights holders may not divert water in a manner that would reduce the ability of senior water rights holders to exercise their water right.

h. Groundwater Protection Program

CDPR implements the Pesticide Contamination Prevention Act through its Groundwater Protection Program. The Groundwater Protection Program identifies pesticides that have the potential to pollute groundwater from legal agricultural use, requires sampling to determine if those pesticides are present in groundwater, directs CDPR to maintain a database of all wells sampled by all agencies for pesticides, and requires CDPR to conduct a formal review to determine whether the use of the detected pesticides can be modified to protect groundwater (CDPR and SWRCB 2019).

i. Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) became law in 2015 and created a legal and policy framework to manage groundwater sustainability at a local level. SGMA allows local agencies to customize groundwater sustainability plans (GSPs) to their regional economic and environmental conditions and needs and establish new governance structures, known as groundwater sustainability agencies (GSAs). SGMA requires that GSAs develop GSPs for groundwater basins designated

as high and medium priority by the Department of Water Resources (DWR). GSPs are intended to facilitate the management of groundwater supply and use in a manner that avoids specific undesirable results. Undesirable results are defined as the following:

1) Chronic lowering of groundwater levels (not including overdraft during a drought if a basin is otherwise managed).

2) Significant and unreasonable reduction of groundwater storage.

3) Significant and unreasonable seawater intrusion.

4) Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies.

5) Significant and unreasonable land subsidence that substantially interferes with surface land uses.

6) Depletion of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

GSPs are required to include measurable objectives and minimum thresholds, as well as interim milestones in five-year increments, to achieve the sustainability goal for the basin for the long- term beneficial uses of groundwater. Additionally, GSPs are required to include components related to groundwater quality monitoring, the monitoring and management of groundwater levels within the basin, mitigation of overdraft, and a description of surface water supply used or available for use for groundwater recharge or in-lieu use. Specifically, Section 354.34(c)(6) of the final GSP regulations (23 CCR Division 2, Chapter 1.5, Subchapter 2) requires that, where interconnected surface water conditions exist, monitoring networks must characterize the spatial and temporal exchanges of surface water and groundwater, including “surface water discharge, surface water head, and baseflow contribution.” With respect to water quality, SGMA requires that groundwater be managed to avoid significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water quality. GSAs are not required to address historic groundwater quality problems, but rather established 2015 water quality conditions as a baseline against which changes due to GSP implementation will be compared. GSP requirements must consider agricultural activities that use groundwater as a source. There are currently two GSAs in the viticultural areas (Ukiah Valley and Santa Rosa Plain) of the North Coast Region which have submitted GSPs to the DWR. See the following section for a discussion of basin prioritization processes.

j. California Statewide Groundwater Elevation Monitoring Basin Prioritization

In 2009, the California State Legislature amended the California Water Code with SBx7-6, which mandates a statewide groundwater elevation monitoring program to track seasonal and long- term trends in groundwater elevations in California. Under this amendment, DWR established the California Statewide Groundwater Elevation

Monitoring (CASGEM) program, which establishes the framework for regular, systematic, and locally managed monitoring in all of California's groundwater basins. The CASGEM program is essential to DWR's ranking all of California's basins by priority: High, Medium, Low, and Very Low. DWR's basin prioritization is based on the following factors:

1) Population overlying the basin.

2) Rate of current and projected growth of the population overlying the basin.

3) Number of public supply wells that draw from the basin.

4) Total number of wells that draw from the basin.

5) Irrigated acreage overlying the basin.

6) Degree to which persons overlying the basin rely on groundwater as their primary source of water.

7) Any documented impacts on the groundwater within the basin, including overdraft, subsidence, saline intrusion, and other water quality degradation.

8) Any other information determined to be relevant by DWR.

At the time the Proposed Project was initiated (Spring 2022), DWR had designated seven North Coast Region groundwater basins as medium priority. Two of the medium priority basins are located in the viticultural area of the North Coast Region (Ukiah Valley and Santa Rosa Plain) as shown in Figure 9. Historically, there have been two basin prioritization projects: 2014 CASGEM Basin Prioritization and SGMA 2015 Basin Prioritization. The latest basin prioritization project, SGMA 2019 Basin Prioritization, was completed in December 2019. SGMA 2019 Basin Prioritization was based on the same technical process as the previous basin prioritization efforts with minor updates to meet changes to the statute included in the SGMA legislation. No future basin prioritization projects are planned at this time.

3. Local and Regional Laws and Plans

a. General Plans

Numerous local jurisdictions (i.e., cities and counties) are located within the North Coast Region. All of these jurisdictions have adopted general plans, which identify goals and policies related to land use, habitat conservation, and noise, etc. Attachment C lists potentially applicable general plan goals and policies for Mendocino and Sonoma County. Refer to this appendix for goals and policies related to hydrology and water quality that are relevant to this section.

b. Grading Permits

Sonoma and Mendocino Counties have grading ordinances, which regulate construction activities involving excavation or filling of material. Although specific requirements/processes vary by jurisdiction, grading permits require implementation of BMPs (e.g., erosion control measures) to minimize potential impacts to water quality.

c. Flow Regulations

Certain rivers and streams in the North Coast Region have regulations in place that govern surface water flows. Such regulations are often established on rivers with upstream dams/reservoirs and are designed to protect endangered species of fish. For example, State Water Board Decision 1610 establishes flow regulations on Lake Mendocino and Lake Sonoma to protect steelhead trout in the Russian River.

d. Vineyard Erosion and Sediment Control Ordinance

New vineyard development and replants in Sonoma County are guided by the Grading, Drainage, and Vineyard and Orchard Site Development Ordinance (VESCO). The Sonoma County Agricultural Commissioner's Office implements and enforces VESCO. VESCO requires a permit for any grading, drainage improvement, or site development associated with new or replanted vineyards. VESCO permits are issued at two levels that take into account soil type, soil erosivity, and slope as follows (Sonoma County, 2023):

Level I – Applies to new vineyard development or replants developed on slopes less than or equal to 10 to 15 percent and does not require erosion control plan (ECP) documentation or verification of project completion.

Level II – Applies to new development vineyards or replants on slopes greater than 10 or 15 percent and requires the project proponent to submit an ECP that is reviewed by the VESCO staff. VESCO staff conducts post-construction review to confirm that ECP design plans were followed and implemented appropriately.

Both Level I and Level II projects are required to adhere to the best management practices and standards described in the Best Management Practices for Agricultural Erosion and Sediment Control manual (Sonoma County Agricultural Commissioner, 2021).

VESCO and the County General Plan establish stream setback requirements that range from 25 feet to 200 feet, depending on slope of the adjacent land, soil type, and stream designation.

New vineyards on slopes greater than 50 percent are prohibited and there are no retroactive erosion control requirements for vineyards constructed prior to VESCO. Existing vineyards are required to comply with VESCO at the time of replanting with more oversight occurring on properties containing highly erodible soils.

Although permits issued through VESCO typically are ministerial (and therefore exempt from review under CEQA), VESCO includes an extensive pre-application process and standard terms and conditions that are intended to reduce potential environmental impact to a less than significant level.

B. Environmental Setting

1. General

The North Coast Hydrologic Region comprises a total area of approximately 19,390 mi^2, encompassing all of Mendocino County and all but the southern portion of Sonoma County. The primary viticulture area of the Region is the Russian and Navarro River valley floodplains, terraces, and slopes which experience a Mediterranean climate defined by cool rainy season from October through April when greater 90 percent of annual precipitation occurs, and a warm dry season with seasonal maximums exceeding 100 ºF. Average annual precipitation in the viticulture area of the Region, almost all of which falls as rain, is between 20 and 50 inches.

Existing and potential beneficial uses identified in the Basin Plan for the Russian and Navarro Rivers and their tributaries include: cold freshwater habitat (COLD); warm freshwater habitat (WARM); water contact recreation (REC1); noncontact water recreation (REC2); fish migration (MIGR); preservation of rare and endangered species (RARE); fish spawning (SPWN); and wildlife habitat (WILD).

a. Navarro River Watershed

The Navarro River watershed is located in southern Mendocino County encompassing approximately 315 mi^2 (201,600 acres). The Navarro River flows through the Anderson Valley to the Pacific Ocean about fifteen miles south of the town of Mendocino. The watershed is the largest coastal basin in Mendocino County and can be subdivided into five major drainage basins: Mainstem Navarro River, North Fork Navarro River, Indian Creek, Anderson Creek, and Rancheria Creek. The Navarro River is included on the Clean Water Act 303(d) list for impairments associated with excessive sediment and high temperatures. Approximately 2,500 acres of agricultural land planted to vineyards are present in the Navarro River watershed.

b. Russian River Watershed

The Russian River watershed encompasses 1,485 mi^2 in Mendocino and Sonoma counties, bounded by the Coast Ranges on both the east and west. The mainstem is about 110 miles long, and flows southward from Redwood and Potter valleys (north of Ukiah) to its confluence with Mark West Creek, where it turns west and flows into the Pacific Ocean at Jenner. Numerous tributaries enter the main stem from the mountains that rise on both sides of the valley. Two reservoirs provide flood protection and water supply storage: (1) Coyote Dam forming Lake Mendocino on the East Fork Russian River near Ukiah, and (2) Warm Springs Dam forming Lake Sonoma on Dry Creek west of Healdsburg. A diversion from the Eel River through the Potter Valley powerhouse flows through Potter Valley into the East Fork and Lake Mendocino. The Russian River

is included on the Clean Water Act 303(d) list for impairments associated with excessive sediment and high temperatures. Approximately 60,000 acres of agricultural land planted to vineyards are present in the Russian River watershed.

2. Groundwater Resources

The North Coast Basin Plan designates the beneficial uses of groundwater within the North Coast Region. Existing and potential beneficial uses applicable to groundwater in the Basin Plan include, Municipal and Domestic Water Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply, Native American Culture, and Aquaculture. The Basin Plan also establishes water quality objectives for the protection of these beneficial uses. Groundwater water quality objectives in the North Coast Region include objectives for bacteria, chemical constituents, radioactivity, taste and odors, and toxicity. The Basin Plan also requires a program of implementation needed for achieving water quality objectives.

Groundwater accounts for about one-third of water supply in the North Coast Region and in about half of the groundwater basins, groundwater comprises more than two-thirds of the water supply with some communities relying solely on groundwater. About 1,000 active public supply wells are regulated by the State Water Resources Control Board - Division of Drinking Water and approximately 38,000 private domestic wells supply groundwater used for drinking water. Within North Coast Region groundwater basins, groundwater is nearly half of the water supply for about 250,000 acres of irrigated agricultural land. Generally, groundwater in the North Coast Region is the least degraded in the state. Statewide, salts and nutrients are the most common groundwater pollutants. Naturally occurring manganese, iron, and arsenic commonly occur in groundwater at concentrations requiring treatment before use as drinking water.

In about a quarter of North Coast Region groundwater basins, salts and nutrients are the most common pollutant and have caused or threaten to cause an exceedance of water quality objectives and impacts to beneficial uses. Salts are typically measured as total dissolved solids and nitrate is the predominate nutrient of concern. Waste discharges from Onsite Wastewater Treatment Systems (OWTS), agricultural operations, and municipal and industrial wastewater treatment facilities are believed to be the primary threats to groundwater quality and the sources of salts and nutrients found in groundwater. In some basins, high density residential areas reliant on OWTS for wastewater disposal and domestic wells for domestic water supply may compound impacts to groundwater quality and threaten public health. Irrigation using imported water, surface water, groundwater, and/or recycled water may increase salt and nutrient loading. Saltwater intrusion induced by sea level rise and falling groundwater elevations in coastal aquifers will reduce the capacity of an aquifer to assimilate salt loads and support beneficial uses.

The North Coast Region is abundant in high quality groundwater resources and includes 63 groundwater basins or subbasins designated by DWR. A groundwater basin is defined as a hydrogeologic unit containing one large aquifer or several connected and

interrelated aquifers. Groundwater is defined as subsurface water in soils and geologic formations that are fully saturated all or part of the year. Groundwater may also exist even where groundwater basins have not been identified such as in fractured rock formations. It also includes areas where saturation of the soils and geology fluctuate, including areas of capillary fringe. Groundwater bearing formations sufficiently permeable to transmit and yield significant quantities of water are called aquifers. In the context of water quality protection, groundwater includes all subsurface waters, whether these waters occur within the classic definition of an aquifer or identified groundwater basins.

To sustain the ongoing development of salt and nutrient management plans in groundwater basins and subbasins where plans are needed and to clarify where salt and nutrient management planning is not needed, the Recycled Water Policy requires each Regional Water Board to evaluate each basin or subbasin in its region Resolution No. R1-2021-0006 Groundwater Basin Evaluation And Prioritization Results 4 before April 8, 2021, and identify basins through a resolution or executive officer determination where salts and/or nutrients are a threat to water quality and therefore need salt and nutrient management planning to achieve water quality objectives in the long term. Each Regional Water Board shall review and update this evaluation every five years to consider any changes in these factors that have occurred that would change the findings from the initial evaluation. Regional Water Boards shall consider the following factors in this determination, as well as any additional region specific factors: (1) magnitude of and trends in the concentrations of salts and nutrients in groundwater; (2) contribution of imported water and recycled water to the basin water supply; (3) reliance on groundwater to supply the basin or subbasin; (4) population; (5) number and density of OWTS; (6) other sources of salts and nutrients, including irrigated agriculture and confined animal facilities; and (7) hydrogeologic factors, such as regional aquitards, depth to water, and other basin- or subbasin specific factors.

In response to legislation enacted in California's 2009 Comprehensive Water Package, DWR completed groundwater basin prioritization based on population and groundwater use through implementation of the CASGEM Program. In September 2014, Governor Brown signed into law three bills that formed SGMA which required DWR to update the priority of each groundwater basin. In 2019, the SGMA Basin Prioritization process was conducted to reassess basin priority using the process and methodology developed for the CASGEM 2014 Basin Prioritization, adjusted as required by SGMA and related legislation. Basin Prioritization components specified in Water Code section 10933(b) consist of the following: (1) the population overlying the basin or subbasin; (2) the rate of current and projected growth of the population overlying the basin or subbasin; (3) the number of public supply wells that draw from the basin or subbasin; (4) the total number of wells that draw from the basin or subbasin; (5) the irrigated acreage overlying the basin or subbasin; (6) the degree to which persons overlying the basin or subbasin rely on groundwater as their primary source of water; (7) any documented impacts on the groundwater within the basin or subbasin, including overdraft, subsidence, saline intrusion, and other water quality degradation; and (8) any other information determined

to be relevant by DWR, including adverse impacts on local habitat and local stream flows.

The Regional Water Board adopted Resolution No. R1-2021-0006 Groundwater Basin Evaluation and Prioritization Results Supporting Salt and Nutrient Management Planning as Required by the State Water Resources Control Board Recycled Water Policy to inform salt and nutrient management planning within North Coast Region's groundwater basins. Where evaluation Factors of the Recycled Water Policy are similar to SGMA Basin Prioritization Components, staff utilized the 2019 SGMA Basin Prioritization Process and Results. Technical process for the remaining evaluation factors was informed by SGMA, the Recycled Water Policy, the State Water Board OWTS Policy, Groundwater Ambient Monitoring and Assessment Program, DWR Bulletin 118, Waste Discharge Permittee Reports, and publicly available GIS information.

The Regional Water Board prioritized the following groundwater basins for salt and nutrient management planning Santa Rosa Plain, Smith River Plain, Scott River Valley, Mad River Lowland, Eureka Plain, Eel River Valley, Anderson Valley, Fort Bragg Terrace Area, Ukiah Valley, Sanel Valley, Alexander Area, Cloverdale Area, Healdsburg Area, Rincon Valley, Wilson Grove Formation Highlands, Lower Russian River Valley, and Fort Ross Terrace Deposits (Figure 10).

3. Flooding

Major floods within the project occur in response to atmospheric rivers which are long narrow streams of warm air characterized by high water vapor content, that occur about one-mile up in the atmosphere, and which carry the moisture equivalent of ten-to-fifteen Mississippi Rivers, up from the tropics across the middle latitudes (Dettinger and Ingram, 2013). Many of the watersheds of the North Coast Region are still moving quantities of stored sediment first deposited during catastrophic flooding events of 1955 and 1964. Flooding events of 1982, 1995, and 1997 also have had dramatic impact on North Coast rivers.

Flooding can be rapid and intense as a result of the intensity of atmospheric-river storm events, and also the ridge and valley topography that characterizes the North Coast viticulture region. Hillslopes within the project area receive more rainfall than adjacent areas within Sonoma and Mendocino counties as a result of orographic effects. Hillslope soils are shallow and runoff often is rapid into steep, confined tributary channels that drain small catchments (typical drainage areas are 2-to-20 mi^2). These tributaries rapidly reduce their gradients and become unconfined when they exit the mountain fronts to the valley floors. These topographic attributes, the very high rainfall intensities associated with atmospheric river events, and watershed development interact to influence the nature and location of flooding problems.

C. Environmental Analysis

1. Impact Analysis Methods

This impact analysis uses a qualitative approach to evaluate the potential water quality impacts that could result from Proposed Project activities. As described in the Project Description Chapter, the precise locations of individual actions that may result from implementation of the Vineyard Order (e.g., Management Practice construction/implementation) are not known and cannot be known at this time. Additionally, it is not known which Management Practices might be implemented on which vineyards. Therefore, the analysis considers generally the impacts to hydrology and water resources that could potentially occur on vineyards in the North Coast Region based on the reasonably foreseeable Management Practices. In general, potential impacts were assessed based on the degree to which the Proposed Project could result in violations of water quality objectives, impairment of beneficial uses, or water quality conditions that could be harmful to aquatic life or human health. The analysis also considers potential effects on hydrology, groundwater, and flow, using the significance criteria described below.

2. Thresholds of Significance

For the purposes of this analysis, based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would:

1) Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface water or groundwater quality.

2) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

3) 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:

    a) result in a substantial erosion or siltation on- or off-site,

    b) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site,

    c) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage system or provide substantial additional sources of polluted runoff; or

    d) impede or redirect flows.

4) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

5) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3. Impacts and Mitigation Measures

Impact HWQ-1: Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface water or groundwater quality. (*Less than Significant with Mitigation*).

Among the primary objectives of the Proposed Project Protect and restore beneficial uses and achieve water quality objectives specified in the Basin Plan for areas in the North Coast Hydrologic Region planted to vineyards by:

1) Minimizing or preventing nitrate and pesticide discharges to groundwater,

2) Minimizing or preventing nutrient and pesticide discharges surface water,

3) Minimizing or preventing sediment discharges to surface water, and

4) Minimizing or preventing temperature impacts to surface water from loss of riparian shade.

As such, the Proposed Project is designed to avoid and rectify impacts to surface water and groundwater quality caused by discharges from vineyards (the Proposed Project itself constitutes WDRs for vineyards). Nevertheless, the Proposed Project could potentially result in water quality impacts from construction activities (i.e., implementation/construction of Management Practices). Many of the reasonably foreseeable Management Practices that vineyards may implement to comply with the Vineyard Order would involve construction activities/ground disturbance. Specifically, storm-proofing agricultural roads, upgrading culverts, and construction/maintenance of sediment retention basins would involve some amount of ground disturbance and construction activity. Likewise, establishment of vegetative buffers could require removal of existing vines, tilling, and planting of new vegetation. These activities could loosen soils and allow for erosion and off-site discharge of sediments to occur if proper precautions are not taken (e.g., a precipitation event washing away loose soils/sediments to nearby waterbodies). The construction activities also may involve use of heavy construction equipment, which may use hazardous materials (e.g., fuel, oil, lubricant, etc.) in its operation. Hazardous materials may be stored on site during construction of individual Management Practices and transported off site or disposed of following completion of construction. If such materials were to spill or leak from equipment, it could result in adverse impacts on surface water and groundwater quality, including adverse effects on beneficial uses and potential violation of water quality standards.

In situations where VESCO or another local ordinance does not apply, vineyards would need to implement Mitigation Measure HWQ-I. This mitigation measure would require implementation of erosion and sediment control measures during construction of

ground-disturbing Management Practices.

Additionally, implementation of Mitigation Measure HAZ-1would require that Dischargers follow proper hazardous materials storage and management during construction activities.

Given compliance with existing laws and regulations, and with implementation of applicable mitigation measures, these impacts would be ***less than significant with mitigation.***

Mitigation Measure HWQ-1: Implement Construction Best Management Practices for Erosion Control

Where construction of Management Practices would not be subject to VESCO or another local ordinance, vineyards must implement the following measures during construction of Management Practices, or must implement alternative measures that are demonstrated to be equally or more effective:

1) Implement practices to prevent erosion of exposed soil and stockpiles, including watering for dust control, establishing perimeter silt fences, and/or placing fiber rolls.

2) Minimize soil disturbance areas.

3) Implement practices to maintain water quality, including silt fences, stabilized construction entrances, and storm drain inlet protection. Where feasible, limit construction to dry periods.

4) Revegetate disturbed areas.

5) The performance standard for these erosion control measures is to use the best practicable treatment and control (BPTC). These measures may be included in Attachment B, as appropriate.

Impact HWQ-2: 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*).

Most of the reasonably foreseeable Management Practices that could be implemented under the Vineyard Order would not include impervious surfaces that would impede groundwater recharge. On the contrary, many reasonably foreseeable Management Practices (e.g., ground cover, runoff management features, sediment detention basins, etc.) would serve to capture and detain stormwater runoff, thereby potentially allowing for increased percolation and groundwater recharge to occur. Some vineyards may implement Management Practices designed to protect groundwater quality while controlling and treating discharges, such as lined ponds. These types of Management Practices are inherently limited in size and volume due to limitations including space within the vineyard boundaries, so the impact on groundwater recharge would not be

significant.

During construction, practices such as permanent ground cover, filter strips, and vegetated buffer areas would require irrigation to support initial plant establishment, and potentially periodic watering to ensure maturation during the dry season. However, it is not anticipated that the amount of water necessary to support these vegetated areas would substantially decrease groundwater supplies, especially compared to water used for existing agricultural activities. Overall, the Vineyard Order would not substantially decrease groundwater supplies or interfere with groundwater recharge such as to impede sustainable management of groundwater basins within the north coast region. As a result, this impact would be ***less than significant***.

Impact HWQ-3: 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 that would:

HWQ-3a: Result in a substantial erosion or siltation on- or off-site (*No Impact*)

Construction and implementation of Management Practices, such as runoff management features and sediment retention basins are not expected to alter drainage patterns in a manner that would result in substantial erosion or siltation. A purpose of the Vineyard Order is to minimize erosion and sediment discharges to surface waters. No impact would occur.

HWQ-3b: Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site (*No Impact*)

As noted under Impact HWQ-2 above, none of the reasonably foreseeable Management Practices under the Proposed Project would include large impervious surface areas that would increase surface runoff rates and volumes. Proposed Project activities would be focused in areas of new, replanted, and existing vineyards and would be limited to Management Practices designed for the protection of water quality. Therefore, the Proposed Project would have no potential to substantially increase the rate or amount of surface runoff in a manner which would result in flooding. ***No impact*** would occur.

HWQ-3c: Create runoff which would exceed the capacity of existing or planned stormwater drainage system or provide additional sources of polluted runoff (*Less than Significant*)

Proposed Project activities would not generate substantial additional sources of runoff and Management Practices and may reduce runoff rates and volumes from vineyards. Areas where activities would occur under the Vineyard Order would not typically be connected to municipal stormwater drainage systems; therefore, there would be little to no potential for significant impacts on these facilities to occur. As such, this impact would be ***less than significant***.

HWQ-3d: Impede or redirect flows (*Less than significant*)

The Proposed Project would not include reasonably foreseeable Management Practices that would include large above-ground structures that could impede or redirect flood flows. Some Management Practices would include depressions or swales, or basins, which would have the purpose of collecting and directing flows, but these features would not be anticipated to result in substantial adverse effects on movement of flood waters. As a result, this impact would be ***less than significant***.

Impact HWQ-4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation. (*Less than Significant*)

Vineyards may be located in areas prone to flooding or inundation as a result of tsunami or seiche. During construction of Management Practices, hazardous materials/pollutants (e.g., fuel, oil, lubricant, etc.) may be contained in construction equipment and/or stored on construction sites. If a flood event were to occur during the construction period for Management Practices installed on vineyards located in the 100-year floodplain, this could result in such pollutants being released, resulting in adverse effects on water quality. In general, due to the low probability of a 100-year flood event in any given year, the relatively short duration of construction activities for most Management Practices, and because Management Practice construction/installation typically occurs during the dry season, the probability of such an uncontrolled release of hazardous materials/pollutants associated with Proposed Project activities is exceedingly low, therefore the impact is ***less than significant***.

Impact HWQ-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. (*No Impact*)

A primary purpose of the Vineyard Order is to "protect and restore beneficial uses and achieve water quality objectives specified in the Basin Plan for vineyards in the north coast region…" As such, the Proposed Project would support implementation of the Basin Plan. As described in Impact HWQ-1 above, certain unintended consequences of Management Practice construction and implementation and Vineyard Order compliance are possible; however, these effects are largely speculative and, even if they could be quantified, would very likely be outweighed by the benefits of the Proposed Project. The Proposed Project would have limited potential to adversely affect groundwater supplies or limit recharge (see discussion under Impact HWQ-2). Reasonably foreseeable Management Practices under the Vineyard Order would not use substantial groundwater supplies or include large new impervious surfaces and would generally benefit groundwater quality by reducing nitrate loading and potential pesticide pollution. Although Groundwater Sustainability Plans (GSPs) were prepared for two groundwater basins in the viticulture areas of the North Coast Region, the Proposed Project is not expected to conflict with implementation of these GSPs in any way. Overall, ***No Impact*** would occur.

XIII. Tribal Cultural Resources

This section presents the environmental setting and potential impacts of the Proposed Project related to tribal cultural resources (TCRs). TCRs include sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe. As such, TCRs may contain physical cultural remains (i.e., materials found in archaeological sites), or they may be places within the natural landscape.

A. Regulatory Setting

1. Federal Laws, Ordinances, Regulations, and Policies

Federal law does not address TCRs, although Traditional Cultural Properties are addressed in Section 106 of the National Historic Preservation Act (NHPA). However, actions under the Proposed Project are not expected to require federal permits or occur on federal land; therefore, the NHPA would not apply.

2. State Laws, Ordinances, Regulations, and Policies

Assembly Bill 52 (Statutes of 2014, Chapter 532), which went into effect on July 1, 2015, requires that lead agencies under CEQA consult with California Native American tribes that have requested in writing to be notified and that are traditionally and culturally affiliated with the geographic area of a proposed project, prior to the development of a CEQA document. Under the same bill, PRC Section 21084.2 specifies that a project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment.

As defined in PRC Section 21074(a), TCRs are:

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

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

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

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

In addition to Section 21074(a) above, TCRs are further defined under Section 21074(b) and (c) as follows:

1) A cultural landscape that meets the criteria of subdivision (a) is a TCR to the extent

that the landscape is geographically defined in terms of the size and scope of the landscape; and

2) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms to the criteria of subdivision (a) [of Section 21074].

Mitigation measures for TCRs may be developed in consultation with the affected California Native American tribe in accordance with PRC Section 21080.3.2 or Section 21084.3. The latter section identifies mitigation measures that include avoidance and preservation of TCRs and treating TCRs with culturally appropriate dignity, consideration of tribal cultural values, and the meaning of the resource.

a. Native American Tribal Consultation

The Regional Water Board contacted the NAHC on May 26, 2022, to request a comprehensive list of all tribes within the North Coast Region. The NAHC responded on July 13th with a list that contained the contact information for 52 tribes. On June 23, 2022, the Regional Water Board sent 107 letters, through the U.S. Postal Service, to all tribes included in the NAHC list and other tribal individuals. The letters described the Regional Water Board's intent to produce this DEIR for the Proposed Project and salient aspects of the Proposed Project itself. The letters provided notice of Regional Water Board's consideration of the Proposed Project's potential to affect TCRs and invited the letter recipients to contact Regional Water Board if they wished to consult on the Proposed Project in accordance with PRC Section 21080.3.1. The Regional Water Board received responses from seven separate tribes, although none chose to undergo formal consultation. The list of individual tribes contacted are listed below, with tribes that provided a response to the invitation to consult marked with an asterisk (*).

Agua Caliente Band of Cahuilla Indians*

Alturas Rancheria of Pit River Indians

Amah Mutsun Tribal Band of Mission San Juan Bautista

Bear River Band of the Rohnerville Rancheria

Big Lagoon Rancheria

Blue Lake Rancheria

Cachil DeHe Band of Wintun Indians of the Colusa Indian Community*

Cahto Tribe

Cedarville Rancheria of Northern Paiute Indians

Cher-Ae Heights Indian Community of the Trinidad Rancheria*

Cloverdale Rancheria of Pomo Indians

Coyote Valley Band of Pomo Indians*

Dry Creek Rancheria Band of Pomo Indians

Elem Indian Colony Pomo Tribe

Elk Valley Rancheria

Federated Indians of Graton Rancheria*

Fort Bidwell Indian Community of Paiute

Gabrieleno/ Tongva San Gabriel Band of Mission Indians

Grindstone Rancheria of Wintun-Wailaki

Guidiville Indian Rancheria

Habematolel Pomo of Upper Lake

Hoopa Valley Tribe

Hopland Band of Pomo Indians

Karuk Tribe

Kashia Band of Pomo Indians*

Klamath Tribe

Koi Nation of Northern California

Lytton Rancheria

Manchester Band of Pomo Indians of the Manchester Rancheria

Melochundum Band of Tolowa Indians

Mishewal-Wappo Tribe of Alexander Valley

Mooretown Racheria*

Nor-Rel-Muk Nation

Noyo River Indian Community

Pinoleville Pomo Nation

Pit River Tribe of California

Pit River Tribe of California - Madesi Band

Potter Valley Tribe

Quartz Valley Indian Community*

Redding Rancheria

Redwood Valley or Little River Band of Pomo Indians

Resighini Rancheria / Coast Indian Community

Robinson Rancheria Band of Pomo Indians

Round Valley Reservation/ Covelo Indian Community

Shasta Indian Nation

Shasta Nation*

Sherwood Valley Rancheria of Pomo*

Tolowa Dee-ni' Nation (previously known as the Smith River Tribe)

Tsnungwe Council

Winnemem Wintu Tribe

Wintu Tribe of Northern California

Wiyot Tribe

Yocha Dehe Wintun Nation*

Yokayo Tribe

3. Local Laws, Ordinances, Regulations, and Policies

Because the passage and implementation of PRC Section 21080.3.1 is relatively recent, TCRs are rarely identified in city and county general plans. However, since the passage of Senate Bill 18 in 2004, which requires consultation with California Native

American tribes during the development of a general plan, many cities and counties have included requirements for consultation with the California Native American tribes traditionally and culturally affiliated with the area during development of their general plans or substantial general plan updates. Attachment C lists potentially applicable goals and policies in general plans for counties in the north coast region.

B. Environmental Setting

1. Tribal History in California and the North Coast Region

California had the densest aboriginal population within the continental United States prior to European and Euro-American colonization. Estimates of the number of indigenous inhabitants have varied widely over the decades, but the general consensus, at present, is that approximately 300,000 people representing 80 or more tribes lived within the borders of what is now known as California. The primary sources of information for this section are the US Bureau of Land Management Cultural Resources Overview for Northwestern California (2016), Mendocino County General Plan EIR Cultural Resources Section (2009), Humboldt County General Plan Final EIR (2017), Humboldt County Cannabis Program Final EIR (2018) Sonoma County General Plan Housing Element Update Draft EIR (2022), and Trinity County Cannabis Program Final EIR (2020).

2. Ethnography

At the time of European contact, the watersheds within the North Coast Region overlapped with the traditional territories of multiple tribal communities, and was home to many thousands of Native Americans for thousands of years. The ethnographic record of the region shows the cultural complexity at the time of European-American contact.

a. Sonoma County Area

i. Coast Miwok

Coast Miwok territory is centered on Marin and Sonoma Counties, extending roughly from Duncan's Point south to Point Bonita, with the inland boundary east of the Sonoma River. The Miwok Language consists of two dialect groups, the southern, or Marin group, and the western, or Bodega group. The pre-contact Coast Miwok inhabited villages made up of conical dwellings, semi-subterranean sweathouses, and dance houses. Each village had a chief to oversee village affairs and social and ceremonial life was organized around moieties, or dichotomous groups, classed as either Land or Water. Coast Miwok subsistence was based on hunting, gathering, and fishing. Dried acorns and kelp were primary food sources during the winter and early spring when food was scarce. Coast Miwok relied heavily on nearshore fish and shellfish and on fish from rivers, marshes, and the bay. Hunting focused on deer, elk, bear, and small game. The material culture of the Coast Miwok included clamshell disk beads as currency, and a variety of stone tools, shell ornaments, ceremonial artifacts, and baskets.

ii. Wappo

Wappo territory includes a small area on the southern edge of Clear Lake and a larger area extending from Cloverdale and Middletown in the north to Napa and Sonoma in the south. The primary sociopolitical unit consisted of the village led by a chief. Villages included oval houses made of grass thatch. Wappo material culture consisted of stone, shell, and bone tools. Basketry was also important. Additionally, the Wappo participated in the clamshell bead trade and traded in magnesite cylinders. Wappo subsistence focused primarily on acorn, dried seaweed, and a variety of roots and grasses. Important game included ducks, geese, and quail. Fishing and shellfish gathering were also important, with critical species including abalone, clam, mussels, eels, turtles, chub, and salmon.

iii. Southern Pomo

Southern Pomo territory extends roughly from Gualala south to Duncan's Point, east to the Russian River. Southern Pomo is one of several Pomo dialect groups. The Pomo were organized into a series of independent tribelets ranging in size from 100 to 2,000 people, with the most significant social unit being the kin group. The Pomo participated in a clamshell disk bead exchange system internally and among other groups. Pomo subsistence was based on hunting, gathering, and fishing, with acorns as a primary staple. Other important plant resources included Buckeye nuts, berries, and seeds from approximately 15 types of grasses, roots, and bulbs. Big game included deer, elk, and antelope. Material culture included obsidian and chert tools, intricate basketry, and bone and shell implements.

b. Mendocino County Area

At the time of Euroamerican contact (ca. 1769), Central Pomo, Northern Pomo, Coast Yuki, Yuki, Huchnom, Cahto, Sinkyone, and Wailaki occupied the area encompassed by current Mendocino County. Central and Northern Pomo occupied most of Mendocino County with the other groups occupying areas at the northern boundary of the county. Material culture of these tribes was similar, with an emphasis on the use and production of baskets for many of the day-to-day tasks of living. However, each had its own territories, cultural traditions and forms.

i. Pomo

The southern third of Mendocino County is the home of Native Americans speaking the Central Pomo languages. North of this area was traditionally the territory of people speaking the Northern Pomo language, who controlled a strip of land extending from the Pacific Coast to Clear Lake in Lake County. The northern groups also controlled the coast from the Navarro River north to Cleone and from just north of Anderson Valley to Sherwood Valley. Coyote, Yokayo, Redwood, and Potter Valley tribes were also within this territory. Northern Pomo were the most populous native linguistic group in Mendocino County. The Pomo are members of the Hokan language family that appears to be one of the oldest linguistic families in California.

Pomo built three basic types of structures that included dwelling houses, temporary shelters, and semi-subterranean ceremonial houses. Dwelling houses were constructed for individual and multi-family use, and semi-subterranean houses were used for ceremonial purposes and other group activities. Pomo subsistence strategies highlighted the exploitation of a wide variety of plant and animal resources from many native ecosystems within Mendocino County. The Pomo produced baskets for fish and quail traps, flat seed winnowing, acorn storage and processing, as well as for ceremonial and religious purposes. Trade was an important activity among Pomo and they had economic relationships with their neighbors, including the Yuki, Cahto, Lake Miwok, Wappo, and Potwin.

ii. Coast Yuki, Yuki, and Huchnom

Coast Yuki occupied an area along the coast extending from Fort Bragg north to an area just north of Rockport. Coast Yuki are one of the few groups in California with a true coastal adaptation because they had little access to interior resources. Yuki and Huchnom occupied an area east of the Coast Yuki that included most of the drainage of the upper Eel River in the Coast Range, extending north just beyond Round Valley and south to just beyond Willits.

There is scant ethnographic information regarding these groups and the population of each group appears to have been relatively small compared to other California Native American groups such as the Pomo. Multiple massacres of Native people took place across northwestern California, including the 1859–1860 “Mendocino War” that resulted in the deaths of hundreds of Yuki and other Indian people in the Round Valley vicinity. The history of these three groups becomes merged in the 1860s as they join other groups at the Round Valley Indian Reservation that was established in 1858. The Round Valley Indian Reservation at the northern end of Round Valley is the largest contiguous enclave of Indian land in Mendocino County and one of the largest in California.

iii. Cahto

Cahto territory is bounded by Branscomb, Laytonville, and Cummings and includes Cahto and Long Valleys and the upper drainage of the South Fork Eel River at the north end of Mendocino County. Cahto are the southernmost Athapaskan-speaking group on the Pacific Coast and like the Cahto, extended just south of the county boundary.

There is scant ethnographic information regarding Cahto, and the population of the group appears to have been relatively small compared to other California Native American groups. Regardless, Cahto had several permanent villages at the current sites of Branscomb, Laytonville, and Cummings. Salmon and acorns were primary food sources that were supplemented by hunting of deer and other animals. Cahto had friendly contact with Northern Pomo and Yuki. By the 1920s, the remaining population of Cahto resided at the Round Valley Reservation or their tribal rancheria near Laytonville.

iv. Sinkyone and Wailaki

Sinkyone occupied the area around Shelter Cove and along Eel River and South Fork Eel River. Wailaki occupied most of the Eel River and North Fork Eel River drainage. Sinkyone and Wailaki are Athapaskan speakers and are related to groups further to the north. Salmon and other fish and acorns were primary food sources that were supplemented by hunting of deer and other animals. Sinkyone and Wailaki were relatively isolated from other groups at the north end of Mendocino County because of local geography and primarily interacted with each other and three other Athapaskan-speaking groups (i.e., Mattole, Nongatl, and Lassik) in the area. Multiple massacres of Native people took place across northwestern California, including the near annihilation of almost the entire Sinkyone tribe at Needle Rock on the Mendocino Coast. There is scant ethnographic information regarding Sinkyone and Wailaki, but they were organized into tribelets that were controlled by a chief.

c. Humboldt County Area

Before European settlement, the Humboldt County area was one of the most culturally diverse regions of California and was home to nearly a dozen distinct peoples. In large part, Native American tribes occupied distinct areas conforming largely to the natural watershed basins. Most tribes were Athabascan speakers and hill people who built permanent homes along rivers. The Yurok and Wiyot spoke Algonquian languages and settled along both coasts and rivers. The Karuk were Hokan-speaking and lived in mountainous territory. Peoples that settled north of the Eel complex watersheds are grouped together as Northwest California cultures. This group includes the Hokan- and Algonquian-speaking tribes, as well as the Hoopa, Chilula, and Whilkut.

Villages were clustered around lagoons, sloughs, and river mouths along the coast. Inland settlements were usually along streams, sometimes on terraces above floodways; the Yurok sometimes built on steep slopes. Seasonal migration was common; for example, the Chilula built permanent villages on flats along Redwood Creek, but moved up to higher ridges in summer and fall. Most groups tended to build along the side of a river or hill that received more sun and on hillsides where timber was less dense. Although some tribes to the south practiced cremation, Northwest California tribes generally buried their dead in plank-lined graves, and cemeteries were established near the permanent (wintertime) villages. The Hoopa claimed food-rich lands (where acorns and manzanita were plentiful), but shared right-of-way with other groups. The Yurok established privately owned land. located along the coast or near rivers and relied on fish and sea mammals as their primary source of food. Food was obtained by a variety of means, including hunting, fishing, and gathering greens, depending on seasonal availability. Archaeologically significant sites have been identified by the presence of refuse from marine life, debris from stone toolmaking, mortar, and tools. Multiple massacres of Native people took place across northwestern California, including the 1860 massacre of nearly an entire Wyot village on Tuluwat Island in Humboldt Bay.

d. Klamath Mountain Region

The Klamath Mountains are situated in the northeastern portion of Humboldt County, eastern Del Norte County, and the western portions of Siskiyou and Trinity Counties. Native American groups living in northwest California have long been associated with the larger Northwest Coast Culture Area, differing significantly from other groups in California. The Northwest Coast Culture Area extends from Canada and Alaska south to near Cape Mendocino, where groups like the Tolowa, Yurok, Wiyot, Karuk, and Hoopa represent the southernmost expression of the culture. These groups lived in relatively high densities and occupied permanent coastal and interior riverine settlements. Many of the settlements were supported by the storage of acorns, and the use of large communal fish weirs. River canoes, large oceangoing canoes, composite harpoons, and redwood smoke houses also facilitated the harvest and storage of fish and marine mammals.

The Tolowa, Yurok, Wiyot, Karuk, and Hoopa all lived in semi-subterranean plank houses located in permanently occupied villages. Major villages were located in strategic foraging areas such as estuaries and lagoons, protected river mouths, and high-quality fishing areas along interior streams. All groups lived in their permanent villages during the winter, relying on stored resources. With the advent of spring a variety of greens and root crops were harvested, and people took advantage of the spring salmon run. Fall brought the acorn harvest and the large salmon run, both of which were major resources for all people living in northwest California. Most of this harvest occurred during the fall, when the large weirs were constructed and produced a winter's supply of fish in a relatively short period of time. Many items of wealth were obtained through exchange, such as the large obsidian blades and dentalia acquired from eastern and northern neighbors. In addition to other forms of treasure (e.g., redheaded woodpecker scalps), an active trade of subsistence commodities took place, with dried smelt, shellfish, and seaweed moving into the interior, and acorns and pine nuts coming back in exchange. Redwood dugout canoes were also an important trade item, originating among the coastal groups and distributed to those living in the interior.

a. Trinity County Area

The Wintuan family includes Wintu, Nomlaki, and Patwin. Analysis of historical linguistic indicates that proto-Wintun split apart between about 3,000 and 2,500 years ago in Oregon, while Wintu/Nomlaki became a discrete branch about 500 years later. The Wintu/Nomlaki moved south out of Oregon next, settled into two distinct languages, and then spread up the various tributaries of the Sacramento and upper Trinity Rivers. The estimated arrival of the Wintu fits within the emergence of the Shasta Pattern at 1,500 calibrated years before present (cal BP), which represents a radical change in the archaeological record that one would expect with the arrival of a new people.

The Wintu people occupied the Weaverville area for approximately 4,000 years. Closely related to the Nomlaki and Patwin to the south, the Chimariko to the west, and the Hupa to the northwest, the Wintu people lived along the Trinity River. Seasonally, they hunted deer, elk, and small game; fished for salmon and steelhead; and harvested berries,

seeds, and other plants. The Wintu were known for basketry that was both beautiful and useful, and traded with various native groups living in coastal and valley areas of California. The Wintu way of life was forever changed with the incursion of trappers and settlers ready to exploit this resource-rich area. By the early 1800s nearly three-quarters of the Wintu people had been decimated by diseases to which they had no immunity. The Gold Rush brought even greater changes for the native people, most notably the loss of their traditional lands and culture.

C. Environmental Analysis

1. Impact Analysis Methods

This analysis evaluates potential impacts to TCRs that may result from implementation of management practices and other actions that could occur under the Proposed Project. Potential impacts have been compared against the thresholds of significance discussed below.

2. Thresholds of Significance

For the purposes of this analysis, based on Appendix G of the State CEQA Guidelines, the Proposed Project would result in a significant impact to TCRs if it would:

1) Cause a substantial adverse change in the significance of the tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

    a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resource Code section 5020.1(k), or

    b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth is subdivision (c) of Public Resources Code section 5024.1. in applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

3. Impacts and Mitigation Methods

Impact TCR-1: Cause a substantial adverse change in the significance of a tribal cultural resource. (Less than Significant with Mitigation)

The Proposed Project encompasses a broad geographical region that is rich in tribal resources and was home to a large number of Native American tribes, or tribelets, prior to colonization. These indigenous communities are represented today by descendants who maintain a strong cultural connection to their ancestral lands.

Many of the reasonably foreseeable management practices that could be implemented under the Proposed Project to comply with discharge, receiving water, and application limits would have little to no potential to impact TCRs. For example, practices such as applying less fertilizer, applying pesticides per labeling directions, and other similar practices would not impact TCRs. These activities would take place within existing vineyards and would not substantially change any landscape, site, or place that could have tribal cultural significance. Likewise, many of the monitoring and reporting activities that could occur under the Proposed Project (e.g., surface water monitoring, pedestrian, and vehicle trips to monitoring sites, groundwater sampling and analysis via existing wells) would have no potential to substantially affect TCRs.

While Proposed Project activities would have limited to no potential to substantially affect sites, features, places, or cultural landscapes that could be TCRs, certain activities could potentially affect buried objects or materials that could be TCRs. Construction/installation of reasonably foreseeable management practices that involve ground disturbance (e.g., sediment basins, vegetated filter strips, etc.) could potentially uncover buried TCRs. As discussed in the Cultural Resources Chapter, it is assumed that the majority of management practices and other activities (e.g., installation of new monitoring wells) under the Proposed Project would occur within existing vineyards. In general, these areas are subject to repeated disturbance (e.g., tilling) and thus Proposed Project activities disturbing the top soil layers in these areas would not be expected to uncover any buried TCRs or other cultural resources.

However, while most activities would occur within existing fields, it is possible that certain management practices could be constructed/installed in areas adjacent to existing vineyards that have not been subject to prior disturbance. Facilities such as sediment basins could be installed on the periphery of fields to receive runoff and could be placed in undisturbed areas. Additionally, certain management practices, although located within existing vineyards, could be installed to depths below the prior disturbance limits (e.g., excavation for construction of a sediment basin could disturb soil to five feet deep, whereas routine disturbance from tilling and other activities only reaches to two feet deep). These types of activities could potentially impact TCRs if they were present within the proposed disturbance area and proper protocols were not followed.

Implementation of Mitigation Measure CUL-1 and CUL-2 would avoid or reduce potential impacts on TCRs by requiring that growers or third parties retain a qualified archaeologist in the event that proposed management practices or other actions would involve modifications to previously undisturbed soils. The qualified archaeologist would conduct a California Historical Resources Information System records search, contact the NAHC to request a search of the Sacred Lands files, contact tribes who have a traditional and cultural affiliation with the proposed disturbance area, and conduct a pedestrian survey of the site (if one has not already been conducted). This process would identify any TCRs that may be present in the proposed impact area and allow for input by affiliated tribes. Mitigation Measure CUL-1 would require that growers or third parties avoid identified significant resources to the extent feasible. If avoidance is not

feasible, the qualified archaeologist would be required to develop a data recovery plan, which applicable tribes would have the opportunity to review.

Additionally, Mitigation Measure CUL-3 would require that California Health and Safety Code Section 7050.5 is followed for any human remains known to be present within archaeological sites or inadvertently encountered during the course of excavation activities for individual management practices. This would include contacting the NAHC for any remains that are determined to be those of a Native American individual by the coroner, identification of a most likely descendent (MLD) by the NAHC, and working with the MLD to ensure that the remains are removed to a protected location and treated with dignity and respect.

Implementation of Mitigation Measures CUL-1, CUL-2, and CUL-3 would reduce potential impacts to TCRs to ***less than significant with mitigation***.

XIV. Cumulative Impacts

According to State CEQA Guidelines Section 15130(a)(1), a cumulative impact is created by the combination of a proposed project with other past, present, and probable future projects causing related impacts. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (Cal. Code Regs., tit.14 section 15355 (b)). Under CEQA, an EIR must discuss the cumulative impacts of a project when the project's incremental contribution to the group effect is "cumulatively considerable." An EIR does not need to discuss cumulative impacts that do not result, in part, from the project evaluated in the EIR. Where an incremental effect is not cumulatively considerable, the basis for concluding that the incremental effect is not cumulatively considerable must be described.

To meet the adequacy standard established by State CEQA Guidelines Section 15130, an analysis of cumulative impacts should contain the following elements:

1) an analysis of related past, present, and reasonably foreseeable projects or planned development that would affect resources in the project area similar to those affected by the proposed project;

2) a summary of the environmental effects expected to result from those projects with specific reference to additional information stating where that information is available; and

3) a reasonable analysis of the combined (cumulative) impacts of the relevant projects.

A. Approach to Analysis

The following analysis of cumulative impacts focuses on whether the impacts of the Proposed Project are cumulatively considerable within the context of impacts resulting from the Proposed Project and other past, present, or reasonably foreseeable future projects. The cumulative impact scenario considers other projects proposed within the area defined for each resource topic that have the potential to contribute cumulatively considerable impacts.

State CEQA Guidelines Section 15130 provides the following two alternative approaches for analyzing and preparing an adequate discussion of significant cumulative impacts:

1) the list approach, which involves listing past, existing, and probable future projects or activities that have or would produce related or cumulative impacts, including, if necessary, those projects outside the control of the lead agency; or

2) the projection approach, which uses a summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions and their contribution to the cumulative effect.

This chapter utilizes a list approach by developing a list of past, present, and reasonably foreseeable future related projects, as shown in Table XIV-1. Table XIV-1, that was developed based on review of information available on local county websites. For each resource topic evaluated, the possible impacts are considered cumulatively in light of similar possible impacts as the Vineyard Order. A cumulative impact refers to the combined effect of "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). As defined by the State of California, cumulative impacts reflect "the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (CEQA Guidelines Section 15355(b)).

Table XIV-1: Reasonably Foreseeable Future Related Projects

Related Project	Project Summary	Activities that Could Affect Resources Similar to the Proposed Project
VESCO – Sonoma County Code Chapter 36	Vineyard and Orchard Erosion and Sediment Control Ordinance	Setbacks from Waterbodies
Riparian Corridor Ordinance - Amendments to Sonoma County Code Chapter 26	Protect Biotic Resource Communities	Limits on Agricultural Activities within Riparian Corridors

Detailed analysis of a project's contribution to cumulative impacts is required when (1) a cumulative impact is expected to be significant, and (2) the project's contribution to the cumulative impact is expected to be cumulatively considerable, or significant in the context of the overall (cumulative) level of effect.

B. Evaluation of Cumulative Impacts

1. Agriculture and Forestry

In the cumulative context, implementation of Sonoma County Vineyard and Orchard Erosion and Sediment Control Ordinance (VESCO) would be expected to result in conversion of agricultural land to non-agricultural uses. The conversion of agricultural land to non-agricultural uses resulting from the implementation of VESCO occur within the geographic scope of the Proposed Project and uses similar geometry for setbacks. The Riparian Corridor Ordinance does not convert existing vineyards to non-agricultural uses – it places controls on how those activities are conducted. Therefore, the cumulative impact on agricultural resources from the Proposed Project, VESCO and the Riparian Corridor Ordinance is still significant.

It is reasonable to assume that other ongoing development throughout the North Coast Region may result in conversion of agricultural land to urban and built-up land. This is considered a significant cumulative impact on agricultural resources. Implementation of the setback requirements under the Vineyard Order could result in conversion of Important Farmland to non-crop uses. As discussed in the Agricultural and Forestry Resource Chapter, up to 300 acres of agricultural land could be taken out of production as a result of the Proposed Project. Nonetheless, given the magnitude of Important Farmland conversion expected to occur under the Vineyard Order with no feasible mitigation available to reduce these adverse effects, the Proposed Project's contribution to this cumulative impact on agricultural resources would be considerable.

2. Air Quality

Cumulative effects on air quality are addressed in the Air Quality Chapter, and therefore are not discussed further in this section.

3. Greenhouse Gas Emissions

Greenhouse gas emissions are a cumulative issue and are already addressed in the Greenhouse Gas Chapter; therefore, this topic is not discussed further in this section.

4. Hydrology and Water Quality

As described in the Hydrology and Water Quality Chapter, Management Practices implemented under the Vineyard Order would be expected to improve water quality and would largely have a beneficial effect on receiving waters. The primary objectives of Vineyard Order are to reduce or minimize discharges of pollutants (e.g., nutrients, pesticides, sediment, and temperature) from vineyards. Like the Proposed Project, the cumulative impact of projects listed in Table XVI-I would largely improve water quality conditions in streams within Sonoma County. As a result, the Proposed Project would not substantially contribute to significant cumulative water quality impacts.

5. Geology and Soils, Cultural Resources, and Tribal Cultural Resources

Construction or installation of some Management Practices that would involve new ground disturbance and excavation could potentially cause damage to, disrupt, or adversely affect archaeological resources, paleontological resources, or human remains. While the majority of Management Practices are expected to occur within existing vineyards and Appurtenant Agricultural Roads where soils have generally been repeatedly disturbed, it is possible that some management activities could occur on the periphery of existing fields where previous disturbance has not occurred or within existing fields and to depths of soil that have not previously been disturbed, potentially resulting in adverse effects on buried, unknown cultural resources. Implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and GEO-1 would prevent or minimize such potential impacts on cultural resources, paleontological resources, and undocumented human remains.

Development projects throughout the North Coast Region would also involve ground-

disturbing activities that would have potential to adversely affect cultural resources, primarily buried archaeological materials, paleontological resources (e.g., fossils), and human remains. Given the nature of buried cultural resources, it is difficult to ascertain the magnitude of potential ongoing cumulative impacts to these resources since in many cases it is not known precisely what is present below the surface soil and it may not be known what is lost through excavation activities. Due to the widespread, ongoing development in California, much of which has the potential to disturb known and unknown cultural resources, it can be assumed that the cumulative impact is significant. However, there are robust federal and state laws, as well as local laws and policies, the require the proper treatment and mitigation for potential impacts to cultural and tribal cultural resources, which the Proposed Project and other development projects in the North Coast Region would need to follow, at least partially mitigating the cumulative impact.

Overall, given implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and GEO-1 and the fact that most Management Practices would take place within disturbed areas of existing vineyards, the Proposed Project's contribution to this cumulative impact would be less than considerable.

XV. Alternatives Analysis

A. Introduction

This chapter analyzes alternatives to the Regional Water Board adopting the proposed Vineyard Order. The chapter describes the alternatives screening and development process and the list of alternatives considered in the draft environmental impact report (DEIR). The chapter analyzes the environmental impacts of the alternatives considered in comparison to the Proposed Vineyard Order.

1. Regulatory Requirements

The California Environmental Quality Act (CEQA) requires that an EIR evaluate a reasonable range of alternatives to a proposed project, including a No Project Alternative. The No Project Alternative allows decision makers to compare the impacts of approving the proposed action against the impacts of not approving the action. Although no clear rule exists for determining a reasonable range of alternatives to a proposed project, CEQA provides guidance that can be used to define the range of alternatives for consideration in the environmental document.

With the exception of the No Project Alternative, the range of alternatives considered under CEQA must meet most of the basic project objectives, should reduce or eliminate one or more of the significant impacts of the proposed project (although the alternative could have greater impacts overall), and must be potentially feasible. In determining whether alternatives are potentially feasible, lead agencies are guided by the general definition of feasibility provided in Section 15364 of the State CEQA Guidelines: “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.” Section 15126.6 (f) of the State CEQA Guidelines further stipulates that the lead agency should consider site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, and jurisdictional boundaries in determining the range of alternatives to be evaluated in an EIR.

An EIR must briefly describe the rationale for selection and rejection of alternatives and the information that the lead agency relied on in making the selection. It also should identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reason for their exclusion (State CEQA Guidelines Section 15126[d][2]).

2. Alternatives Development and Screening Process

In developing alternatives to the Proposed Project, the Regional Water Board considered and applied screening criteria to potential alternatives in accordance with CEQA requirements, including (1) whether the alternative meets most of the Project objectives; (2) whether the alternative is potentially feasible; and (3) whether the alternative lessens or avoids one or more of the Proposed Project’s significant environmental impacts. The relevant comments received, and the screening criteria, are discussed below.

3. Alternatives Screening Criteria

a. Would the Alternative Meet Most of the Project Objectives?

As described in the Project Description Chapter, the purpose of the Vineyard Order is to:

Objective #1 - Protect and restore beneficial uses and achieve water quality objectives specified in the Basin Plan for areas in the North Coast Hydrologic Region planted with vineyards by:

a) Minimizing or preventing nitrate and pesticide discharges to groundwater.

b) Minimizing or preventing nutrient and pesticide discharges surface water.

c) Minimizing of preventing sediment discharges to surface water.

d) Minimizing or preventing temperature impacts to surface water from loss of riparian shade.

Objective #2 - Effectively track and quantify achievement of the stated objectives over a specific, defined time schedule.

Objective #3 - Comply with the NPS Policy, the State Antidegradation Policy, the precedential language in the Eastern San Joaquin Agricultural Order, the Basin Plan, including Total Maximum Daily Loads (TMDLs) in the North Coast Hydrologic Region, and the Temperature Implementation Policy, and the Sediment TMDL Implementation Policy.

Potential alternatives were analyzed to determine whether they would achieve “most” objectives, which in this case would be at least two out of three. Note that meeting the third Project Objective is not considered optional by the Regional Water Board, as there is no option but to implement and comply with these existing regulations, statutes, and court decisions.

b. Is the Alternative Potentially Feasible?

As noted above, the determination of feasibility under CEQA takes into account economic, environmental, legal, social, and technological factors. The CEQA Guidelines also state that factors such as site suitability, availability of infrastructure, general plan consistency, other regulatory limitations, and jurisdictional boundaries may be considered.

With respect to the Vineyard Order, which is a regionwide general order that does not pertain to a specific project site, site suitability and availability of infrastructure are not directly relevant. General Plan consistency and geopolitical jurisdictional boundaries are also not necessarily relevant since the Vineyard Order would be implemented across multiple geopolitical jurisdictions and would not specify a manner of compliance. With

the exception of potential conversion of agricultural land to riparian/vegetative buffers due to the Streamside Area setback requirements, the Vineyard Order would not involve a significant change to an existing land use that could conflict with general plan land use designation or zoning.

The factors considered in the alternatives screening process and the specific considerations which guided the process are discussed further below.

Economic Feasibility. Is the alternative so costly that implementation would be prohibitive? CEQA Guidelines Section 15126.6(b) requires consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may "impede to some degree the attainment of the project objectives, or would be more costly." The Court of Appeals determined in Citizens of Goleta Valley v. Board of Supervisors (2nd Dist. 1988) 197 Cal.App.3d 1167, p. 1181 (see also Kings County Farm Bureau v. City of Hanford [5th Dist. 1990] 221 Cal.App.3d 692, 736): "[t]he fact that an alternative may be more expensive or less profitable is not sufficient to show that the alternative is financially infeasible. What is required is evidence that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project."

Environmental Feasibility. Would implementation of the alternative cause substantially greater environmental damage than the Proposed Project, thereby making the alternative clearly inferior from an environmental standpoint? To the extent that the alternative could introduce a new significant effect, or increase the severity of a significant effect, this could render the alternative environmentally infeasible.

Legal Feasibility. Does the alternative conflict with established law or regulations, such that it would be infeasible to implement? With respect to Vineyard Order, this criterion is particularly relevant to consistency with Project Objective #3, which requires consistency with the State Nonpoint Source Pollution Control Program, the State Antidegradation Policy, the precedential language in the Eastern San Joaquin Agricultural Order, the Basin Plan, including the Temperature Implementation Policy, the Sediment TMDL Implementation Policy, watershed specific TMDLs, and other relevant statutes and water quality plans and policies (i.e., No Net Loss Policy for Wetlands). Inability to meet this objective, even if the other two objectives (i.e., "most") could be met, could render an alternative legally infeasible.

Social Feasibility. Is the alternative inconsistent with an adopted goal or policy of the Regional Water Board or another applicable agency? This criterion may apply to aspects of a given alternative that, while technically legally feasible, would not support the agency's policies or mission.

Technical Feasibility. Is the alternative infeasible from a technological perspective, considering available technology? Given that the Vineyard Order and its alternatives would not involve specific actions at a specific site (i.e., would not dictate the manner of compliance), technical feasibility is not a prominent limiting factor. It is possible that

certain Management Practices may be technically infeasible at certain locations, but it is assumed that growers would implement or install Management Practices that are suitable for their specific vineyard/situation.

Note that the threshold for retaining an alternative for consideration in the DEIR is *potential* feasibility. In this regard, an alternative does not need to *definitely* be feasible in order to carry it forward for analysis. The approving body (in this case the Governor's appointed members of the Regional Water Board) makes the final determination in its findings pursuant to CEQA as to whether a given alternative analyzed in the DEIR is actually feasible.

c. Would the Alternative Lessen or Avoid One or More of the Proposed Project's Significant Environmental Impacts?

As described throughout this DEIR, the Vineyard Order would have the potential to result in potentially significant environmental impacts that could be reduced to less-than-significant with implementation of mitigation measures. The Vineyard Order would result in the following significant and unavoidable impacts, for which feasible mitigation could not be identified to reduce those impacts to a less-than-significant level:

1) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmland) to non-agricultural use (Impact AG-1). Specifically, the Streamside Area setback requirements in Vineyard Order could result in the conversion of up to 300 acres (0.5 percent) of Important Farmland planted to vineyards to riparian buffers (i.e., non-agricultural) uses.

2) Conflict with existing zoning for agricultural use or a Williamson Act contract (Impact AG-2). As noted above, the Streamside Area setback requirements in the Vineyard Order could result in the conversion of up to approximately 300 acres of Important Farmland to non-agricultural uses. The majority of this conversion would occur on lands zoned for agricultural use, and the conversion to non-agricultural uses would conflict with the spirit/intent of agricultural zoning districts. Additionally, up to approximately 200 acres (inclusive of Impact AG-1) of this conversion would occur on lands under Williamson Act contracts. Although Williamson Act contracts protect open space uses as well as agricultural uses, this amount of conversion would conflict with the primary intent of the Williamson Act.

It is also important to consider that the Vineyard Order is specifically designed to correct existing unacceptable water quality impairments caused in part by discharges from vineyards. Therefore, even though the Vineyard Order could result in the significant impacts described above, its purpose is to address the existing adverse impacts on the environment that are described in the Project Description Chapter. This objective was taken into account during the alternatives impacts evaluation.

B. Analysis of Alternatives

The following alternatives were carried forward for analysis in the DEIR because they

are required by statute or would meet most of the Vineyard Order objectives, are potentially feasible, and would avoid or substantially reduce one or more potentially significant impact of the Vineyard Order:

1) No Project

2) Reduced Streamside Area Setback

3) Offsite Riparian Restoration

These alternatives are defined below. The alternative screening results are also discussed, and the potential environmental impacts of each alternative are analyzed in comparison to the Vineyard Order. No alternatives were considered but dismissed from full analysis in the DEIR.

1. No Project Alternative

a. Description

Under the No Project Alternative, the Regional Water Board would not implement the Vineyard Order. In this scenario, existing county-level regulatory programs and existing voluntary programs are expected to continue as they did at the time when the Notice of Preparation was issued. As the Vineyard Order would not be adopted under the No Project Alternative, none of requirements described in the Project Description Chapter and Attachment A would go into effect. Discharges from vineyards in the North Coast Region would not be subject to requirements envisioned under the Vineyard Order.

b. Screening Analysis

The No Project Alternative is required by statute; therefore, it was not screened against the alternatives screening criteria. However, while the No Project Alternative is analyzed in this DEIR for informational purposes, it is not consistent with the Non-Point Source Policy, Antidegradation Policy and direction from the State Water Board to regulate discharges from irrigated lands under its Irrigated Lands Regulatory Program. Under the No Project Alternative, Vineyard sediment discharges and temperature impacts would not be regulated. As such, the fundamental objectives of the proposed project would not be achieved. Under the No Project alternative, impacts to beneficial uses from Vineyard discharges would persist and without a monitoring and reporting program there would be no adequate adaptive management feedback loop to assess the quality of surface waters and groundwaters affected by vineyard operations. Because the No Project alternative fails to meet the basic objectives and legal requirements, this DEIR does not consider the No Project alternative in further detail.

2. Reduced Streamside Area Setback Alternative

a. Description

Under the Reduced Streamside Area Setback Alternative (Reduced Setback

Alternative), the width of setbacks is reduced by 50 percent as shown in Table XV-1. Table XV-1 also includes estimated acres of land currently planted to vineyards impacted by setbacks in the Proposed Project and setbacks in the Reduced Riparian Setback Alternative.

In this alternative, there would be no change to the proposed Vineyard Order requirements, prohibitions or allowed activities in Streamside Areas. The timeline of implementation would also not change, and Dischargers would be required to meet all Streamside Area setback requirements at the time of vineyard replant.

Implementing the setback requirements as proposed in the Vineyard Order would result in conversion of Important Farmland (Prime Farmland, Unique Farmland, and Farmland of Statewide Importance) to non-agricultural use. The Reduced Setback Alternative potentially decreases conversion of Important Farmland, therefore reducing the impact.

Table XV-1: Streamside Area Vegetated Buffer Minimum Horizontal Width (feet) in Vineyard Order and Reduced Setback Alternative

	Perennial Stream	Ephemeral/ Intermittent Stream	Hydrologically Connected Undesignated Channel	Wetland	Lake, Pond, or On-Stream Reservoir	Estimated Important Farmland Converted (acres)
Vineyard Order	50	25	10	50	50	300
Reduced Setback Alternative	25	12	5	25	25	125

b. Screening Analysis

Consistency with Project Objectives

The Reduced Setback Alternative would meet Project Objective #2 and partially meet Project Objectives #1 and #3 in the sense that implementing the Alternative as proposed would reduce pollutant discharges at least to some degree and maintain prohibitions against removal of riparian vegetation within those setbacks.

However, the Reduced Setback Alternative may not achieve the same level of reductions in pollutant discharges and protection of beneficial uses compared to the Vineyard Order due to the lesser control of sediment discharges and temperature impacts. Thus, Reduced Setback Alternative would do less to correct the existing adverse impacts of vineyard properties on water quality in the North Coast Region.

Overall Conclusion: The Reduced Setback Alternative would potentially meet some of

the project objectives for the Vineyard Order.

c. Feasibility

Economic Feasibility: The Reduced Setback Alternative would potentially be less costly to implement than the Proposed Project, as there would be less agricultural land to convert to non-agricultural use under Streamside Area requirements. However, as the Vineyard Order proposes this conversion at the time of replant, it is likely that this cost decrease is minimal. It is also possible that a reduced vegetated buffer width would decrease overall cost of Management Practice implementation, as the total area required for Streamside Area practices would be less. However, Dischargers would have to implement similar Management Practices in the Farm Area so it is likely that this increased cost would be minimal. Therefore, the Reduced Setback Alternative would be economically feasible.

Environmental Feasibility: The Offsite Alternative would be less beneficial to water quality than the Proposed Project. The Reduced Setback Alternative could potentially increase removal of existing riparian vegetation and habitat, which could in turn have adverse effects on biological resources and water quality. The Reduced Setback Alternative could result in more vineyards removing existing riparian vegetation adjacent to their fields. However, the extent and severity of this potential impact is speculative because it is unknown which growers in which locations may choose to pursue riparian vegetation removal under this alternative. As such, these potential impacts are not considered significant, and the Reduced Setback Alternative would not be infeasible.

Legal Feasibility: The Reduced Setback Alternative is considered to potentially meet Project Objective #3 and thus would be potentially legally feasible.

Social Feasibility: The Reduced Setback Alternative would not appear to conflict with any policy or social goal of the North Coast Regional Water Board. For the purposes of this analysis, the Reduced Setback Alternative is considered potentially feasible from a social standpoint.

Technical Feasibility. The Reduced Setback Alternative would not require any additional monitoring and reporting from what is proposed in the Vineyard Order. As such, the Reduced Setback Alternative would be feasible from a technical standpoint.

Overall Conclusion: The Reduced Setback Alternative is potentially feasible.

Potential to Reduce or Eliminate One or More Significant Environmental Impacts

The Reduced Setback Alternative would reduce both of the significant and unavoidable impacts that are identified for the Proposed Project (i.e., conversion of Important Farmland to non- agricultural uses and potential conflicts with agricultural zoning and Williamson Act contracts). Because the Reduced Setback Alternative includes lesser setback requirements than the Proposed Project, it could result in the potential conversion of 120 acres of Important Farmland to a non-agricultural use planted to

vineyards as compared the potential conversion of up to 300 acres for the Proposed Project (see Agriculture and Forestry Chapter). The Reduced Setback Alternative would reduce but not eliminate the conversion of land zoned for agricultural use and/or under Williamson Act contract) to a non-agricultural use as compared to the Proposed Project.

However, while the Reduced Setback Alternative would reduce the environmental impacts mentioned above, it would not achieve some of the Proposed Project's beneficial effects on the environment. As discussed above, the Regional Water Board does not find that the Reduced Setback Alternative would achieve the same level of reductions in pollutant discharges compared to the Proposed Project due to the lesser control of sediment and temperature discharges. Thus, Reduced Setback Alternative would do less to correct the existing adverse impacts of vineyards on water quality in the North Coast Region.

Additionally, not having reduced setback requirements would lessen the beneficial effects of additional riparian vegetation/habitat on water quality and biological resources that could be achieved through the Proposed Project.

Overall Conclusion: The Reduced Setback Alternative would reduce or eliminate one or more significant environmental impacts of the Proposed Project but does not completely support all objectives of the Proposed Project.

d. Impacts Analysis

i. Agriculture and Forestry Resources

As described above in the Screening Analysis, the Reduced Setback Alternative would lessen or reduce the Vineyard Order's adverse effects on agriculture and forestry resources related to conversion of Important Farmland to non-agricultural uses and conflicts with existing zoning for agricultural use and Williamson Act contracts. The Reduced Setback Alternative would reduce setback distances by 50 percent and thus would not result in the potential direct conversion of up to approximately 300 acres of agricultural land to non-agricultural uses. This alternative would not avoid some conversion of Important Farmland, as approximately 120 acres would still be subject to the Streamside Management Area setbacks and undergo conversion.

No other components of the Reduced Setback Alternative would be anticipated to result in the substantial conversion of existing agricultural land; however, like the Vineyard Order, the Reduced Setback Alternative would allow growers discretion with respect to the types of Management Practices that they may choose to implement, and some types of Management Practices (e.g., sediment basins, vegetated filter strips) could result in relatively small areas of farmland being taken out of production (i.e., due to the footprint of these sediment control facilities).

The Reduced Setback Alternative also would likely reduce the costs of compliance for growers relative to the Vineyard Order, and thus could reduce potential for economic effects to indirectly result in the conversion of agricultural land to non-agricultural uses

(e.g., a vineyard owner selling their vineyard and the buyer converting the land to a non-agricultural use), although this potential impact is largely speculative. Overall, the Reduced Setback Alternative's impact on agriculture and forestry resources would be **significant and unavoidable**.

ii. Other impacts:

Air Quality: As the Reduced Setback Alternative would still require Management Practices within Streamside Areas albeit with less available land for those Management Practices, there is no predicted difference in the impact to air quality between the Reduced Setback Alternative and the Vineyard Order. The impact to air quality would be **less than significant**.

Biological Resources: While the likely reduced construction/implementation of Management Practices in land that would have otherwise been part of a vegetative buffer under the Vineyard Order could reduce potential for some short-term construction-related impacts to biological resources, it would also limit the beneficial effects on water quality and biological resources. Because the Streamside Area setbacks are reduced in this alternative, in theory, additional riparian vegetation could be removed in comparison to the Vineyard Order. The extent and severity of this potential impact is unknown and speculative, however, as growers would still have discretion as to whether to retain or remove vegetation in their specific circumstances (i.e., it cannot be determined where and to what extent removal of vegetation may occur). In particular, the maintenance of riparian vegetation under the Vineyard Order requirements would allow for attenuation of pollutant discharges from vineyard properties, provide shading for stream temperature regulation, provide additional habitat for a variety of species, and provide improved water quality for downstream uses. The Reduced Setback Alternative would not achieve these beneficial effects on biological resources to the same degree as the Vineyard Order. Nevertheless, from a CEQA perspective, the Reduced Setback Alternative would likely not substantially adversely affect biological resources relative to baseline conditions particularly with implementation of standard mitigation measures. Therefore, this impact would be **less than significant with mitigation**.

Tribal Cultural Resources and Cultural Resources: Similar to biological resources, the Reduced Setback Alternative could have reduced impacts on cultural resources to the extent that this alternative would result in fewer construction activities associated with construction/installation of vegetative buffer strips as required in the Streamside Area setback requirements of the Vineyard Order. Construction/installation of Management Practices involving ground disturbance could encounter buried unknown cultural resources and adverse impacts to these resources could occur if appropriate protocols are not followed. The probability of encountering Tribal Cultural resources is generally considered low for both the Vineyard Order and Reduced Setback Alternative, and potential impacts could be avoided or reduced through compliance with existing laws and regulations and implementation of mitigation measures. Overall, this impact would be **less than significant with mitigation**.

Greenhouse Gas Emissions: Related to energy use, greenhouse gas (GHG) emissions under the Reduced Setback Alternative would likely be reduced compared to the Vineyard Order due to fewer Management Practices that would need to be implemented. Operation of construction equipment during construction/installation of certain Management Practices (e.g., vegetated filter strips) would generate GHG emissions. Overall, this impact would be **less than significant.**

Hazards and Hazardous Materials: The Reduced Setback Alternative could result in reduced hazards and hazardous materials impacts relative to the Proposed Project to the extent that it could result in reduced construction/installation of Management Practices (e.g., vegetated filter strips). Such reduced construction activity could result in reduced use, transport, storage, and disposal of hazardous materials (e.g., fuel, oil, lubricant, etc.) and reduced potential for accidental releases or harmful effects on workers, the public or environment due to improper handling. However, as discussed in the Hazards and Hazardous Materials Chapter, these effects would be less than significant for the Proposed Project with implementation of mitigation measures and compliance with existing laws and regulations related to hazardous materials. The potential hazards and hazardous materials effects of the Reduced Setback Alternative would be slightly reduced (decrease in construction related to Management Practices) compared to the Vineyard Order. This impact would be **less than significant with mitigation.**

Hydrology and Water Quality: The Reduced Setback Alternative would result in reduced Management Practice implementation compared to the Vineyard Order in Streamside areas. As discussed in the Screening Analysis above, the Reduced Setback Alternative would potentially meet most of the project objectives; however, the Regional Water Board finds that the Reduced Setback Alternative would not reduce discharges of waste (specifically sediment and temperature impacts) as effectively as the Vineyard Order. As such, the Reduced Setback Alternative would not fully achieve the beneficial effects of the Vineyard Order on hydrology and water quality. To the extent that the Reduced Setback Alternative would not prohibit the removal of existing riparian vegetation/habitat, it could also adversely affect hydrology and water quality relative to baseline. Overall, this impact would be **less than significant with mitigation.**

3. Offsite Riparian Restoration Alternative

a. Description

Under the Offsite Riparian Restoration Alternative (Offsite Alternative) Dischargers would be given the option to mitigate the difference in area available for natural succession of riparian vegetation between existing conditions and proposed requirements. Mitigation would be accomplished through restoration and protection of riparian vegetation at another location within the same sub-watershed (HUC-12). In this alternative, the Offsite Alternative option would be added to the currently proposed Streamside Management Area requirements. The width and length of offsite riparian area mitigation would be 200 percent of the difference between existing conditions and

the proposed requirements. The proposed mitigation area would have to be placed into a conservation easement with enough financial resources to fund 20 years of maintenance, i.e., replace vegetation which did not survive. The timeline of implementation would change, and Dischargers would be required to meet Offsite Alternative requirements within five years of the date of Vineyard Order adoption. This option would only be available to existing vineyards at the time of Vineyard Order adoption.

Implementing the setback requirements as proposed in the Vineyard Order would result in conversion of Important Farmland (Prime Farmland, Unique Farmland, and Farmland of Statewide Importance) to non-agricultural use. The Offsite Alternative potentially decreases conversion of Important Farmland, therefore reducing that significant impact.

b. Screening Analysis

Consistency with Project Objectives

The Offsite Alternative would partially meet Project Objective #1 in the sense that implementing the Alternative as proposed would reduce pollutant discharges at least to some degree and maintain prohibitions against removal of riparian vegetation within setbacks.

However, the Offsite Alternative may not achieve the same level of reductions in pollutant discharges compared to the Proposed Project due to the lesser control of sediment discharges and temperature impacts at vineyards and the likelihood that mitigation sites would not have the same magnitude of pollutant discharges as a Vineyard. Mitigation sites would have to be in a location not already subject to waste discharge requirements or another regulatory action. Thus, the Offsite Alternative would do less to correct the existing adverse impacts of vineyards on water quality in the North Coast Region.

The Offsite Alternative would likely lead to more rapid increases in riparian shade and protection of streambanks from erosion given the following: (1) a shorter timeline to implement the mitigation projects as compared to the timeline with achieving setbacks in the Proposed Project; and (2) it would require planting and maintenance of riparian vegetation whereas the Proposed Project only requires allowing natural succession of riparian vegetation.

Overall Conclusion: The Offsite Alternative would meet Project Objective #2 and partially meet Project Objectives #1 and #3.

c. Feasibility

Economic Feasibility. The Offsite Alternative could potentially be more costly than the Proposed Project for both Dischargers and Regional Water Board staff to implement. Staff would play a more active role in reviewing and responding to proposed riparian mitigation plans and verifying compliance over the 20-year period. Dischargers would

incur costs to develop, implement, and maintain riparian mitigation projects. Overall, implementation of the Offsite Alternative does not appear to be economically infeasible.

Environmental Feasibility. The Offsite Alternative would be less beneficial to water quality than the Proposed Project. The Offsite Alternative would have reduced impacts on Important Farmland, existing zoning for agricultural use, and Williamson Act contract lands compared to the Proposed Project due to the less stringent setback requirements; however, the conversion of agricultural land to non-agricultural uses likely would still be significant relative to baseline conditions. The Offsite Alternative would not result in any other significant impacts above and beyond those identified for the Proposed Project, such as to render this alternative environmentally infeasible.

Legal Feasibility. As discussed above under “Consistency with Project Objectives,” the Offsite Alternative would appear to comply with the NPS Policy and Antidegradation Policy, although it would not be entirely consistent with the Temperature Implementation Policy. The Offsite Alternative would not violate or contradict any other existing laws, regulations, or policies. Like the Proposed Project, the Offsite Alternative would not mandate a manner of compliance and would not require or encourage actions on lands subject to legal protections. For the purposes of this analysis, the Offsite Alternative would not be legally infeasible.

Social Feasibility. The Offsite Alternative would not appear to conflict with any policy or social goal of the Regional Water Board. For the purposes of this analysis, the Offsite Alternative is considered potentially feasible from a social standpoint.

Technical Feasibility. An aspect of the Offsite Alternative that may be technically challenging is the requirement to implement riparian mitigations on lands that are currently lacking in riparian vegetation within the same sub-watershed which are not already subject to waste discharge requirements or another regulatory action. Then the mitigation area must be placed in a conservation easement with enough financial resources to fund 20 years of maintenance, i.e., replace vegetation which did not survive. However, overall, for the purposes of this analysis, the Offsite Alternative is considered technically feasible.

Overall Conclusion: The Offsite Alternative is potentially feasible.

Potential to Eliminate or Reduce One or More Significant Environmental Effects

As noted above, the Offsite Alternative may reduce potential impacts of the Proposed Project on Important Farmland, existing zoning for agricultural land, and Williamson Act contract lands due to the optional reduced setback requirements. Whereas the Proposed Project includes setback requirements based on waterbody type, the Offsite Alternative allows existing agricultural land to remain in production through implementation of a riparian mitigation project. These requirements may result in fewer acres of existing Important Farmland being taken out of production for establishment of riparian setbacks. Likewise, the reduced conversion of existing agricultural lands to a

non-agricultural use would result in fewer conflicts with existing zoning for agricultural land use and Williamson Act contracts.

Overall Conclusion: The Offsite Alternative could potentially reduce one or more of the significant impacts of the Proposed Project but would not fully achieve the Project Objectives.

d. Impacts Analysis

i. Agricultural and Forestry Resources

The Offsite Alternative likely would result in some conversion of existing Important Farmland to non-crop (i.e., riparian/open space) use as a result of Dischargers not selecting to implement the Offsite Alternative. The conversion would likely be reduced compared to the Proposed Project but would still likely be significant and unavoidable. As the Offsite Alternative would still have the potential to convert existing agricultural land to non-crop uses, it may conflict, to some degree, with existing zoning for agricultural use and Williamson Act contracts (most agricultural lands within the North Coast Region are zoned for agricultural use and under Williamson Act contract). Similar to the Proposed Project, no feasible mitigation is available to eliminate these potential impacts. As such, the impact of the Offsite Alternative impacts on agricultural and forestry resources would be **significant and unavoidable**.

ii. Air Quality

The Offsite Alternative would result in similar implementation of Management Practices as the Proposed Project, which would result in similar air emissions from operation of construction equipment and potential fugitive dust generation. Similar to the Proposed Project, the air emissions under the Offsite Alternative would not be anticipated to be significant, given compliance with existing laws and regulations and implementation of any measures that may be required by the air district. Therefore, impacts on air quality from this alternative would be **less than significant.**

iii. Biological Resources

Implementation/construction of Management Practices under the Offsite Alternative would have similar potential to impact biological resources as the Proposed Project. As discussed above, these potential impacts may be more likely to occur in the early years of the order under the Offsite Alternative due to the faster time schedule. Over the life of the project, potential impacts to biological resources would likely be similar due to the similar total level of Management Practice implementation/construction. These impacts would not be significant with implementation of mitigation measures. Overall, the impacts of the Offsite Alternative on biological resources would be **less than significant with mitigation.**

iv. Cultural Resources

The Offsite Alternative could adversely affect buried, unknown cultural resources,

similar to the Proposed Project, as a result of ground-disturbing activities during construction of reasonably foreseeable Management Practices. Excavation and grading that may occur for implementation of Management Practices and riparian mitigation projects could unearth buried cultural resources, which could result in adverse impacts on these resources if proper protocols are not followed. Like the Proposed Project, these potential impacts could be avoided or reduced through compliance with existing laws and regulations pertaining to treatment of cultural resources, as well as implementation of mitigation measures. Relative to the Proposed Project, these potential impacts could be more front-loaded towards the first years of the order due to the faster time schedule in the Offsite Alternative, although the overall potential impacts over the life of the Vineyard Order would be similar. Overall, the impacts of the Offsite Alternative would be **less than significant with mitigation.**

v. Economics

The Offsite Alternative may result in additional front-loaded costs due to the faster time schedule and long-term costs associated with placing proposed mitigation areas into a conservation easement with sufficient financial resources to fund 20 years of maintenance, i.e., replace vegetation which did not survive. However, even with the increased costs, these costs likely would affect a small percentage of vineyards. As such, this impact on the economics would be **less than significant.**

vi. Energy

The Offsite Alternative could result in energy use, primarily from operation of construction equipment (e.g., fuel use) during implementation of riparian mitigation projects and reasonably foreseeable Management Practices. Relative to the Proposed Project, this energy use may be somewhat increased during the early years of order implementation, but overall would be similar over the life of the Order. This energy use would not be significant and would not be unnecessary or wasteful, particularly given compliance with existing laws and regulations. Therefore, the Offsite Alternative's impact on energy would be **less than significant**.

vii. Greenhouse Gas Emissions

The Offsite Alternative would result in no change in GHG emissions relative to the Proposed Project but will be front-loaded due to faster time schedules. Overall, GHG emissions would likely be below applicable significance thresholds and would not be significant. As such, GHG emissions from the Offsite Alternative would be **less than significant.**

viii. Hydrology and Water Quality

Similar to the Proposed Project, the Offsite Alternative would have beneficial effects on hydrology and water quality by reducing discharges of pollutants from vineyards. Under existing conditions, there are adverse impacts on hydrology and water quality associated with vineyards, which have contributed to exceedances of water quality objectives and impairment of beneficial uses. Over the short term, implementation of

riparian mitigation projects could result in impacts to hydrology and water quality if adequate precautions are not taken. Overall, given compliance with existing laws and regulations, potential impacts on hydrology and water quality for both the Proposed Project and Offsite Alternative would be **less than significant with mitigation**.

ix. Tribal Cultural Resources

As discussed above under "Cultural Resources," ground-disturbing activities for construction/installation of certain Management Practices under the Offsite Alternative could potentially encounter buried unknown cultural resources, some of which could be tribal cultural resources (TCRs). Similar to the Proposed Project, this could result in adverse impacts if proper protocols are not followed for treatment of cultural resources, including TCRs. Under the Offsite Alternative, due faster time schedules, associated ground-disturbing activities could be more skewed toward the early years of the Order; thus, potential TCR impacts may more readily occur during these early years compared to the Proposed Project. However, compliance with existing laws and regulations and implementation of standard mitigation measures would reduce these potential impacts to **less than significant with mitigation**.

C. Environmentally Superior Alternative

The State CEQA Guidelines, under Section 15126.6(e)(2), state that "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." Neither the CEQA statute nor the State CEQA Guidelines states that an EIR must necessarily identify an environmentally superior alternative, particularly for situations/projects where the no project alternative is not environmentally superior or where none of the other alternatives are clearly environmentally superior. The State CEQA Guidelines do not specifically address what happens when the No Project Alternative is infeasible.

As described above, in the case of the Proposed Project, the No Project Alternative is not environmentally superior because it is not sufficiently protective of water quality and does not comply with the North Coast Region's Temperature Implementation Policy and the State Water Board's NPS Policy.

Due to the nature of the Proposed Project, it is difficult to designate any of the remaining alternatives (i.e., other than the No Project Alternative) as environmentally superior. Unlike many of the more "typical" projects evaluated under CEQA (e.g., a housing development), the purpose of the Proposed Project is largely to correct existing ongoing impairments in water quality associated with discharges from vineyards. In other words, the purpose of the Proposed Project is to benefit the environment. Additionally, the baseline conditions, against which the potential impacts of the Proposed Project and alternatives are evaluated, are unacceptable from an environmental standpoint in that beneficial uses are not being protected and other serious water quality impacts are occurring. Therefore, although the Proposed Project would result in two significant impacts relative to baseline conditions, it would result in a number of beneficial effects and would improve existing degraded water quality conditions that are represented in

the baseline conditions.

As discussed above, the Reduced Setback Alternative and Offsite Alternative would reduce, but not eliminate, the significant and unavoidable effects of the Proposed Project related to conversion of agricultural land to non-agricultural uses as a result of the setback requirements. However, the setback requirements included in the Proposed Project would be highly effective in reducing discharges of pollutants to waterbodies and restoring beneficial uses affected by vineyards. Therefore, while the two action alternatives would reduce adverse effects on agricultural resources, they also would not achieve the same level of beneficial effects that would be realized by the Proposed Project.

In other words, the Proposed Project and the alternatives considered each involve environmental tradeoffs, including environmental costs and benefits relative to baseline conditions. Table XV-2 provides a relative ranking for the Proposed Project and action alternatives with respect to the primary environmental costs and benefits, which are discussed in greater detail in Chapter III of this DEIR and above As shown in Table XV-2. Taking into account all the relevant factors, staff find that the Proposed Project best accomplishes the water quality goals of Regional Water Board, while minimizing environmental impacts to the extent possible.

Table XV-2: Ranking of the Proposed Project and Alternatives with Respect to Primary Environmental Costs and Benefits

Relevant Cost or Benefit	Proposed Project	Reduced Setback Alternative	Offsite Alternative
Environmental Costs			
Conversion of Agricultural Lands to Non-Agricultural Uses	3	2	1
Construction-Related Effects from Implementation of Management Practices	2	2	3
Compliance Costs for Growers	2	2	3
Environmental Benefits			
Protection / Creation of Riparian Vegetation and Habitat	1	2	1

Relevant Cost or Benefit	Proposed Project	Reduced Setback Alternative	Offsite Alternative
Long-Term Water Quality Benefits from Implementation of Management Practices	1	2	1
Overall Effectiveness of Discharge Reduction / Water Quality Protection	1	2	2
Cumulative Score[1]	**10**	**12**	**11**

Note: Lower cumulative score indicates higher ranking (i.e., is better).

D. Changes in Project Design to Minimize Impacts to Resources

The Initial Study prepared for the Proposed Project identified Less than Significant Impacts with Mitigation for Aesthetics, which through changes in project design has been determined to be Less than Significant. The Initial Study also identified Potentially Significant Impacts to Air Quality and Greenhouse Gas Emissions which through additional environmental analysis have been determined to be Less than Significant - see the Air Quality and Greenhouse Gas Emission Chapters for a discussion of impacts.

1. Aesthetics

Vineyards in the North Coast Region that would be subject to the proposed Vineyard Order are typically located in rural agricultural settings. These lands are visible from public roads and neighboring properties and may also be partially visible from public open space areas. Vineyards are generally relatively large, open, cultivated areas. Trees, or other shrubs or landscape plantings, may be present, particularly along property boundaries and along riparian corridors. vineyards may also include agricultural buildings, irrigation and drainage structures, and roads.

The North Coast Region is a predominantly rural region with numerous outstanding natural features and scenic vistas, including dramatic coastline, rolling hills, mountains, forests, rivers, wetlands, and estuaries. Hundreds of miles of highway cross through the North Coast Region. Within these highways 52 miles have been designated officially as a State Scenic Highway. Within the viticultural areas of the North Coast Region this includes 12 miles of Highway 12 east of Santa Rosa and 28 miles of Highway 116 west of Santa Rosa.

The Initial Study determined the Proposed Project would have a Less than Significant Impact with Mitigations to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway. The Initial Study determined impacts to scenic resources to originate from two conditions that may occur

as a result of the Proposed Project: (1) increased risk of wildfire damage as a result of order requirements limiting removal of woody vegetation within Streamside Areas; and (2) implementation of ground disturbing Management Practices.

In response to increased risk of wildfire, the Proposed Project was changed to allow for vegetation management in Streamside Areas consistent with State and Local fire-safe requirements. Furthermore, riparian vegetation adjacent to streams and wetland areas usually has a higher moisture content than surrounding vegetation and it is speculative that allowing natural succession of riparian vegetation would substantially increase wildfire risk and therefore result in damage to scenic resources.

In response to potential impacts to scenic resources from implementation of ground disturbing Management Practices, the Proposed Project was changed to provide vineyards the option to implement practices in a manner that best suit their specific situation. If additional Management Practices (beyond those currently implemented) are needed to control discharges of waste, it is expected they would be constructed within or adjacent to existing disturbed areas; therefore, it would be speculative to determine that a Management Practice would damage a scenic resource (such as a rock outcrop) and require a mitigation measure when the location of future Management Practices is unknown at this time. Therefore, the impact to Aesthetic Resources **is less than significant**.

XVI. Other CEQA Required Sections

A. Growth Inducing Impacts

Section 15126.2(d) of the CEQA Guidelines requires that an Environmental Impact Report (EIR) include a detailed statement of a proposed project's anticipated growth-inducing impacts. The analysis of growth-inducing impacts must discuss the ways in which a proposed project could foster economic or population growth or the construction of additional housing in the surrounding environment. The analysis must also address project-related actions that would remove existing obstacles to population growth, tax existing community service facilities and require construction of new facilities that cause significant environmental effects, or encourage or facilitate other activities that could, individually or cumulatively, significantly affect the environment. A project would be considered growth-inducing if it induces growth directly (through the construction of new housing or increasing population) or indirectly (increasing employment opportunities or eliminating existing constraints on development). Under CEQA, growth is not assumed to be either beneficial or detrimental.

A majority of vineyards are already implementing Management Practices with the assistance of current employees and contractors. In order to provide assistance with adaptive management, monitoring and reporting, we estimate that up to an additional ten full-time jobs could be created. Even if the actual number just for the sake of argument, was an order of magnitude larger, compliance actions would have a very small overall effect on job creation that would result in a less than significant effect on economic and/or population growth within the project areas. The Proposed Project does not propose the creation of any housing or long-term facilities that would otherwise create a significant number of jobs and/or increase the population base within the geographic scope of the Vineyard Order.

Reasonably foreseeable Management Practices under the Proposed Project with the greatest potential for environmental impacts would require temporary workers during the construction phase. Example Management Practices that would require construction workers for vegetated buffers, sediment retention basins, and streamside areas. It is anticipated that implementing these Management Practices would rely on construction workers in the local work force and construction would be short term, and therefore, would have a small overall effect on job creation within the Project area. Therefore, the Proposed Project would not have growth inducing impacts.

B. Significant and Unavoidable Environmental Effects

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts that cannot be mitigated to a less-than-significant level. The following impacts were found to be significant and unavoidable for the Proposed Project:

Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Important Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) of the California Resources

Agency, to non- agricultural use. (Chapter III, Agriculture and Forestry Resources)

Impact AG-2: Conflict with existing zoning for agriculture use or a Williamson Act contract. (Chapter III, Agriculture and Forestry Resources).

APPENDIX I: Abbreviations, Acronyms, and Definitions

A. Acronyms and Abbreviations

Acronym/Abbreviation	Term
AG	Agricultural and Forestry Resources
Antidegradation Policy	State Water Board Resolution 68-16, the Statement of Policy with Respect to Maintaining High Quality Waters in California
AQ	Air Quality
Basin Plan	Water Quality Control Plan for the North Coast Basin
BIO	Biological Resources
BPTC	Best practicable treatment or control
CAC	County Agricultural Commissioner
CalFIRE	California Department of Forestry and Fire Protection
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CDPR	California Department of Pesticide Regulation
CDPH	California Department of Public Health
CEDEN	California Environmental Data Exchange Network
CEQA	California Environmental Quality Act
COLD	Cold Freshwater Habitat Beneficial Use
CN	Nitrogen Removal Coefficient
CSDS	Controllable Sediment Discharge Sources
CUL	Cultural Resources
CWA	Clean Water Act
DDW	State Water Board, Division of Drinking Water
DEIR	Draft Environmental Impact Report
DWR	Department of Water Resources

Acronym/Abbreviation	Term
EIR	Environmental Impact Report
ESJ Order	Eastern San Joaquin Order (State Board Order WQ 2018-0002).
ELAP	Environmental Laboratory Accreditation Program
ESA	Endangered Species Act
Enforcement Policy	State Water Board Water Quality Enforcement Policy
eNOI	Electronic Notice of Intent
GEO	Geology and Soils
GHG	Greenhouse Gas
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GWP	Groundwater Protection (see GWP Formula, GWP Values, GWP Targets)
HAZ	Hazardous Materials
HUC	Hydrologic Unit Code
HWQ	Hydrology and Water Quality
ILRP	Irrigated Lands Regulatory Program
INMP	Irrigation and Nitrogen Management Plan
MCL	Maximum Contaminant Level
MDL	Method Detection Limit
mg/L	Milligrams per Liter
MRP	Monitoring and Reporting Program
NAHC	Native American Heritage Commission
NOC	Notice of Completion
NOD	Notice of Determination
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPS	nonpoint source

Acronym/Abbreviation	Term
NPS Policy	State Water Board Policy for the Implementation and Enforcement of the Nonpoint Source Pollution Control Program
NRCS	Natural Resource Conservation Service
OEHHA	California Office of Environmental Health Hazard Assessment
PCA	Agricultural Pest Control Advisor
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PRC	California Public Resources Code
RCD	Resource Conservation District
Regional Water Board	North Coast Regional Water Quality Control Board
Sediment TMDL Policy	TMDL Implementation Policy Statement for Sediment Impaired Receiving Waters in the North Coast Region
SGMA	Sustainable Groundwater Management Act
State Water Board	State Water Resources Control Board
SWAMP	Surface Water Ambient Monitoring Program
TAG	Technical Advisory Group
TCR	Tribal Cultural Resource
Temperature Policy	Implementation of the Water Quality Objectives for Temperature
TMDL	Total Maximum Daily Load
UCCE	University of California Cooperative Extension
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VESCO	Vineyard and Orchard Erosion and Sediment Control Ordinance
Water Code	California Water Code
WDRs	Waste Discharge Requirements
WBD	Watershed Boundary Dataset
WQMP	Water Quality Management Plan

B. Definitions

The following definitions apply to the Draft Environmental Impact Report (EIR) for General Waste Discharge Requirements for Commercial Vineyards in the North Coast Region. The terms are arranged in alphabetical order. All other terms not explicitly defined here for the purposes of this EIR have the same definitions as defined by Water Code Division 7 or are explained within the Attachments.

Adaptive Management. The iterative process of modifying existing management practices or incorporating new scientific and programmatic information into the implementation of management practices to ensure the goals of the Order are achieved.

Agricultural Drainage Structure. Features that collect, convey, channel, hold, inhibit, retain, detain, infiltrate, divert, treat, or filter stormwater runoff, including detention and retention basins, overland flow paths, pipes, channels, and the inlets and outlets to these features. These can include vineyard tile drains and similar subsurface drainage structures. They do not include drainage alteration for private roads and driveways, dams, reservoirs, lakes, ponds, and structures. These features may also be classified as Class IV watercourses that do not support native aquatic species and are man-made, provide established domestic, agricultural, hydroelectric supply, or other beneficial use.

Antidegradation. The State Water Board established a policy to maintain high quality waters of the State - Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California." Resolution No. 68-16 requires existing high-quality water to be maintained until it has been demonstrated that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of water, and will not result in water quality less than that prescribed in the policies. When authorizing the discharge of waste into waters of the state, Regional Water Boards are required to comply with Resolution No. 68-16. Permits issued by the Regional Water Board must result in the best practicable treatment or control of the discharge necessary to assure pollution or nuisance will not occur and maintain the highest water quality consistent with maximum benefit to the people of the state. Resolution No. 68-16 has been approved by the USEPA to be consistent with the federal antidegradation policy (40 CFR 131.12).

Appurtenant. Belonging to, pertinent to, or used for the vineyard operation.

Appurtenant Agricultural Road. An agricultural road used for vineyard operations which connects or is used to access vineyard blocks under the ownership or control of the vineyard landowner or operator.

Basin Plan. The Basin Plan is the North Coast Region’s Water Quality Control Plan. The Basin Plan describes how the quality of the surface and groundwater in the North Coast Region should be managed to provide the highest water quality reasonably possible. The Basin Plan includes beneficial uses, water quality objectives, and a program of implementation.

Beneficial Uses. The Basin Plan establishes the beneficial uses to be protected in the North Coast Region. Beneficial uses for surface water and groundwater have been identified in waterbodies within the Region: Municipal and Domestic Supply (MUN), Agricultural Supply (AGR), Industrial Service Supply (IND), Industrial Process Supply (PRO), Groundwater Recharge (GWR), Freshwater Replenishment (FRSH), Navigation (NAV), Hydropower Generation (POW), Water Contact Recreation (REC-1), Non-Contact Water Recreation (REC-2), Commercial and Sport Fishing (COMM), Cold Freshwater Habitat (COLD), Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), Preservation of Areas of Special Biological Significance (ASBS), Preservation of Areas of Special Rare, Threatened, or Endangered Species (RARE), Marine Habitat (MAR), Migration of Aquatic Organisms (MIGR), Spawning, Reproduction, and/or Early Development (SPWN), Shellfish Harvesting (SHELL), Estuarine Habitat (EST), Aquaculture (AQUA), Native American Culture (CUL), Flood Peak Attenuation/Flood Water Storage (FLD), Wetland Habitat (WET), Water Quality Enhancement (WQE), Subsistence Fishing (FISH), Inland Saline Water Habitat (SAL).

Commercial Vineyard. Land planted in winegrapes including vineyard avenues and appurtenant agricultural roads/structures that has one or more of the following characteristics: (1) The landowner or operator holds a current Operator Identification Number/Permit Number for pesticide use reporting; (2) The crop and/or its product is sold, including but not limited to (a) an industry cooperative, (b) harvest crew/company, or (c) a direct marketing location, such as Certified Farmers Markets; or (3) the federal Department of Treasury Internal Revenue Service form 1040 Schedule F Profit or Loss from Farming is used to file federal taxes.

Concentration. The relative amount of a substance mixed with another substance. An example is 5 mg/L of nitrogen in water or 5 ppm (parts per million).

Controllable Sediment Discharge Sources (CSDS). Areas discharging or having the potential to discharge sediment to waters of the state in violation of water quality standards or other requirements of this Order caused or affected by human activity and may feasibly and reasonably respond to management practices.

Cover Crop. (See Ground Cover).

Discharge. A release of a waste to waters of the state, either directly to surface waters or through percolation to groundwater. Wastes from irrigated agriculture include but are not limited to earthen materials (soil, silt, sand, clay, and rock), inorganic materials (metals, plastics, salts, boron, selenium, potassium, nitrogen, phosphorus, etc.) and organic materials such as pesticides. Discharges from commercial vineyards regulated by this Order include discharges to surface water and groundwater, through mechanisms such as stormwater runoff flowing from irrigated lands, stormwater runoff conveyed in agricultural drainage structures, and runoff resulting from frost control or operational spills. These discharges can contain wastes that could affect the quality of waters of the state and impair beneficial uses.

Discharger. The owner and/or operator of the commercial vineyard that discharges or has the potential to discharge waste that could directly or indirectly reach waters of the State and affect the quality of any surface water or groundwater. See also Enrollee, Landowner, Operator, Permittee, Responsible Party.

Discharge Point. A discharge point is defined as a location where surface water discharges, which are in hydrologic connection to off-farm surface waters, leave the Discharger's property. A discharge point is any hydrologically connected discharge that is not an agricultural drainage structure as defined above.

Disturbance. When natural conditions have been modified in a way that may result in waste discharge to waters of the state from the site. Disturbed areas are where natural plant growth has been removed, whether by physical, animal, or chemical means, or natural grade has been modified for any purpose. Disturbance includes all activities whatsoever associated with developing or modifying land for agricultural related activities or access. Disturbance activities include, but are not limited to, construction of roads, buildings, water storage areas; excavation, grading, and site clearing. Disturbance includes crop areas, storage areas where soil or chemicals (e.g., pesticides, fertilizers, compost, or biosolids) are located.

Drinking Water Supply Well. Any groundwater well that is connected to a residence, workshop, or place of business that may be used for human consumption, cooking, or sanitary purposes that is located within the enrolled Assessor Parcel Number (APN). This includes all domestic wells located within the enrolled APN, not limited to the leased property or within the ranch boundary. This definition includes "dual-use" wells that are used for both irrigation and domestic purposes. The State Water Resources Control Board (State Water Board), Groundwater Ambient Monitoring and Assessment (GAMA) Program defines an individual well serving a single residential connection as a "private domestic well." For the purposes of this Order, a "private domestic well" is a Drinking Water Supply Well if it is located on the enrolled parcel and there are drinking water users of that well.

Enrollee. A Discharger enrolled in the Vineyard Order. See also Discharger, Landowner, Operator, Permittee, and Responsible Party.

Ephemeral Stream. A Class III watercourse. A body of flowing water that contains water for only part of the year, but more than just after rainstorms and as snowmelt as shown in the NHD shapefile. In the absence of diversion, water is flowing less than three months during a typical year and the stream does not support riparian vegetation or aquatic life. Ephemeral watercourses typically have water flowing for a short duration after precipitation events or snowmelt and show evidence of being capable of sediment transport.

Erosion. The gradual destruction of land surface by wind or water, intensified by land-clearing practices related to farming, residential or industrial development, road building, or logging.

Exceedance. A reading using a field instrument or a detection by a California State-certified analytical laboratory where the detected result is above an applicable water quality standard for the parameter or constituent.

Farm Area. The planted area and appurtenant structures, vineyard avenues, maintenance areas, mixing and loading sites, and appurtenant storage yards on a commercial vineyard.

Field. A term to describe aggregation of planted areas for the purposes of reporting. Where this Order requires reporting by field, Dischargers may report data for a portion of a field or for multiple fields provided that the reported area has (1) the same fertilizer inputs, (2) the same irrigation management, and (3) the same management practices. Fields can be defined by the Discharger in a manner consistent with the farming operation (e.g., vineyard blocks).

Ground Cover. Ground cover refers to the following practices: (1) Cover crop can be grasses, legumes, forbs, or other herbaceous plants established in vineyards and orchards to provide seasonal or year-round ground cover for conservation purposes. (2) Annual cover crops are permanent vegetation that do not need to be re-seeded every year (3) Perennial cover crops are crops are planted in late summer to early Fall of each year (4) Low-till crops are grown with practices that limit the soil-disturbing activities used to grow and harvest crops in systems where the field surface is tilled prior to planting (5) No-till crops are planted and grown in narrow slots or tilled strips established in the untilled seedbed of the previous crop. This practice includes maintaining most of the crop residue on the soil surface throughout the year, commonly referred to as no till. The common characteristic of this practice is that the only tillage performed is a very narrow strip prepared by coulters, sweeps, or similar devices attached to the front of the planter. (6) Conservation cover is establishing and maintaining perennial vegetated cover to protect soil and water resources on lands needing permanent protective cover that will not be used for forage production. (7) Effective soil cover includes mulching, straw mulching, plant residues or other suitable materials produced off site to the land surface. Mulching is used on bare, exposed soil surfaces that are deemed to be potential critical erosion areas. In most cases, mulch will consist of grain straw residue, but may include wood chips, leaves, composted yard waste, etc. (NRCS Conservation Practice Standards 2016[17]).

Ground Disturbing Management Practices. These measures could include but are not limited to practices to prevent erosion of exposed soil and stockpiles, including watering for dust control, establishing perimeter silt fences, and/or placing fiber rolls; minimizing soil disturbance areas; implementing practices to maintain water quality, including silt fences, stabilized construction entrances, and storm drain inlet protection; limiting construction to dry periods; and revegetating disturbed areas.

[17] Natural Resource Conservation Service: Conservation Practice Standards Information (https://www.nrcs.usda.gov/getting-assistance/conservation-practices)

Groundwater. The supply of water found beneath the Earth's surface, usually in aquifers which can supply wells and springs.

Groundwater Protection Formula, Values and Targets. The Groundwater Protection (GWP) Formula generates GWP Values, expressed as either nitrate-N loading numbers or concentrations of nitrate in water (e.g., mg/L), reflecting the influence of total applied nitrogen, total removed nitrogen, recharge conditions, and other relevant and scientifically supported variables that influence the potential average concentration of nitrate in water expected to reach groundwater in a given township over a given time period. GWP Values are calculated based on reported INMP data and reflect discharge estimates from the bottom of the root-zone. GWP Targets considers GWP Values to establish the nitrogen loading rate necessary to comply with the Antidegradation Policy and Basin Plan.

High-Water Mark. That line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

High Vulnerability Groundwater Basin. Defined in the ESJ Order as areas "where known groundwater quality impacts exist for which irrigated agricultural operations are a potential contributor or where conditions make groundwater more vulnerable to impacts from irrigated agricultural activities." For the purposes of this Order, 'high vulnerability areas' are defined as the priority groundwater basins having a relatively high threat from salts and nutrients and would benefit from salt and nutrient management planning as defined in Groundwater Basin Evaluation and Prioritization Resolution No. R1-2021-0006.

HUC-8, HUC-10, and HUC-12 Watersheds. Derived from Watershed Boundary Dataset (WBD) maps developed by the U.S. Department of Agriculture, Natural Resources Conservation Service to define and compare true watersheds and hydrologic units and their applications for watershed assessment. The WBD maps the full areal extent of surface water drainage for the United States, using a hierarchal system of nesting hydrologic units at various scales, each with an assigned hydrologic unit code (HUC). HUC-8 maps the subbasin level, analogous to medium-sized river basins. HUC-12 is a more local sub-watershed level that captures tributary systems.

Hydrologically Connected. Farm areas with a continuous surface flow path to a natural stream channel during a storm runoff event (also referred to as hydrologic connectivity). Connectivity usually occurs through agricultural drainage structures, drainage inlets, road ditches, gullies, and channels.

Hydrologically-Connected Undesignated Channel. Channels not part of the NHD dataset that are hydrologically-connected to off-farm surface waters. Includes above-ground agricultural drainage structures.

Hydrologic Unit. A hydrologic unit is a drainage area delineated to nest in a multi-level, hierarchical drainage system. Its boundaries are defined by hydrographic and topographic criteria that delineate an area of land upstream from a specific point on a river, stream, or similar surface water. Watersheds in the United States were delineated by the U.S. Geological Survey using a national standard hierarchical system based on surface hydrologic features and are classified into four types of hydrologic units: first-field (region), second-field (subregion), third-field (accounting unit), and fourth-field (cataloguing unit), a fifth field of classification (watershed) and sixth field (sub-watershed).

Important Farmland. The sum of land area classified as Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance as defined by CA Dept. of Conservation's Farmland Mapping & Monitoring Program in cooperation with NRCS.

Intermittent Stream. A Class II watercourse. A body of flowing water that contains water only during or after a local rainstorm or heavy snowmelt as shown in the NHD shapefile. In the absence of diversions, water is flowing for three to nine months during a typical year, provides aquatic habitat for non-fish aquatic species, fish always or seasonally present within 1,000 feet downstream, and/or water is flowing less than three months during a typical year and the stream supports riparian vegetation.

Invasive Species. Organisms (plants, animals, or microbes) that are not native to an environment and that, once introduced, establish, quickly reproduce and spread, and cause harm to the environment, economy, or human health. U.S. Department of Agriculture, Natural Resource Conservation Service website: EnviroAtlas Hydrologic Unit Codes Fact Sheet[18]. For guidance on identifying species of concern, see the Cal-IPC website: Plants A to Z[19].

Irrigation. Applying water to land areas to supply the water and nutrient needs of plants.

Irrigation Management Practices. Management practices designed to improve irrigation efficiency and reduce the amount of irrigation return flow or tailwater, and associated degradation or pollution of surface and groundwater caused by discharges of waste associated with irrigated lands.

Lake and Streambed Alteration Agreement. Fish and Game Code section 1602 requires an entity to notify CDFW prior to commencing any activity that may do one or more of the following: (1). Substantially divert or obstruct the natural flow of any river, stream or lake; (2). Substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or (3). Deposit debris, waste or other materials that could pass into any river, stream or lake. "Any river, stream or lake" includes those that are episodic (they are dry for periods of time) as well as those that are perennial (they

[18] EnviroAtlas Fact Sheet: Hydrologic Unit Codes (https://enviroatlas.epa.gov/enviroatlas/datafactsheets/pdf/Supplemental/HUC.pdf)
[19] Cal-IPC Plants A to Z (https://www.cal-ipc.org/plants/profiles/)

flow year-round). This includes ephemeral streams, desert washes, and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a body of water.

Landowner. An individual or entity who has legal ownership of a parcel(s) of land. See also Discharger, Enrollee, Operator, Permittee, and Responsible Party.

Load. The mass of a substance discharged over a given amount of time, for example 10 mg/day or 5 kg/day.

Method Detection Limit. The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in accordance with USEPA Definition and Procedure for the Determination of the Method Detection Limit, Revision 2. The laboratory establishes the MDL values based on the analytical test method and the types of calibrated laboratory equipment that are used.

Monitoring. Observing and checking on a feature or factor over time to determine compliance with this Order or other regulatory requirements. Monitoring in this Order includes but is not limited to: surface water or groundwater sampling and analysis to evaluate water quality in connection with agricultural activities, and inspecting operations, management practice implementation and effectiveness, maintenance of on-site records, and management practice reporting.

Nitrogen Applied. Total nitrogen applied includes nitrogen in any product, form, or concentration including, but not limited to, organic and inorganic fertilizers, slow-release products, compost, compost teas, manure, extracts, nitrogen present in the soil, and nitrate in irrigation water; it is reported in units of pounds of nitrogen per crop, per acre for each commercial vineyard or nitrate loading risk unit.

Nitrogen Removed. Nitrogen Removed includes all nitrogen taken from the field in harvested or other materials. Other materials may include wheat straw, orchard prunings, almond hulls, etc. In the case of perennial crops, Nitrogen Removed also includes the nitrogen annually sequestered in the permanent wood.

Nonpoint Source (NPS) Pollution. The Basin Plan states that nonpoint sources of water pollution are generally defined as sources which are diffuse (spread out over a large area). Nonpoint sources of pollution are not subject to NPDES permitting. The wastes are generally carried off the land by runoff. Common nonpoint sources of pollution are activities associated with agriculture, timber harvest, certain mining, dams, and saltwater intrusion.

Nitrogen Management Practices. Management practices designed to reduce the nitrogen loss from agricultural lands, which occur through edge-of-field runoff or leaching from the root zone.

Operator. Person responsible for or otherwise directing farming operations in decisions that may result in a discharge of waste to surface water or groundwater, including, but not limited to, a farm/ranch manager, lessee, or sub- lessee. The operator is responsible for ensuring compliance with this Order and for any discharge of waste occurring on or from the operation. See also Discharger, Enrollee, Landowner, Permittee, and Responsible Party.

Operation. A distinct farming business, generally characterized by the form of business organization, such as a sole proprietorship, partnership, corporation, and/or cooperative. A farming operation may be associated with one-to-many individual farms/ranches.

Perennial Stream. A Class I watercourse. In the absence of diversions, water is flowing for more than nine months during a typical year, fish always or seasonally present onsite or includes habitat to sustain fish migration and spawning, and/or a spring, an area where there is concentrated discharge of ground water that flows at the ground surface (a spring may flow any part of the year and does not have a defined bed and banks).

Permittee. A Discharger enrolled in the Agricultural Order. See also Discharger, Enrollee, Operator, Landowner, and Responsible Party.

Pesticide. Any substance intended to control, destroy, repel, or otherwise mitigate a pest. The term pesticide is inclusive of all pest and disease management products, including insecticides, herbicides, fungicides, nematicides, rodenticides, algicides, etc.

Planted Area. The area of the Farm Area that is planted in grapevines. Planted area does not include appurtenant structures, agricultural roads, or vineyard avenues.

Pollutant. The man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water, including dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.

Pollution. Any alteration of the quality of the waters of the state by waste to a degree which unreasonably affects either of the following: (1) the waters for beneficial uses, (2) facilities which serve these beneficial uses. Pollution may include contamination.

Quality of the Water. The “chemical, physical, biological, bacteriological, radiological, and other properties and characteristics of water which affect its use” as defined in the California Water Code Sec. 13050(g).

Receiving Waters. Surface waters or groundwater that receive or have the potential to receive discharges of waste from irrigated lands.

Responsible Party. The landowner or operator of a commercial vineyard that discharges or has the potential to discharge waste that could directly or indirectly reach

waters of the state and affect the quality of any surface water or groundwater. See also Discharger, Enrollee, Landowner, Operator, and Permittee.

Requirements of Applicable Water Quality Control Plans. Water quality objectives, prohibitions, Total Maximum Daily Load (TMDL) Implementation Plans, or other requirements contained in the Basin Plan, as adopted by the Regional Water Board and approved according to applicable law.

Riparian Vegetation. The vegetation (including dead, dying, or decaying vegetation) along a watercourse that is distinguished from other vegetation by its dependence on the combination of soil moisture and other environmental factors provided by a watercourse.

Riparian Vegetation Canopy. The more-or-less continuous cover of branches and foliage formed collectively by the crowns of adjacent trees and other woody species adjacent to a watercourse.

Seasonal Road. An agricultural road that is part of the permanent road network that is not designed for year-round use. These roads have a surface that is suitable for maintaining a stable operating surface during the period of use. Vineyard avenues are seasonal roads.

Sediment Basin. A constructed basin to capture and detain surface runoff for a sufficient length of time to allow sediment to settle.

Sediment and Erosion Control Practices. Practices used to prevent and reduce the amount of soil and sediment entering surface water in order to protect or improve water quality.

Site-Specific Potential Effective Shade. The shade equivalent to that provided by topography and potential vegetation conditions at a site. Shade controls that are effective at correcting temperature impairments also operate to prevent impairments, and provide other water quality protections such as bank stability and filtering sediment and other waste discharges.

Stormwater. Stormwater runoff, snow melt runoff, and surface runoff and drainage, as defined in 40 CFR 122.26(b)(13).

Stormwater Runoff. Precipitation water in excess of what can infiltrate the soil surface and be stored in small surface depressions.

Streamside Area. The area between the waterside edge of riparian vegetation canopy (or the nearest edge of the high-water mark if riparian vegetation canopy is not present) and the field side edge of a vegetated buffer.

Surface Runoff. Precipitation, snow melt, or irrigation water in excess of what can infiltrate the soil surface and be stored in small surface depressions, a major transporter of nonpoint source wastes in rivers, streams, and lakes.

Tailwater. Runoff of irrigation water from the lower end of an irrigated field. See also Irrigation Runoff or Return Flow.

Third-Party Group. An organization or entity that is approved to represent Dischargers under this Order and is obligated to fulfill the following responsibilities: (1) collect fees from Dischargers and submit payments to the State Water Resources Control Board; (2) manage communications between Dischargers and the Regional Water Board; (3) provide outreach and education resources for Dischargers; and (4) fulfill monitoring and reporting requirements including but not limited to submitting monitoring workplans and necessary technical material, conducting regional surface water and groundwater monitoring, and connecting Dischargers to resources that can assist the preparation and implementation of Water Quality Management Plans.

Third-Party Program. The set of requirements under this Order that a Third-Party Group is allowed to perform on behalf of the Dischargers enrolled in that Third-Party Group.

Total Maximum Daily Load (TMDL). The calculation of the maximum amount of a particular material that a waterbody can assimilate on a regular basis and still support beneficial uses designated for that waterbody.

Trend. A general direction in which something is developing or changing. See also Water Quality Trend.

Vegetated Buffer. A narrow, permanent strip of dense perennial vegetation (including riparian vegetation) where no crops are grown and which is established parallel to the contours of and perpendicular to the dominant slope of the land applications area for the purposes of slowing water runoff, enhancing water infiltration, trapping pollutants bound to sediment and minimizing the risk of any potential nutrients or pollutants from reaching surface waters.

Vineyard Avenue. A seasonal road around or through a vineyard block, or an area at the end of a vine row where vehicles and equipment can turn around.

Waste. “Includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal” as defined in the California Water Code Sec. 13050(d). “Waste” includes irrigation return flows and drainage water from agricultural operations containing materials not present prior to use. Waste from irrigated agriculture includes earthen materials (such as soil, silt, sand, clay, rock), inorganic materials (such as metals, salts, boron, selenium, potassium, nitrogen, phosphorus), and organic materials such as pesticides.

Water Quality Control. The “regulation of any activity or factor which may affect the quality of the waters of the State and includes the prevention and correction of water pollution and nuisance” as defined in the California Water Code Sec. 13050(i). 133.

Water Quality Criteria. Levels of water quality required under Sec. 303(c) of the Clean Water Act that are expected to render a body of water suitable for its designated uses. Criteria are based on specific levels of pollutants that would make the water harmful if used for drinking, swimming, farming, fish production, or industrial processes. The California Toxics Rule adopted by USEPA in April 2000, sets numeric Water Quality Criteria for non-ocean waters of California for federal priority pollutants. See also Water Quality Objectives.

Water Quality Objectives. “Limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specified area,” as defined in Sec. 13050(h) of the California Water Code. Water Quality Objectives may be either numerical or narrative and serve as Water Quality Criteria for purposes of section 303 of the Clean Water Act. 135. Water Quality Standard. Provisions of State or Federal law that consist of the beneficial designated uses or uses of a waterbody, the numeric and narrative water quality criteria that are necessary to protect the use or uses of that particular waterbody, and an antidegradation statement. Water quality standards includes water quality objectives in the Regional Water Board’s Basin Plan, water quality criteria in the California Toxics Rule and National Toxics Rule adopted by USEPA, and/or water quality objectives in other applicable State Water Board plans and policies. For groundwater with the beneficial use of municipal or domestic water supply, the applicable drinking water standards are those established by the USEPA or California DDW, whichever is more stringent. Under Sec. 303 of the Clean Water Act, each State is required to adopt water quality standards.

Water Quality Trend. A change in time of a measured chemical constituent that represents as aspect of the quality of the water (e.g., increasing, stable, or decreasing concentration of a constituent). The analysis of a water quality trend predicts the behavior of water quality parameters and overall water quality in the time domain.

Waters of the State. “Any surface water or groundwater, including saline waters, within the boundaries of the State” as defined in the California Water Code Sec. 13050(e). “Waters of the state” includes all “waters of the U.S.” Any significant accumulation of water above the ground surface, such as lakes, ponds, rivers, streams, creeks, springs, wetlands, and canals.

Winterization Period. For the purposes of this Order, the winterization period is defined as November 15th – April 1st.

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APPENDIX III: Figures

Figure 1: I. Executive Summary

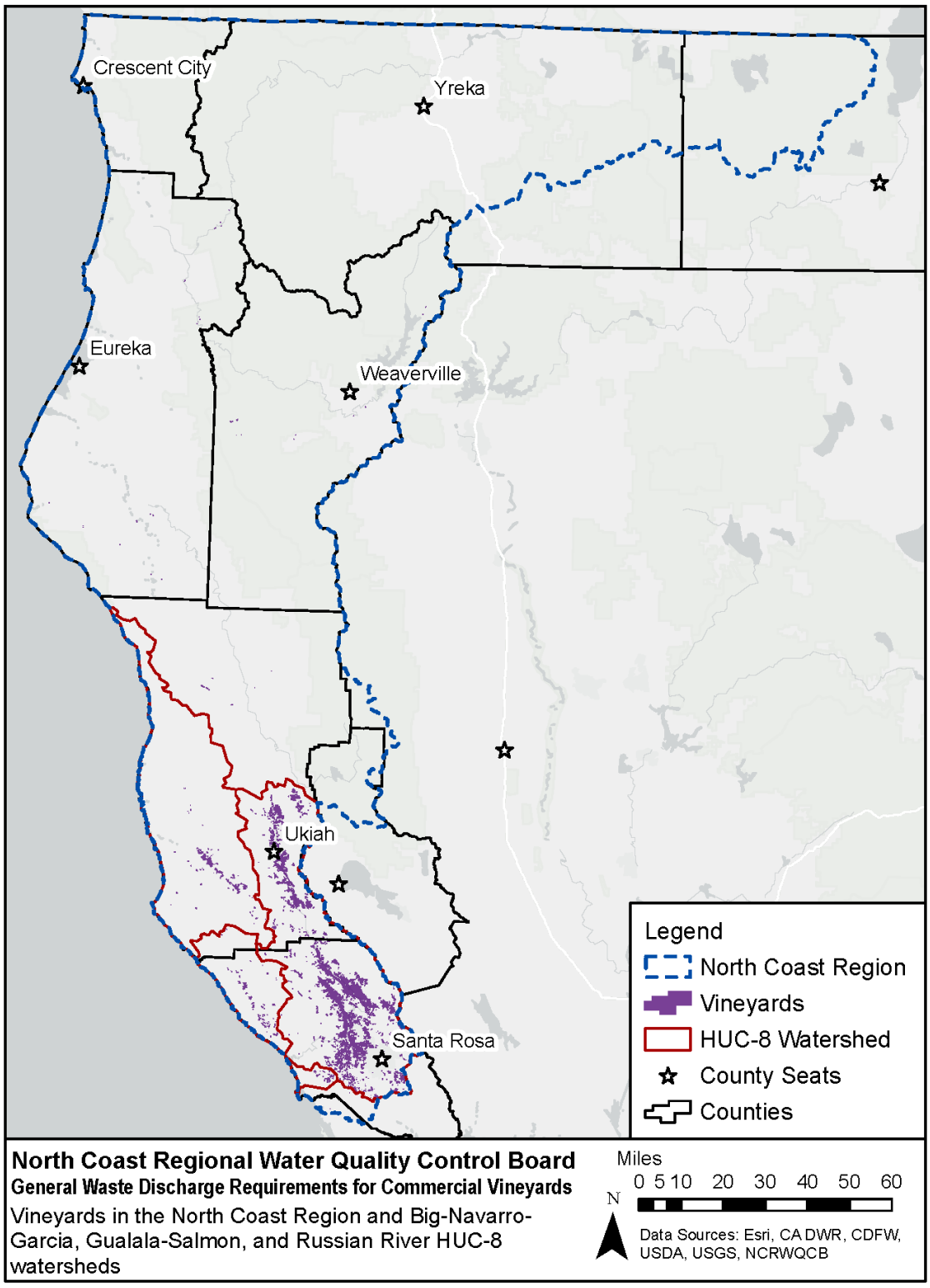


Figure 2: III.D Project Location

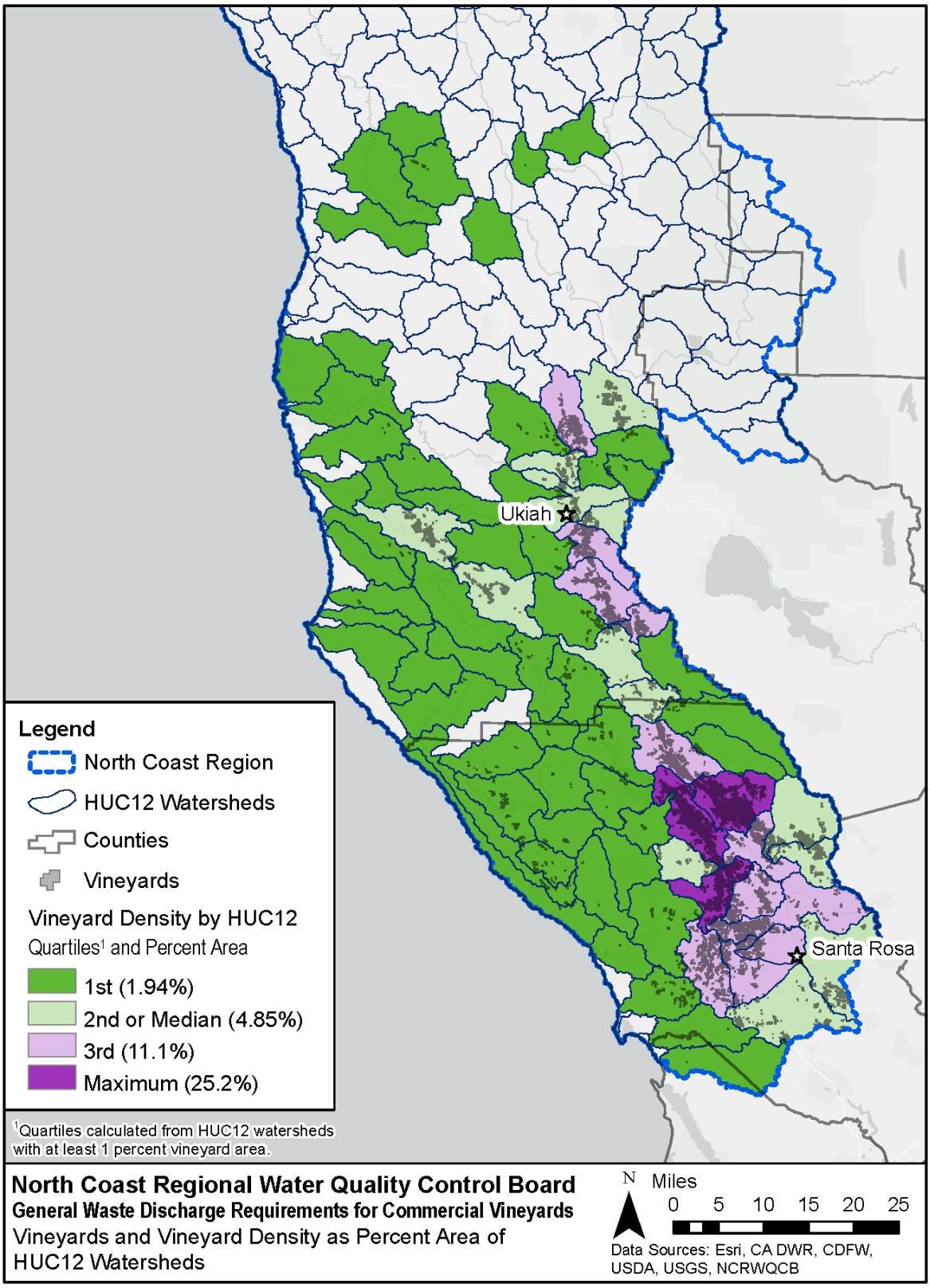


Figure 3: VII.B Biological Resources

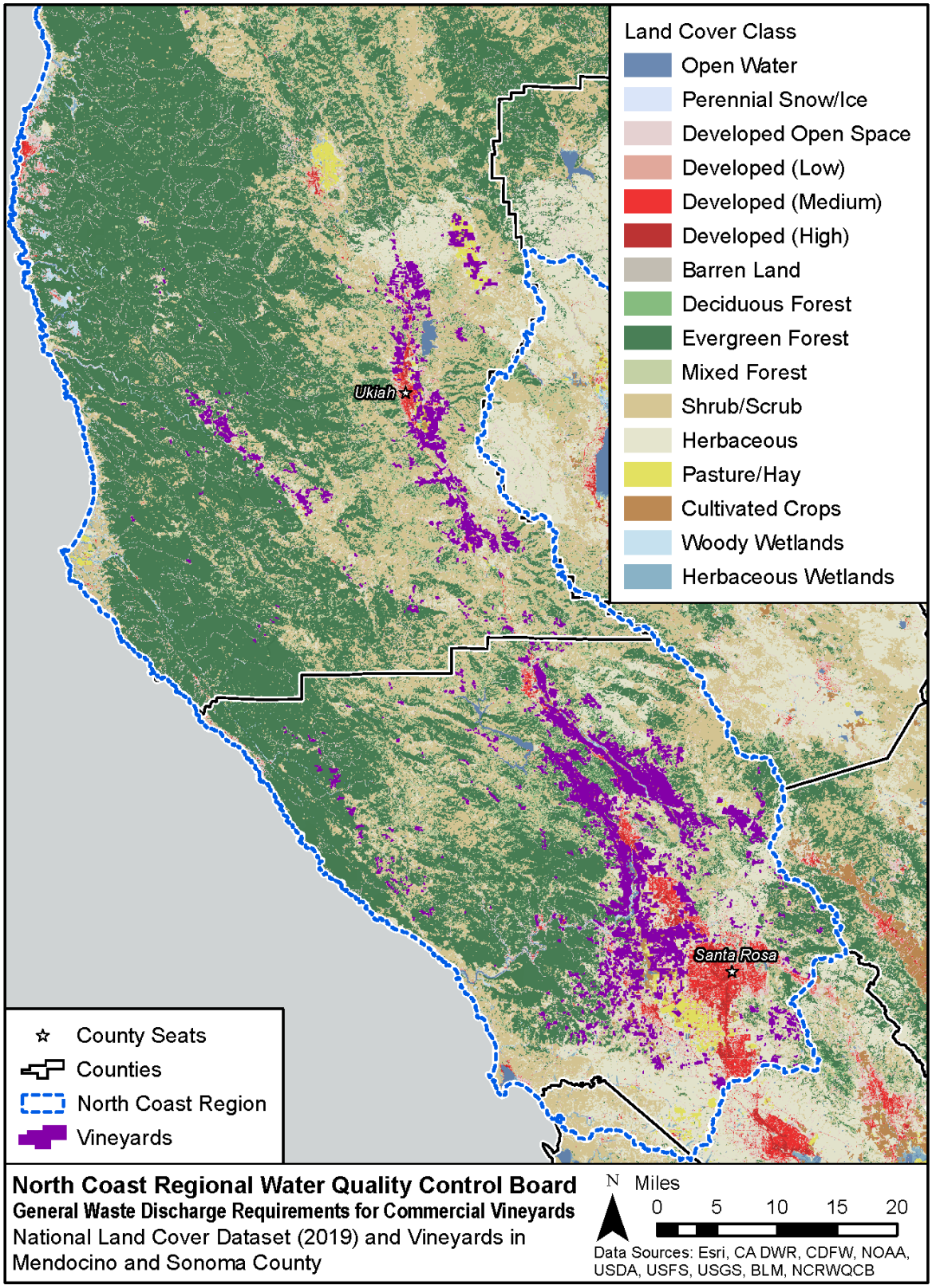


Figure 4: VII.B Biological Resources

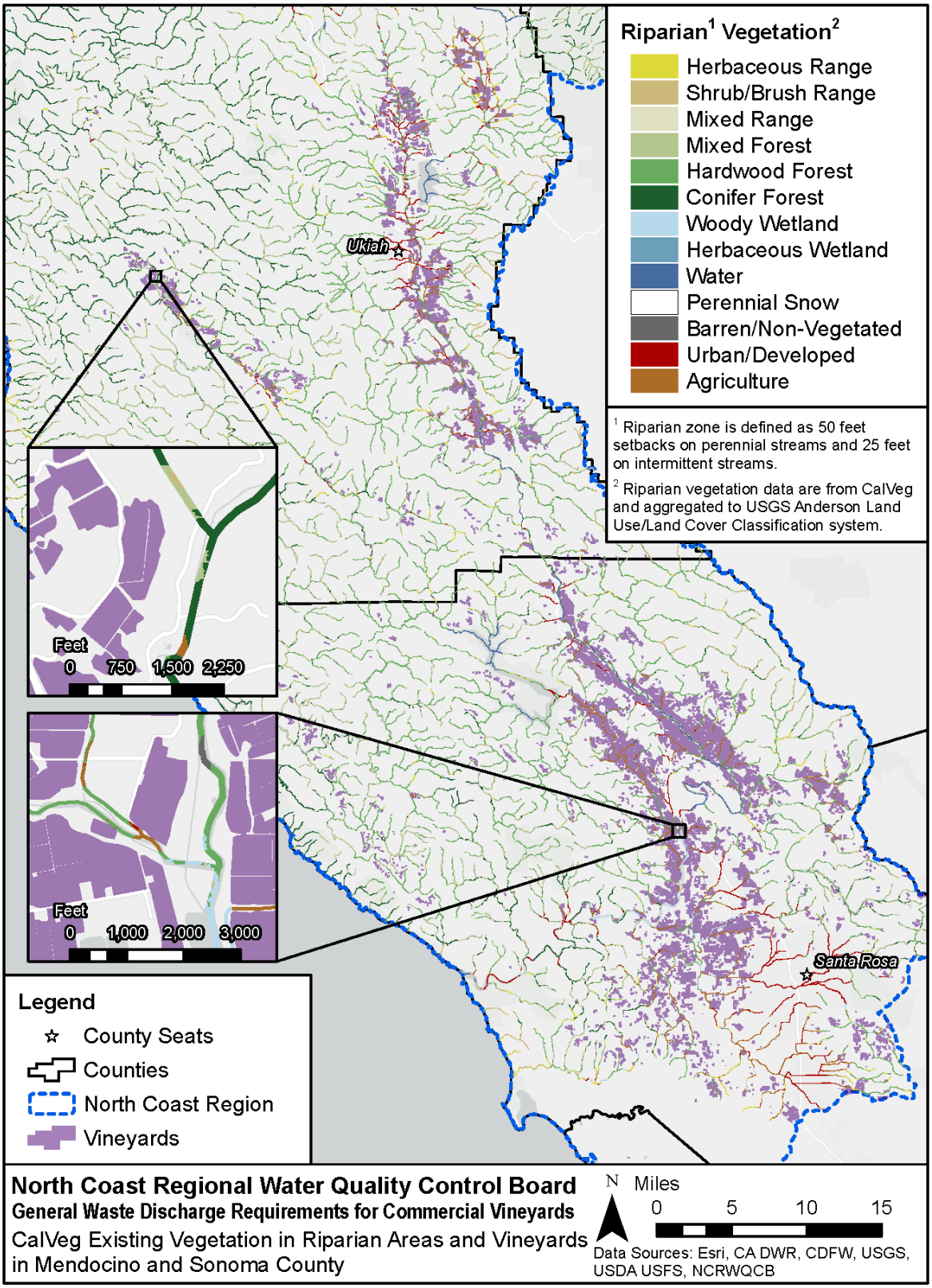


Figure 5: VII.B Biological Resources

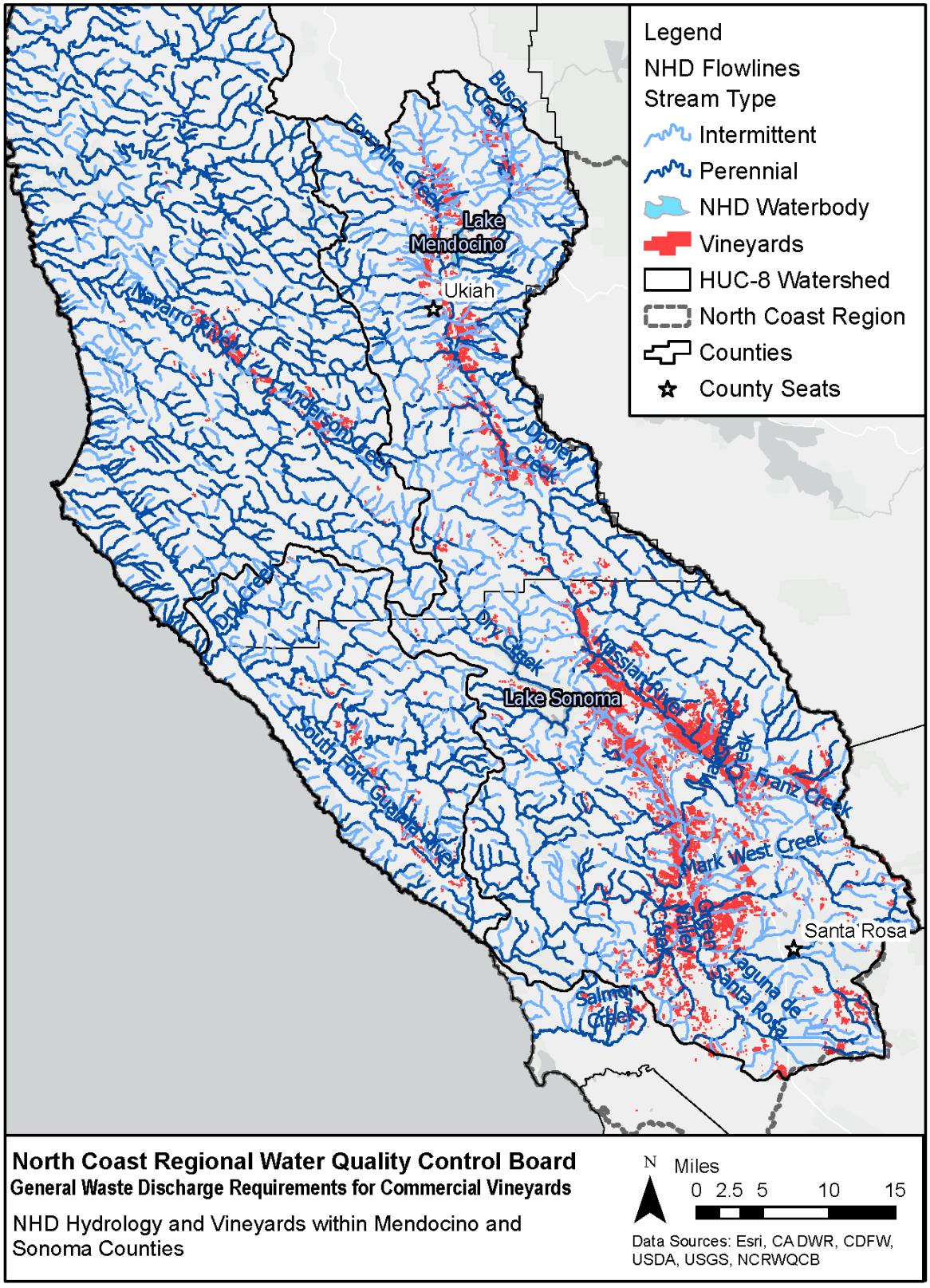


Figure 6: VII.B Biological Resources

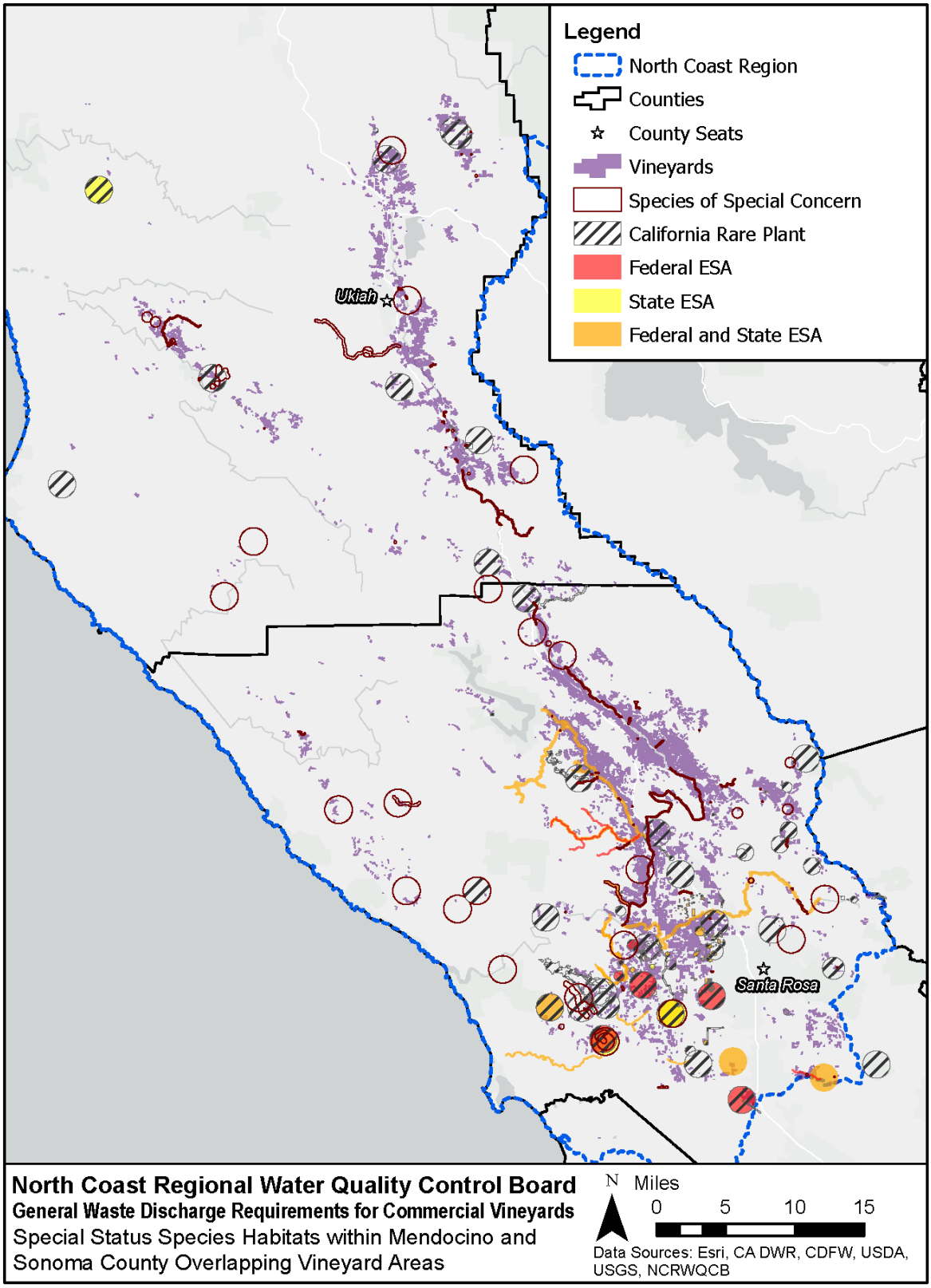


Figure 7: VII.B Biological Resources

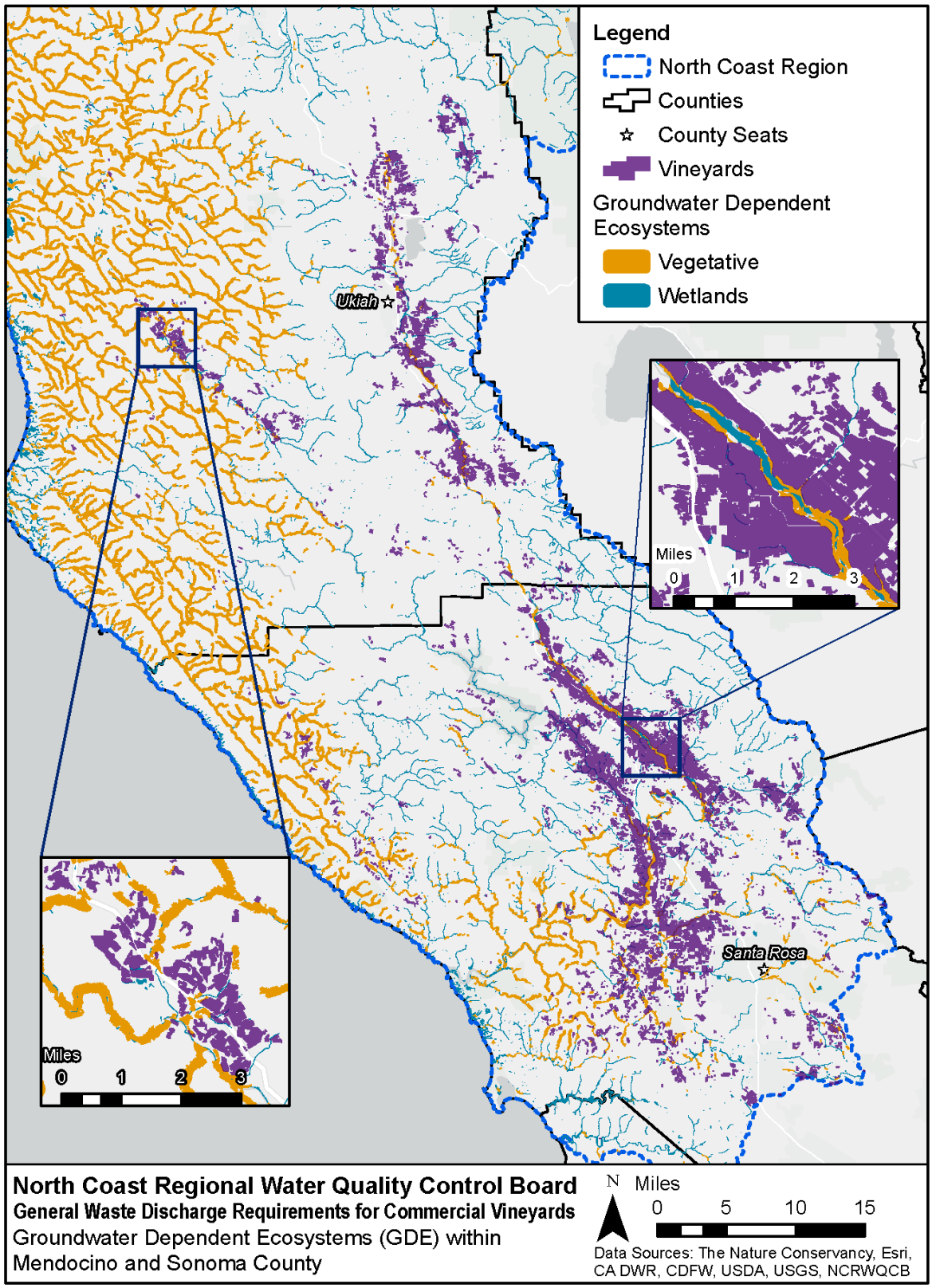


Figure 8: XI.B Fire Hazard

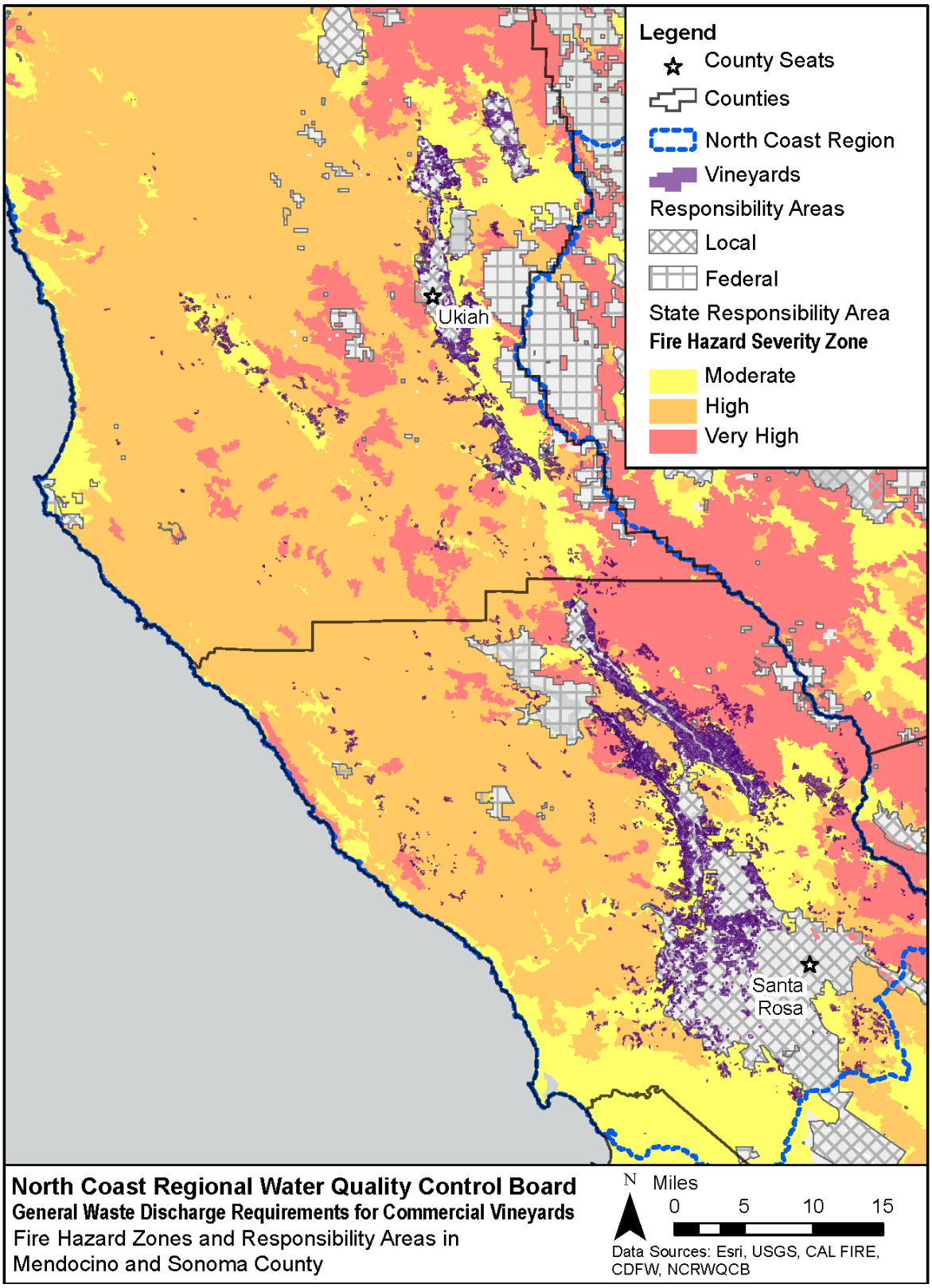


Figure 9: XII.A Hydrology and Water Quality

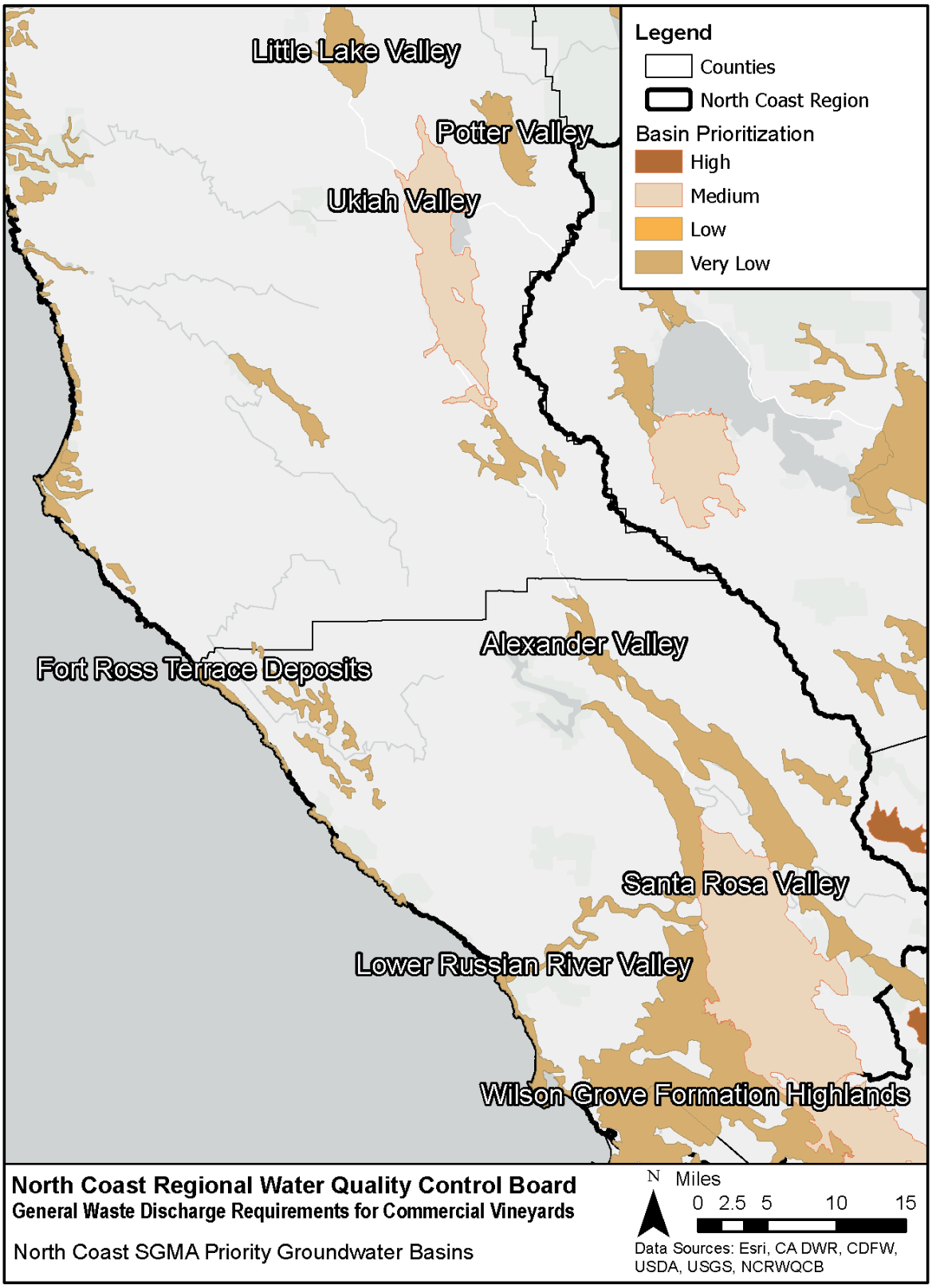
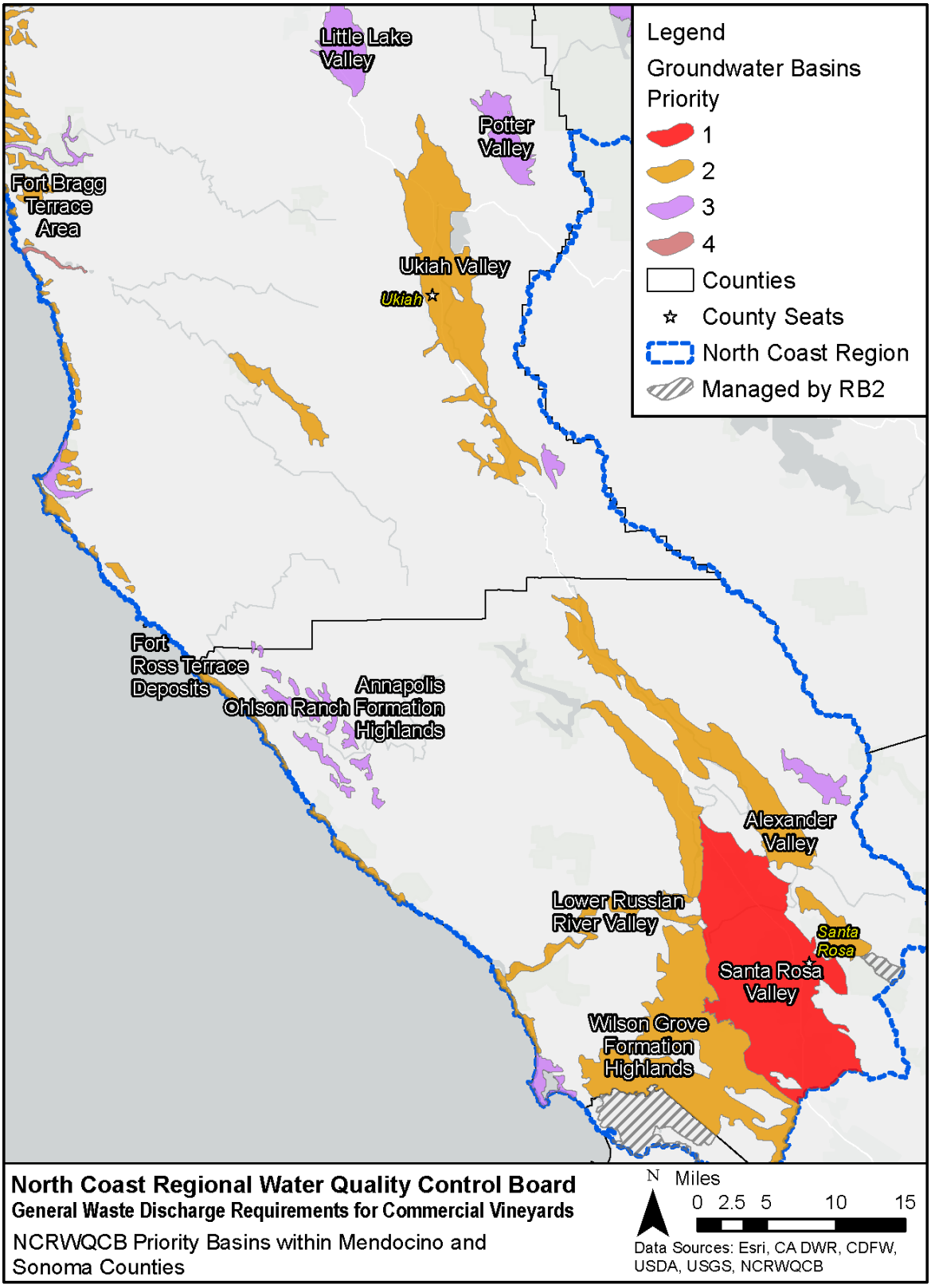


Figure 10: XII.B Hydrology and Water Quality



ATTACHMENT A: Draft General Waste Discharge Requirement for Commercial Vineyards in the North Coast Region

ATTACHEMENT B: Management Practices

ATTACHMENT C: Mendocino and Sonoma County General Plan Goals and Policies Relevant to the Proposed Project

ATTACHMENT D: Special Status Species

ATTACHMENT E: Estimated Cost of Compliance