

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

Attachment B-Attachment E

ATTACHMENT B: Management Practices

Typical Construction, Operation, and Maintenance Processes for Selected Generalized Reasonably Foreseeable Management Practices

The number of reasonably foreseeable management practices listed in the prior table is too great to provide detailed information regarding typical construction/installation, operation, and maintenance processes for each one. Additionally, many of the practices listed (e.g., apply less fertilizer, apply pesticides in accordance with label instructions, less tillage, etc.) would have limited potential to result in significant adverse environmental impacts. Therefore, a selected number of generalized reasonably foreseeable management practices with the greatest potential for environmental impacts associated with their construction, operation, and/or maintenance is presented here.

Efficient Irrigation Systems

This generalized management practice category includes drip irrigation, micro-irrigation, or similar irrigation systems that are installed to increase efficiency and reduce irrigation runoff. Such irrigation systems typically include a delivery system (e.g., mainline and sub-mainline polyvinyl chloride [PVC] pipe, and smaller-diameter drip lines that may be polyethylene), filters (e.g., media, screen, and disk filters, or settling ponds), pressure regulators, valves or gauges, chemical injectors (if chemigation or fertigation is employed), and controllers. Installation could include some excavation and/or trenching, transport and delivery of irrigation system materials, and potentially off-haul of soil or construction waste materials. Operation of the efficient irrigation system may use energy (i.e., electricity) for filtration systems and pressure regulation. Maintenance activities may include periodic replacement of filters and/or drip lines, including disposal of used materials.

Runoff Management Features (e.g., Buffer Strip, Vegetated Filter Strip, or Swale)

Runoff management features may include buffer strips, vegetated filter strips, or swales, all of which serve to manage runoff through vegetation that absorbs and filters water and sediments. These features usually include sloped areas of planted vegetation positioned between a waterbody receiving runoff and pollutant source area. Construction/installation activities could 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. General vegetation management (e.g., mowing, weeding, etc.) may be required for periodic maintenance of the facilities. Generally, these types of runoff management features would not use or require energy, other than for operation of any equipment used in maintenance activities.

Sediment Retention Basins

Sediment retention basins or sediment basins are constructed from an embankment or

excavation to capture and retain sediment-laden runoff. Sediment retention basins typically are constructed with an engineered outlet and are designed to retain runoff for a sufficient length of time to allow the sediment to settle out in the basin. Heavy equipment is required for construction of sediment retention basins, 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 include periodic inspections of the basin, removal of accumulated sediment, debris/trash removal, replacement of damaged parts, and vegetation management.

Riparian Buffer Areas

Riparian buffer areas are communities of perennial vegetation including trees, shrubs, and grasses adjacent to a body of water that provide important habitat and water quality functions, including passive removal of pollutants (e.g., sediment, pesticides, etc.) and temperature regulation through shading. Depending on the existing vegetation/ground cover in the targeted area, construction of the riparian buffer area may include removal of existing vines, light disking, and broadcast seeding or plug planting of riparian vegetation species. Equipment used during construction could include a “no till” or grass drill, skidsteer loader, and trucks for transport of materials. Following construction/installation, riparian buffer areas may require some watering, particularly in the early plant stages to ensure survival, but otherwise would not use substantial water or energy. Maintenance activities may include periodic inspections of streambank stability/evidence of erosion, exclusion of livestock, and general vegetation management.

Reasonably Foreseeable Management Practices as Determined from Available Literature

Practices to Reduce Nutrient Loading to Surface Water and Groundwater

- Reduce/eliminate irrigation discharge.
- Reduce/eliminate stormwater discharge.
- Plant cover crops; use them and manage them appropriately (e.g., not applying fertilizer to them).
- Manage irrigation, examples include:
 - Irrigation distribution uniformity.
 - Reduce irrigation water applied.
 - Use micro-irrigation.
 - Maintain irrigation system; check for leaks and broken emitters, and fix/replace as needed.
- Install buffer strip, vegetated filter strip, or swale.
- Install constructed wetlands or other vegetated treatment system.
- Install backflow prevention devices.
- Apply less fertilizer.

- Test water in wells to determine nutrient concentration before irrigating and fertilizing and reduce fertilizer application based on irrigation water nutrient concentration and volume to be applied.
- Install appropriate storage of fertilizers, if kept on site.
- Develop a nutrient management plan.
- Apply nutrients at rates necessary to achieve realistic crop yields.
- Improve timing of nutrient application.
- Use agronomic crop production technology to increase nutrient use efficiency.
- Avoid winter nitrogen applications.
- Plan timing of fertilizer application to avoid applying before predicted rainfall events.
- Monitor the nutrient content of the soil to reduce fertilizer applications.
- Account for nutrient content of unharvested plant material to reduce fertilizer applications.
- Rinse and dispose of chemical containers safely.
- Manage soil health to improve water and nutrient retention and reduce leaching.

Practices to Reduce/Eliminate Pesticides from Entering Surface Water or Groundwater

- Reduce/eliminate irrigation discharge Reduce/eliminate stormwater discharge.
- Plant cover crops; use them and manage them appropriately.
- Manage irrigation, examples include:
 - Irrigation distribution uniformity.
 - Reduce irrigation water applied.
 - Use micro-irrigation.
 - Maintain irrigation system; check for leaks and broken emitters, and fix/replace as needed.
 - Install buffer strip, vegetated filter strip, or swale.
- Install constructed wetlands or other vegetated treatment systems.
- Install backflow prevention devices.
- Apply pesticide per labeling directions (e.g., do not apply during windy conditions, do not apply right before forecasted rain, do not irrigate directly after pesticide application, apply lowest dose, apply based on infestation thresholds).
- Use an IPM strategy.
- Install appropriate storage of chemicals, if kept on site.
- Install hedgerows.
- Use beneficial insects to reduce pesticide applications.
- Scout for pests prior to pesticide applications.
- Minimize deep percolation.
- Reduce pesticide applications.
- No dormant spray.
- Spot-treat infestations.
- Rinse and dispose of chemical containers safely.

Practices to Reduce/Control Erosion and Discharge of Sediment to Surface Waters

- Reduce/eliminate irrigation discharge Reduce/eliminate stormwater discharge.
- Plant cover crops; use them and manage them appropriately.
- Install buffer strip, vegetated filter strip, or swale Install constructed wetlands or other vegetated treatment system.
- Minimize bare soil.
- Limit movement of water to surface waters.
- Minimize tillage.
- Install and maintain sediment trapping measures.
- Conservation tillage
- Conservation cover.
- Critical area planting.
- Mulching.
- Contour farming or strip-cropping.
- Contour buffer strips.
- Terrace.
- Avoid fall tillage.
- Properly construct and maintain roads.
- Out-slope roads.

Practices to Control Impacts to Stream Temperature

- Re-establish (and/or preserve) riparian buffers.
- Expand riparian and wetland buffers.
- Increase riparian and in-channel tree canopy for surface waters to support beneficial uses.
- Establish native species (grasses, forbs, legumes, shrubs, and trees) near riparian areas.
- Exclude people and vehicles from an area to protect, maintain, or improve the quantity and quality of riparian vegetation.
- Plant native vegetation to increase shade in accordance with site-specific potential.

Also refer to [USEPA National Management Measures to Control Nonpoint Source Pollution from Agriculture](https://www.epa.gov/nps/national-management-measures-control-nonpoint-source-pollution-agriculture) (<https://www.epa.gov/nps/national-management-measures-control-nonpoint-source-pollution-agriculture>).

ATTACHMENT C: Mendocino and Sonoma County General Plan Goals and Policies Relevant to the Proposed Project

Mendocino County – Resource Management Goals/Policies¹

Watershed Policies Policy:

Goal RM-1 (Watersheds) Land uses, development patterns, and practices that facilitate functional and healthy watershed ecosystems.

RM-1: Protect stream corridors and associated riparian habitat.

Action Item RM-1.1: Require adequate buffers for all projects potentially impacting stream corridors and/or their associated riparian habitat.

Policy RM-2: Promote and participate in watershed restoration and enhancement projects.

Policy RM-3: Work cooperatively with property owners, agencies, and organizations to develop and support programs that maintain the integrity of stream systems for flood control, aquatic habitat, and water supply.

Policy RM-4: Promote and support public outreach and education programs pertaining to watershed and water resources stewardship.

Action Item RM-4.1: Develop a Riparian Systems Management Plan to facilitate coordination and cooperation between organizations and individuals responsible for the diverse functions – flood control, stormwater management, groundwater stewardship, aquatic habitat protection/enhancement – occurring in watersheds throughout the county. Policy RM-5: Promote and encourage land-use activities that maintain or improve channel elevation and banks for rivers and streams in the county.

Water Quality Policies

Goal RM-3 (Water Quality) Land use development and management practices that protect or enhance water quality.

Policy RM-21: Promote and support agricultural best management practices that protect or enhance surface and groundwater quality.

Policy RM-22: Support public and private programs to reduce water contamination and improve the water quality in county rivers and streams, specifically those that do not

¹ [Mendocino County General Plan Chapter 4: Resource Management Element](https://www.mendocinocounty.org/home/showpublisheddocument/54487/638055061981600000) (https://www.mendocinocounty.org/home/showpublisheddocument/54487/638055061981600000).

meet federal water quality standards.

Policy RM-23: The County shall work with other responsible regulatory agencies to prevent the discharge or threatened discharge of sediment from any activity in amounts harmful to beneficial uses of the water.

Ecosystems Policies

Goal RM-4 (Ecosystems) Protection and enhancement of the county's natural ecosystems and valuable resources.

Goal RM-5 (Ecosystems) Prevent fragmentation and loss of the county's oak woodlands, forests, and wildlands and preserve their economic and ecological values and benefits.

Policy RM-24: Protect the county's natural landscapes by restricting conversion and fragmentation of timberlands, oak woodlands, stream corridors, farmlands, and other natural environments.

Policy RM-25: Prevent fragmentation and loss of our oak woodlands, forests, and wildlands and preserve the economic and ecological values and benefits.

Policy RM-26: Protect, use, and manage the county's farmlands, forests, water, air, soils, energy, and other natural resources in an environmentally sound and sustainable manner.

Policy RM-27: Conserve, restore and enhance natural resources, sensitive environments, and ecological integrity.

Action Item RM-27.1: Identify and maintain wildlife movement corridors to support biodiversity and healthy natural processes.

Policy RM-28: All discretionary public and private projects that identify special-status species in a biological resources evaluation (where natural conditions of the site suggest the potential presence of special-status species) shall avoid impacts to special-status species and their habitat, to the maximum extent feasible. Where impacts cannot be avoided, projects shall include the implementation of site-specific or project-specific effective mitigation strategies developed by a qualified professional in consultation with state or federal resource agencies with jurisdiction (if applicable) including, but not limited to, the following strategies:

- Preservation of habitat and connectivity of adequate size, quality, and configuration to support the special-status species. Connectivity shall be determined based on the specifics of the species' needs.
- Provision of supplemental planting and maintenance of grasses, shrubs, and trees of similar quality and quantity to provide adequate vegetation cover to enhance water

quality, minimize sedimentation and soil transport, and provide adequate shelter and food for wildlife.

- Provide protection for habitat and the known locations of special-status species through adequate buffering or other means.
- Provide replacement habitat of like quantity and quality on- or off-site for special-status species.
- Enhance existing special-status species habitat values through restoration and replanting of native plant species.
- Provision of temporary or permanent buffers of adequate size (based on the specifics of the special-status species) to avoid nest abandonment by nesting migratory birds and raptors associated with construction and site development activities.
- Incorporation of the provisions or demonstration of compliance with applicable recovery plans for federally listed species.

Action Item RM-28.1: The County shall develop CEQA standards that require disclosure of impacts to all sensitive biotic communities during a review of discretionary projects. These standards shall require the following mitigation:

- Sensitive Biotic Communities – For all sensitive biotic communities, restore or create habitat at a no net loss standard of habitat value lost. Where it is determined that restoration or creation are ecologically infeasible, preserve at a 2:1 ratio for habitat loss.
- Oak Woodland – Maintain and improve oak woodland habitat to provide for slope stabilization, soil protection, species diversity, and wildlife habitat through the following measures:
 - To the maximum extent possible, preserve oak trees and other vegetation that occur near the heads of drainages or depressions to maintain the diversity of vegetation type and wildlife habitat as part of agricultural projects.
 - Comply with the Oak Woodlands Preservation Act (PRC Section 21083.4) to conserve the integrity and diversity of oak woodlands, and retain, to the maximum extent feasible, existing oak woodland and chaparral communities and other significant vegetation as part of residential, commercial, and industrial approvals.
 - Provide appropriate replacement of lost oak woodlands or preservation at a 2:1 ratio for habitat loss.

Policy RM-29: All public and private discretionary projects shall avoid impacts to wetlands if feasible. If avoidance is not feasible, projects shall achieve no net loss of wetlands, consistent with state and federal regulations.

Policy RM-30: Individual development projects and conversions from rangeland to intensive agriculture should retain movement corridor(s) adequate (both in size and in habitat quality) to allow for continued wildlife use based on the species anticipated to use the corridor and maintain Provide protection for habitat and the known locations of special-status species through adequate buffering or other means.

- Provide replacement habitat of like quantity and quality on- or off-site for special-status species.
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Policy RM-30: Individual development projects and conversions from rangeland to intensive agriculture should retain movement corridor(s) adequate (both in size and in habitat quality) to allow for continued wildlife use based on the species anticipated to use the corridor and maintain compatibility with adjacent uses.

Policy RM-31: For the purposes of implementing this General Plan, the County defines “special status species” and “sensitive biotic communities” to include all species and habitat identified as such by the California Department of Fish and Game, U.S. Fish and Wildlife Service, or NOAA Fisheries.

Policy RM-32: Use conservation and open space easements, growth boundaries, tax incentives, and other tools to:

- Protect, restore, and enhance significant resource values. • Reduce premature conversion of resource lands in and around community areas.
- Provide linkages between natural resource areas.

Policy RM-33: Reduce development of open space and agricultural land by encouraging multistory buildings.

Policy RM-34: Protect and enhance watershed ecosystems by supporting and integrating local, state, and federal requirements avoiding regulatory duplication.

Action Item RM-34.1: Advocate education, technical and financial assistance, collaboration, and best management practices to protect, enhance, and manage the county’s watershed, earth, and biological resources.

Soil Resources Policies

Goal RM-12 (Soil Resources) Protection, enhancement, and management of the soil resources of Mendocino County.

Policy RM-62: Promote soil conservation practices by public and private landowners and managers.

Policy RM-65: Discourage development and conversion from rangeland to intensive agriculture in areas of known landslides or slopes where weak geologic materials are susceptible to failure.

Biological Resources Policies

Goal RM-7 (Biological Resources) Protection, enhancement, and management of the biological resources of Mendocino County and the resources upon which they depend in a sustainable manner.

Policy RM-74: Promote land uses and management practices that protect biological

diversity and productivity.

Policy RM-75: New development shall protect sensitive environments and resource corridors while maintaining compatibility with adjacent uses.

Policy RM-76: The design of new development should emphasize avoiding sensitive resources and environments rather than their removal and replacement.

Policy RM-77: Discretionary development shall be designed or conditioned to achieve no net loss of sensitive resources.

Policy RM-78: Protection of existing sensitive resources is the highest priority. Onsite replacement or offsite replacement, protection, or enhancement is less desirable. Policy RM-79: Limit land use density and intensity within and adjacent to critical wildlife habitats, such as wetlands, deer wintering range, old-growth forests, and riparian corridors.

Policy RM-80: Maintain resource diversity and integrity by protecting and enhancing continuous resource corridors compatible with adjacent uses through project design.

Policy RM-81: Conserve native vegetation, critical habitats, and soil resources through education, technical and financial assistance, cooperative endeavors, best management practices, and soils and vegetation management plans for development and resource uses.

Policy RM-82: Encourage farmers, landowners, and property managers to protect sensitive environments, and minimize the effects of recreation, tourism, agriculture, and development on these resources. Promote techniques and features such as:

- Habitat contiguity,
- Wildlife corridors,
- Maintaining compatibility with adjacent uses,
- Maintaining habitat for sensitive plant and animal species.

Action Item RM-82.1: Work with agencies and organizations to educate the public about effective ways to protect listed plant and animal species and preserve sensitive habitats.

Action Item RM-82.2: Seek private and public funding for fish habitat restoration programs such as the County Fish and Game Advisory Committee, community salmon and steelhead rearing, and other efforts.

Action Item RM-82.3: Promote conservation easements to protect wildlife habitat, wetlands, and other sensitive environments.

Action Item RM-82.4: Provide information to landowners, developers, and the public on the importance and value of maintaining wildlife corridors.

Policy RM-83: Vegetation removal should be reviewed when involving five (5) or more acres, assessing the following impacts:

- Grading and landform modifications including effects on site stability, soil erosion and hydrology.
- Effects on the natural vegetative cover and ecology in the project area.
- Degradation to sensitive resources, habitat and fisheries resources.
- Compatibility with surrounding uses.
- Visual impacts from public vantage points.
- Cumulative and growth-inducing impacts.

Action Item RM-83.1: Consider adopting an ordinance for the regulation of vegetation removal.

Policy RM-84: Vegetation management and landscaping for public and private development should emphasize the protection and continuity of natural habitats and hydrology.

Policy RM-85: Promote the conservation and use of native species or drought-tolerant, fire-resistive, and noninvasive vegetation.

Policy RM-86: In rural areas, promote vegetation and landscape management programs that protect wildlife and livestock habitat, discourage pest species and non-native species, reduce wildfire risk, and conserve water resources.

Policy RM-87: Protect “pygmy” ecosystems (“pygmy” and “transitional pygmy” vegetation and soils) through the use of measures that include minimizing:

- Vegetation removal,
- Disruption of vegetation continuity, and
- The introduction of water and nutrients due to human activity, sewage disposal systems, animals or agricultural uses.
- Limit subdivision of land on agricultural lands adjacent to “pygmy” ecosystems, and
- Promote best management practices to minimize impacts.

Policy RM-88: Conserve and replant oak woodlands and stands of native oaks in community areas and developments. Protect oak woodlands in other areas through limitations on density and clustering.

Policy RM-90: Conserve the county's hillside vegetation (consistent with fire safety standards) by incorporating density transfers, clustering, small building sites, shared improvements, and other measures that:

- Are compatible with the natural terrain and hydrology.
- Conserve continuous critical habitats, oak woodlands, and natural vegetation.
- Minimize visual impacts.

Policy RM-92: Conserve and enhance watercourses to protect habitat, fisheries, soils, and water quality.

Policy RM-93: Conserve and enhance streamside (riparian) vegetation through development design and standards.

Policy RM-94: Stream restoration and maintenance programs shall conserve riparian vegetation and the floodwater carrying capacity of river and stream channels.

Policy RM-95: Whenever possible, use riparian vegetation in conjunction with natural or appropriate structural materials to achieve a natural appearance.

Fisheries Policies Policy

RM-96: Encourage public agencies and private property owners to protect fishery habitat and participate in fishery enhancement projects (including removal of barriers to fish passage) for coastal and inland waterways of Mendocino County.

Action Item RM-96.1: Continue participation in the 5-County Salmonid Conservation Program and work with organizations and agencies at all levels to formulate strategies and implement actions to improve watershed conditions and fisheries habitat.

Policy RM-97: Support instream flows adequate to maintain and protect fisheries and beneficial uses.

Policy RM-98: Support implementation of fisheries and watershed management plans adopted by public agencies, such as the Summer Steelhead Management Plan for the Middle Fork Eel River and Mendocino County Salmon and Steelhead Management Plan.

Policy RM-99: Support the restoration of spawning and nursery habitat in all salmonid-bearing streams and rivers.

Policy RM-100: The County encourages the State of California to re-establish a fish hatchery at Cape Horn.

Policy RM-101: Water development projects shall apply for all required permits and shall include mitigation and enhancement features for fish and wildlife if required to address adverse environmental impacts.

Action Item RM-101.1: Support State and Federal measures to protect and enhance the freshwater and marine ecology through the development process, such as:

- Stream corridor protection and restoration.
- Riparian vegetation protection and restoration.
- Erosion and sediment control measures.

Agricultural Resources Policies

Goal RM-10 (Agriculture) Protection of agriculture as a primary industry essential to the economy and quality of life and food security of the county by maintaining extensive agricultural land areas and limiting incompatible uses.

Policy RM-103: Maintain extensive agricultural land areas and limit incompatible uses.

Policy RM-104: The County supports policies and programs to maintain and enhance the viability of agricultural operations and retention of agricultural land.

Action Item RM-104.1: Develop vertical integration opportunities for adding value to natural resources, including local agricultural and timber processing facilities.

Policy RM-105: The County will work to protect important farmlands under the State Farmland Mapping and Monitoring Program.

Action Item RM-105.1: Adopt a map and standards for locally important farmlands and ensure they are appropriately zoned.

Policy RM-106: The County shall prioritize the protection of lands designated as “Type I Contracts” under the Williamson Act over the protection of lands designated as “Type II Contracts.”

Policy RM-107: Support the diversification and expansion of the agricultural economic base.

Policy RM-108: The County Agricultural Commissioner’s Office shall coordinate with University of California (UC) Cooperative Extension to support sustainable agricultural operations through research, vegetation management programs, best management practices, and technical assistance for agricultural operators to maintain and improve

soil health, identify use opportunities for sites no longer appropriate for agricultural activities, and encourage alternative crop types that are drought-, heat-, and severe weather-resistant.

Policy RM-109: Land shall not be converted from the Agricultural Lands or Range Lands classifications to non-agricultural classifications unless all of the following criteria are substantiated:

- The project will not result in a need for unintended expansion of infrastructure in conflict with other policies.
- The project will not adversely affect the long-term integrity of the agricultural areas or agricultural uses in the area.
- The proposed use in the subject location will achieve the long-range objectives of the General Plan.

Action Item RM-109.1: Enforce County ordinances that protect agricultural lands and operations from nuisances, trespass, vandalism or theft, livestock predation, and contamination from abandoned or uncared for orchards.

Policy RM-113: Consistent with State funding, encourage the creation and renewal of Williamson Act contracts on eligible agricultural lands, including implementing the Farmland Security Act.

Action Item RM-113.1: Continue to monitor and update the County's Williamson Act program for conformance with State law and the General Plan.

Action Item RM-113.2: Maintain land use classifications with minimum parcel sizes sufficient to meet County standards for Agricultural Preserves.

Action Item RM-113.3: Publicize provisions allowing small agricultural preserves with unique characteristics.

Action Item RM-113.4: Evaluate whether intensively farmed prime lands zoned Rural Residential-10 Acre Minimum or Remote Residential should be eligible for enrollment in Williamson Act contracts.

Action Item RM-113.5: Evaluate whether to modify the County Agricultural Preserves program to reflect the State Farmland Mapping and Monitoring Program.

Sonoma County – Resource Management Goals/Objectives²

² [Sonoma County General Plan](https://permitsonoma.org/longrangeplans/adoptedlong-rangeplans/generalplan/organizationandoverview) (https://permitsonoma.org/longrangeplans/adoptedlong-rangeplans/generalplan/organizationandoverview).

Land Use

GOAL LU-8: Protect Sonoma County's water resources on a sustainable yield basis that avoids long term declines in available surface and groundwater resources or water quality.

Objective LU-8.1: Protect, restore, and enhance the quality of surface and groundwater resources to meet the needs of all beneficial uses.

GOAL LU-9: Protect lands currently in agricultural production and lands with soils and other characteristics that make them potentially suitable for agricultural use. Retain large parcel sizes and avoid incompatible non-agricultural uses.

Objective LU-9.1: Avoid conversion of lands currently used for agricultural production to non-agricultural use.

Objective LU-9.2: Retain large parcels in agricultural production areas and avoid new parcels less than 20 acres in the "Land Intensive Agriculture" category.

Objective LU-9.3: Agricultural lands not currently used for farming but which have soils or other characteristics that make them suitable for farming shall not be developed in a way that would preclude future agricultural use.

Objective LU-9.4: Discourage uses in agricultural areas that are not compatible with long term agricultural production.

Objective LU-9.5: Support farming by permitting limited small scale farm services and visitor serving uses in agricultural areas.

GOAL LU-10: The uses and intensities of any land development shall be consistent with preservation of important biotic resource areas and scenic features.

Objective LU-10.1: Accomplish development on lands with important biotic resources and scenic features in a manner which preserves or enhances these features.

Open Space and Resource Conservation

GOAL OSRC-7: Protect and enhance the County's natural habitats and diverse plant and animal communities.

Objective OSRC-7.1: Identify and protect native vegetation and wildlife, particularly occurrences of special status species, wetlands, sensitive natural communities, woodlands, and areas of essential habitat connectivity.

Objective OSRC-7.2: Designate important Biotic Habitat Areas and update designations periodically using credible data sources.

Objective OSRC-7.3: Establish development guidelines to protect designated Biotic Habitat Areas and assure that the quality of these natural resources is maintained.

Objective OSRC-7.4: Where appropriate, support regulatory efforts by other agencies to protect biotic habitat.

Objective OSRC-7.5: Maintain connectivity between natural habitat areas.

Objective OSRC-7.6: Establish standards and programs to protect native trees and plant communities.

Objective OSRC-7.7: Support use of native plant species and removal of invasive exotic species.

Objective OSRC-7.8: Encourage voluntary efforts to restore and enhance biotic habitat.

Objective OSRC-7.9: Preserve and restore the Laguna de Santa Rosa, San Pablo Bay and Petaluma marshes and other major marshes and wetlands.

GOAL OSRC-8: Protect and enhance Riparian Corridors and functions along streams, balancing the need for agricultural production, urban development, timber and mining operations, and other land uses with the preservation of riparian vegetation, protection of water resources, flood control, bank stabilization, and other riparian functions and values.

Objective OSRC-8.1: Designate all streams shown on USGS 7.5-minute quadrangle topographic maps as of March 18, 2003, as Riparian Corridors and establish streamside conservation areas along these designated corridors.

Objective OSRC-8.2: Provide standards for land use and development in streamside conservation areas that protect riparian vegetation, water resources and habitat values while considering the needs of residents, agriculture, businesses and other land users.

Objective OSRC-8.3: Recognize and protect riparian functions and values of undesignated streams during review of discretionary projects.

GOAL OSRC-10: Encourage the conservation of soil resources to protect their long term productivity and economic value.

Objective OSRC-10.1: Preserve lands containing prime agricultural and productive woodland soils and avoid their conversion to incompatible residential, commercial or industrial uses.

GOAL OSRC-11: Promote and encourage soil conservation and management practices that maintain the productivity of soil resources.

Objective OSRC-11.1: Ensure that permitted uses are compatible with reducing

potential damage due to soil erosion.

Objective OSRC-11.2: Establish ways to prevent soil erosion and restore areas damaged by erosion.

Water Resources

GOAL WR-1: Protect, restore and enhance the quality of surface and groundwater resources to meet the needs of all reasonable beneficial uses.

Objective WR-1.1: Work with the Regional Water Quality Control Boards (RWQCB) and interested parties in the development and implementation of RWQCB requirements.

Objective WR-1.2: Avoid pollution of stormwater, water bodies and groundwater.

Objective WR-1.3: Inform the public about practices and programs to minimize water pollution and provide educational and technical assistance to agriculture in order to reduce sedimentation and increase on-site retention and recharge of stormwater.

Objective WR-1.4: Seek and secure funding for development of countywide groundwater quality assessment, monitoring, management, and education regarding groundwater quality issues.

GOAL WR-6: Improve understanding, valuation and sound management of the water resources in Sonoma County's diverse watersheds.

Objective WR-6.1: Seek and secure funding for addressing water resource issues on a watershed basis.

Objective WR-6.2: Support programs to assess the quality and quantity of the water captured, stored and used within each unique watershed.

ATTACHMENT D: Special Status Species

Species Name	Common Name	Taxon	In Riparian Area	In Wetlands	CEQA Categories
<i>Agelaius tricolor</i>	tricolored blackbird	Birds	No	No	ST; SSC
<i>Alopecurus aequalis</i> var. <i>sonomensis</i>	Sonoma alopecurus	Monocots	Yes	Yes	FE; CRPR
<i>Ambystoma californiense</i> pop. 3	California tiger salamander - Sonoma County DPS	Amphibians	No	No	FE; ST
<i>Amorpha californica</i> var. <i>napensis</i>	Napa false indigo	Dicots	No	Yes	CRPR
<i>Antrozous pallidus</i>	pallid bat	Mammals	Yes	Yes	SSC
<i>Arborimus pomo</i>	Sonoma tree vole	Mammals	Yes	Yes	SSC
<i>Arctostaphylos bakeri</i> ssp. <i>bakeri</i>	Baker's manzanita	Dicots	No	No	CRPR
<i>Arctostaphylos densiflora</i>	Vine Hill manzanita	Dicots	No	No	SE; CRPR
<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	Konocti manzanita	Dicots	No	No	CRPR
<i>Arctostaphylos stanfordiana</i> ssp. <i>decumbens</i>	Rincon Ridge manzanita	Dicots	Yes	Yes	CRPR
<i>Arctostaphylos stanfordiana</i> ssp. <i>raichei</i>	Raiche's manzanita	Dicots	Yes	Yes	CRPR
<i>Athene cunicularia</i>	burrowing owl	Birds	No	No	SSC

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Species Name	Common Name	Taxon	In Riparian Area	In Wetlands	CEQA Categories
<i>Balsamorhiza macrolepis</i>	big-scale balsamroot	Dicots	No	No	CRPR
<i>Blennosperma bakeri</i>	Sonoma sunshine	Dicots	No	Yes	FE; SE; CRPR
<i>Bombus occidentalis</i>	western bumble bee	Insects	Yes	Yes	SC
<i>Bombus suckleyi</i>	Suckley's cuckoo bumble bee	Insects	No	No	SC
<i>Brodiaea leptandra</i>	narrow-anthered brodiaea	Monocots	Yes	Yes	CRPR
<i>Campanula californica</i>	swamp harebell	Dicots	No	No	CRPR
<i>Carex comosa</i>	bristly sedge	Monocots	Yes	No	CRPR
<i>Carex saliniformis</i>	deceiving sedge	Monocots	No	No	CRPR
<i>Castilleja uliginosa</i>	Pitkin Marsh paintbrush	Dicots	No	No	SE; CRPR
<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	Dicots	Yes	Yes	CRPR
<i>Ceanothus foliosus var. vineatus</i>	Vine Hill ceanothus	Dicots	No	No	CRPR
<i>Ceanothus purpureus</i>	holly-leaved ceanothus	Dicots	Yes	Yes	CRPR
<i>Ceanothus sonomensis</i>	Sonoma ceanothus	Dicots	No	Yes	CRPR
<i>Chorizanthe valida</i>	Sonoma spineflower	Dicots	No	No	FE; SE; CRPR
<i>Clarkia imbricata</i>	Vine Hill clarkia	Dicots	No	No	FE; SE; CRPR

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Species Name	Common Name	Taxon	In Riparian Area	In Wetlands	CEQA Categories
<i>Coccyzus americanus occidentalis</i>	western yellow-billed cuckoo	Birds	No	No	FT; SE
<i>Cordylanthus tenuis ssp. capillaris</i>	Pennell's bird's-beak	Dicots	No	No	FE; CRPR
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	Mammals	Yes	Yes	SSC
<i>Coturnicops noveboracensis</i>	yellow rail	Birds	No	No	SSC
<i>Cryptantha dissita</i>	serpentine cryptantha	Dicots	No	No	CRPR
<i>Cuscuta obtusiflora var. glandulosa</i>	Peruvian dodder	Dicots	No	No	CRPR
<i>Cypseloides niger</i>	black swift	Birds	No	No	SSC
<i>Delphinium bakeri</i>	Baker's larkspur	Dicots	Yes	Yes	FE; SE; CRPR
<i>Delphinium luteum</i>	golden larkspur	Dicots	Yes	Yes	FE; CRPR
<i>Dicamptodon ensatus</i>	California giant salamander	Amphibians	Yes	Yes	SSC
<i>Downingia pusilla</i>	dwarf downingia	Dicots	No	No	CRPR
<i>Emys marmorata</i>	western pond turtle	Reptiles	Yes	Yes	SSC
<i>Erigeron greenei</i>	Greene's narrow-leaved daisy	Dicots	No	No	CRPR
<i>Erigeron serpentinus</i>	serpentine daisy	Dicots	No	No	CRPR

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Species Name	Common Name	Taxon	In Riparian Area	In Wetlands	CEQA Categories
<i>Eryngium constancei</i>	Loch Lomond button-celery	Dicots	No	No	FE; SE; CRPR
<i>Erythranthe trinitiensis</i>	pink-margined monkeyflower	Dicots	No	Yes	CRPR
<i>Erythronium revolutum</i>	coast fawn lily	Monocots	Yes	Yes	CRPR
<i>Fritillaria liliacea</i>	fragrant fritillary	Monocots	No	No	CRPR
<i>Gilia capitata ssp. tomentosa</i>	woolly-headed gilia	Dicots	No	No	CRPR
<i>Harmonia guggolziorum</i>	Guggolz's harmonia	Dicots	No	No	CRPR
<i>Hemizonia congesta ssp. congesta</i>	congested-headed hayfield tarplant	Dicots	Yes	Yes	CRPR
<i>Hesperolinon bicarpellatum</i>	two-carpellate western flax	Dicots	No	No	CRPR
<i>Horkelia tenuiloba</i>	thin-lobed horkelia	Dicots	No	No	CRPR
<i>Hysterochrysa traskii</i>	Russian River tule perch	Fish	No	Yes	SSC
<i>Juncus dudleyi</i>	Dudley's rush	Monocots	Yes	No	CRPR
<i>Kopsiopsis hookeri</i>	small groundcone	Dicots	No	No	CRPR
<i>Lasiurus frantzii</i>	western red bat	Mammals	No	No	SSC
<i>Lasthenia burkei</i>	Burke's goldfields	Dicots	Yes	Yes	FE; SE; CRPR
<i>Lasthenia californica ssp. bakeri</i>	Baker's goldfields	Dicots	No	No	CRPR

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Species Name	Common Name	Taxon	In Riparian Area	In Wetlands	CEQA Categories
<i>Layia septentrionalis</i>	Colusa layia	Dicots	Yes	Yes	CRPR
<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	Dicots	Yes	Yes	CRPR
<i>Lilium pardalinum ssp. pitkinense</i>	Pitkin Marsh lily	Monocots	No	No	FE; SE; CRPR
<i>Limnanthes vinculans</i>	Sebastopol meadowfoam	Dicots	Yes	Yes	FE; SE; CRPR
<i>Lupinus sericatus</i>	Cobb Mountain lupine	Dicots	Yes	Yes	CRPR
<i>Microseris paludosa</i>	marsh microseris	Dicots	Yes	No	CRPR
<i>Navarretia leucocephala ssp. bakeri</i>	Baker's navarretia	Dicots	Yes	Yes	CRPR
<i>Oenothera wolfii</i>	Wolf's evening-primrose	Dicots	No	No	CRPR
<i>Oncorhynchus kisutch pop. 4</i>	coho salmon - central California coast ESU	Fish	Yes	Yes	FE; SE
<i>Oncorhynchus mykiss irideus pop. 49</i>	steelhead - northern California DPS winter-run	Fish	Yes	Yes	FT
<i>Oncorhynchus mykiss irideus pop. 8</i>	steelhead - central California coast DPS	Fish	Yes	Yes	FT

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Species Name	Common Name	Taxon	In Riparian Area	In Wetlands	CEQA Categories
<i>Oncorhynchus tshawytscha</i> pop. 30	chinook salmon - upper Klamath and Trinity Rivers ESU	Fish	No	No	ST; SSC
<i>Packera bolanderi</i> var. <i>bolanderi</i>	seacoast ragwort	Dicots	No	No	CRPR
<i>Pekania pennanti</i>	Fisher	Mammals	No	Yes	SSC
<i>Piperia candida</i>	white-flowered rein orchid	Monocots	No	No	CRPR
<i>Plagiobothrys lithocaryus</i>	Mayacamas popcornflower	Dicots	Yes	Yes	CRPR
<i>Pleuropogon hooverianus</i>	North Coast semaphore grass	Monocots	Yes	Yes	ST; CRPR
<i>Potentilla uliginosa</i>	Cunningham Marsh cinquefoil	Dicots	No	No	CRPR
<i>Rana boylei</i> pop. 1	foothill yellow-legged frog - north coast DPS	Amphibians	Yes	Yes	SSC
<i>Rana draytonii</i>	California red-legged frog	Amphibians	No	No	FT; SSC
<i>Rhynchospora alba</i>	white beaked-rush	Monocots	Yes	No	CRPR
<i>Rhynchospora californica</i>	California beaked-rush	Monocots	Yes	No	CRPR
<i>Rhynchospora capitellata</i>	brownish beaked-rush	Monocots	Yes	No	CRPR

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Species Name	Common Name	Taxon	In Riparian Area	In Wetlands	CEQA Categories
<i>Rhynchospora globularis</i>	round-headed beaked-rush	Monocots	Yes	No	CRPR
<i>Rorippa columbiae</i>	Columbia yellow cress	Dicots	No	No	CRPR
<i>Sidalcea hickmanii</i> ssp. <i>napensis</i>	Napa checkerbloom	Dicots	No	No	CRPR
<i>Sidalcea oregana</i> ssp. <i>valida</i>	Kenwood Marsh checkerbloom	Dicots	No	Yes	FE; SE; CRPR
<i>Silene bolanderi</i>	Bolander's catchfly	Dicots	Yes	Yes	CRPR
<i>Silene hookeri</i>	Hooker's catchfly	Dicots	No	No	CRPR
<i>Stuckenia filiformis</i> ssp. <i>alpina</i>	northern slender pondweed	Monocots	No	No	CRPR
<i>Syncaris pacifica</i>	California freshwater shrimp	Crustaceans	Yes	Yes	FE; SE
<i>Taricha rivularis</i>	red-bellied newt	Amphibians	Yes	Yes	SSC
<i>Taxidea taxus</i>	American badger	Mammals	No	Yes	SSC
<i>Thermopsis robusta</i>	robust false lupine	Dicots	No	No	CRPR
<i>Trifolium amoenum</i>	two-fork clover	Dicots	Yes	Yes	FE; CRPR
<i>Trifolium hydrophilum</i>	saline clover	Dicots	No	No	CRPR
<i>Viburnum ellipticum</i>	oval-leaved viburnum	Dicots	No	No	CRPR

ATTACHMENT E: Estimated Cost of Compliance

Permit Fees

The State Water Resources Control Board (SWRCB) sets the fee schedule for irrigated lands regulatory programs throughout the state, as specified in California Code of Regulations, title 23, section 2200.6. All enrolled Vineyard Properties must pay the SWRCB fees on an annual basis. Although the SWRCB fees may change from year to year, the fee categories/schedule for the 2022-2023 fiscal year is shown below.

If a discharger is a member of a group that has been approved by the Regional Board or Regional Board Executive Officer to manage fee collection and payment, then the annual fee shall be \$1.35 per acre.

If a discharger is not a member of a group that has been approved by the Regional Board or Regional Board Executive Officer to manage fee collection and payment, then the annual fee shall be: \$33.51 per acre up to 300 acres plus \$16.76 per acre over 300 acres with a minimum fee of \$668.

The North Coast Water Board anticipates the vast majority of Vineyard Properties enrolled under the Order will choose to participate as a member of a group (i.e., Third-Party Program) that has been approved by the Regional Board or Regional Board Executive Officer to manage fee collection and payment.

Compliance with Water Quality Protection Requirements

All Dischargers must comply with requirements to implement and adapt management practices including Sediment and Erosion Control minimum management practices and Streamside Area setbacks. Dischargers are provided flexibility in selecting management practices and are required to monitor, and report on, their discharges and the management practices they are implementing to manage their discharges.

Dischargers may be required to implement improved or additional management practices, as necessary, and report on the water quality-related outcomes of their management practice implementation. Dischargers must ultimately implement management practices that result in compliance with the Order.

Management practices associated with irrigation and nutrient management, pesticide management, and sediment and erosion control management are already being implemented by many dischargers. This may be due to requirements imposed by other regulatory agencies (e.g., pesticide tracking and reporting by the Department of Pesticide Regulation and Agricultural Commissioners) and through long standing voluntary conservation programs.

Implementation of management practices may also have direct net cost benefits to a vineyard (e.g., irrigation and nutrient management result in higher crop yields and less fertilizer and irrigation application costs). For example, preventing erosion of valuable topsoil is an incentive for sediment and erosion management on a vineyard.

The Natural Resource Conservation Service (NRCS) has developed standard agricultural management practices to address irrigation and nutrient management, pesticide management, and sediment and erosion control management, some of the more common of which are discussed below. Implementation of many of these practices would result in compliance with multiple requirements of the Order. Table 1 provides estimated costs of management practices/scenarios Dischargers may implement to meet the requirements in the Order, as reported by the U.S. Department of Agriculture (USDA), NRCS³.

Conservation Cover – involves establishing and maintaining a permanent vegetative cover on lands that are either not currently in use/production or lands currently in production that would be taken out of production. The practice does not apply to plantings for forage production or to critical area plantings. This practice can be applied on a portion of the field. The Conservation Cover practice may be implemented to reduce erosion and sedimentation and reduce associated groundwater and surface water quality degradation by nutrients and sediment, as well as other purposes. Costs range between \$200 and \$300 per acre.

Contour Buffer Strips – involves establishing narrow strips of permanent, herbaceous vegetative cover around hill slopes, which are alternated down the slope with wider cropped strips that are farmed on the contour. This practice may be implemented to reduce erosion and associated water quality degradation from the transport of sediment and other water-borne contaminants downslope. Costs range between \$300 to \$400 per acre.

Cover Crop – involves planting grasses, legumes, and/or forbs for seasonal vegetative cover. The practice may be implemented to reduce erosion, maintain or increase soil health and organic matter content, reduce water quality degradation by utilizing excessive soil nutrients, or for other purposes. Costs range between \$100 to \$300 per acre.

Filter Strip – involves establishing a strip or area of herbaceous vegetation that removes contaminants from overland flow. Filter strips can be established anywhere environmentally sensitive areas need to be protected from sediment, or other suspended solids, and dissolved contaminants in runoff. Costs range between \$200 to \$300 per acre

Integrated Pest Management (IPM) program – involves implementing a site-specific combination of pest prevention, pest avoidance, pest monitoring, and pest suppression strategies. An IPM approach seeks to prevent or mitigate offsite pesticide risks to water quality from leaching, solution runoff and adsorbed runoff losses; and prevent or mitigate on-site pesticide risks to pollinators and other beneficial species through direct

³ [USDA Natural Resource Conservation Service California Practice Scenarios 2023](https://www.nrcs.usda.gov/sites/default/files/2022-11/California-Scenarios-23-payment-rates.pdf)
(<https://www.nrcs.usda.gov/sites/default/files/2022-11/California-Scenarios-23-payment-rates.pdf>)

contact; among other goals. Costs range between \$50 and \$100 per acre.

Micro-Irrigation System – involves implementation of an irrigation system that provides for frequent application of small quantities of water on or below the soil surface (e.g., as drops, tiny streams, or miniature spray through emitters or applicators placed along a water delivery line. Drip tape, tubing, or microsprayers may be used. This practice may be implemented to prevent contamination of groundwater and surface water by efficiently and uniformly applying chemicals, and to maintain soil moisture by efficiently and uniformly applying irrigation water. Costs range between \$750 to \$3,500 per acre.

Nutrient Management (NM) – involves managing the amount (rate), source, placement (method of application), and timing of plant nutrients and soil amendments. The practice is implemented to minimize agricultural nonpoint source pollution of surface waters and groundwater, among other reasons. Costs associated with this practice include soil testing, analysis, and implementation of the NM plan and recordkeeping. Costs range between \$10 and \$320 per acre.

Riparian Vegetation Buffer – involves establishment of an area of predominantly trees and/or shrubs located adjacent to and up-gradient from waterbodies. The practice may be implemented to reduce excess amounts of sediment, organic material, nutrients and pesticides in surface runoff and reduce excess nutrients and other chemicals in shallow groundwater flow; reduce pesticide drift entering the waterbody; restore riparian plant communities; create shade to lower or maintain water temperatures to improve habitat for aquatic organisms; or to provide other benefits. Costs vary based on whether riparian forest buffer vegetation is established through seeding, cuttings, bare-root plantings, or small or large containers. For scenarios where land is taken out of production to establish the riparian vegetation buffer, foregone income is considered. Costs range between \$3,000 to \$5,500 per acre.

Sediment Control Basin – involves constructing a basin with an engineered outlet, formed by excavating a dugout, constructing an embankment, or a combination of both. The purpose of the sediment basin is to capture and detain sediment-laden runoff, or other debris for a sufficient length of time to allow it to settle out in the basin. Costs are estimated between \$6,000 to \$13,000 per basin.

These potential costs were considered when the water quality protection requirements were developed for the Order.

Table 1: Estimated Costs of Management Practices/Scenarios for Water Quality Protection

Management Practice	Scenario Size	Unit Cost	Total Cost (low)	Total Cost (High)
Conservation Cover (327)	50 acres	\$200-\$300/acre	\$10,000	\$15,000
Contour Buffer Strip (332)	1 acre	\$300-\$400/acre	\$300	\$400
Cover Crop (340)	40 acres	\$100-\$300/acre	\$4,000	\$12,000
Filter Strip (393)	1 acre	\$200-\$300/acre	\$200	\$300
Integrated Pest Management (IPM) program (595)	40 acres	\$50-\$100/acre	\$2000	\$4,000
Micro-Irrigation System (441)	20 acres	\$750-\$3,500/acre	\$15,000	\$70,000
Nutrient Management (590)	40 acres	\$10-\$320/acre	\$400	\$12,800
Riparian Vegetation Buffer (391)	1.5 acres	\$3,000-\$5,000/acre	\$4,500	\$7,500
Sediment Control Basin (638)	Basin	Each	\$6,000	\$13,000

Compliance with Agricultural Road Storm-Proofing Requirements

Dischargers with appurtenant agricultural roads must comply with requirements to implement road storm-proofing management practices. Existing Vineyard Properties are provided a compliance schedule (10 years from the date of the Order) to complete implementation of road storm-proofing management practices.

Dischargers are required to inspect appurtenant agricultural road networks following qualifying storm events and are required to implement improved or additional management practices, as necessary. Dischargers must ultimately implement management practices that result in compliance with the Order.

Management practices associated with road storm-proofing are already being implemented by many dischargers. This may be due to requirements imposed by other regulatory agencies (e.g., existing County grading and drainage requirements) and through long standing voluntary conservation programs.

Implementation of road storm-proofing management practices may also have direct net cost benefits to a vineyard (e.g., reduced road maintenance costs costs).

The Natural Resource Conservation Service (NRCS) has developed standard management practices for agricultural road sediment, erosion, and drainage control, some of the more common of which are discussed below. Implementation of many of these practices would result in compliance with multiple requirements of the Order. Table 2 shows costs of management practices/scenarios Dischargers may implement to meet the requirements in the Order, as reported by the U.S. Department of Agriculture (USDA), NRCS⁴ and adjusted by Regional Water Board staff for anticipated scenarios.

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. Costs are estimated between \$10 to \$20 per lineal foot.

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. Cost is estimated at \$10 to \$20 per lineal foot.

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. Cost is estimated at \$3 to \$30 per lineal foot.

These potential costs were considered when the appurtenant agricultural road storm-proofing requirements were developed for the Order.

Table 2: Estimated Costs of Management Practices/Scenarios for Road Storm-proofing

Management Practice	Scenario Size	Unit Cost	Total Cost (low)	Total Cost (High)
Rolling Dip	1,000 feet	\$10-20/ft	\$10,000	\$20,000
Critical Dip	1,000 feet	\$10-20/ft	\$10,000	\$20,000
Road Out-sloping	5,000 feet	\$3-\$30/ft	\$15,000	\$150,000

⁴ [USDA Natural Resource Conservation Service California Practice Scenarios 2023](https://www.nrcs.usda.gov/sites/default/files/2022-11/California-Scenarios-23-payment-rates.pdf) (https://www.nrcs.usda.gov/sites/default/files/2022-11/California-Scenarios-23-payment-rates.pdf).

Monitoring and Reporting

All Dischargers are required to conduct surface water and groundwater monitoring and reporting either individually or as part of a Third-Party (group) effort. All Dischargers are required to report management practice implementation annually on the Annual Compliance Form (ACF), record and report total nitrogen applied on the Total Nitrogen Applied (TNA) report, and track and record elements of the INMP Summary report that are not included in the TNA report. Refer to Appendix C for monitoring and reporting requirements and Table 3, 4, and 4b for estimated costs.

Table 3: Estimated Annual Monitoring and Reporting Costs for Dischargers Enrolling Individually (assume 100-acre vineyard)

Task	Cost Estimate	Requirements
Edge-of-Field Surface Water Monitoring	\$0 -\$1200	Annual monitoring for turbidity and monitoring for pesticides every five years. Turbidity monitoring includes all agricultural drainage structures and a representative number of discharge points. Pesticide monitoring occurs at one representative site.
Drinking Water Supply Well Monitoring (nitrates)	\$110 per well	Annual sampling for three years for nitrates and once every five years after that.
Drinking Water Supply Well Monitoring (pesticides)	\$200-1050 per well.	Sampling every five years for 6800(a) listed pesticides that the Discharger has applied.
Groundwater Trend Monitoring	\$0 -\$400	Monitoring nitrates and field parameters annually and evaluating trends every five years.
INMP Requirements	\$135 per farm	Includes annual soil and irrigation water testing and INMP certification ⁵ .
Annual Compliance Form	\$250-\$500	Includes management practice reporting, nitrogen reporting, outreach attendance, CEQA mitigation measure monitoring, and annual water quality monitoring results.

⁵ Dischargers may self-certify their INMP if they take the [CDFA Irrigation and Nitrogen Management Training for Grower Self-Certification](https://www.cdfa.ca.gov/is/ffldrs/frep/training.html) (<https://www.cdfa.ca.gov/is/ffldrs/frep/training.html>), pass the [Irrigation and Nitrogen Management Training and Exam](https://www.cdfa.ca.gov/is/ffldrs/frep/training.html) and maintain the certification through continuing education (<https://www.cdfa.ca.gov/is/ffldrs/frep/training.html>).

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Task	Cost Estimate	Requirements
Trend Monitoring Report	\$250-\$500	Includes water quality results for five-year monitoring requirements and trend analysis.

Table 4a: Estimated Annualized Monitoring Costs Over Five Years for Dischargers Enrolling in a Third-Party Group (assume 65,000 acres of enrolled vineyards)

Task	Cost Estimate	Monitoring Sites (assumed)	Requirements
Tributary Turbidity Monitoring	\$1.62/acre	3 sites	Continuous monitoring for turbidity
Tributary Streambed Monitoring	\$0.59/acre	12 sites	Monitor streambed conditions every five years after two initial monitoring efforts in Year 1 and Year 4.
Representative Pesticide Monitoring	\$0.01/acre	3 sites	Monitor for 20 pesticides in one representative site within each HUC-12 watershed in the top quartile by vineyard density. See Figure 5 for HUC-12 watersheds by vineyard density within the North Coast Region.
Agricultural Drainage Structure Monitoring	\$0.51/acre	3000 sites	Turbidity monitoring for 20 percent of agricultural drainage structures on each vineyard annually on a 5-year cycle.
Groundwater Trend Monitoring	\$0.06/acre	25	Monitoring for parameters in Order Attachment B: Section IV annually and evaluating trends every five years.
Drinking Water Supply Well Monitoring	\$110-320	per well	Includes annual sampling for three years for nitrates and sampling for 6800(a) listed pesticides that the Discharger has applied every five years.
INMP Requirements	\$135	per commercial vineyard	Includes annual soil and irrigation water testing and INMP certification.

Table 4b: Estimated Annualized Reporting Costs Over Five Years for Dischargers Enrolling in a Third-Party Group (assume 65,000 acres of enrolled vineyards)

Task	Cost Estimate	Requirements
Annual Compliance Report	\$0.38/acre	Includes participant list, management practice reporting, nitrogen reporting and calculations, outreach attendance, and CEQA mitigation measure monitoring.
Annual Water Quality Monitoring Report	\$0.38/acre	Results of any water quality monitoring conducted in the previous year.
Trend Monitoring Report	\$0.38/acre	All water quality data for past five years reported and analyzed for trends in accordance with Order Attachment B: Section VII.E.

Technical Reports and Planning Documents

As part of Order compliance, Dischargers and the Third-Party are required to submit the following technical reports and planning documents:

Water Quality Monitoring Workplan (Individual): Dischargers enrolled individually shall submit a Water Quality Monitoring Workplan (Workplan) to the Executive Officer which describes how they will implement the water quality monitoring and reporting requirements of the Order as detailed in Attachment A: Monitoring and Reporting Program of the Order. Estimated Cost (one-time): \$1,000-\$2,000.

Water Quality Monitoring Workplan (Third-Party): The Third-Party shall submit a Workplan to the Executive Officer for approval, which (1) proposes surface water monitoring locations; (2) proposes a groundwater monitoring trend network; and (3) proposes how the Third-Party will meet all group surface and groundwater monitoring requirements on behalf of their enrolled Dischargers as detailed in Attachment B: Monitoring and Reporting Program of the Order. Estimated Cost (one-time): \$25,000-\$50,000.

Groundwater Protection Plan (Third-Party): The Third-Party may choose to submit a Groundwater Protection Plan that identifies a methodology for determining outliers of Nitrogen Applied and Nitrogen Removed (AR), establishes a nitrogen removal coefficient (C_N), and proposes groundwater protection formulas and targets. This is a one-time requirement. If the Third-Party chooses to not submit a Groundwater Protection Plan, the Regional Board will determine these elements. Estimated Cost (one-time): \$50,000-\$100,000.

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Attachment E: Estimated Cost of Compliance

Water Quality Management Plan (WQMP): Dischargers are required to develop and implement a WQMP when adaptive management and/or existing management practices are insufficient to achieve the goal of minimizing the discharge of pollutants to off-site surface water. WQMPs require certification by a professional. Estimated Cost (per WQMP): \$5,000-\$10,000.

