

California Environmental Quality Act (CEQA)
Initial Study
for
Agricultural Order for Discharges from
Irrigated Lands



Photo credit: <https://www.seemonterey.com/blog/post/life-is-a-highway-in-monterey-county-highway-101-road-trip/>

CEQA

Initial Study

February 16, 2018



EDMUND G. BROWN JR.
GOVERNOR



MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

**California Environmental Protection Agency
State Water Resources Control Board**

**Central Coast
Regional Water Quality Control Board**
895 Aerovista Place, Suite 101
San Luis Obispo, California 93401
(805) 549-3147

Website:

<http://www.waterboards.ca.gov/centralcoast/>

Central Coast Regional Water Quality Control Board

**California Environmental Quality Act
Initial Study
for
Agricultural Order for Discharges from Irrigated Lands
(Resolution No. R3-2020-0XXX)**

Central Coast Regional Water Quality Control Board

Dr. Jean-Pierre Wolff, Chair
Dr. Monica S. Hunter, Vice Chair
Karina Cervantez
Bruce Delgado
Jane Gray
Michael Johnston
Jeffrey Young
John M. Robertson, *Executive Officer*
Michael Thomas, *Assistant Executive Officer*

This report was prepared by

Shanta Keeling, Water Resources Control Engineer

With assistance from

*Peter Meertens, Environmental Scientist
Arwen Wyatt-Mair, Water Resources Control Engineer
Peter Osmolovsky, Engineering Geologist
Jill North, Environmental Scientist
Elaine Sahl, Environmental Specialist
Paula Richter, Environmental Scientist*

*Monica Barricarte, Water Resources Control Engineer
Leah Lemoine, Water Resources Control Engineer
Larry Harlan, Environmental Scientist
Dean Thomas, Engineering Geologist
James Bishop, Engineering Geologist
Mary Hamilton, Environmental Scientist*

Under the direction of

*Chris Rose, Irrigated Lands Program Manager
Jennifer Epp, Senior Water Resources Control Engineer*

February 16, 2018



Central Coast Regional Water Quality Control Board
895 Aerovista Place, Suite 101,
San Luis Obispo, California 93401

Contact information – Shanta Keeling, (805) 549-3464,
Shanta.Keeling@waterboards.ca.gov
<http://www.waterboards.ca.gov/centralcoast/>

Table of Contents

1. Executive Summary	1
2. Introduction	2
2.1. Purpose of CEQA as related to this project.....	2
2.2. Description/definition of the project being proposed	3
2.3. Nature of the water quality problem	4
2.4. Purpose of the proposed Agricultural Order.....	5
2.5. Development of an Environmental Impact Report will be required	5
3. Project Information and Location	6
4. Environmental Setting and Baseline Conditions	7
4.1. Definition of environmental setting and baseline conditions.....	7
4.2. Central Coast Water Board's jurisdictional area.....	8
4.3. Irrigated agriculture in the central coastal region	8
4.4. Noting the interconnection between surface water and groundwater	17
4.5. Surface water and water quality	18
4.5.1. Watersheds in the central coast region	18
4.5.2. Water quality	19
4.6. Groundwater	28
4.7. Precipitation and climate	32
4.8. Temperature.....	38
4.9. Special status species.....	38
4.10. Wetland and riparian habitat	45
4.10.1. Introduction.....	45
4.10.2. Scope and location of wetlands in the central coast region.....	45
4.10.3. Riparian areas	48
4.11. Other areas not discussed in detail	50
5. Lead, Responsible, and Trustee Agencies	50
5.1. Lead Agency	50
5.2. Responsible Agency.....	50
5.3. Trustee Agency	50
5.4. Other interested agencies	51
6. Names of preparers	51
7. Reasonably Foreseeable Methods of Compliance	52
7.1. Reasonably foreseeable methods of compliance to reduce nutrient and salt loading to surface water and groundwater	53
7.2. Reasonable foreseeable methods of compliance to reduce/eliminate pesticides from entering surface water or groundwater.....	54
7.3. Reasonable foreseeable methods of compliance to retain sediment onsite	54
7.4. Reasonable foreseeable methods of compliance to maintain appropriate stream temperature	55
8. Environmental Checklist	56
8.1. Overview	56
8.2. Aesthetics.....	57
8.2.1. Discussion	57
8.2.2. Conclusion.....	58
8.3. Agriculture and Forestry Resources.....	59
8.3.1. Discussion	61
8.3.2. Conclusion.....	63
8.3.3. Mitigation Measures	63

8.4.	Air Quality	64
8.4.1.	Discussion	64
8.4.2.	Air quality standards and plans	64
8.4.3.	Pesticides	65
8.4.4.	Fertilizers	65
8.4.5.	Increased car trips due to monitoring and construction.....	65
8.4.6.	Temporary construction due to installation of management practices	65
8.4.7.	Bioreactors	66
8.4.8.	Additional monitoring wells drilled	66
8.4.9.	Conclusion.....	66
8.4.10.	Mitigation measures	67
8.5.	Biological Resources.....	67
8.5.1.	Discussion	68
8.5.2.	Potential flow reductions	68
8.5.1.	Improved water quality as it relates to biological resources	69
8.5.2.	Construction activities	69
8.5.3.	Conflict with any local policies, ordinances, plans.....	69
8.5.4.	Conclusion.....	69
8.5.5.	Mitigation Measures	70
8.6.	Cultural Resources.....	70
8.6.1.	Discussion	70
8.6.2.	Conclusion.....	71
8.6.3.	Mitigation measures	71
8.7.	Geology and Soils	72
8.7.1.	Conclusion.....	73
8.8.	Greenhouse Gas Emissions.....	74
8.8.1.	Discussion	74
8.8.2.	Conclusion.....	74
8.8.3.	Mitigation measures	75
8.9.	Hazards and Hazardous Materials	75
8.9.1.	Discussion	76
8.9.2.	Conclusion.....	77
8.9.3.	Mitigation measures	77
8.10.	Hydrology and Water Quality	79
8.10.1.	Discussion	80
8.10.2.	Groundwater.....	80
8.10.3.	Surface water	81
8.10.4.	Conclusion.....	82
8.10.5.	Mitigation measures	82
8.11.	Land Use and Planning	82
8.11.1.	Discussion	83
8.11.2.	Conclusion.....	83
8.12.	Mineral Resources	83
8.12.1.	Discussion	84
8.12.2.	Conclusion.....	84
8.13.	Noise	84
8.13.1.	Discussion	85
8.13.2.	Conclusion.....	85
8.13.3.	Mitigation measures	85
8.14.	Population and Housing	86
8.14.1.	Discussion	86

8.14.2. Conclusion.....	86
8.15. Public Services.....	87
8.15.1. Discussion	87
8.15.2. Conclusion.....	87
8.16. Recreation.....	87
8.16.1. Discussion	88
8.16.2. Conclusion.....	88
8.17. Transportation/Traffic	88
8.17.1. Discussion	89
8.17.2. Conclusion.....	89
8.18. Tribal Cultural Resources.....	89
8.18.1. Discussion	90
8.18.2. Conclusion.....	91
8.18.3. Mitigation measures	91
8.19. Utilities and Service Systems	91
8.19.1. Discussion	92
8.19.2. Conclusion.....	92
8.20. Mandatory Findings of Significance	92
8.20.1. Discussion	93
8.20.2. Conclusion.....	94
9. Conclusion	94
10. Reference Relied Upon	94

Table of Tables

Table 4-1. Definitions of irrigated crops according to FMMP.....	9
Table 4-2. Crop types in the central coast region, <i>according to DWR</i> . See Figure 4-3 and Figure 4-4 for spatial representation of where these crop types occur.	14
Table 4-3. Self-reported information from Tier 2 and 3 growers on the type of nutrient management practices they are implementing.	15
Table 4-4. Self-reported information from Tier 2 and 3 growers on the type of irrigation practices they are implementing.....	16
Table 4-5. Self-reported information from Tier 2 and 3 growers on the type of pesticide practices they are implementing.....	16
Table 4-6. Self-reported information from Tier 2 and 3 growers on the type of sediment practices they are implementing.....	17
Table 4-7. California 305(b) Report category definitions and the number of central coast region water segments placed in each category for the 2014 Report. This information is based on data as recent as 2010.	20
Table 4-8. Summary of nitrate as N (mg/L) data from groundwater wells in the central coast region (2010-2017).	31
Table 4-9. Average yearly precipitation, 1987 – 2016 for three drainage climate divisions within the central coast region.....	35
Table 4-10. Table of special status species on either the federal or California list. Species listed have been identified in areas of irrigated agriculture.	39
Table 4-11. Wetlands in the central coast region (source: National Wetlands Inventory).....	45
Table 4-12. NWI wetlands classification descriptions.	45
Table 4-13. Riparian areas assessment (percent cover rank) in the central coast region.	48
Table 8-1. Aesthetics, environmental checklist.....	57
Table 8-2. Agriculture and forestry resources, environmental checklist.	59

Table 8-3. Air quality, environmental checklist.....	64
Table 8-4. Biological resources, environmental checklist	67
Table 8-5. Cultural Resources, environmental checklist.....	70
Table 8-6. Geology and soils environmental checklist.....	72
Table 8-7. Greenhouse gas emissions, environmental checklist.....	74
Table 8-8. Hazards and hazardous materials, environmental checklist.....	75
Table 8-9. Hydrology and water quality, environmental checklist.	79
Table 8-10. Land use and planning, environmental checklist.	82
Table 8-11. Mineral resources, environmental checklist.....	83
Table 8-12. Noise, environmental checklist.	84
Table 8-13. Population and housing, environmental checklist.....	86
Table 8-14. Public services, environmental checklist.	87
Table 8-15. Recreation, environmental checklist.....	87
Table 8-16. Transportation/traffic, environmental checklist.	88
Table 8-17. Tribal cultural resources, environmental checklist.....	89
Table 8-18. Utilities and service systems, environmental checklist	91
Table 8-19. Mandatory findings of significance, environmental checklist.	92

Table of Figures

Figure 2-1. CEQA Process Flow Chart. Source: http://resources.ca.gov/ceqa/flowchart/	6
Figure 4-1. Project Area - Irrigated Agriculture in the central coast region.	10
Figure 4-2. Crop type, Department of Water Resources data, shown for the northern portion of our region.....	12
Figure 4-3. Crop type, Department of Water Resources data, shown for the southern portion of our region.....	13
Figure 4-4. Acres of specific crops in the central coast region. The age of this data ranges from 1996-2014, depending on the county.	14
Figure 4-5. Central coast region by subbasin (data from USGS watershed boundary dataset, hydrologic unit code 8).....	19
Figure 4-6. A map of the central coast region's water segments. The categories refer to the categories defined in Clean Water Act 305(b). The hydrologic unit category (HUC), or River Basin designation, is HUC-8.	22
Figure 4-7. Map of the central coast region's 2014 303(d) listings for nutrients. Nutrient related impairments include nitrate, ammonia, and dissolved oxygen.....	24
Figure 4-8. Map of the central coast region's 2014 303(d) listings for pesticides. Pesticide related impairments include carbaryl, chlordane, chlorpyrifos, cyfluthrin, cyhalothrin - lambda, cypermethrin, DDD (dichlorodiphenyldichloroethane), DDE (dichlorodiphenyldichloroethylene), DDT (dichlorodiphenyltrichloroethane), diazinon, dieldrin, dimethoate, endrin, malathion, permethrin - total, pesticides, and toxaphene.	25
Figure 4-9. Map of the central coast region's 2014 303(d) listings for toxicity.	26
Figure 4-10. Map of the central coast region's 2014 303(d) listings for sedimentation/siltation. Sedimentation/siltation listings include sedimentation/siltation and turbidity.	27
Figure 4-11. Groundwater basins in the central coast region, northern portion.	29
Figure 4-12. Groundwater basins in the central coast region, southern portion.	30
Figure 4-13. Climate divisions in the central coast regions as defined by the National Climatic Data Center.....	34
Figure 4-14. Average annual precipitation in the central coastal region.	37
Figure 4-15. Frequency distribution of average annual rainfall, presented in Figure 4-14, in the central coast region.....	38
Figure 4-16. Wetlands of the central coast regions.	47

Figure 4-17. Pie chart illustrating ratios of wetland types in the central coast region.	48
Figure 4-18. Riparian cover in central California (source: National Land Cover Dataset).	49
Figure 8-1. Scenic vistas, rivers, highways, and habitat conservation boundaries in the northern portion of the central coast region.....	58
Figure 8-2. Scenic vistas, rivers, highways, and habitat conservation boundaries in the southern portion of the central coast region.....	59
Figure 8-3. Proximity of public schools to irrigated agricultural areas.....	78

Reference table for recurring acronyms and recurring terms used in this document	
Agricultural Order	Agricultural Order for Discharges from Irrigated Lands
CCR	California Code Regulations
CEQA	California Environmental Quality Act
DWR	Department of Water Resources
EIR	Environmental Impact Report
HUC	Hydrologic Unit Code
Initial Study	A preliminary analysis conducted by the lead agency to determine if a project may have a significant effect on the environment. This preliminary analysis also aids in determining what type of environmental document to prepare.
Lead Agency	The public agency that has the primary responsibility for carrying out or approving a project. The Central Coast Water Board is the Lead Agency for this project
Pollutants	The term "pollutant" means 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. This term does not mean (A) "sewage from vessels" within the meaning of section 1322 of this title; or (B) water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil or gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the State in which the well is located, and if such State determines that such injection or disposal will not result in the degradation of ground or surface water resources. Source: Clean Water Act, Section 502.
Potentially significant impact	A substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. A social or economic change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant (14 CCR section 15382).
Reasonable foreseeable methods of compliance	Potential management measures, or other actions, that may be implemented in to comply with the requirements of the Agricultural Order.
Project	The project is defined as the Agricultural Order's requirements and irrigated agriculture's activities implemented as a result of complying with those requirements.
State Water Board	State Water Resources Control Board
Trustee Agency	A state agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California. California Department of Fish and Wildlife, State Lands Commission, State Department of Parks and Recreation, UC with regard to sites within the Natural Land and Water Reserves Systems.
Waste	"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. Source: Water Code section 13050 .
Water Board	Central Coast Water Board

WBD	Watershed Boundary Dataset
-----	----------------------------

Initial Study

Project Name/Title: Agricultural Order for Discharges from Irrigated Lands (Agricultural Order).

Lead Agency Name and Address: Central Coast Water Board, 895 Aerovista Place, Suite 101, San Luis Obispo, CA 93401.

Contact person and phone number: Shanta Keeling, 805-549-3464.

Project Location: The project area encompasses irrigated agricultural areas in all, or portions of, San Mateo, Santa Cruz, Santa Clara, San Benito, Monterey, San Luis Obispo, Santa Barbara, and Ventura Counties.

Project Description: The project is defined as the Agricultural Order's requirements and irrigated agriculture's activities implemented as a result of complying with those requirements.

Surrounding land uses and setting: Irrigated agricultural lands within the central coastal region. See Environmental Setting (section 4) for more details.

Other public agencies whose approval is required: There are no other public agencies whose approval is required for this project.

Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun? No tribes have requested consultation at this time.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|--|--|--|
| <input type="checkbox"/> Aesthetics | <input checked="" type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology /Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology / Water Quality |
| <input type="checkbox"/> Land Use / Planning | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise |
| <input type="checkbox"/> Population / Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Transportation/Traffic | <input type="checkbox"/> Tribal Cultural Resources | <input type="checkbox"/> Utilities/Service Systems |
| <input checked="" type="checkbox"/> Mandatory Findings of Significance | | |

DETERMINATION

On the basis of this initial evaluation:

The Central Coast Water Board determines that the proposed project MAY have a potentially significant effect on the environment and an ENVIRONMENTAL IMPACT REPORT is required.

1. Executive Summary

This document is an Initial Study for the Agricultural Order for Discharges from Irrigated Lands (Agricultural Order). The Central Coast Regional Water Quality Control Board (Water Board), which is the Lead Agency, prepared this Initial Study for the Agricultural Order to comply with the California Environmental Quality Act (CEQA). The intent of an Initial Study is to determine whether this project may have a significant effect on the environment and whether an Environmental Impact Report (EIR), Mitigated Negative Declaration, Negative Declaration, or other should be prepared.

CEQA states that if the Initial Study determines that the project may have potentially significant environmental effects, the Lead Agency must prepare an EIR.

This Initial Study provides a *cursory* analysis of the potentially significant environmental impacts associated with complying with the Agricultural Order. As stated in CCR 15063 (a)(3), “an initial study is neither intended nor required to include the level of detail included in an EIR.”

Therefore, the Initial Study sets out to identify the areas where there may be significant environmental impacts but does not provide a detailed analysis.

Water Board staff informally consulted with many agencies and individuals while developing this Initial Study as well as researched similar projects. Staff also used best professional judgment in some cases in areas of the checklist. The level of detail necessary to support all these areas will be fully documented in the EIR.

While drafting an Initial Study is not required if the lead agency will be preparing an EIR¹, staff determined that developing an Initial Study would be another opportunity for public involvement. The spirit of CEQA law dictates a *good faith effort at full disclosure* and early opportunities for public involvement help to foster this underlying goal. We chose to communicate the potential environmental impacts early, with less documentation as opposed to waiting for more research/documentation and presenting this information later. We chose to communicate this information earlier to inform the public of the direction we anticipate this project going. Additionally, providing this information to the public earlier will allow us to incorporate important public feedback and show transparency in our public process.

CEQA describes a **project** as the whole of an action that may cause a direct or indirect physical change in the environment. This project is defined as the Agricultural Order’s requirements and irrigated agriculture’s activities implemented to comply with those requirements.

In reviewing *potential* requirements of the Agricultural Order and applicable management measures², Water Board staff anticipates potentially significant environmental impacts in the following areas:

- Biological Resources

¹ CCR 15063(a)

² Note that during the development of this Initial Study, draft Agricultural Order language was not available. Therefore, reasonably foreseeable methods of compliance are those that focus on nutrient, pesticide, sediment, and salt reductions/eliminations. Compliance methods also aim to reduce stream temperatures. These compliance measures are based on the 2017 version of the Agricultural Order and previously published management practices aimed at reducing the mentioned pollutants. See section 8.

- Agriculture and Forestry Resources
- Mandatory Findings of Significance

Water Board staff has informally consulted with Trustee Agencies³ and other interested agencies on this Initial Study to determine if any of the potentially significant environmental impacts can be mitigated to a less than significant level and to help define the scope of the EIR (see Section 5). Additionally, staff consultation resulted in information gathering and information exchange between various agencies.

Water Board staff will be holding three CEQA scoping meetings in March 2018 and will seek public input on the potentially significant environmental impacts in the categories detailed in the nineteen areas of the checklist. We will hold the first meeting in Salinas on March 20, 2018, the second, in Watsonville on March 26, 2018, and the third in Santa Maria on March 27, 2018. More details about these meetings can be found on our website⁴.

We anticipate completing an Environmental Impact Report by early 2019.

For the sake of clarity in naming conventions, please note that there is currently an Agricultural Order in effect that was adopted in March 2017. This Order will expire in March 2020. Throughout the document, reference to the "Agricultural Order" will mean the Agricultural Order in development that will be presented to the Central Coast Water Board in 2020, unless otherwise noted.

Contact information

To stay informed of CEQA issues as they relate to the Agricultural Order, please join our email list. You can sign up at:

https://www.waterboards.ca.gov/resources/email_subscriptions/reg3_subscribe.html

Enter your name and email and click on "CEQA - Agricultural Order 4.0, March 2020."

To provide comment on this Initial Study or provide information regarding potentially significant environmental impacts, mitigation measures, or project alternatives, please email AgNOI@waterboards.ca.gov (with subject line "CEQA Comment." Alternatively, you may provide written comment to Central Coast Water Board at 895 Aerovista Place, Suite 101, San Luis Obispo, CA 93401-7906, Attn. Shanta Keeling.

Please provide comments on this Initial Study by **April 30, 2018**.

2. Introduction

2.1. Purpose of CEQA as related to this project

Why does an environmental protection agency such as the Water Board need to comply with CEQA when the intent of the Agricultural Order is to improve water quality? The intent of CEQA is to put forth a good faith effort at full disclosure of all the potentially significant environmental impacts associated with implementing the Agricultural Order. While the Order aims to improve

³ A state agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California. California Department of Fish and Wildlife, State Lands Commission, State Department of Parks and Recreation, UC with regard to sites within the Natural Land and Water Reserves Systems.

⁴ https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/

water quality in irrigated agricultural areas (and those downstream and connected via groundwater), it is important that our agency also look at all areas in the environmental checklist (see section 8) to determine if implementing management practices to improve water quality may result in unintended environmental impacts in other areas.

It is important for the Water Board to look at these potentially significant environmental impacts early in the process of developing regulations. This is so we can consider these potential impacts while developing our regulations and either avoid them, mitigate them, or determine that they are necessary and unavoidable.

Writing an Initial Study is part of the Water Board's effort to provide information to the public early in the process of developing the regulations associated with discharges from irrigated agriculture. Additionally, we release this Initial Study in advance of our planned release of a draft EIR in early 2019 so that the public and other agencies may provide comment and input into our preliminary assessments regarding environmental impacts.

As mentioned in the Executive Summary, an Initial Study is not required when the lead agency will be preparing an EIR.⁵ Also note that the draft EIR will supersede the Initial Study when it is released. The Initial Study is meant to involve and engage the public and agencies early on.

2.2. Description/definition of the project being proposed

The Agricultural Order will regulate discharges of waste⁶ from irrigated lands. Individuals subject to this Agricultural Order are required to comply with the terms and conditions set forth to ensure discharges do not cause or contribute to the exceedance of any regional, state, or federal numeric or narrative water quality standard (hereafter referred to as exceedance of water quality standards) in waters of the state or of the United States⁷.

Analysis contained in this Initial Study will focus on the management practices that growers may implement to comply with the Agricultural Order. It is those management practices that will be analyzed to determine if they have the potential to negatively impact the environment.

CEQA guidelines⁸ define a CEQA "project" as the whole of an action, resulting in physical impact on the environment, directly or ultimately, that is any of the following:

1. An activity directly undertaken by any public agency including but not limited to public works construction and related activities, clearing or grading of land, improvements to existing public structures, enactment and amendment of zoning ordinances, and the adoption of local General Plans or elements thereof (*emphasis added*);

2. An activity undertaken by a person which is supported in whole or in part through public agency contracts, grants, subsidies, loans, or other forms of assistance for one or more public agencies;

⁵ CCR 15063(a)

⁶ This Order regulates discharge of "waste" as defined in Water Code section 13050 and "pollutants" as defined in the Clean Water Act. For simplicity, the term "waste" or "wastes" is used throughout. The term "waste" is very broad and includes "pollutants" as defined in the Clean Water Act.

⁷ https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/docs/ag_order3/ag_order3.0_approved.pdf, text adapted from findings no. 5, 6 and 9.

⁸ California Code Regulations 15378.

3. An activity involving the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies.

The Agricultural Order falls under the first category. The Central Coast Water Board is undertaking the “activity” of issuing or waiving waste discharge requirements to irrigated agricultural operations.

The project is defined as the Agricultural Order’s requirements and irrigated agriculture’s activities implemented as a result of complying with those requirements.

This project is necessary to restore and maintain water quality in irrigated agricultural areas, to protect public health, ensure safe drinking water, and protect aquatic habitat next to and downstream of irrigated agriculture.

2.3. Nature of the water quality problem

Since the early 2000s, the Central Coast Water Board has compiled substantial empirical data demonstrating that water quality conditions in agricultural areas of the region continue to be severely polluted by waste discharges from irrigated agricultural operations. These irrigated agricultural activities impair beneficial uses, including drinking water, and impact aquatic habitat on or near irrigated agricultural operations. Fertilizer and pesticide use cause the most serious water quality degradation. Fertilizer contains nitrogen, which discharges via runoff from agricultural fields into surface waters and infiltrates into groundwater. Fertilizer also contains phosphorus, which discharges via runoff from agricultural fields to surface waters. Pesticides are causing widespread toxicity in sediment and the water column in many surface waters and groundwater. Runoff and percolation include both irrigation water and storm water⁹.

Nitrate pollution of drinking water supplies is a critical problem throughout the Central Coast Region. Studies indicate that fertilizer from irrigated agriculture is the largest single source of nitrate pollution in drinking water wells and that significant loading of nitrate continues as a result of agricultural fertilizer practices. Researchers estimate that tens of millions of pounds of nitrate leach into groundwater in the Salinas Valley alone each year. Studies indicate that irrigated agriculture contributes approximately 78 percent of the nitrate loading to groundwater in agricultural areas. Hundreds of drinking water wells serving thousands of people throughout the region have nitrate levels exceeding standards for drinking water beneficial use. This presents a significant risk to human health as pollution gets substantially worse each year, and the actual numbers of polluted wells and people affected are unknown¹⁰.

While nitrate and pesticide pollution contribute to the most severe pollution, agricultural activities can also contribute to elevated levels of turbidity, sedimentation, erosion, and excess salts. Turbidity levels and excess sediment can negatively affect aquatic habitat, especially with regards to fish and benthic invertebrates. Elevated levels of turbidity can make it difficult for fish to hunt their food.¹¹ Excess sedimentation can smother benthic organisms and fill in cobbles where fish would normally lay their eggs. Excess salts can negatively affect beneficial uses

⁹ *Ibid* for the entire paragraph.

¹⁰ *Ibid* for the entire paragraph.

¹¹ “Turbidity interferes with foraging success of visual but not chemosensory predators,” Jessica Lunt and Delbert Smee, *PeerJ*. 2015 Sep 8;3:e1212.

associated with agriculture^{12,13}. Certain crops will not tolerate excess salt levels.¹⁴ Elevated levels of turbidity, sedimentation, erosion, and excess salts contribute to negatively affecting aquatic and, in some cases, agricultural beneficial uses.

2.4. Purpose of the proposed Agricultural Order

The Agricultural Order's purpose is to improve water quality in irrigated agricultural areas and those areas in close proximity to irrigated agriculture. The Order sets out to protect public health, ensure safe drinking water, and protect aquatic habitat and agricultural beneficial uses.

2.5. Development of an Environmental Impact Report will be required

The Central Coast Water Board is required to comply with CEQA as it develops and adopts the Agricultural Order. Because this project may have potentially significant effects on the environment, the Central Coast Water Board is required to develop an EIR¹⁵. One of the first steps in developing an EIR is to develop an Initial Study. While drafting an Initial Study is not required if the lead agency will be preparing an EIR¹⁶, staff determined that developing an Initial Study would be another opportunity for public involvement. The spirit of CEQA law is a *good faith effort at full disclosure* and early opportunities for public involvement help to foster this underlying goal.

This Initial Study sets out to describe the area where impacts are anticipated. This Initial Study will help inform our preparation of an EIR by:

- Focusing the EIR on the effects determined to be significant,
- Identifying the effects determined not to be significant, and
- Explaining the reasons for determining that potentially significant effects would not be significant.¹⁷

CEQA law details the steps a Lead Agency must follow (see Figure 2-1). We have followed the initial steps outlined in this figure and determined that the activity is a project¹⁸ and is not subject to any exemptions (statutory, ministerial, or categorical)¹⁹. We have determined that the project may have significant effects on the environment. Therefore, we will be preparing an EIR and have chosen to develop an Initial Study in an effort to keep the public informed of our findings.

¹² A Study of the Paso Robles Ground Water Basin to Establish Best Management Practices and Establish Salt Objectives", Coastal Resources Institute, June 1993, as cited in the Central Coastal Basin Plan, September 2017 edition.

¹³ Central Coastal Basin Plan, 2017 edition, page 80.

¹⁴ Central Coastal Basin Plan, 2017, page 35.

¹⁵ CCR 15081, 15060.

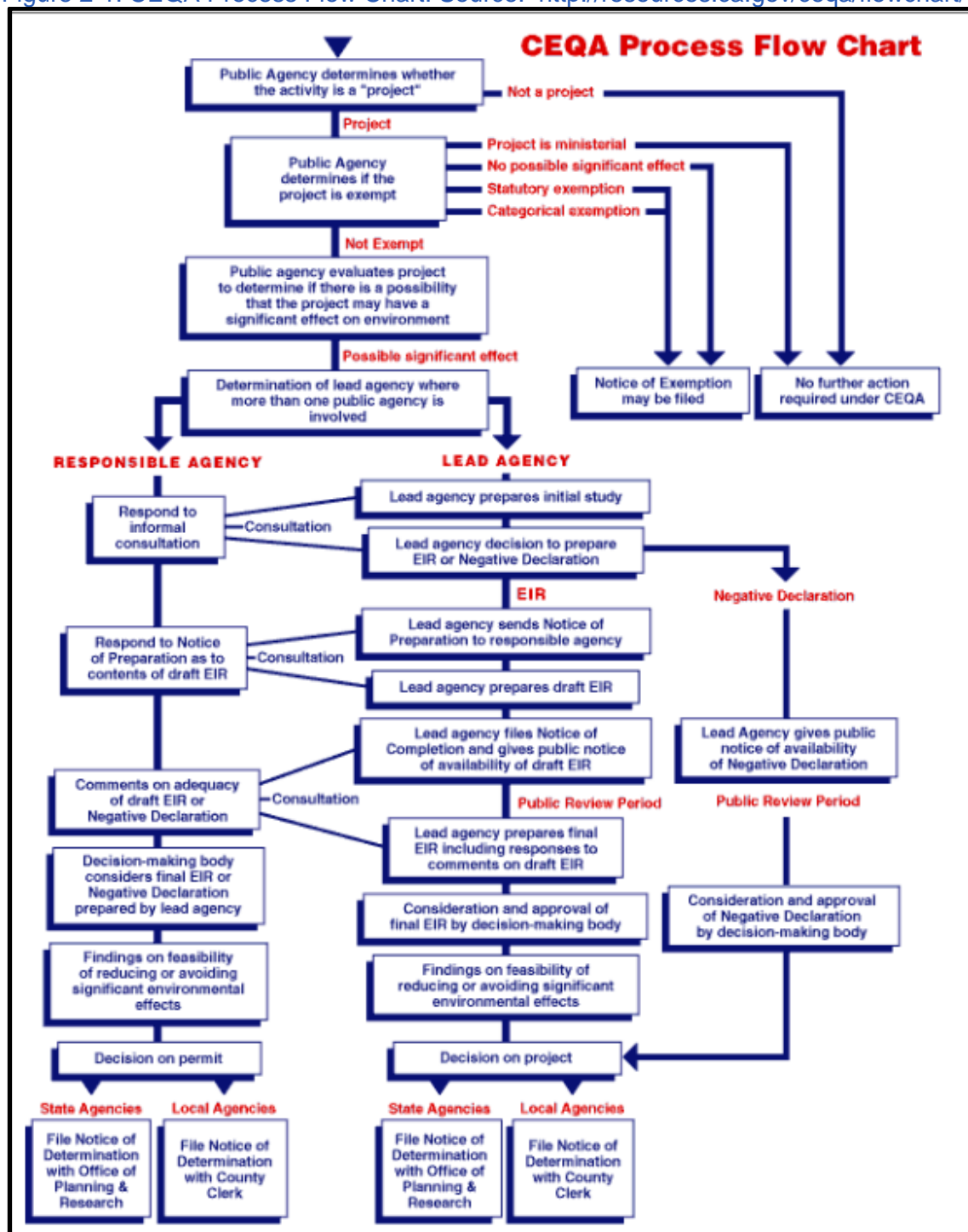
¹⁶ CCR 15063(a)

¹⁷ CCR 15063(C)(3)(A-C)

¹⁸ PRC 21065 states that any activity that may cause either a direct physical change or a reasonably foreseeable indirect physical change in the environment and is a) an activity undertaken by any public agency.

¹⁹ In reviewing the list of exemptions (CCR 15260, 15268, 15300), we could not determine any applicable exemptions.

Figure 2-1. CEQA Process Flow Chart. Source: <http://resources.ca.gov/ceqa/flowchart/>



3. Project Information and Location

The Agricultural Order will regulate waste discharges from irrigated agriculture throughout the central coast region. The project area encompasses irrigated agricultural areas in all, or portions of, San Mateo, Santa Cruz, Santa Clara, San Benito, Monterey, San Luis Obispo, Santa Barbara, and Ventura Counties. This is discussed in more detail in Section 4, Environmental Setting.

4. Environmental Setting and Baseline Conditions

4.1. Definition of environmental setting and baseline conditions

It is important to define what the environmental setting is under current conditions to determine significant environmental impacts, as defined by CEQA. The environmental setting describes the physical environment. Current conditions are defined as the state of the environment at the time when the project begins CCR goes on to state:

An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to an understanding of the significant effects of the proposed project and its alternatives²⁰ (emphasis added).

In other words, what is the current state of the environment in and around irrigated agriculture in the central coast?

As mentioned, baseline is defined as the environmental conditions at the current time the project begins. In other words, baseline is considered “now.” Pursuant to California Code Regulations 15125(a), we will define fall 2017 as the time environmental analysis commenced. We will use the baseline described in this section as the point of comparison for determining the significance of this project’s environmental effect. Baseline conditions will be further developed in the EIR.

There is not a precise statutory or guidelines definition to help guide us so we will define it here. There are many areas to consider when considering baseline conditions. These areas include:

- Water quality, both surface and groundwater,
- Groundwater use,
- Riparian corridor,
- Management practices,
- Crop types

In addition to the areas related to the checklist we will consider when defining baseline conditions, the *timeframe* for these conditions is important. In general, staff will use the most current information to determine baseline condition. However, in some cases, it may make sense to group a time-period of data. An example of a case where this would be most appropriate would be for evaluating water quality data.

Water quality data are best analyzed over a longer time-period, as opposed to one day, to account for the environmental fluctuations that occur over the course of a water year. For example, water quality can be affected by weather. Rain and lack of rain can impact water

²⁰ California Code Regulations 15125(a).

quality and quantity. Additionally, the volume of water in a specific waterbody can also affect water quality.

The most current data is important for determining current conditions. Staff will obtain the most current data noting that there is often a lag time between when samples are collected and when the data are available to be reported. This is due to the time it takes for the laboratory to analyze a sample and perform quality assurance/quality controls on the sample. The sample results are then given to the appropriate agency/group and more quality control analysis is performed. After the samples are deemed satisfactory, the data is then entered into the appropriate database or spreadsheet and available for staff to use. Note that this entire process takes time and staff will work to obtain the most recent data possible.

Therefore, in terms of analyzing water quality data for this Initial Study, staff will aggregate data from 2000-2015.

At the time of writing the Initial Study, a robust analysis of baseline conditions was not complete. A more thorough analysis of baseline conditions will be detailed in the EIR. However, staff was still able to use existing reports and other literature to make a more qualitative interpretation on potentially significant environmental impacts. These impacts will be detailed more fully and quantifiably in the EIR where appropriate.

Another area to note when describing baseline conditions is that growers are currently regulated under the Agricultural Order that was adopted in March 2017. Under the 2017 Order, many growers have implemented management practices to control pollutants. See section 4.3 for more information on this subject.

The following subsections provide the environmental setting in the central coast's jurisdictional area.

4.2. Central Coast Water Board's jurisdictional area

The Central Coast Water Board has jurisdiction over a 300-mile-long by 40-mile-wide section of California's central coast (see Figure 4-1). Its geographic area encompasses all of Santa Cruz, San Benito, Monterey, San Luis Obispo, and Santa Barbara Counties as well as the southern one-third of Santa Clara County and small portions of San Mateo, Kern, and Ventura Counties. Included in the region are urban areas such as the Monterey Peninsula and the Santa Barbara coastal plain; prime agricultural lands such as the Salinas, Santa Maria, and Lompoc Valleys; national forest lands; extremely wet areas like the Santa Cruz mountains; and arid areas like the Carrizo Plain²¹.

4.3. Irrigated agriculture in the central coastal region

The central coast region contains approximately 466,000 acres of irrigated farmland (see Figure 4-1). The California Department of Conservation's Farmland Mapping and Monitoring Program²² (FMMP) produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status. The maps are updated every two years with the use of a computer mapping system, aerial imagery, public review, and field reconnaissance. Water Board staff used FMMP data to determine the acres of irrigated farmland in the central coast region. Note that irrigated farmland

²¹ Central Coastal Basin Plan, September 2017 Edition, page 1-2.

²² <http://www.conservation.ca.gov/dlrp/fmmp> - Important Farmland Categories, accessed 10/5/2017.

include what FMMP considers Prime Farmland (P), Farmland of Statewide Importance (S), and Unique Farmland (U) (see Table 4-1).

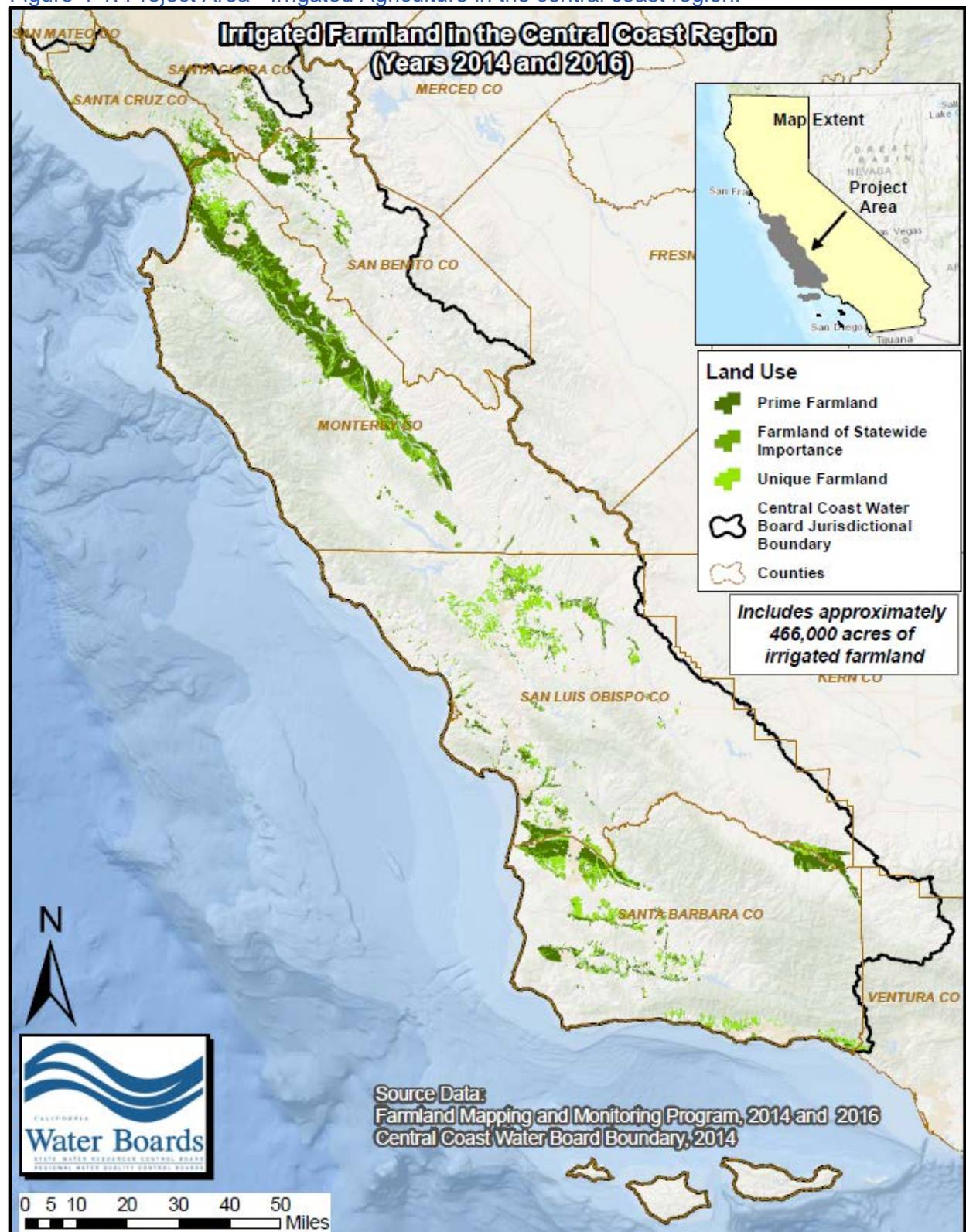
Table 4-1. Definitions of irrigated crops according to FMMP.

California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) designation	Definition
Prime Farmland (P)	Irrigated land with the best combination of physical and chemical features able to sustain long term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for production of irrigated crops at some time during the four years prior to the mapping date.
Farmland of Statewide Importance (S)	Irrigated land similar to Prime Farmland that has a good combination of physical and chemical characteristics for the production of agricultural crops. This land has minor shortcomings, such as greater slopes or less ability to store soil moisture than Prime Farmland. Land must have been used for production of irrigated crops at some time during the four years prior to the mapping date.
Unique Farmland (U)	Lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

At the time of drafting this report (fall 2017), the most recent FMMP data available for the counties within the central coast region were data collected in 2014, with the exception of Ventura county which had 2016 data available. To provide the most recent data possible, staff chose to use 2014 data and 2016 data.

As of December 1, 2017, approximately 1,700 operations are enrolled under the Agricultural Order that was adopted in March 2017. This constitutes approximately 4,300 ranches.

Figure 4-1. Project Area - Irrigated Agriculture in the central coast region.



The central coast region contains approximately 466,000 acres of irrigated farmland (refer back to Figure 4-1).

The Department of Water Resources (DWR) has been collecting land use data²³ since 1976. The latest data available for the central coast region are from 2014 (Santa Clara County), although data from several counties contained in our region are from as long ago as 1996 (San Luis Obispo and Santa Barbara Counties). While the Farmland Mapping and Monitoring Program provides land use data related to the type of farmland (e.g. prime, unique, etc.), DWR identifies the types of crops (e.g. vineyard, truck, nursery, etc.) in the region.

The DWR is not the most recent data available. However, these data were accessible and provide useful information as to the types of crops in our region over a large time period. During development of the EIR, we will obtain more recent information from the county agricultural commissioners.

Figure 4-3 and Figure 4-4 show the type of crops grown in the central coast region. As the age of this data can be as old as 20 years in some cases (San Luis Obispo and Santa Barbara Counties), some of the current crop types may be different.

²³ <http://water.ca.gov/landwateruse/lusrvymain.cfm> accessed 11/9/2017.

Figure 4-2. Crop type, Department of Water Resources data, shown for the northern portion of our region.

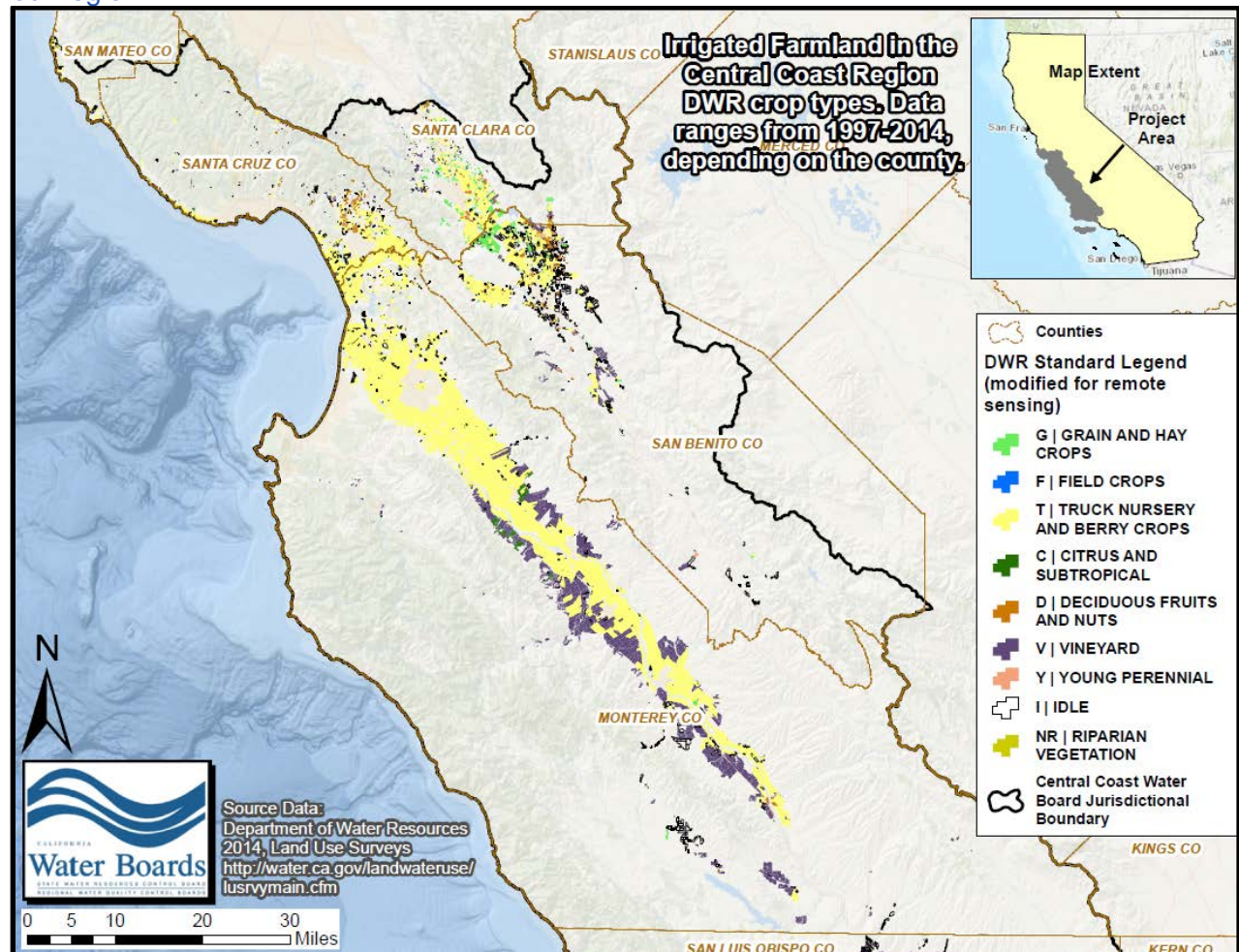


Figure 4-3. Crop type, Department of Water Resources data, shown for the southern portion of our region.

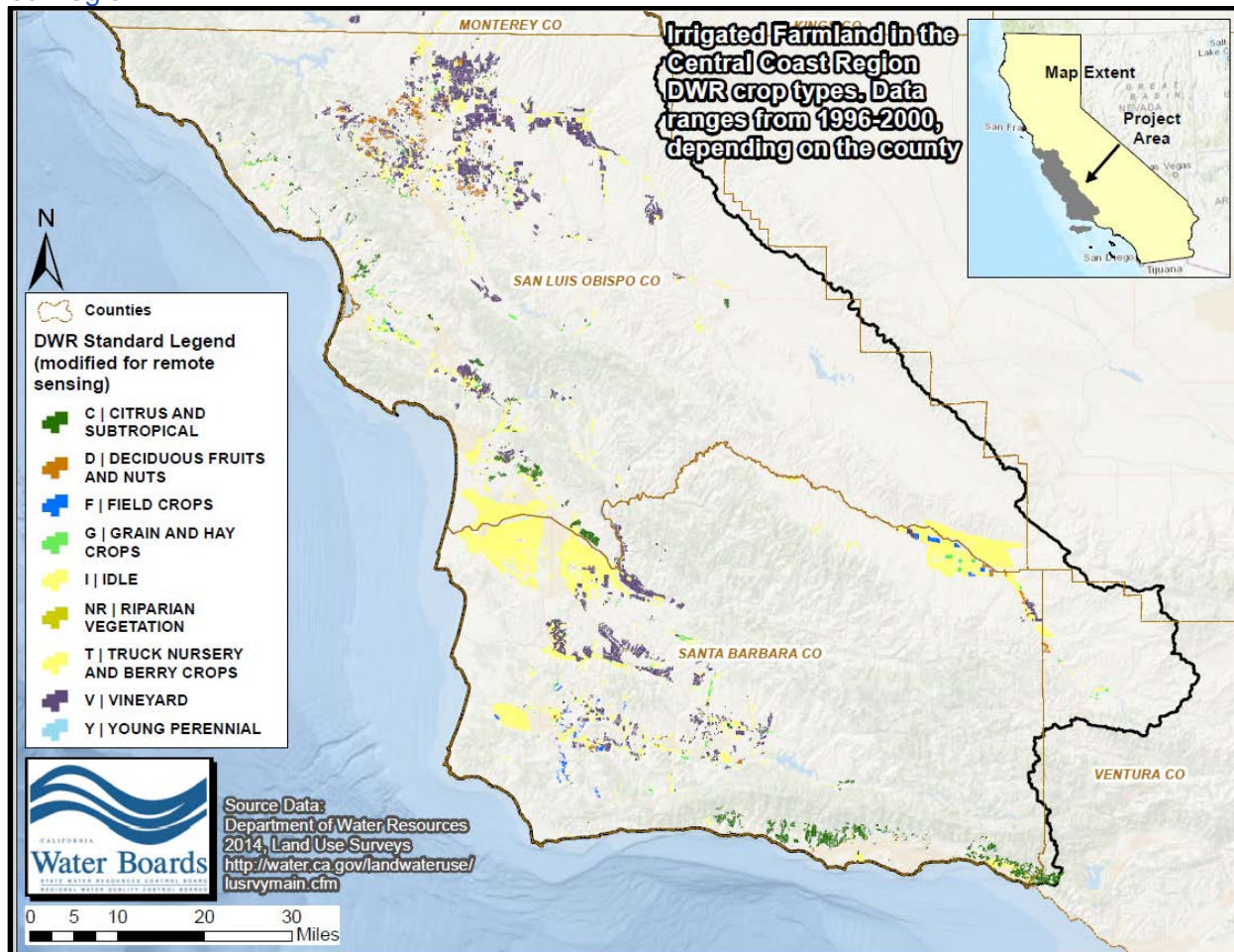


Figure 4-4. Acres of specific crops in the central coast region. The age of this data ranges from 1996-2014, depending on the county.

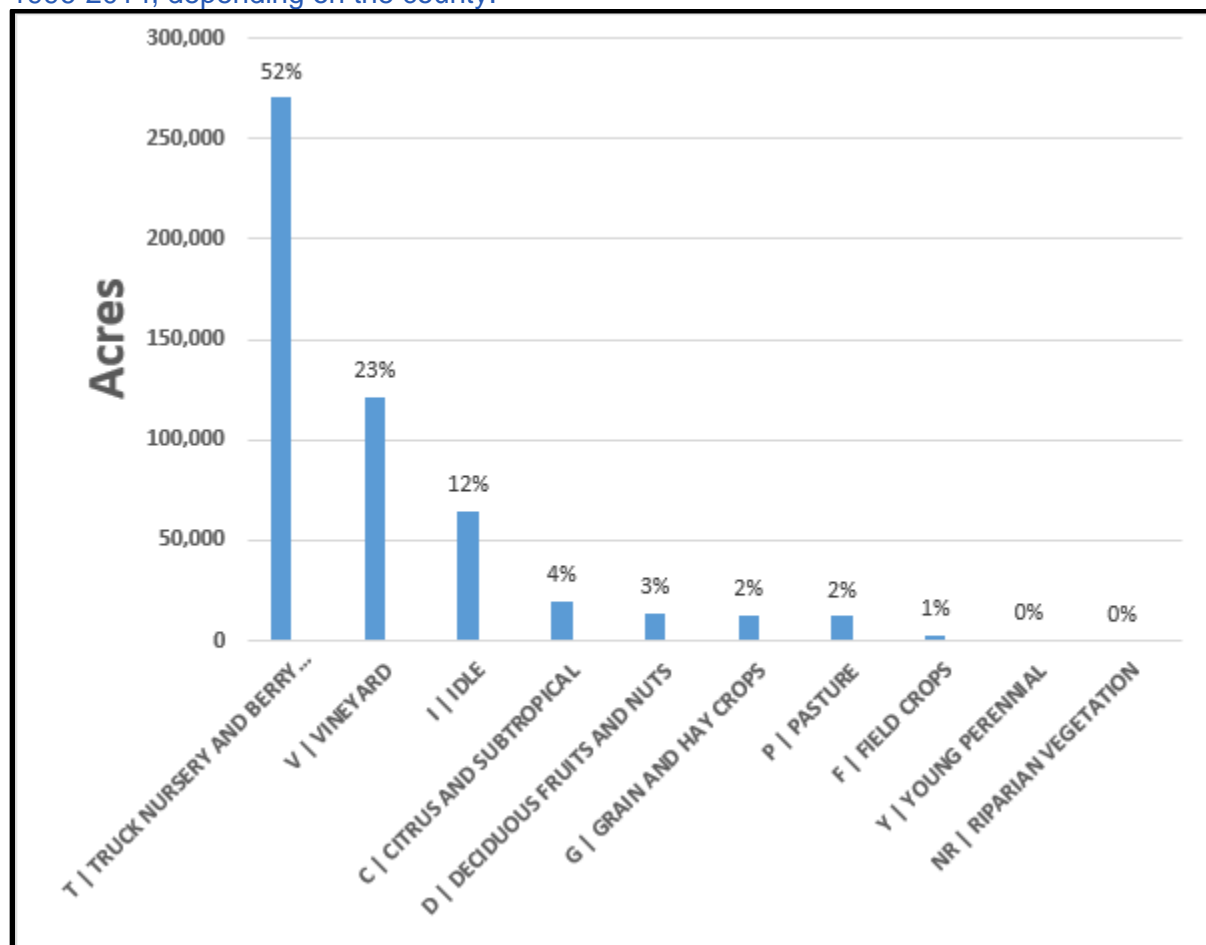


Table 4-2. Crop types in the central coast region, according to DWR. See Figure 4-3 and Figure 4-4 for spatial representation of where these crop types occur.

DWR Category	Type of crops
Citrus and subtropical	Avocados, Citrus, Miscellaneous Subtropical Fruits, Olives
Deciduous fruits and nuts	Almonds, Apples, Cherries, Kiwis, Miscellaneous Deciduous, Peaches/Nectarines, Pistachios, Plums, Prunes and Apricots, Pomegranates, Walnuts
Field crops	Beans (Dry), Corn, Sorghum, and Sudan
Grain and hay crops	Miscellaneous Grain and Hay, Wheat
Idle	Idle
Riparian Vegetation	Managed Wetland ¹
Pasture	Alfalfa and Alfalfa Mixtures, Miscellaneous Grasses
Truck nursery and berry crops	Bush Berries, Carrots, Cole Crops, Flowers, Nursery and Christmas Tree Farms, Greenhouse, Lettuce/Leafy Greens, Melons, Squash and Cucumbers, Miscellaneous Truck Crops, Onions and Garlic, Peppers, Potatoes and Sweet Potatoes, Strawberries, Tomatoes
Vineyard	Grapes
Young perennial	Young perennials

¹ Note that this category, from DWR's definition, is only considering managed wetlands as riparian vegetation in agricultural lands. The central coast region does not have managed wetlands in our

region. We do, however, have riparian vegetation in agricultural areas. These areas will be further defined in both section 4.10 and in the EIR.

Growers in the central coast region are currently regulated under the 2017 Agricultural Order that was adopted on March 8, 2017. This Order is in effect from March 8, 2017 to March 8, 2020. As of September 15, 2017, there were approximately 4,377 growers enrolled.

Under the current Agricultural Order, growers in tiers 2 and 3 are required to self-report management practices they are implementing on their farms. Growers report management practices they are implementing to reduce nutrients, pesticides, and excess sediment from leaving their farm. Additionally growers report on their irrigation practices. As of January 1, 2018, 2,763 growers reported management practices on their farms.²⁴ Please see Table 4-3 through Table 4-6 for more details on the types of management practices growers are currently implementing.

Table 4-3. Self-reported information from Tier 2 and 3 growers on the type of nutrient management practices they are implementing.

Type of nutrient management practice	Number of ranches indicating they are implementing this management practice
None	98
Evaluated how much fertilizer crop needs and timing of application	2,427
Scheduled fertilizer applications to match crop requirements	2386
Measured nitrogen concentration in irrigation water and adjusted fertilizer nitrogen applications accordingly	1,328
Measured soil nitrate or soil solution nitrate and adjusted fertilizer nitrogen applications accordingly	1,479
Used precision techniques to place fertilizer in the root zone, to ensure crop uptake, with minimal runoff and deep percolation (e.g. fertigation)	1,910
Measured nitrogen in plant tissue and adjusted fertilizer nitrogen applications.	1,062
Measured phosphorus in soil and adjusted fertilizer phosphorus applications.	1,407
Measured nitrogen and phosphorous content of applied manures and other organic amendments.	685
Mixed and loaded fertilizers on low runoff hazard sites (e.g. away from creeks and wells)	1,855
Used urease inhibitors and/or nitrification inhibitors.	95
Modified crop rotation to use beneficial cover crops, deep rooted species, or perennials to utilize nitrogen.	1,132
Used treatment systems to remove nitrogen from irrigation runoff or drainage water (e.g. wood chip bioreactor).	37
Other, describe in Farm Plan and submit upon request.	1,328

²⁴ This information from a January 1, 2018 data download of Annual Compliance Form self-reporting from growers.

Table 4-4. Self-reported information from Tier 2 and 3 growers on the type of irrigation practices they are implementing.

Type of irrigation practices	Number of ranches indicating they are implementing this management practice
None	89
Determined amount of crop water uptake and applied irrigation water accordingly	1,931
Installed more efficient irrigation system (e.g. microirrigation)	1,629
Improved irrigation distribution uniformity (DU) based on results of mobile lab or similar assessment	668
Scheduled irrigation events using soil moisture measurements	1,122
Scheduled irrigation events using weather information (e.g., evapo-transpiration, crop coefficient)	1,333
Maintained irrigation system to maximize efficiency and minimize losses (e.g. system components are replaced and/or flushed/cleaned)	2,217
Selected sprinkler heads, nozzles, and drip tape/emitter with application rate(s) that match system layout, system pressure, and infiltration rates	2,187
Installed a variable speed pump and/or control system to improve irrigation distribution uniformity (DU)	499
Recycled or reused excess irrigation water	166
Contained and/or treated irrigation water runoff prior to discharge off the farm/ranch	248
Other, describe in Farm Plan and submit upon request.	24

Table 4-5. Self-reported information from Tier 2 and 3 growers on the type of pesticide practices they are implementing.

Type of pesticide management practices	Number of ranches indicating they are implementing this management practice
None	91
Certified Organic	263
Utilized Integrated Pest Management to reduce pesticide use (e.g., pest scouting, beneficial insects other)	2,313
Selected lower risk pesticides to minimize risk to water quality (e.g. based on toxicity, runoff potential, leaching potential)	1,928
Followed specific label instructions and any local use restrictions	2,419
Avoided pesticide applications prior to rain events to prevent runoff	2,199
Avoided pesticide applications during windy conditions to prevent drift	2,411
Avoided pesticide application in areas adjacent to streams, creeks, or other surface water bodies	1,773
Eliminated or controlled irrigation runoff during and after pesticide applications	1,740
Eliminated or controlled sediment erosion and movement to avoid transport of pesticides	1,550
Treated irrigation runoff with enzymes or other products to breakdown pesticides	39
Used filter strips, vegetated treatment or other systems to remove pesticides and pollutants from irrigation runoff or tile drain water	288
Mixed and loaded pesticides on low runoff hazard sites (e.g. away from creeks and wells)	2,038

Other, describe in Farm Plan and submit upon request.	1,928
---	-------

Table 4-6. Self-reported information from Tier 2 and 3 growers on the type of sediment practices they are implementing.

Type of sediment management practices	Number of ranches indicating they are implementing this management practice
None	142
Avoided disturbance of soils adjacent to streams, creeks, and other surface water bodies	1,811
Minimized presence of bare soil in non-cropped areas	1,322
Minimized presence of bare soil in cropped areas	1,249
Minimized tillage to protect soil structure and cover soil	1,427
Used soil amendments to protect soil structure	1,415
Planted cover crops	1,367
Aligned rows for proper drainage and to reduce erosion	1,769
Diverted runoff and concentrated flows to grassed areas	423
Controlled concentrated drainage on roads by grading to reduce erosion or installing culverts, rolling dips, underground outlet pipe(s)	1,464
Installed filter strips, vegetated treatment or other systems to remove sediment and other pollutants from runoff	350
Installed sediment basin(s), pond(s), reservoir(s) or other sediment trapping structures to remove sediments from discharge	475
Applied Polyacrylamide (PAM) in irrigation water	18
Other, describe in Farm Plan and submit upon request.	1,249

4.4. Noting the interconnection between surface water and groundwater

While we often separately analyze data from surface water or groundwater, it is imperative we recognize they are not separate categories. Surface water and groundwater are connected and influence each other. For example, there are many areas in the central coast region where residents rely on groundwater for drinking water²⁵. Loading of nutrients from farms to surface water can impact the amount of nitrogen in the groundwater.

The interconnection between surface water and groundwater is important because management practices discussed in this Initial Study focus on practices on the surface (i.e., are not underground). However, these management practices affect both surface water and groundwater. This is because of the intrinsic connection between surface water and groundwater.

The American Geosciences Institute²⁶ explains the interconnection between surface water and groundwater concept as follows:

Surface water and groundwater systems are connected in most landscapes.
Streams interact with groundwater in three basic ways: streams gain water from

²⁵https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/docs/ag_order3/ag_order3.0_approved.pdf, finding number 6, and referenced as California Department of Public Health Data obtained using GeoTracker GAMA (Groundwater Ambient Monitoring and Assessment) online database, <http://geotracker.waterboards.ca.gov/gama/>.

²⁶ <https://www.americangeosciences.org/critical-issues/faq/how-do-groundwater-and-surface-water-interact>, accessed 10/6/2017.

inflow of groundwater through the streambed, streams lose water by outflow through the streambed, or they do both depending upon the location along the stream.

The movement of water between groundwater and surface-water systems leads to the mixing of their water qualities. High quantities of nutrients or other dissolved chemicals in surface water can be transferred to the connected groundwater system.

4.5. Surface water and water quality

It is important to define the locations where surface waters occur in the central coast region as well as identify the current water quality associated with these water bodies. Surface water is described as water that is on the surface of the ground.²⁷

4.5.1. Watersheds in the central coast region

We can display the acres of irrigated agriculture in the central coast region coupled with their location in various Watershed Boundary Datasets²⁸ (WBDs), which contain digital hydrologic unit boundary layers organized by hydrologic unit codes (HUCs), or watersheds. The United States Geological Survey developed Hydrologic Unit Codes (HUCs) to identify all the drainage basins of the United States. In other words, hydrologic unit codes help us see where water from an area drains.

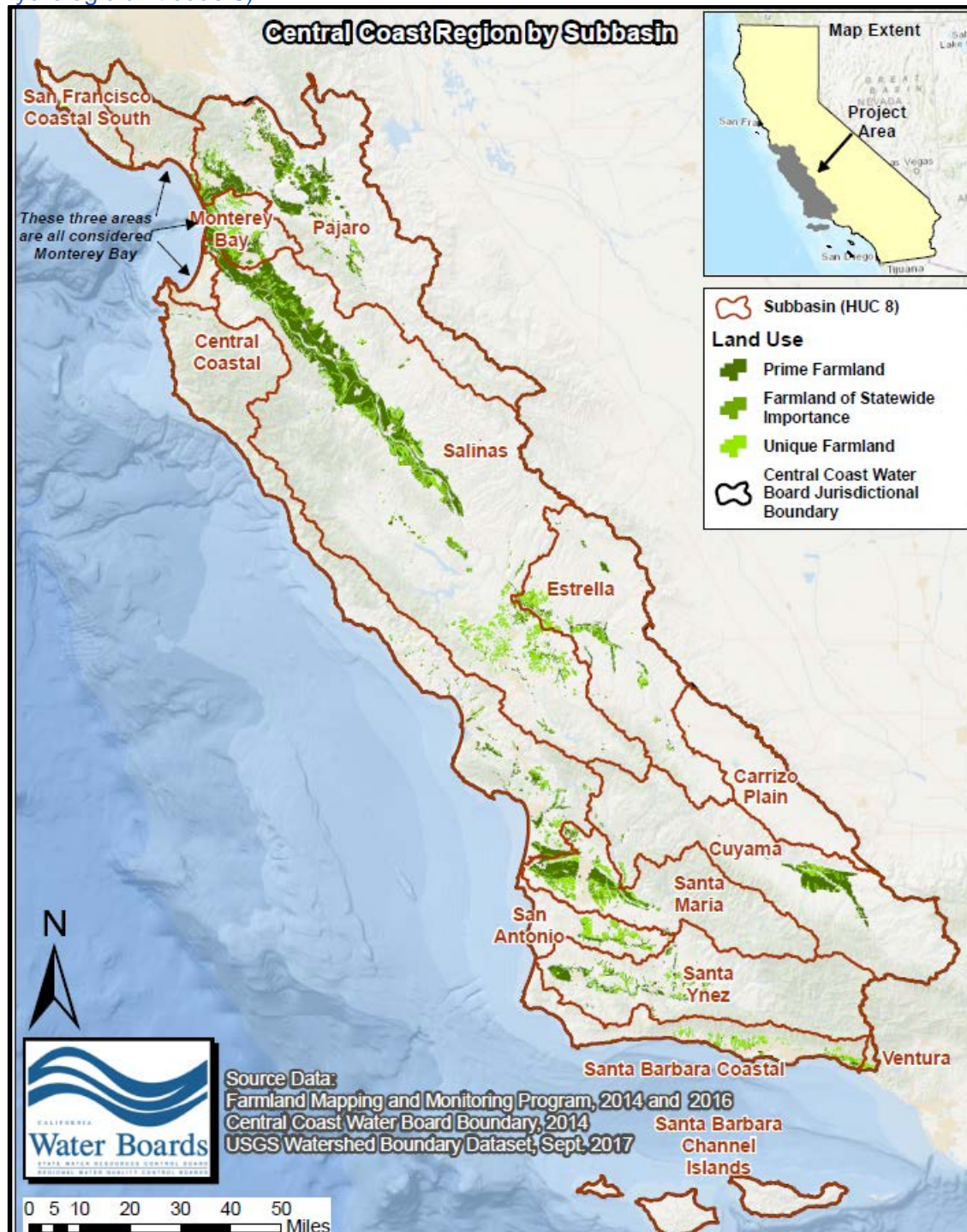
There are fourteen²⁹ hydrologic unit code 8's (see Figure 4-5) represented in the central coast region. A hydrologic unit code 8 often referred to as a subbasin and is analogous to medium-sized river basins. Some of these hydrologic units, or subbasins, are partial representations, such as San Francisco Coastal South, and Ventura. Locating where irrigated agricultural areas are with respect to the subbasin they are in identifies where water from an agricultural operation flows after it leaves the farm.

²⁷ https://www.waterboards.ca.gov/waterrights/board_info/faqs.html#surfacewater

²⁸ The Watershed Boundary Dataset (WBD) is developed by federal agencies and national associations. WBD contains watershed boundaries that define the areal extent of surface water drainage to a downstream outlet. WBD watershed boundaries are determined solely upon science-based principles, not favoring any administrative boundaries. See <https://nhd.usgs.gov/wbd.html>. WBDs for this project used the 9/7/2017 dataset.

²⁹ Note that there is a very small portion of the Coyote HUC8 that was not included in this map because the Coyote watershed drains to Region 2.

Figure 4-5. Central coast region by subbasin (data from USGS watershed boundary dataset, hydrologic unit code 8).



4.5.2. Water quality

The current conditions related to water quality are a key component in the development of this project. During development of the EIR, we will include more up-to-date information on water quality in the central coast region in and around irrigated agriculture. In the meantime, the Central Coast Water Board has a list of waterbodies that do not meet certain water quality

criteria. We will use this list to provide a general overview of the current state of water quality in our region.

Section 303(d) of the federal Clean Water Act requires the State and Regional Water Boards to establish and periodically update a list of “water quality limited segments” or impaired waters (303(d) List). Section 305(b) requires the state to develop a water quality conditions report (305(b) Report). Together, the 303(d) List and the 305(b) Report are referred to as an Integrated Report. The Integrated Report is important because it describes the overall condition of our surface waters and drives the Water Board’s priorities and decisions for many programs.³⁰

During the most recent 303(d) listing cycle (2014 list³¹), the Central Coast Water Board identified waterbodies in our region that were considered either impaired or were meeting water quality standards. Staff made this determination per definitions provided in the 305(b) Report³² (see Table 4-7). These waterbodies are classified as either category 1-2 (waters achieving beneficial uses, or, not enough information to determine beneficial use support), category 3 (insufficient data, but may be impaired), or category 4-5 (waters in which at least one beneficial use is not supported). In other words, category 1 and 2 waters are unimpaired or restored waters and meet water quality standards and category 4 and 5 waters have at least one water quality standard that is not attained³³.

It is also important to note that the 2014 303(d) List only contains data as recent as 2010. During development of the EIR, more recent data will be analyzed. Rough calculations show the water quality has not changed drastically between 2010 and 2017, but the future EIR will delve deeper into this area.

Table 4-7. California 305(b) Report category definitions and the number of central coast region water segments placed in each category for the 2014 Report. This information is based on data as recent as 2010.

Category	Category Definition	Number of water segments
1	All assessed beneficial uses are supported and no beneficial uses are known to be impaired.	71
2	There is insufficient information to determine beneficial use support.	92
3	There is insufficient data and/or information to make a beneficial use support determination but information and/or data indicates beneficial uses may be potentially threatened.	2

³⁰[https://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/303\(d\)_2014_attachments/item15_staff_report.pdf](https://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/303(d)_2014_attachments/item15_staff_report.pdf), Staff Report, 2014 Integrated Report Assessing Waters of the Central Coast Region- Clean Water Act (CWA) Section 303(d) List of Water Segments not Meeting Water Quality Standards and CWA Section 305(b), Water Quality Condition Report, summary.

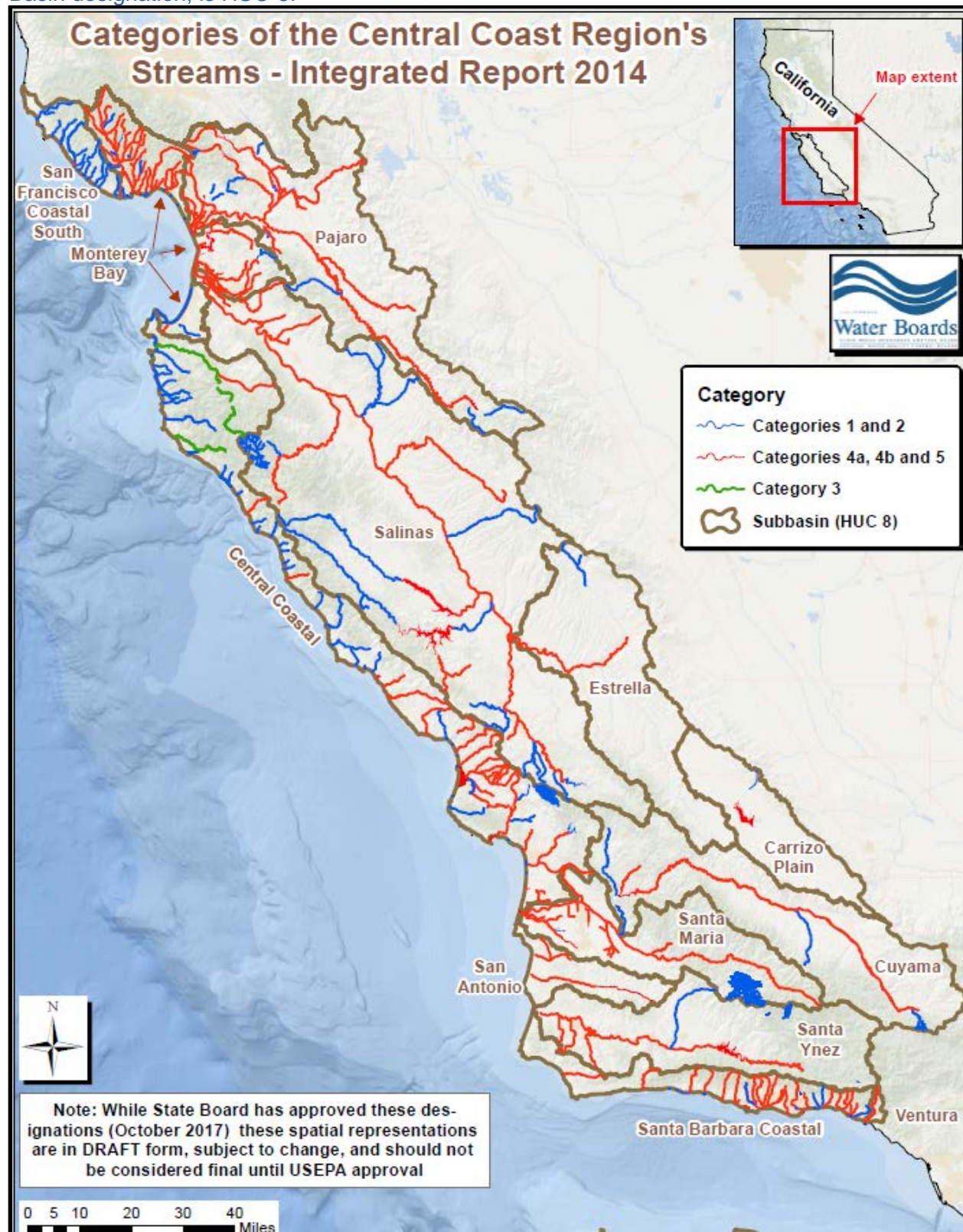
³¹ Note that the State Water Resources Control Board approved this list in October 2017. The USEPA has not issue final approval as of 2/16/2018.

³² https://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/303d_list.html and go to Central Coast Water Board approved changes to the Integrated Report, Staff Report.

³³ https://www.epa.gov/sites/production/files/2015-10/documents/2016-ir-memo-and-cover-memo-8_13_2015.pdf accessed 10/6/2017.

4a	At least one beneficial use is not supported and a TMDL has been developed and approved by USEPA for all water segment/pollutant combinations and the implementation plan is expected to result in full attainment of the water quality standard within a specified time frame.	21
4b	At least one beneficial use is not supported and another regulatory program is reasonably expected to result in attainment of the water quality standard within a reasonable, specified time frame.	0
4c	At least one beneficial use is not supported but the non-attainment of any applicable water quality standard for the water segment is the result of pollution and is not caused by a pollutant.	0
5	At least one beneficial use is not supported and a TMDL is needed.	202

Figure 4-6. A map of the central coast region's water segments. The categories refer to the categories defined in Clean Water Act 305(b). The hydrologic unit category (HUC), or River Basin designation, is HUC-8.



The following maps (Figure 4-7, Figure 4-8, Figure 4-9, and Figure 4-10) detail areas where staff has identified impairments for nutrient, pesticide, and sediment. Note that these maps showing impairments do not indicate the source of impairment. In other words, impairments could be due to irrigated agriculture, urban sources, rangeland, or other source. These maps simply indicate that these streams are impaired due to the particular constituents noted and do not make any assertions as to why these streams are impaired. More detail on sources of impairment can be found through our Total Maximum Daily Load program, which can be found at

https://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/303d_and_tmdl_projects.html.

Figure 4-7. Map of the central coast region's 2014 303(d) listings for nutrients. Nutrient related impairments include nitrate, ammonia, and dissolved oxygen.

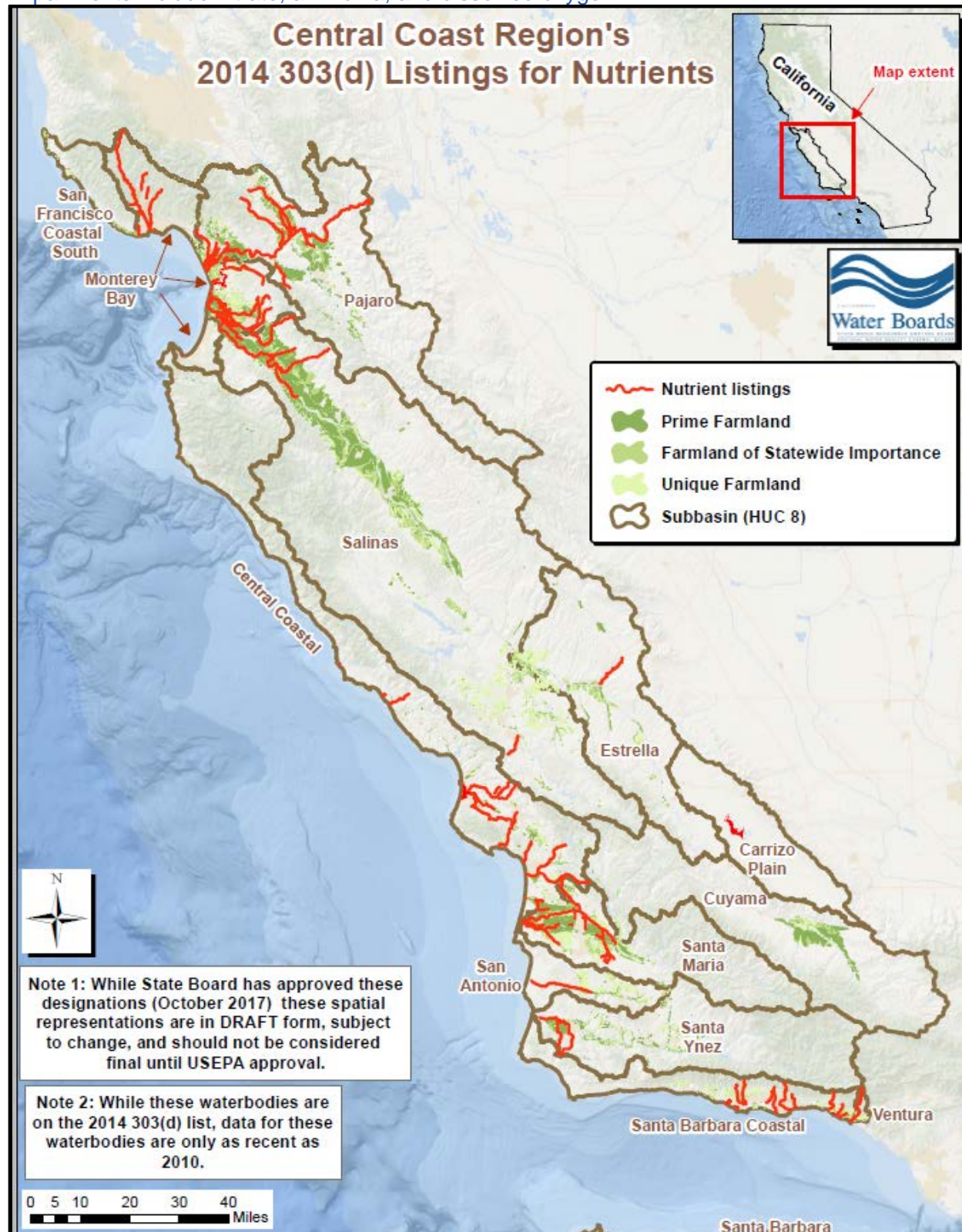


Figure 4-8. Map of the central coast region's 2014 303(d) listings for pesticides. Pesticide related impairments include carbaryl, chlordane, chlorpyrifos, cyfluthrin, cyhalothrin - lambda, cypermethrin, DDD (dichlorodiphenyldichloroethane), DDE (dichlorodiphenyldichloroethylene), DDT (dichlorodiphenyltrichloroethane), diazinon, dieldrin, dimethoate, endrin, malathion, permethrin - total, pesticides, and toxaphene.

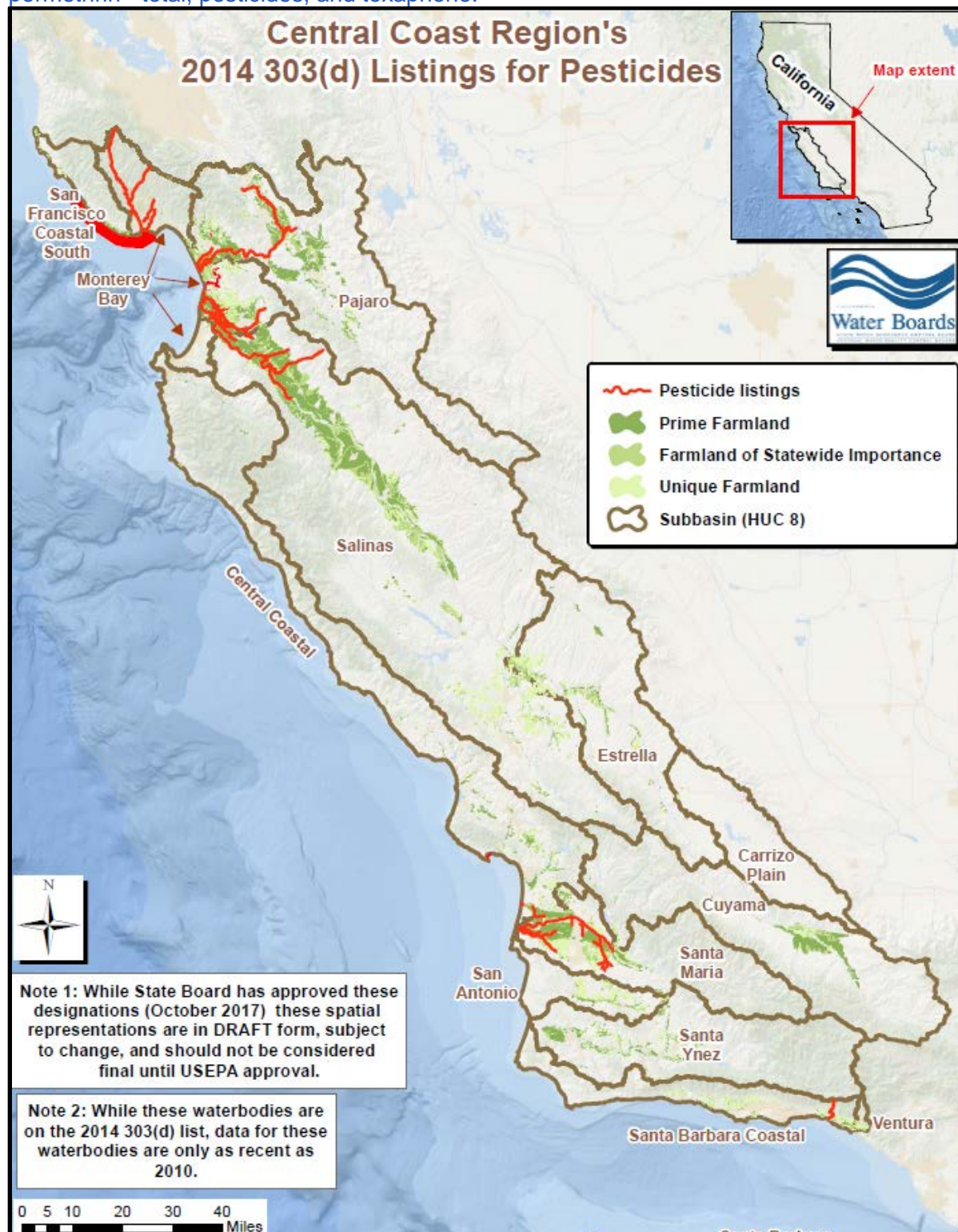


Figure 4-9. Map of the central coast region's 2014 303(d) listings for toxicity.

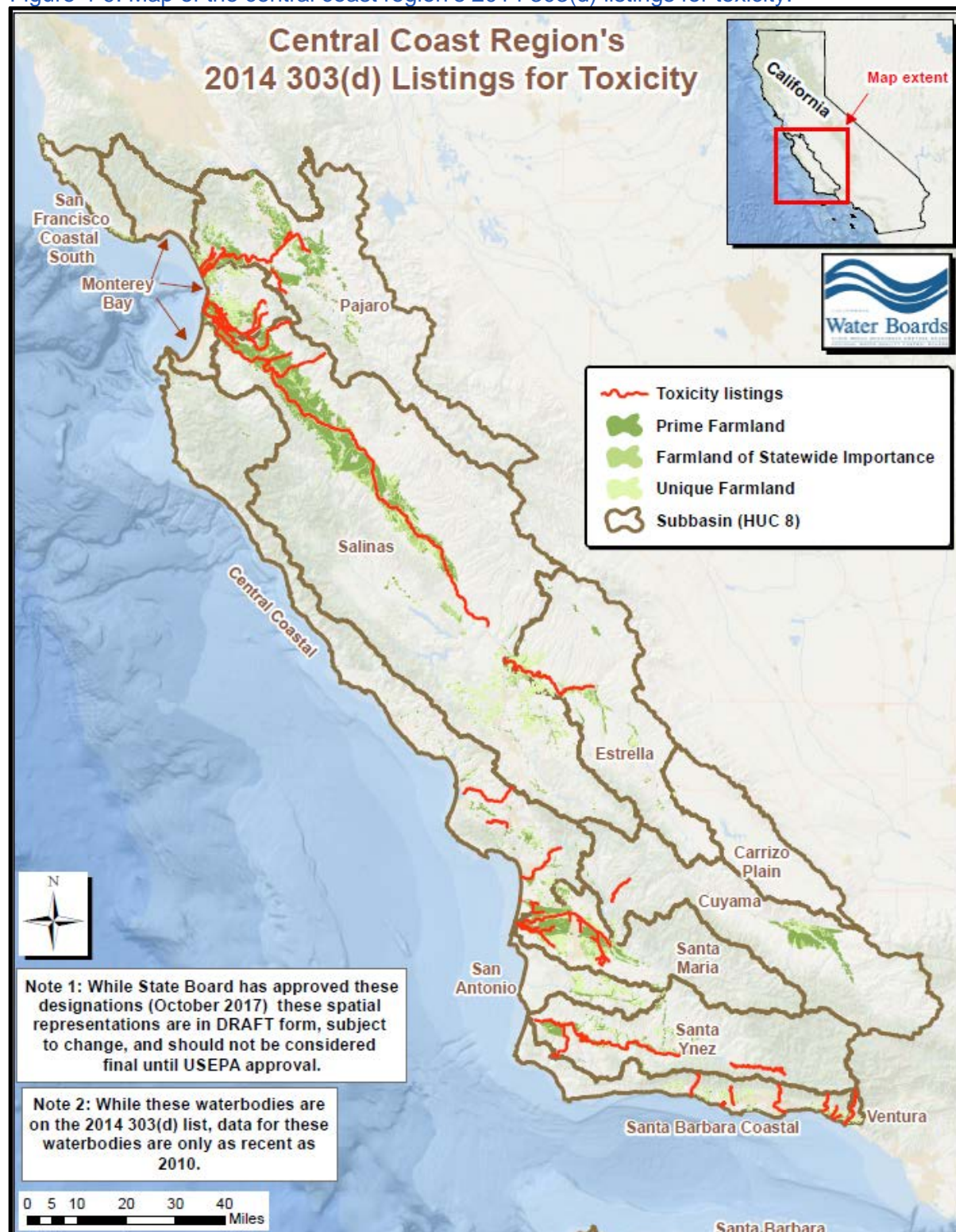
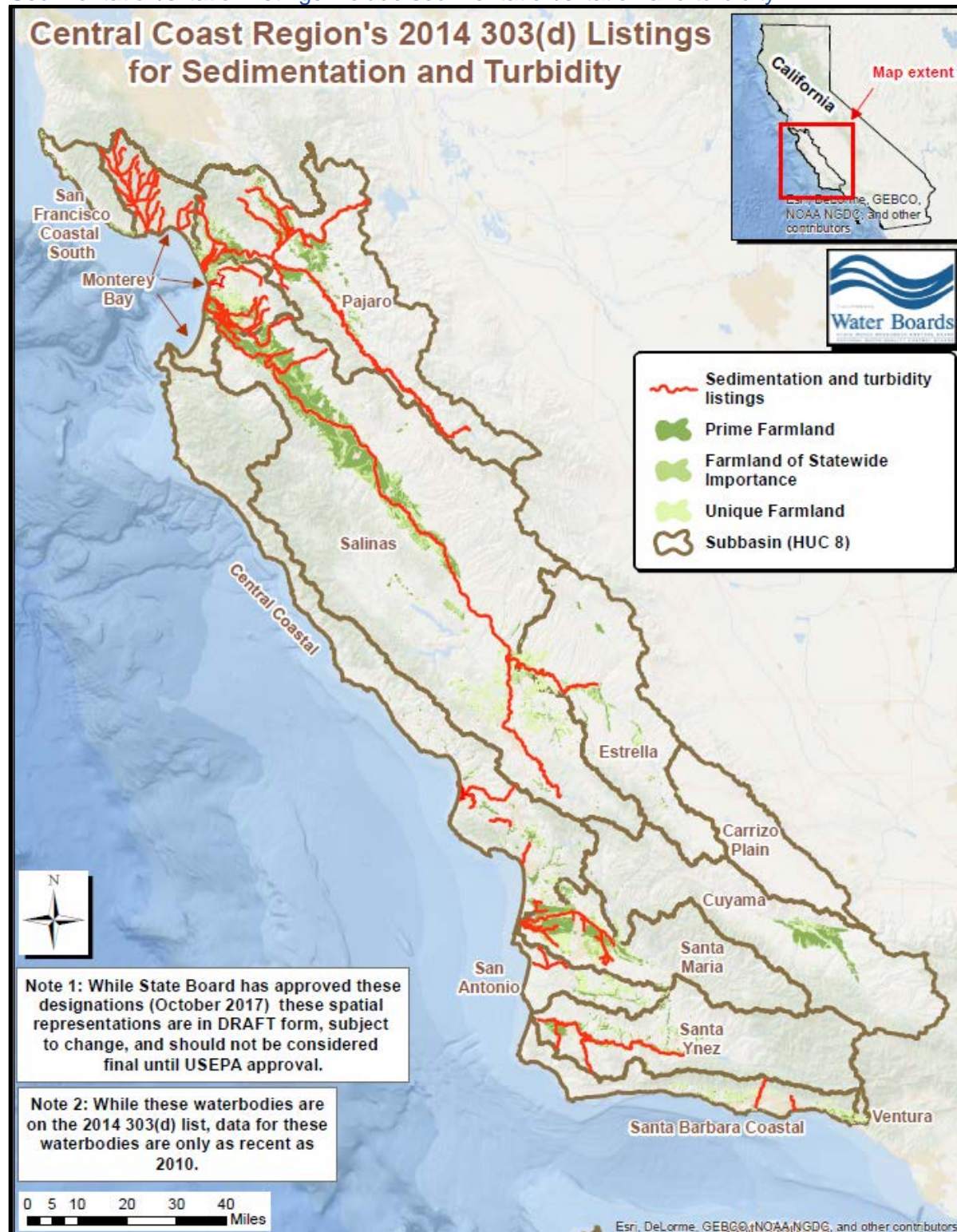


Figure 4-10. Map of the central coast region's 2014 303(d) listings for sedimentation/siltation. Sedimentation/siltation listings include sedimentation/siltation and turbidity.



4.6. Groundwater

The Agricultural Order seeks to improve the quality of groundwater. As such, it is appropriate to describe the current state of groundwater in the central coast region.

In the central coast region, nearly all agricultural, municipal, industrial, and domestic water supply comes from groundwater. This groundwater starts as surface water in the form of precipitation, streams, and recharge and is sequestered in aquifers for potential use. Groundwater supplies approximately 90 percent of the drinking water on the central coast. Currently, more than 700 municipal public supply wells in the central coast region provide drinking water to the public. In addition, based on 1990 census data,³⁴ there are more than 40,000 permitted private wells in the region, most providing domestic drinking water to rural households and communities from shallow sources. The number of private domestic wells has likely significantly increased in the past 30 years due to population growth.³⁵

In the Salinas, Pajaro, and Santa Maria groundwater basins, which are the main agricultural areas in the central coast region, agriculture accounts for approximately 80 to 90 percent of groundwater pumping (MCWRA, 2007; PVWMA, 2002; Luhdorff and Scalmanini Consulting Engineers. April 2009).³⁶

Pollutants in many groundwater basins exceed safe drinking water standards.³⁷

In January 2015, the Legislature added to the Water Code a section that speaks about sustainable groundwater management, often abbreviated SGMA. Section 10720.0 states

All relevant state agencies, including, but not limited to, the board, the regional water quality control boards, the department, and the Department of Fish and Wildlife, shall consider the policies of this part, and any groundwater sustainability plans adopted pursuant to this part, when revising or adopting policies, regulations, or criteria, or when issuing orders or determinations, where pertinent.

As such, the Central Coast Water Board will consider the Sustainable Groundwater Management Act when developing the Agricultural Order.

Figure 4-11 and Figure 4-12 show the geographic locations of the groundwater basins in the central coast region. Note that not all wells are located within groundwater basins identified by the Department of Water Resources (Bulletin 118, 2016).

³⁴ To the best of staff's knowledge, 1990 data is the most recently available. Staff will research this issue further during development of the EIR to determine if there is more recent data available.

³⁵ Agricultural Order, 3.0., Attachment A.

https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/docs/ag_order3/ag_order3.0_att_a_approved.pdf, finding no. 4.

³⁶ *Ibid*, finding no. 4.

³⁷ *Ibid*, finding no. 25.

Figure 4-11. Groundwater basins in the central coast region, northern portion.

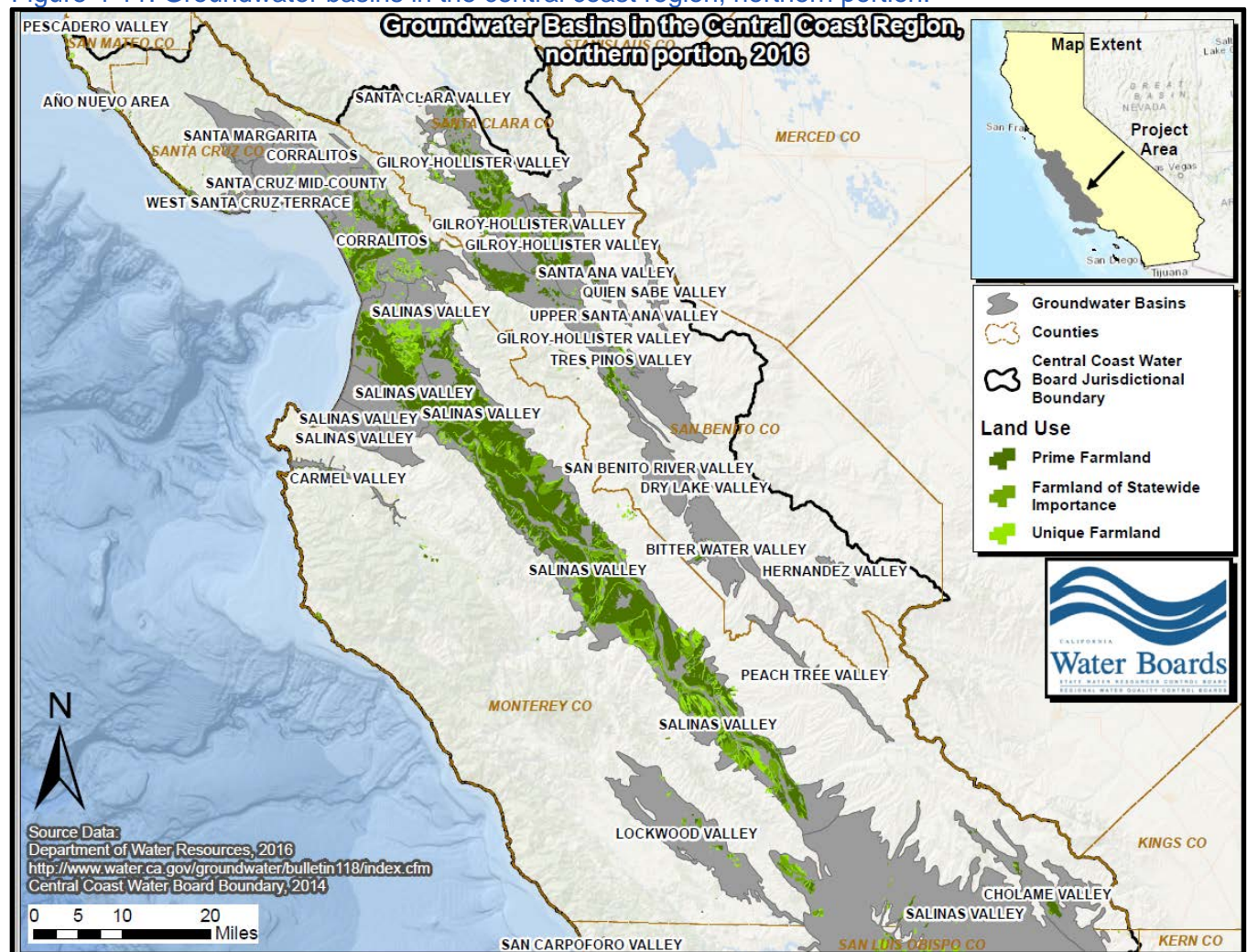
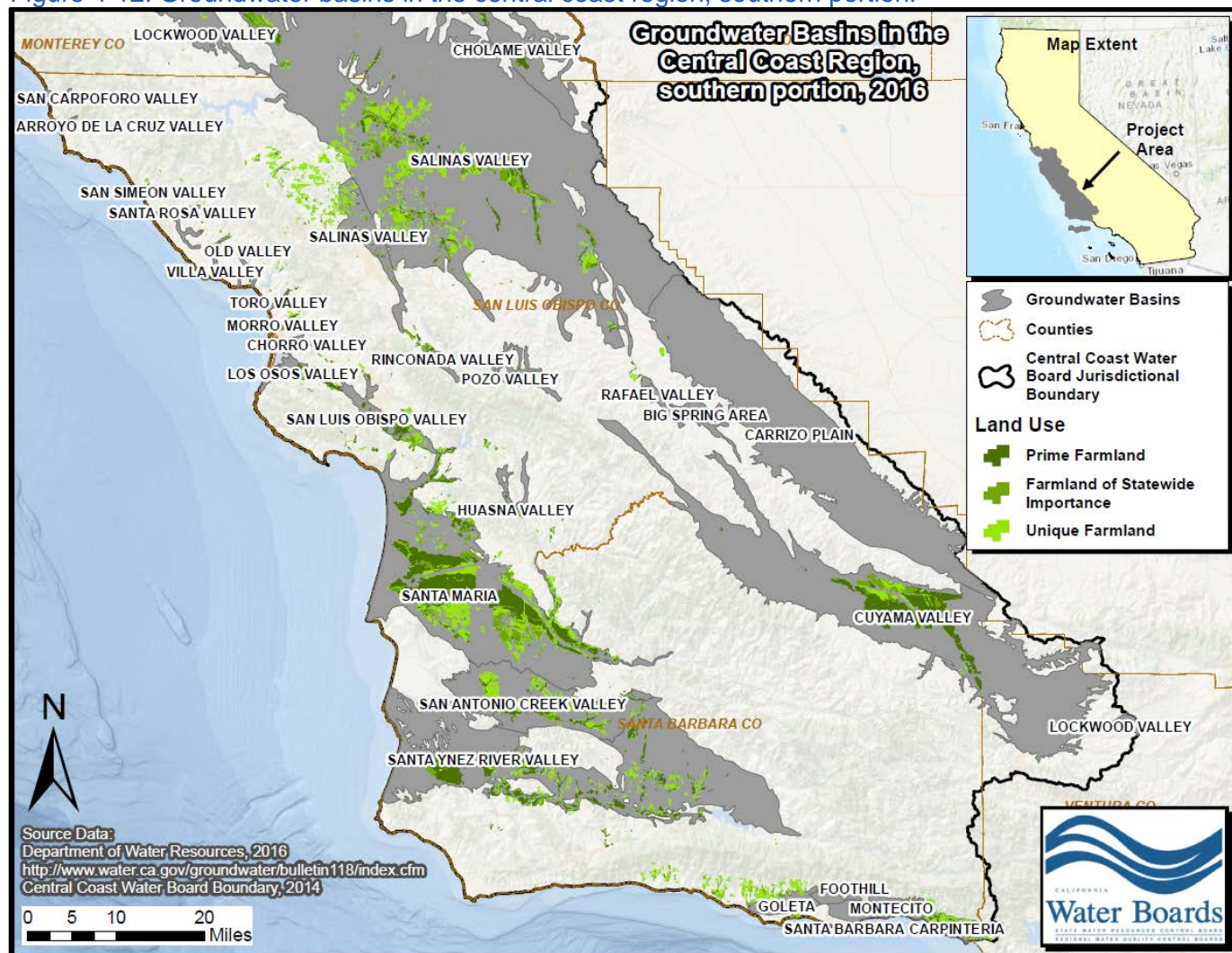


Figure 4-12. Groundwater basins in the central coast region, southern portion.



Water Board staff³⁸ compiled data from groundwater wells in our region to provide background information on the current state of groundwater with regard to nitrate concentration. These data are based on information downloaded from [GeoTracker GAMA database](#). The data were collected between 2010 and 2017. Note that this dataset includes all groundwater data from GeoTracker including domestic wells, agricultural wells, monitoring wells, GAMA wells, etc. Because this dataset utilizes all wells, it also incorporates deep wells, which may skew the data towards lower nitrate concentrations.

Table 4-8 shows the data from the groundwater basins. Note that of the 51 basins sampled, 67% (34 basins) had a well sample that exceeded the 10 mg/L nitrate. This dataset and more information on the current state of groundwater in the central coast region will be more fully developed in the EIR.

³⁸ James Bishop, Central Coast Water Board engineering geologist performed this analysis in January 2018.

This information is presented to show there are many wells in the central coast region that are exceeding the Basin Plan's water quality objective of 10 mg/L nitrate as N.

Table 4-8. Summary of nitrate as N (mg/L) data from groundwater wells in the central coast region (2010-2017).

Groundwater basin	Nitrate as N concentration in mg/L			Number of wells sampled
	Minimum value	Median concentration of nitrate ¹	Maximum value	
Includes all wells that do not fall into one of the basins designated by DWR Bulletin 118, 2016.	0.01	1.72	500.00	1,501
ANO NUEVO AREA	0.12	0.50	1.27	2
BITTER WATER VALLEY	0.20	4.10	7.90	2
CARMEL VALLEY	0.01	0.39	4.22	27
CARPINTERIA	0.09	8.83	81.50	94
CARRIZO PLAIN	6.80	17.13	33.88	7
CHOLAME VALLEY	0.10	1.49	5.53	10
CHORRO VALLEY	0.38	1.99	24.85	10
CORRALITOS PAJARO VALLEY	0.01	8.62	188.00	899
CORRALITOS PURISIMA HIGHLANDS	0.15	0.35	0.68	3
CUYAMA VALLEY	0.02	3.69	173.94	136
FOOTHILL	0.05	3.94	53.30	75
GILROY-HOLLISTER VALLEY BOLSA AREA	0.10	8.80	65.74	80
GILROY-HOLLISTER VALLEY HOLLISTER AREA	0.01	4.91	48.34	175
GILROY-HOLLISTER VALLEY LLAGAS AREA	0.01	8.92	128.76	482
GILROY-HOLLISTER VALLEY SAN JUAN BAUTISTA AREA	0.01	5.36	77.20	280
GOLETA	0.02	1.05	22.14	62
HUASNA VALLEY	0.45	0.84	1.45	3
LOCKWOOD VALLEY	0.10	3.20	10.71	44
LOS OSOS VALLEY	0.09	4.41	28.00	43
MAJORS CREEK	0.10	0.27	0.43	2
MONTECITO	0.02	3.01	23.40	49
MORRO VALLEY	0.10	5.82	45.00	34
NEEDLE ROCK POINT	0.03	0.16	0.42	4
OLD VALLEY	0.10	1.30	4.74	7
POZO VALLEY	0.45	1.26	3.40	8
SALINAS VALLEY 180/400 FOOT AQUIFER	0.02	9.98	754.51	647
SALINAS VALLEY ATASCADERO AREA	0.09	2.35	21.70	147

Groundwater basin	Nitrate as N concentration in mg/L			Number of wells sampled
	Minimum value	Median concentration of nitrate ¹	Maximum value	
SALINAS VALLEY EAST SIDE AQUIFER	0.10	20.80	204.00	384
SALINAS VALLEY FOREBAY AQUIFER	0.02	19.01	117.00	574
SALINAS VALLEY LANGLEY AREA	0.02	3.30	63.00	172
SALINAS VALLEY MONTEREY	0.02	1.52	5.87	49
SALINAS VALLEY PASO ROBLES AREA	0.03	2.96	51.96	926
SALINAS VALLEY SEASIDE	0.01	2.28	8.20	21
SALINAS VALLEY UPPER VALLEY AQUIFER	0.10	14.84	142.00	222
SAN ANTONIO CREEK VALLEY	0.03	2.39	58.96	117
SAN BENITO RIVER VALLEY	0.10	2.23	8.70	10
SAN LUIS OBISPO VALLEY	0.04	4.71	80.00	184
SAN SIMEON VALLEY	0.10	0.44	1.13	5
SANTA ANA VALLEY	0.50	6.18	24.40	8
SANTA BARBARA	0.02	2.30	22.36	136
SANTA CLARA VALLEY SANTA CLARA	0.23	5.30	16.04	10
SANTA CRUZ MID-COUNTY	0.01	1.39	31.00	84
SANTA MARGARITA	0.02	1.02	23.00	75
SANTA MARIA	0.01	14.18	627.00	1,085
SANTA ROSA VALLEY	0.02	1.06	69.58	28
SANTA YNEZ RIVER VALLEY	0.01	4.36	870.00	690
TORO VALLEY	0.10	0.25	0.50	1
TRES PINOS VALLEY	0.10	1.16	6.40	21
VILLA VALLEY	0.20	0.25	0.40	1
WEST SANTA CRUZ TERRACE	0.00	0.93	23.00	49

¹ – This value was calculated by taking the mean concentration (nitrate as N in mg/L) of all samples from the same well, then using those means to find the median of all wells from within each basin.

4.7. Precipitation and climate

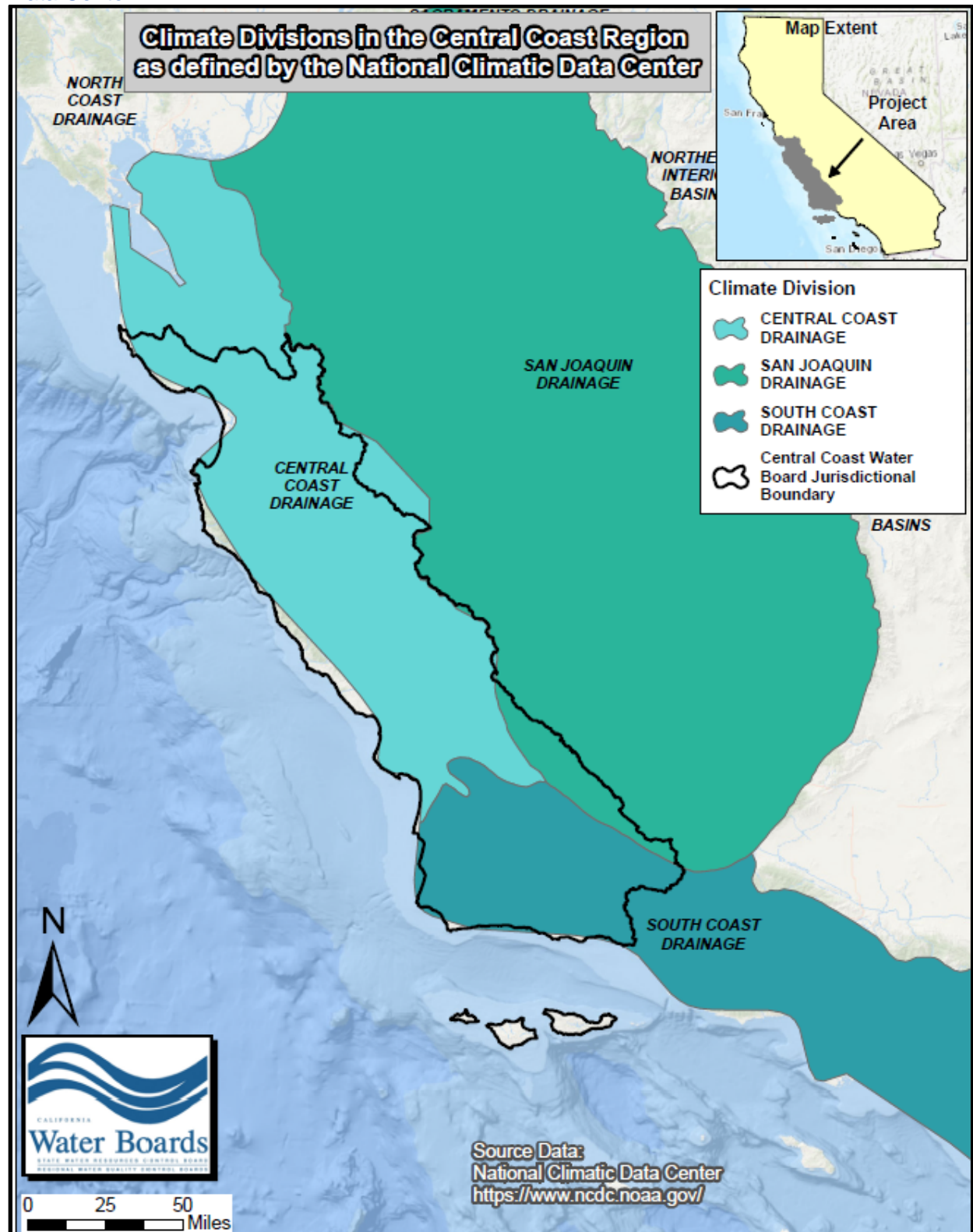
It is important to describe the weather for the central coast region because we are a temperate climate, and therefore water is a limited resource. Acknowledging precipitation and its interaction with irrigation management practices will affect how we determine significant environmental impacts on irrigation management practices.

The central coast region is located in the Central Coast Drainage, South Coast Drainage, and for a small portion in the southeastern portion of the region, the San Joaquin Drainage Climate

Division (see Figure 4-13)³⁹. In general, this area has a Mediterranean climate with warmer, drier summers, and cooler, wetter winters.

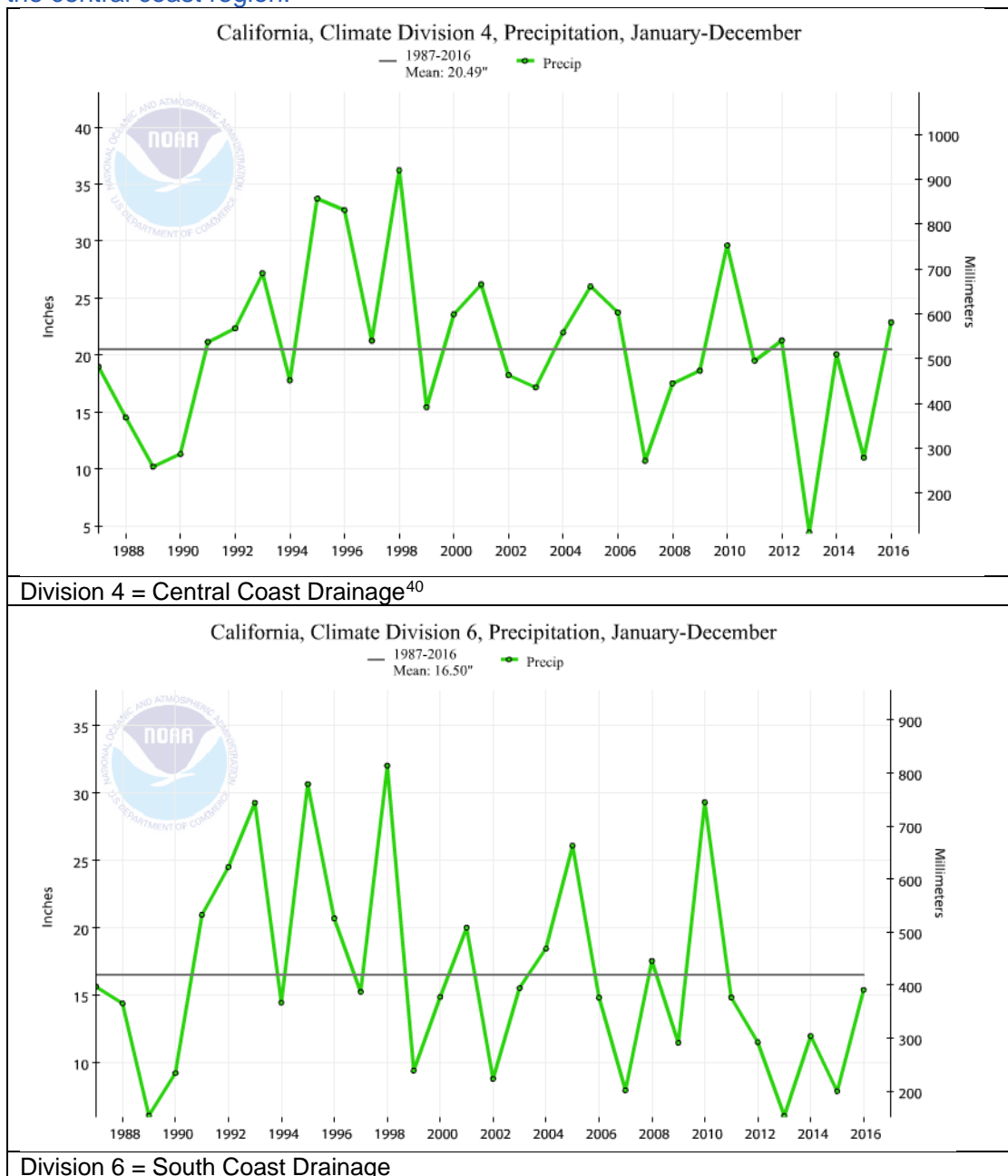
³⁹ According to the National Oceanic and Atmospheric Administration (NOAA), National Centers for Environmental Information <https://www.ncdc.noaa.gov/> accessed December 2017.

Figure 4-13. Climate divisions in the central coast regions as defined by the National Climatic Data Center.



As Table 4-9 shows, average precipitation over the last 29 years, ranges between 16.5 inches and 20.5 inches per year.

Table 4-9. Average yearly precipitation, 1987 – 2016 for three drainage climate divisions within the central coast region.



⁴⁰ Data for all drainages, courtesy of <https://www.ncdc.noaa.gov/cag/time-series>

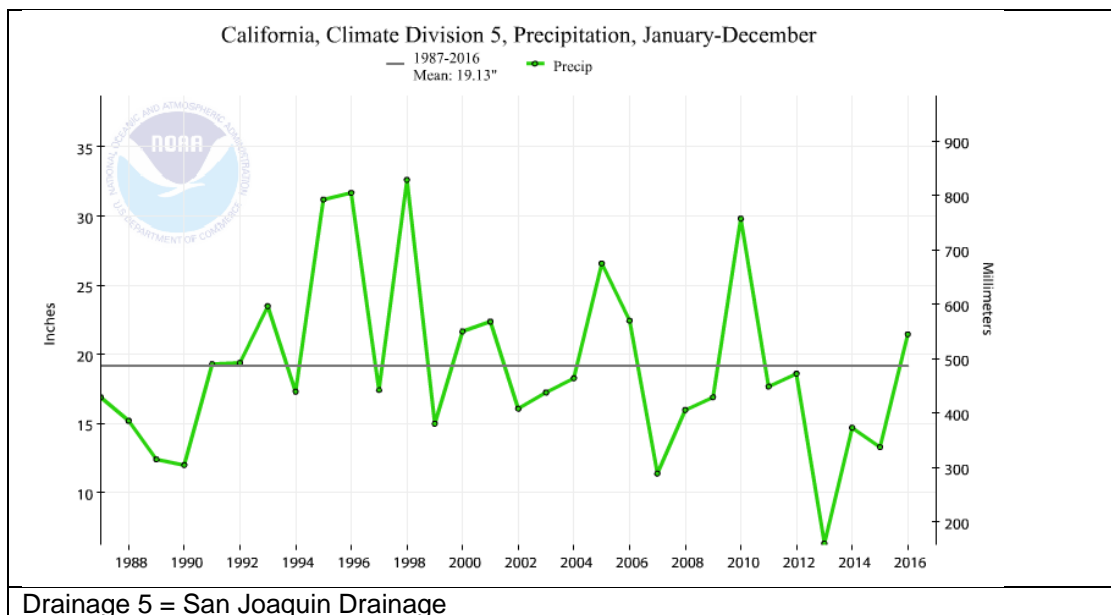


Figure 4-14 shows the thirty-year average of annual precipitation in the central coast region. Note that we are using a thirty-year average as opposed to the most recent year of data because of the variability of rainfall in our region from year to year. Portraying only the last year or two of data would skew the overall picture of our region, especially due to the drought our region has experienced since December 2011. As Table 4-9, shows, the rainfall averages change year to year and presenting a thirty-year average is more appropriate.

Displaying the precipitation data for our region is important because the data show that we have wetter winters and drier summers. Also, the data show that rainfall in our region is highly variable year to year. This is relevant to analyzing significant environmental impacts because many streams in our region are reliant on rainfall for there to be flow in the streams. Other streams, while they also are affected by rainfall, are also affected by irrigation return flows. Irrigation return flow is excess irrigation water leaving a farm and entering a stream.

The premise of rainwater in the context of streamflow is important as we discuss biological resources and how these biological resources are affected by the amount of water in the stream (see section 8.5).

Figure 4-14. Average annual precipitation in the central coastal region.

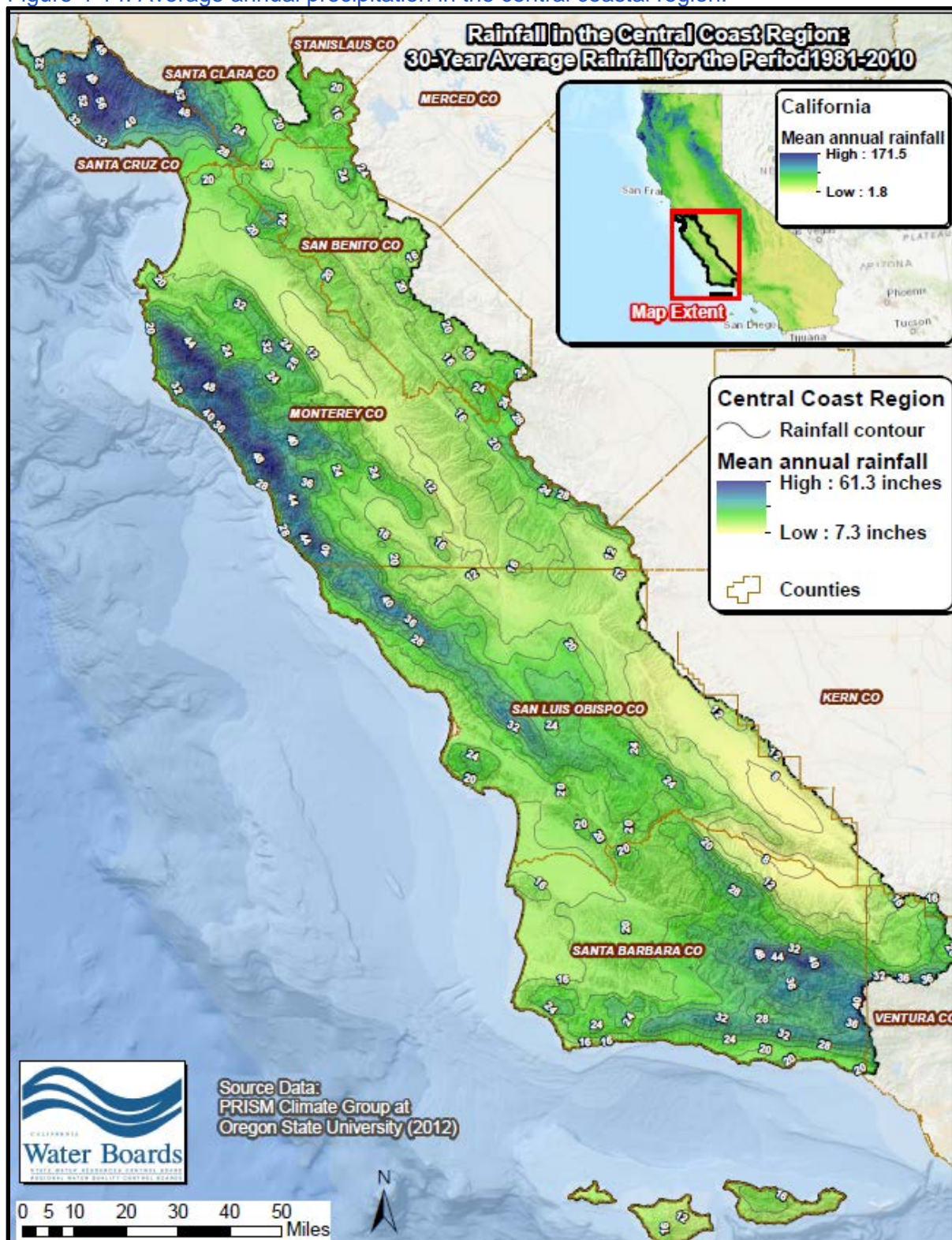
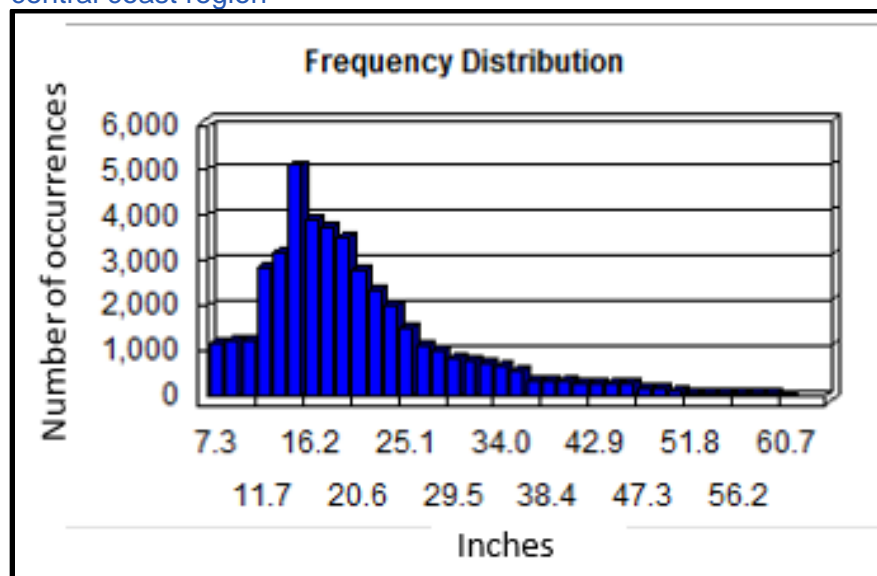


Figure 4-15. Frequency distribution of average annual rainfall, presented in Figure 4-14, in the central coast region



4.8. Temperature

Information regarding stream temperature in the central coast region will be researched further in the EIR.

4.9. Special status species

California Department of Fish and Wildlife maintains a database called California Natural Diversity Database (CNDDDB)⁴¹. This database provides the location of special status species (plants, animals, and natural communities) in part, to aid in the environmental review of projects and provide baseline data helpful in recovering endangered species. The goal of the CNDDDB is to provide the most current information available on the state's most imperiled elements and to provide tools to analyze these data.

Staff used the most recent data available at the time of writing this report (October 3, 2017). Note that this database is a positive detection database. California Dept. of Fish and Wildlife details that information is available only where species were detected. This means there is a bias in the database towards locations that have had more development pressures, and thus more survey work. Places that are empty or have limited information in the database often signify that little survey work has been done there. One cannot imply that there is less diversity in these places due to lack of information. There are no organized inventory or survey efforts designed specifically to populate the database.

Staff used spatial data from CNDDDB and intersected this spatial information with irrigated agriculture in the central coast region. Any overlap of any species with irrigated agriculture is included in this list. This exercise found 236 unique species. Please see Table 4-10 for a full list. The intention of providing this list is to show there are many special status species in the project area that will be discussed in more detail in the biological resources section and in the EIR.

⁴¹ <https://www.wildlife.ca.gov/Data/CNDDDB/About>. Information accessed 10/5/2017.

Table 4-10. Table of special status species on either the federal or California list. Species listed have been identified in areas of irrigated agriculture.

Species Name	Common Name
<i>Astragalus tener</i> var. <i>tener</i>	alkali milk-vetch
<i>Taxidea taxus</i>	American badger
<i>Malacothamnus arcuatus</i>	arcuate bush-mallow
<i>Gila orcuttii</i>	arroyo chub
<i>Arctostaphylos cruzensis</i>	Arroyo de la Cruz manzanita
<i>Polyphylla nubila</i>	Atascadero June beetle
<i>Riparia riparia</i>	bank swallow
<i>Euphydryas editha bayensis</i>	Bay checkerspot butterfly
<i>Dudleya abramsii</i> ssp. <i>bettinae</i>	Betty's dudleya
<i>Dipodomys venustus elephanticus</i>	big-eared kangaroo rat
<i>Cypseloides niger</i>	black swift
<i>Scrophularia atrata</i>	black-flowered figwort
<i>Agrostis blasdalei</i>	Blasdale's bent grass
<i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i>	Blochman's dudleya
<i>Erigeron blochmaniae</i>	Blochman's leafy daisy
<i>Gambelia sila</i>	blunt-nosed leopard lizard
<i>Chorizanthe breweri</i>	Brewer's spineflower
<i>Abies bracteata</i>	bristlecone fir
<i>Athene cunicularia</i>	burrowing owl
<i>Puccinellia simplex</i>	California alkali grass
<i>Laterallus jamaicensis coturniculus</i>	California black rail
<i>Dicamptodon ensatus</i>	California giant salamander
<i>Arizona elegans occidentalis</i>	California glossy snake
<i>Eremophila alpestris actia</i>	California horned lark
<i>Caulanthus californicus</i>	California jewelflower
<i>Sternula antillarum browni</i>	California least tern
<i>Rana draytonii</i>	California red-legged frog
<i>Rallus obsoletus obsoletus</i>	California Ridgway's rail
<i>Cladium californicum</i>	California saw-grass
<i>Ambystoma californiense</i>	California tiger salamander
<i>Calystegia subacaulis</i> ssp. <i>episcopalis</i>	Cambria morning-glory
<i>Malacothamnus palmeri</i> var. <i>involucratus</i>	Carmel Valley bush-mallow
<i>Malacothrix saxatilis</i> var. <i>arachnoidea</i>	Carmel Valley malacothrix
Central Coast Arroyo Willow Riparian Forest	Central Coast Arroyo Willow Riparian Forest
Central Dune Scrub	Central Dune Scrub
Central Maritime Chaparral	Central Maritime Chaparral
<i>Senecio aphanactis</i>	chaparral ragwort
<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i>	Choris' popcornflower
<i>Phrynosoma blainvillii</i>	coast horned lizard

Species Name	Common Name
<i>Taricha torosa</i>	Coast Range newt
<i>Nemacaulis denudata</i> var. <i>denudata</i>	coast woolly-heads
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh
Coastal Brackish Marsh	Coastal Brackish Marsh
<i>Chenopodium littoreum</i>	coastal goosefoot
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	coastal marsh milk-vetch
<i>Oncorhynchus kisutch</i>	coho salmon - central California coast ESU
<i>Cirsium occidentale</i> var. <i>compactum</i>	compact cobwebby thistle
<i>Centromadia parryi</i> ssp. <i>congdonii</i>	Congdon's tarplant
<i>Accipiter cooperii</i>	Cooper's hawk
<i>Atriplex coulteri</i>	Coulter's saltbush
<i>Monardella undulata</i> ssp. <i>crispa</i>	crisp monardella
<i>Bombus crotchii</i>	Crotch bumble bee
<i>Cirsium occidentale</i> var. <i>lucianum</i>	Cuesta Ridge thistle
<i>Atriplex serenana</i> var. <i>davidsonii</i>	Davidson's saltscale
<i>Lagophylla diabolensis</i>	Diablo Range hare-leaf
<i>Pedicularis dudleyi</i>	Dudley's lousewort
<i>Delphinium parryi</i> ssp. <i>blochmaniae</i>	dune larkspur
<i>Calycadenia villosa</i>	dwarf calycadenia
<i>Chlorogalum pomeridianum</i> var. <i>minus</i>	dwarf soaproot
<i>Ericameria fasciculata</i>	Eastwood's goldenbush
<i>Delphinium parryi</i> ssp. <i>eastwoodiae</i>	Eastwood's larkspur
<i>Mielichhoferia elongata</i>	elongate copper moss
<i>Buteo regalis</i>	ferruginous hawk
<i>Rana boylei</i>	foothill yellow-legged frog
<i>Chorizanthe minutiflora</i>	Fort Ord spineflower
<i>Fritillaria liliacea</i>	fragrant fritillary
<i>Cirsium andrewsii</i>	Franciscan thistle
<i>Nasturtium gambelii</i>	Gambel's water cress
<i>Deinandra increscens</i> ssp. <i>villosa</i>	Gaviota tarplant
<i>Dipodomys ingens</i>	giant kangaroo rat
<i>Coelus globosus</i>	globose dune beetle
<i>Plagiobothrys glaber</i>	hairless popcornflower
<i>Malacothamnus hallii</i>	Hall's bush-mallow
<i>Deinandra halliana</i>	Hall's tarplant
<i>Chorizanthe biloba</i> var. <i>immemora</i>	Hernandez spineflower
<i>Lasiurus cinereus</i>	hoary bat
<i>Arctostaphylos hookeri</i> ssp. <i>hookeri</i>	Hooker's manzanita
<i>Agrostis hooveri</i>	Hoover's bent grass
<i>Eryngium aristulatum</i> var. <i>hooveri</i>	Hoover's button-celery

Species Name	Common Name
Eriastrum hooveri	Hoover's eriastrum
Delphinium californicum ssp. interius	Hospital Canyon larkspur
Delphinium hutchinsoniae	Hutchinson's larkspur
Malacothamnus aboriginum	Indian Valley bush-mallow
Lepidium jaredii ssp. jaredii	Jared's pepper-grass
Clarkia jolonensis	Jolon clarkia
Layia jonesii	Jones' layia
Horkelia cuneata var. sericea	Kellogg's horkelia
Eremalche parryi ssp. kernensis	Kern mallow
Euproserpinus euterpe	Kern primrose sphinx moth
Cirsium scariosum var. loncholepis	La Graciosa thistle
Calochortus simulans	La Panza mariposa-lily
Arctostaphylos purissima	La Purisima manzanita
Calochortus fimbriatus	late-flowered mariposa-lily
Vireo bellii pusillus	least Bell's vireo
Caulanthus lemmonii	Lemmon's jewelflower
Lanius ludovicianus	loggerhead shrike
Hoita strobilina	Loma Prieta hoita
Trimerotropis occulens	Lompoc grasshopper
Spirinchus thaleichthys	longfin smelt
Microseris paludosa	marsh microseris
Arenaria paludicola	marsh sandwort
Stylocline masonii	Mason's neststraw
Falco columbarius	merlin
Horkelia cuneata var. puberula	mesa horkelia
Astragalus didymocarpus var. milesianus	Miles' milk-vetch
Tryonia imitator	mimic tryonia (=California brackishwater snail)
Danaus plexippus pop. 1	monarch - California overwintering population
Gilia tenuiflora ssp. arenaria	Monterey gilia
Pinus radiata	Monterey pine
Monterey Pine Forest	Monterey Pine Forest
Chorizanthe pungens var. pungens	Monterey spineflower
Plebejus icarioides morroensis	Morro Bay blue butterfly
Dipodomys heermanni morroensis	Morro Bay kangaroo rat
Streptanthus albidus ssp. peramoenus	most beautiful jewelflower
Layia munzii	Munz's tidy-tips
Ammospermophilus nelsoni	Nelson's antelope squirrel
Lupinus nipomensis	Nipomo Mesa lupine
North Central Coast Drainage Sacramento Sucker/Roach River	North Central Coast Drainage Sacramento Sucker/Roach River
North Central Coast Short-Run Coho Stream	North Central Coast Short-Run Coho Stream

Species Name	Common Name
Anniella pulchra	northern California legless lizard
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh
Monardella sinuata ssp. nigrescens	northern curly-leaved monardella
Quercus dumosa	Nuttall's scrub oak
Bombus caliginosus	obscure bumble bee
Fritillaria ojaiensis	Ojai fritillary
Meconella oregana	Oregon meconella
Areniscythis brachypteris	Oso Flaco flightless moth
Chlosyne leanira elegans	Oso Flaco patch butterfly
Ablautus schlingeri	Oso Flaco robber fly
Arctostaphylos osoensis	Oso manzanita
Antirrhinum ovatum	oval-leaved snapdragon
Arctostaphylos pajaroensis	Pajaro manzanita
Layia heterotricha	pale-yellow layia
Antrozous pallidus	pallid bat
Arctostaphylos pechoensis	Pecho manzanita
Eriogonum nortonii	Pinnacles buckwheat
Optioservus canus	Pinnacles optioservus riffle beetle
Clarkia speciosa ssp. immaculata	Pismo clarkia
Falco mexicanus	prairie falcon
Progne subis	purple martin
Helminthoglypta sequoicola consors	redwood shoulderband
Arctostaphylos refugioensis	Refugio manzanita
Nemacladus secundiflorus var. robbinsii	Robbins' nemacladus
Lepidium virginicum var. robinsonii	Robinson's pepper-grass
Chorizanthe robusta var. robusta	robust spineflower
Leptosiphon rosaceus	rose leptosiphon
California macrophylla	round-leaved filaree
Reithrodontomys megalotis distichlis	Salinas harvest mouse
Perognathus inornatus psammophilus	Salinas pocket mouse
Trifolium hydrophilum	saline clover
Geothlypis trichas sinuosa	saltmarsh common yellowthroat
Symphyotrichum defoliatum	San Bernardino aster
Collinsia multicolor	San Francisco collinsia
Thamnophis sirtalis tetrataenia	San Francisco gartersnake
Masticophis flagellum ruddocki	San Joaquin coachwhip
Vulpes macrotis mutica	San Joaquin kit fox
Perognathus inornatus	San Joaquin Pocket Mouse
Extriplex joaquinana	San Joaquin spearscale
Monolopia congdonii	San Joaquin woollythreads

Species Name	Common Name
<i>Calochortus obispoensis</i>	San Luis mariposa-lily
<i>Lupinus ludovicianus</i>	San Luis Obispo County lupine
<i>Monardella undulata</i> ssp. <i>undulata</i>	San Luis Obispo monardella
<i>Castilleja densiflora</i> var. <i>obispoensis</i>	San Luis Obispo owl's-clover
<i>Carex obispoensis</i>	San Luis Obispo sedge
<i>Arctostaphylos rudis</i>	sand mesa manzanita
<i>Erysimum ammophilum</i>	sand-loving wallflower
<i>Arctostaphylos pumila</i>	sandmat manzanita
<i>Cicindela hirticollis grvida</i>	sandy beach tiger beetle
<i>Lonicera subspicata</i> var. <i>subspicata</i>	Santa Barbara honeysuckle
<i>Aneides niger</i>	Santa Cruz black salamander
<i>Trifolium buckwestiorum</i>	Santa Cruz clover
<i>Dipodomys venustus venustus</i>	Santa Cruz kangaroo rat
<i>Ambystoma macrodactylum croceum</i>	Santa Cruz long-toed salamander
<i>Stebbinsoseris decipiens</i>	Santa Cruz microseris
<i>Holocarpha macradenia</i>	Santa Cruz tarplant
<i>Malacothamnus palmeri</i> var. <i>palmeri</i>	Santa Lucia bush-mallow
<i>Juncus luciensis</i>	Santa Lucia dwarf rush
<i>Arctostaphylos luciana</i>	Santa Lucia manzanita
<i>Arctostaphylos pilosula</i>	Santa Margarita manzanita
<i>Ancistrocarphus keilii</i>	Santa Ynez groundstar
<i>Cordylanthus rigidus</i> ssp. <i>littoralis</i>	seaside bird's-beak
<i>Navarretia nigelliformis</i> ssp. <i>radians</i>	shining navarretia
<i>Asio flammeus</i>	short-eared owl
<i>Orobanche parishii</i> ssp. <i>brachyloba</i>	short-lobed broomrape
<i>Madia radiata</i>	showy golden madia
<i>Lasionycteris noctivagans</i>	silver-haired bat
<i>Malacothamnus gracilis</i>	slender bush-mallow
<i>Stuckenia filiformis</i> ssp. <i>alpina</i>	slender-leaved pondweed
<i>Euphilotes enoptes smithi</i>	Smith's blue butterfly
<i>Thelypteris puberula</i> var. <i>sonorensis</i>	Sonoran maiden fern
Southern California Steelhead Stream	Southern California Steelhead Stream
Southern Coast Live Oak Riparian Forest	Southern Coast Live Oak Riparian Forest
Southern Cottonwood Willow Riparian Forest	Southern Cottonwood Willow Riparian Forest
<i>Monardella sinuata</i> ssp. <i>sinuata</i>	southern curly-leaved monardella
<i>Centromadia parryi</i> ssp. <i>australis</i>	southern tarplant
Southern Vernal Pool	Southern Vernal Pool
Southern Willow Scrub	Southern Willow Scrub
<i>Empidonax traillii extimus</i>	southwestern willow flycatcher
<i>Navarretia fossalis</i>	spreading navarretia

Species Name	Common Name
<i>Oncorhynchus mykiss irideus</i>	steelhead - central California coast DPS
<i>Oncorhynchus mykiss irideus</i>	steelhead - south-central California coast DPS
<i>Oncorhynchus mykiss irideus</i>	steelhead - southern California DPS
<i>Chorizanthe rectispina</i>	straight-awned spineflower
<i>Buteo swainsoni</i>	Swainson's hawk
Sycamore Alluvial Woodland	Sycamore Alluvial Woodland
<i>Eriogonum temblorense</i>	Temblor buckwheat
<i>Eucyclogobius newberryi</i>	tidewater goby
<i>Arctostaphylos montereyensis</i>	Toro manzanita
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat
<i>Agelaius tricolor</i>	tricolored blackbird
<i>Onychomys torridus tularensis</i>	Tulare grasshopper mouse
<i>Bryoria spiralifera</i>	twisted horsehair lichen
<i>Delphinium umbraculorum</i>	umbrella larkspur
<i>Gasterosteus aculeatus williamsoni</i>	unarmored threespine stickleback
Valley Oak Woodland	Valley Oak Woodland
<i>Diplacus vandenbergensis</i>	Vandenberg monkeyflower
<i>Minymischa ventura</i>	Ventura cuckoo wasp
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp
<i>Bombus occidentalis</i>	western bumble bee
<i>Eriogonum heermannii</i> var. <i>occidentale</i>	western Heermann's buckwheat
<i>Eumops perotis californicus</i>	western mastiff bat
<i>Margaritifera falcata</i>	western pearlshell
<i>Emys marmorata</i>	western pond turtle
<i>Lasiurus blossevillii</i>	western red bat
<i>Charadrius alexandrinus nivosus</i>	western snowy plover
<i>Spea hammondi</i>	western spadefoot
<i>Coccyzus americanus occidentalis</i>	western yellow-billed cuckoo
<i>Lichnanthe albipilosa</i>	white sand bear scarab beetle
<i>Pentachaeta bellidiflora</i>	white-rayed pentachaeta
<i>Elanus leucurus</i>	white-tailed kite
<i>Monardella hypoleuca</i> ssp. <i>hypoleuca</i>	white-veined monardella
<i>Monolopia gracilis</i>	woodland woollythreads
<i>Piperia yadonii</i>	Yadon's rein orchid
<i>Setophaga petechia</i>	yellow warbler
<i>Myotis yumanensis</i>	Yuma myotis
<i>Trimerotropis infantilis</i>	Zayante band-winged grasshopper

4.10. Wetland and riparian habitat⁴²

4.10.1. Introduction

Riparian and wetland habitat are important areas to consider when addressing water quality issues. Healthy riparian and wetland habitat can serve to improve water quality in many ways such as providing shading, stabilizing streambanks, and filtering pollutants. As such, providing information on wetland and riparian habitat helps define the current state of these important areas within our region.

4.10.2. Scope and location of wetlands in the central coast region

The scope and location of wetlands in the central coast region can be assessed using the National Wetlands Inventory (NWI) database. The NWI was established by the US Fish and Wildlife Service (Service) in 1974 to conduct a nationwide inventory of U.S. wetlands to provide its biologists and others with information on the distribution of wetlands to aid in wetland conservation efforts.

Table 4-11 presents an assessment of central coast region wetlands based on NWI data. Table 4-12 tabulates the NWI wetlands classification descriptions. Figure 4-16 presents a map illustrating the distributions and location of central coast region wetlands.

Table 4-11. Wetlands in the central coast region (source: National Wetlands Inventory).

Wetland Type	Acres	Wetland density at the landscape level ¹ (wetland type acres / central coast region acres) x100
Total Wetlands	198,047	2.7%
Riverine wetlands	91,760	1.2%
Lake wetlands	24,572	0.3%
Freshwater ponds	8,457	0.1%
Freshwater forest/shrub wetlands	45,326	0.6%
Freshwater emergent wetlands	22,139	0.3%
Estuarine and marine wetlands	5,794	0.1%

¹ Central coast region total size = 7,355,835 acres

Table 4-12. NWI wetlands classification descriptions.

Wetland type ^A	Description ^B
Freshwater emergent wetland	In this wetland class, emergent plants—i.e., erect, rooted, herbaceous hydrophytes, excluding mosses and lichens—are the tallest life form with at least 30% areal coverage. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.
Freshwater forested/shrub wetland	In Forested wetlands, trees are the dominant life form—i.e., the tallest life form with at least 30 percent areal coverage. Trees are defined as woody plants at least 6 m (20 ft) in height.
Freshwater pond	A Palustrine System wetland. This category was developed to group the vegetated wetlands traditionally called by such names as marsh, swamp, bog, fen, and prairie, which are found throughout the U.S. It also includes the small, shallow, permanent or intermittent water bodies often called ponds.

⁴² This section taken from a September 2017 draft version of a Technical Memo on Wetlands and Riparian Habitat by Central Coast Water Board Engineering Geologist staff Peter Osmolovsky.

Wetland type ^A	Description ^B
Riverine wetland	The Riverine system includes all wetlands contained within a channel. A channel is an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water.
Estuarine and marine wetland	Vegetated and non-vegetated brackish and saltwater marsh, shrubs, beach, bar, shoal or flat. Estuarine intertidal and Marine intertidal wetland.

^A Source: U.S. Fish and Wildlife Service, National Wetlands Inventory <https://www.fws.gov/wetlands/Data/Wetland-Codes.html>. The National Wetlands Inventory dataset represent the extent, approximate location, and type of wetlands in the United States and its Territories. Metadata available at: https://www.fws.gov/wetlands/data/metadata/FWS_Wetlands.xml.

^B Source: Classification of Wetlands and Deepwater Habitats of the United States, Federal Geographic Data Committee, August 2013, FGDC-STD-004-2013.

Figure 4-16. Wetlands of the central coast regions.

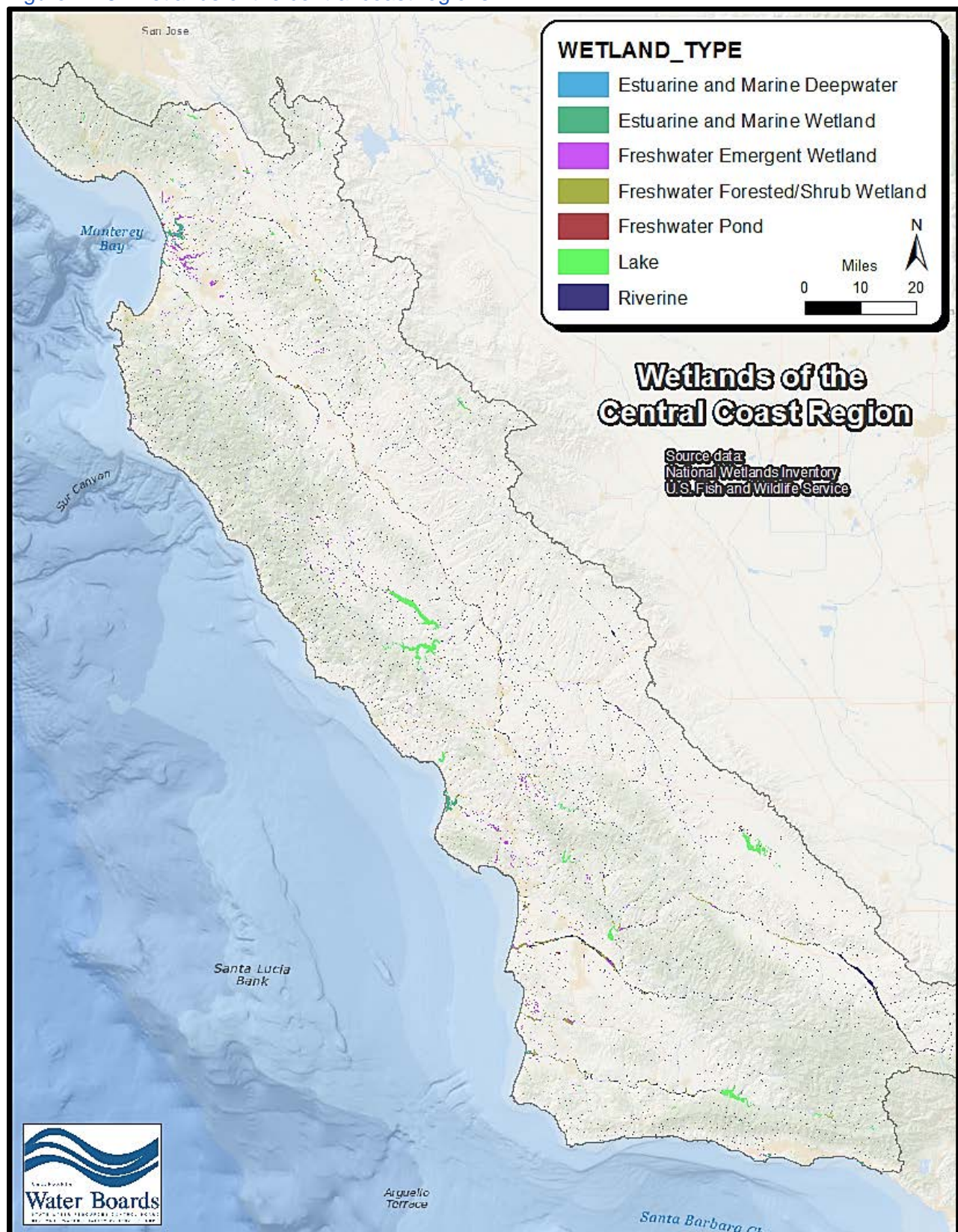
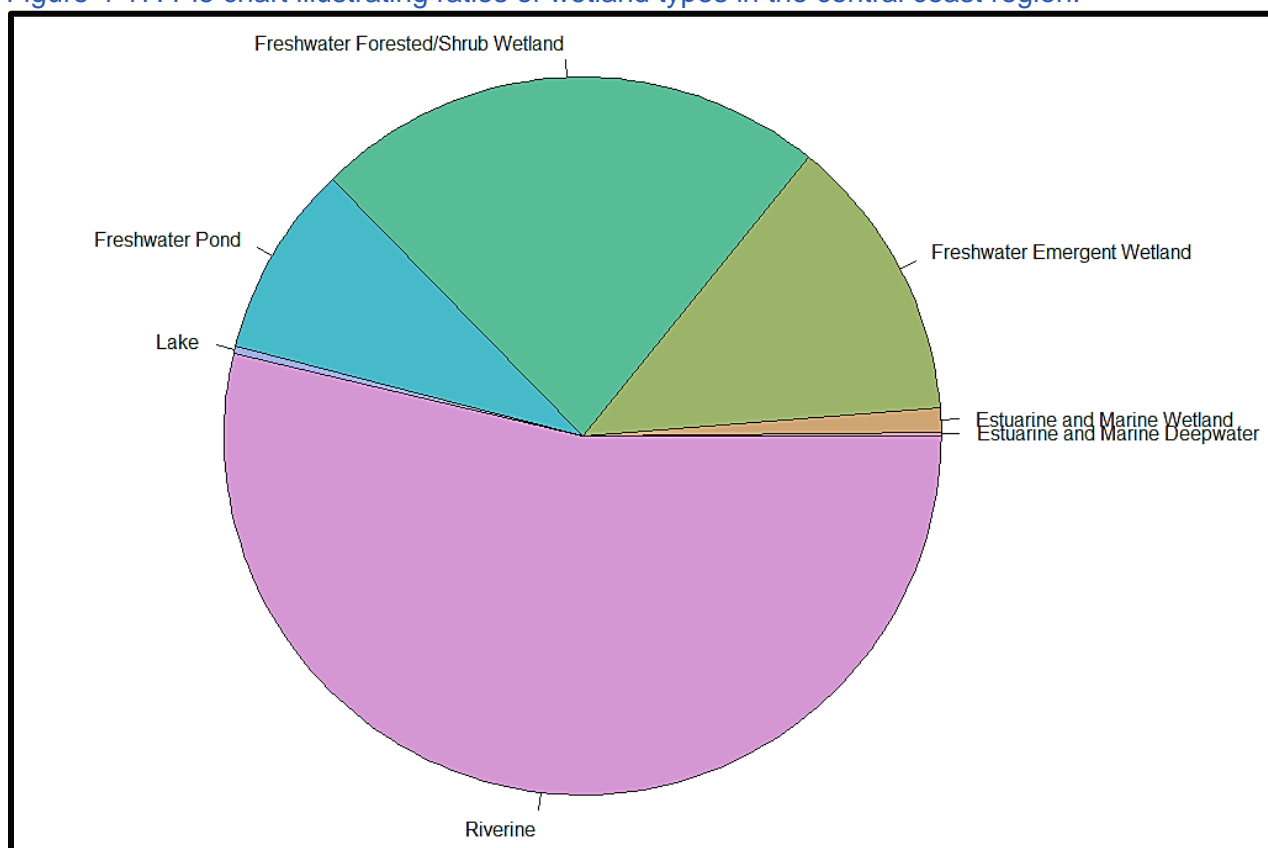


Figure 4-17. Pie chart illustrating ratios of wetland types in the central coast region.



4.10.3. Riparian areas

Intact riparian areas with tree cover support a variety of beneficial uses. Shade covering the streams moderates temperatures, creating better habitat for fish and insects. A healthy riparian area also contributes woody debris to streams, creating habitat for a variety of species.

Riparian areas were derived through a combination of the National Hydrography Dataset (NHD) and National Land Cover Dataset (NLCD). The NHD was used to locate streams and waterbodies. Perennial streams and waterbodies received a buffer of 100 meters while intermittent streams and waterbodies received a buffer of 50 meters (similar to USFS buffers in both the Northwest Forest Plan and the Sierra Nevada Plan).

The buffered hydrology was then intersected with percent canopy cover from the NLCD. This provides a riparian area with percent cover for all perennial and intermittent streams and waterbodies in California. The percent cover was grouped into three classes for non-desert streams, indicated high, medium, and low canopy cover for non-desert area. See Table 4-13 and Figure 4-17 for a riparian rank assessment of the central coast region.

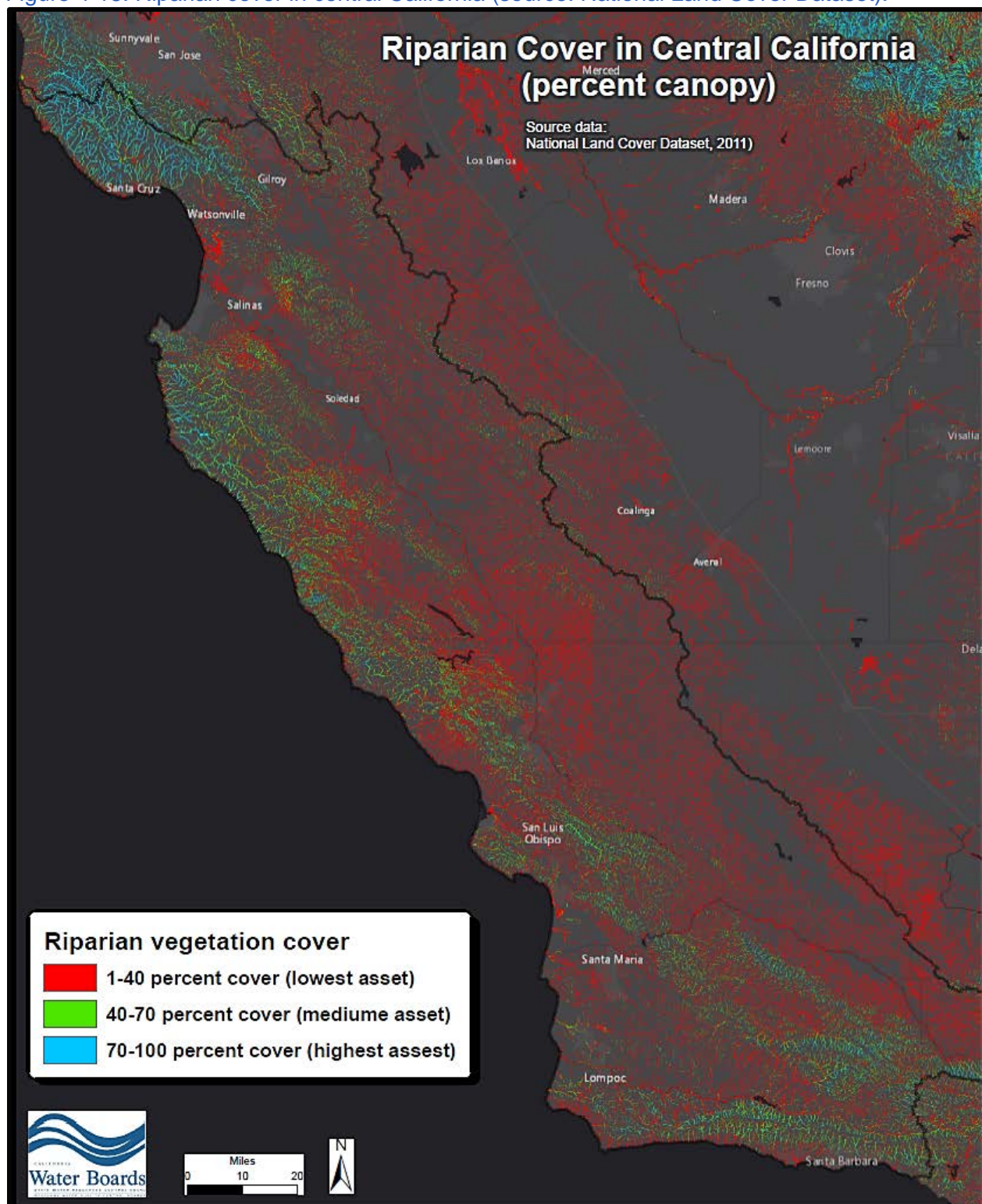
Table 4-13. Riparian areas assessment (percent cover rank) in the central coast region.

Riparian Cover Rank	Estimated Riparian Cover (%)	% of central coast region	Acres in central coast region ¹
3 (highest asset)	70 - 100 percent cover	2.3%	166,407
2 (medium asset)	40 - 70 percent cover	2.4%	178,907
1 (low asset)	1 - 40 percent cover	9.8%	723,096

0 (no canopy cover, no asset)	0 percent canopy cover	85.5%	6,287,425
--------------------------------------	------------------------	-------	-----------

¹ Central coast region total size = 7,355,835 acres

Figure 4-18. Riparian cover in central California (source: National Land Cover Dataset).



4.11. Other areas not discussed in detail

There are some areas in the checklist for which we did not describe baseline conditions. These areas include air, geology and soils, greenhouse gas emissions, mineral resources, noise, population and housing, public services, recreation, transportation/traffic and tribal cultural resources. If during the development of the EIR we find that more detail on baseline conditions in these areas needs to be developed, we will do so.

5. Lead, Responsible, and Trustee Agencies

CEQA law defines three types of agencies that have various responsibilities when it comes to complying with CEQA. These three agencies are the Lead, Responsible, and Trustee agencies. This section details who the Lead, Responsible, and Trustee Agencies are for this project and what their responsibilities are.

5.1. Lead Agency

The Lead Agency is the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment⁴³. The Central Coast Water Board is the Lead Agency for this project.

5.2. Responsible Agency

A Responsible Agency means a public agency, other than the Lead Agency, which has responsibility for carrying out or approving a project⁴⁴. As there are no other agencies have discretionary approval power over this project, there is no Responsible Agency for this project.

5.3. Trustee Agency

A Trustee Agency means a state agency that has jurisdiction by law over natural resources affected by a project that are held in trust for the people of the State of California⁴⁵.

Staff informally consulted⁴⁶ with the Trustee Agencies listed during development of this Initial Study. We note below the areas in the checklist for which they provided input.

Potential trustee agencies for this project include:

- California Department of Fish and Wildlife
 - They provided input on the biological resources section.
- California Department of Pesticide Regulation
 - They provided input on the air quality and hazards and hazardous materials.
- California Department of Water Resources
 - They provided general background information on their area of interest and provided information pertaining to groundwater.
- California State Office of Historic Preservation
 - They provided input on archeology-related areas. Staff will be further consulting with this agency, as consultation was limited during development of the Initial Study.

⁴³ Public Resources Code 21067.

⁴⁴ Public Resources Code 21069.

⁴⁵ Public Resources Code 21070 and CCR 15386.

⁴⁶ CCR 15063(g). Staff made telephone calls and/or emails to all Trustee Agencies and other interested agencies as listed in 7.4.

- California State Water Resources Control Board
 - They provided general information as to their role in this process.
- California State Lands Commission
 - They provided input on the agricultural and forestry resources and land use/planning.
- California Department of Parks and Recreation, with regards to State Parks System
 - They provided input on the agricultural and forestry resources and biological resources.
- University of California with regard to sites within the Natural Land and Water Reserve System
 - *(Based on staff's research, it does not appear that the UC has any natural reserves that overlap with irrigated agriculture in the central coast region, therefore, we did not contact them during development of the Initial Study.)*

5.4. Other interested agencies

While these agencies are not specifically identified in the CEQA regulations, staff also identified the following agencies that have an interest in the project. Staff informally consulted with four county agricultural commissioners during development of this Initial Study.

- County Agricultural Commissioners
 - They provided input on the agricultural and forestry resources section.
- California Department of Transportation (CalTrans)
- Native American Heritage Commission
- California Department of Food and Agriculture
 - They provided input on the agricultural and forestry resources section.

Additionally, federal agencies that have an interest in the project include the agencies listed below. Staff also informally consulted with these agencies listed during development of this Initial Study.

- US Fish and Wildlife Service
 - They provided input on the biological resources section.
- National Marine Fisheries Service
 - They provided input on the biological resources section.
- USEPA
- US Department of the Interior
- Bureau of Reclamation

6. Names of preparers

CEQA guidelines state that we list the names of those who prepared or participated in the Initial Study.⁴⁷

Water Board staff engineer Shanta Keeling is the main author of this Initial Study. During development of this Initial Study, she consulted with various staff within the Central Coast Water Board who have various areas of expertise. These individuals include:

⁴⁷ CCR 15063(d)(6)

- Karen Worcester. She is responsible for the Central Coast Ambient Monitoring Program (CCAMP). This program provides ambient water quality data for our region. She has a background in biology.
- Mary Hamilton. She is also responsible for CCAMP. She has a background in biology.
- Dean Thomas. He is a geologist and provided information on the groundwater section.
- James Bishop. He is a geologist and provided data for the groundwater section.
- Peter Osmolovsky. He is a geologist and helped provide technical input throughout the document. He also provided the analysis for portions of the environmental setting, including precipitation and riparian and wetland habitat.
- Arwen Wyatt-Mair. She is a water resources control engineer who provided peer review for the document. She has expertise in the irrigated lands program, including helping to identify reasonable foreseeable methods of compliance.
- Paula Richter. She is an environmental scientist with CEQA experience. She provided a peer review of the Initial Study.

7. Reasonably Foreseeable Methods of Compliance

In complying with the requirements of the Agricultural Order, owners and operators of irrigated agricultural lands have many different options for reducing or eliminating the discharge of pollutants. The following information outlines some generally accepted types of reasonably foreseeable management practices that implementing parties might consider. The term reasonably foreseeable means that it is within the realm of possibility that an owner or operator of irrigated lands may use some of these options to control their discharge. The list is not prescriptive, nor is it meant to be exhaustive. The list is meant to describe potential options growers may implement, allowing Water Board staff to determine if there are potentially significant environmental impacts (see section 8) associated with these practices.

As stated, the following lists are not meant to be complete or exhaustive lists of compliance measures. There may be others management methods available. This list of management practices may change, or practices may be added to the list, during development of the Agricultural Order. These management practices have been compiled from a variety of sources including:

- Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (EPA 840-B-92-002), January 1993. <https://www.epa.gov/nps/guidance-specifying-management-measures-sources-nonpoint-pollution-coastal-waters>
- National Management Measures to Control Nonpoint Source Pollution from Agriculture (EPA 841-B-03-004), July 2003. <https://www.epa.gov/nps/national-management-measures-control-nonpoint-source-pollution-agriculture>
- Conservation Technology Information Center. Indiana. <http://www.ctic.purdue.edu/Core4/Conservation%20Choices/Conservation%20Practices/>
- Natural Resources Conservation Service, Conservation Practice Standard, Nutrient Management, Code 590, January 2012. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1046896.pdf
- Farming Practices for Groundwater Protection – Washington State Department of Ecology. <https://research.wsulibs.wsu.edu/xmlui/bitstream/handle/2376/6781/eb1716.pdf?sequence=1&isAllowed=y>
- 60 ways farmers can protect surface water. <http://www.thisland.illinois.edu/60ways/60ways.html>

7.1. Reasonably foreseeable methods of compliance to reduce nutrient and salt loading to surface water and groundwater

Methods of compliance include, but are not limited to:

- Reduce/eliminate irrigation discharge
- Reduce/eliminate storm water discharge
- Treat irrigation discharge
- Plant cover crops; use them and manage them appropriately (e.g., not applying fertilizer to them)
- Rotate crops
- 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
- Install bioreactors
- 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 plan⁴⁸
 - 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.
- Treat storm water discharge
- Avoid winter nitrogen applications
- Managed leaching (leach when nitrate content is low and EC is high; do not leach during crop cycle)
- Minimize deep percolation
- Monitor the salinity level of the soil and only leach when necessary
- Plan timing of fertilizer application to avoid applying before predicted rainfall events
- Monitor the nutrient content of the soil to reduce fertilizer applications
- Rinse and dispose of chemical containers safely
- Implement the four rules of nutrient stewardship:
 - Right rate
 - Right time
 - Right place
 - Right formation

⁴⁸ In accordance with U.S. Department of Agriculture-Natural Resources Conservation Service Standard 590. <http://www.aces.edu/departments/aawm/NutrientManagement/590.pdf>

7.2. Reasonable foreseeable methods of compliance to reduce/eliminate pesticides from entering surface water or groundwater

Methods of compliance include, but are not limited to:

- Reduce/eliminate irrigation discharge
- Reduce/eliminate stormwater discharge
- Treat irrigation discharge
- Plant cover crops; use them and manage them appropriately
- Rotate crops
- 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 pesticide per labeling directions, e.g.,
 - do not apply during windy condition
 - do not apply right before forecasted rain
 - do not irrigate directly after pesticide application
 - apply lowest dose
 - application based on infestation thresholds
- Use an integrated pest management strategy
- Install appropriate storage of chemicals, if kept on site.
- Use of PAM or LanGuard™
- Installation of hedgerows
- Install treatment system such as granular activated carbon (GAC)
- Treat stormwater discharge
- 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

7.3. Reasonable foreseeable methods of compliance to retain sediment onsite

Methods of compliance include, but are not limited to:

- Reduce/eliminate irrigation discharge
- Reduce/eliminate stormwater discharge
- Treat irrigation discharge
- Plant cover crops; use them and manage them appropriately
- Rotate crops
- 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
- Minimize bare soil
- Limit movement of water to surface waters
- Minimize tillage
- Install sediment trapping measures
- Conservation tillage
- Conservation cover
- Critical area planting
- Mulching
- Contour farming or stripcropping
- Contour buffer strips
- Grassed waterway
- Terrace
- Maximize irrigation efficiency
- Avoid fall tillage

7.4. Reasonable foreseeable methods of compliance to maintain appropriate stream temperature

Methods of compliance include, but are not limited to⁴⁹:

- Require re-establishment (and/or preservation) of riparian and wetland buffers appropriate for the waterbody on a ranch (e.g., RipZET modeling or functional equivalent).
- Establish mechanism for cooperative watershed-based riparian and wetland restoration projects in agricultural areas.
- Establish mechanism to develop cooperative treatment wetlands at the bottom of tributaries that flow to steelhead or salmonid streams instead of implementation at every farm along non-salmonid tributaries.
- Develop incentives for growers to expand riparian and wetland buffers through decreased monitoring and reporting requirements.
- Increase riparian and in-channel tree canopy for surface waters to support beneficial uses.
- Avoid harvest actions in riparian areas to attain site-specific potential effective shade.
- Establish native species (grasses, forbs, legumes, shrubs, and tress) 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.

⁴⁹ Adapted from North Coast Water Board's Temperature Policy, 2014.
https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/140516_temp/140327_Temp_Policy_Staff_Report_ADOPTED.pdf

8. Environmental Checklist

8.1. Overview

This Initial Study provides a *cursory* analysis of the reasonably foreseeable environmental impacts as a result of implementing management practices outlined in section 7, Reasonably Foreseeable Methods of Compliance. As stated in CCR 15063 (a)(3), “an initial study is neither intended nor required to include the level of detail included in an EIR.” Therefore, as stated previously, the Initial Study sets out to identify the areas where there may be significant environmental impacts. However, the level of detail necessary to fully document each of these assertions will be developed in the EIR.

The environmental checklist is the primary focus of this Initial Study. The checklist, and subsequent discussion, presents the various areas CEQA law requires us to identify if there are any environmental impacts associated with implementing the management practices discussed in section 7. The CEQA impact levels include potentially significant impact, less than significant impact with mitigation, less than significant impact, and no impact. Water Board staff chose to add a column “beneficial” to the table of potentially environmental impacts as there are many management practices that will not merely have “no impact” on the environment but will benefit the environment.

All the tables in this section (section 8) present the 2016 CEQA Checklist, as published on the [Governor's Office of Planning & Research website](#) under CEQA Guidelines Appendix G (accessed May 2017).

A significant effect on the environment is defined in regulation as:

“a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. A social or economic change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant (14 CCR section 15382).”

Also noteworthy, CEQA Section 15064 states that:

“(b) The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area may be significant in a rural area.”

As such, we assessed the questions in the environmental checklist by determining whether implementing the management practices listed in section 7 would result in any potentially significant impacts.

8.2. Aesthetics

Table 8-1. Aesthetics, environmental checklist

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
1. AESTHETICS. Would the project:					
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

8.2.1. Discussion

Complying with the Agricultural Order should not result in any impacts to aesthetics. While there may be some construction activity due to installation of various management practices (e.g., bioreactors, swales, sedimentation ponds, etc.), any construction will occur in active agricultural areas and is unlikely to have any impact on any scenic resources. Most of these management practices should be at ground level and should not block any views. An exception to management practices that are not at the ground level may be vegetation planted in the riparian corridor and wetland vegetation; however, vegetation is generally a pleasing aesthetic feature to the general public. Other management practices such as rotating crops, irrigation management, nutrient reduction, etc. should have no effect on aesthetics.

Water Board staff mapped identified scenic areas in the central coast region (Figure 8-1 and Figure 8-2). The figures illustrate that there are no National Wild and Scenic Rivers, Vistas, or National Rivers Inventory (NRI) River Segments in irrigated agricultural areas. There are some CalTrans designated scenic highways and some Habitat Conservation Plan boundaries that overlap with some of the irrigated agricultural areas. However, any management practices should not have an effect on aesthetic resources, whether these areas have been specifically identified as scenic areas (noted in the figures) or not.

A few management practices may have a beneficial impact on aesthetics. Because some growers may choose to install swales and increase riparian canopy to comply with the Agricultural Order, there may be a beneficial impacts to aesthetics. Grassed or vegetated swales, and increased riparian canopy are generally more visually pleasing than bare earth.

8.2.2. Conclusion

There will be no impacts to aesthetics and there may be beneficial impacts as noted in item 1.a and 1.c in Table 8-1). No mitigation measures are necessary.

Figure 8-1. Scenic vistas, rivers, highways, and habitat conservation boundaries in the northern portion of the central coast region.

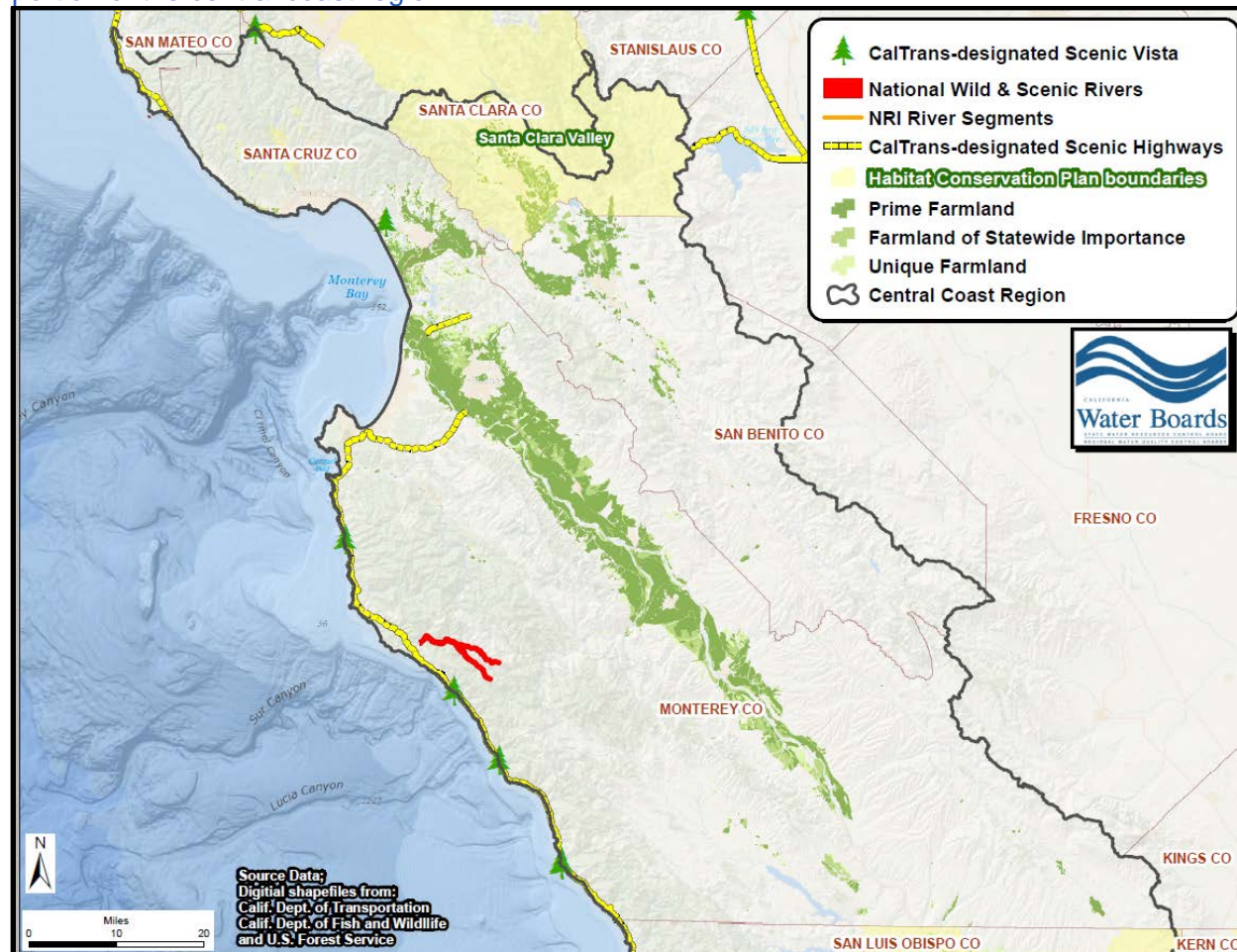
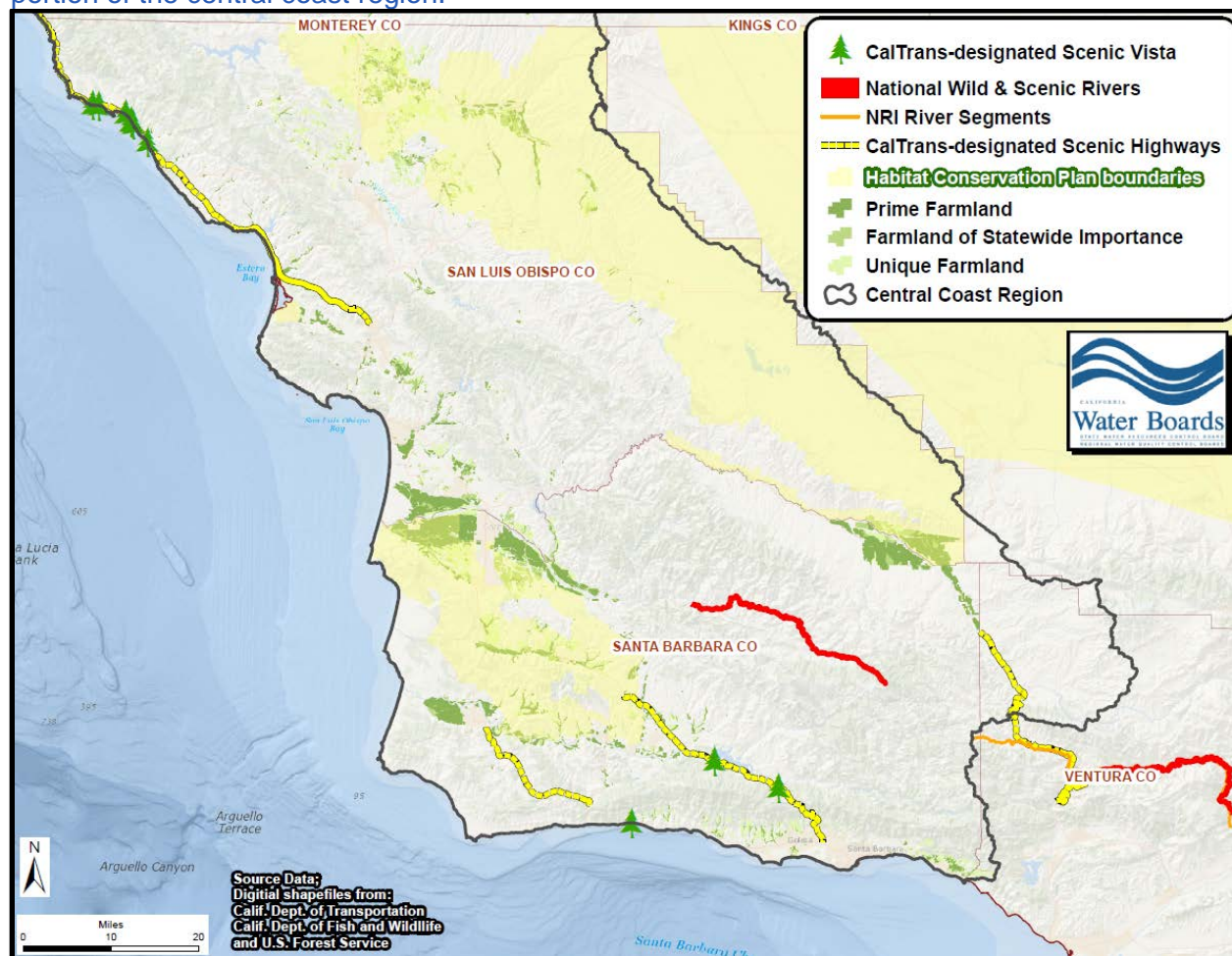


Figure 8-2. Scenic vistas, rivers, highways, and habitat conservation boundaries in the southern portion of the central coast region.



8.3. Agriculture and Forestry Resources

Table 8-2. Agriculture and forestry resources, environmental checklist.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
<p>2. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing</p>					

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project ; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:					
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8.3.1. Discussion

CEQA generally characterizes impacts on agriculture as those that cause the conversion of agricultural lands to a nonagricultural use. The project area does not include any forested areas and therefore will have no impacts on forestry resources.

The California Legislature⁵⁰ finds:

(a) That the preservation of a maximum amount of the limited supply of agricultural land is necessary to the conservation of the state's economic resources, and is necessary not only to the maintenance of the agricultural economy of the state, but also for the assurance of adequate, healthful and nutritious food for future residents of this state and nation.

(b) That the agricultural work force is vital to sustaining agricultural productivity; that this work force has the lowest average income of any occupational group in this state; that there exists a need to house this work force of crisis proportions which requires including among agricultural uses the housing of agricultural laborers; and that such use of agricultural land is in the public interest and in conformity with the state's Farmworker Housing Assistance Plan.

(c) That the discouragement of premature and unnecessary conversion of agricultural land to urban uses is a matter of public interest and will be of benefit to urban dwellers themselves in that it will discourage discontinuous urban development patterns which unnecessarily increase the costs of community services to community residents.

(d) That in a rapidly urbanizing society agricultural lands have a definite public value as open space, and the preservation in agricultural production of such lands, the use of which may be limited under the provisions of this chapter, constitutes an important physical, social, esthetic and economic asset to existing or pending urban or metropolitan developments.

(e) That land within a scenic highway corridor or wildlife habitat area as defined in this chapter has a value to the state because of its scenic beauty and its location adjacent to or within view of a state scenic highway or because it is of great importance as habitat for wildlife and contributes to the preservation or enhancement thereof.

(f) For these reasons, this chapter is necessary for the promotion of the general welfare and the protection of the public interest in agricultural land.

(Amended by Stats. 1980, Ch. 1219.) (Emphasis added by staff.)

To summarize the California Legislature's findings, agriculture is an activity and resource that is encouraged in California and is discouraged from conversion to other uses.

Staff reviewed county general plans to determine local jurisdictional policies and regulations regarding the protection of agricultural resources. There are many details in the general plans

⁵⁰ Government Code Section 51220(a)-(f).

http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=51220.&lawCode=GOV

that discuss how to preserve and expand of agricultural lands. For example, the county of Santa Barbara states that in the rural areas, cultivated agriculture shall be preserved and, where conditions allow, expansion and intensification should be supported. Lands with both prime and non-prime soil shall be reserved for agricultural uses⁵¹. To summarize, all general plans state that any agricultural conversion is strongly discouraged and preservation, protection, and expansion of agricultural lands is encouraged⁵²⁵³.

For the purposes of this Initial Study, we will state that impacts to agriculture are significant if:

- (1) Any agricultural land (prime farmland, unique farmland, or farmland of statewide importance) is converted to a nonagricultural use;
- (2) A portion of the farmland is removed from production due to the installation of management practices aimed at improving water quality. Examples include:
 - (a) Removing some agricultural land on the edge of field to install a buffer,
 - (b) Removing some agricultural land to install a wetland, swale or bioreactor.
 - (c) Removing some agricultural land to install a detention basin or sedimentation basin.

The proposed Agricultural Order does not propose or require any grower to take agricultural lands out of production. However, it is possible that due to the potential costs of complying with the Agricultural Order (monitoring costs, installation of best management practices), some growers will choose to sell their land because they cannot afford to stay in business.⁵⁴⁵⁵ If a grower sells their land, it is possible the land will be converted to a nonagricultural use. This scenario is speculative and there is no way to predict with certainty this will happen. As noted previously, the conversion of agricultural land to a nonagricultural use is discouraged in all county general plans, and conversion of agricultural land to nonagricultural land is not the intent of the Agricultural Order. However, to disclose any reasonably foreseeable environmental impacts, we determined this scenario is a possibility.

We consider installing management practices on agricultural land a significant adverse environmental impact. Overall, the percentage of cultivatable land lost to management practices may be small;⁵⁶ however, removing a portion of land that can no longer actively grow produce could be significant to individual growers. While we anticipate the percentage of agricultural land that may be converted to a swale, buffer, detention basin, or other will be small as compared to the entire growing operation, we acknowledge that any land taken out of active production is a significant impact to the individual grower.

It is also possible that due to the costs of complying with the Agricultural Order, some growers will choose to grow different crops than they are currently growing. It is difficult to predict the environmental impact associated with this potential crop switching. Since the intention of the

⁵¹ Santa Barbara County Environmental thresholds and Guidelines Manual, Published October 2008 and revised July 2015, which cites the County's (Santa Barbara) Comprehensive Plan Land Use Element, the Environmental Resources Management Element (ERME), the Local Coastal Plan, the Agricultural Element, and adopted Community Plans.

⁵² Ibid, beginning on page 8.

⁵³ County of San Luis Obispo, General Plan, Agricultural Element, Revised May 2010.

⁵⁴ The Central Valley Water Board's Draft PEIR (July 2010) indicated this scenario was a possibility.

⁵⁵ Water Board staff consulted with various Agricultural Commissioner's in the central coast region and they concurred with this general statement (personal communication November – December 2017).

⁵⁶ See March 17, 2011 Agricultural Order's Final Subsequent EIR. Note that a new evaluation will be performed in the Draft EIR for the 2020 Agricultural Order.

Order is to improve water quality, staff hypothesizes that crop switching would not result in any environmental impacts. Crop switching alone will not be considered an environmental impact.⁵⁷

The EIR will need to further research whether or not implementing the Agricultural Order will conflict with existing zoning for agricultural use or a Williamson Act⁵⁸ contract. In this Initial Study, we indicated that “conflict with existing zoning for agricultural use, or a Williamson Act contract” may have a potentially significant impact. We selected potentially significant impact because through informal consultation with staff at an Agricultural Commissioner’s office⁵⁹, staff expressed that this may be a potentially significant environmental impact and warrants further research.

Williamsons Act:

The California Land Conservation Act of 1965 commonly referred to as the Williamson Act--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. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to full market value.

State funding was provided in 1971 by the Open Space Subvention Act, which created a formula for allocating annual payments to local governments based on acreage enrolled in the Williamson Act Program. Subvention payments were made through FY 2009, but have been suspended in more recent years due to revenue shortfalls.

8.3.2. Conclusion

Implementation of the Agricultural Order may have a potentially significant impact in areas 2.a, 2.b and 2.e of Table 9-2. We do not anticipate there be any impact with Table 9-2 items 2.c and 2.d.

8.3.3. Mitigation Measures

Assisting the agricultural community in identifying sources of financial assistance that would allow growers to keep important farmland in production⁶⁰ is a possible mitigation measure for this area.

Staff will consider options that reduce the cost of compliance while developing the Agricultural Order. For example, the cost of monitoring requirements may be reduced through a cooperative monitoring approach.

In developing the EIR, staff will provide a list of possible funding sources that could provide growers with financial assistance. Staff will also consider options that implement economies of scale to reduce compliance costs.

⁵⁷ This is consistent with the Central Valley Water Board’s finding in their programmatic EIR for the Irrigated Lands Regulatory Order.

⁵⁸ <http://www.conservation.ca.gov/dlrp/lca>

⁵⁹ Informal consultation, Agricultural Commissioner’s Office (personal communication November 2017).

⁶⁰ Central Valley Water Board (R5), [Draft Programmatic EIR for their Irrigated Lands Regulatory Program](#) (2010). page 5.10-14

8.4. Air Quality

Table 8-3. Air quality, environmental checklist

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated		Less Than Significant Impact		No Impact	Potentially Beneficial	
3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:		Short-term	Long-term	Short-term	Long-term		Short-term	Long-term
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	

8.4.1. Discussion

The Agricultural Order seeks to improve water quality in agricultural areas. While improving water quality, there may be some simultaneous air quality improvements in the long-term (see sections 8.4.4 and 8.4.6). In the short-term, due to additional monitoring that may be required, there may be emissions from additional car trips and activities associated with construction of management practices (see sections 8.4.5 and 8.4.6). The specifics of whether the beneficial impacts combined with the potential environmental impacts associated with extra car trips and construction will have to be determined in the EIR.

8.4.2. Air quality standards and plans

The EIR will need to research this area more fully. However, in the interim, we can find no reason to suspect that implementation of the Agricultural Order would result in any violation of air quality standards or applicable air quality plans.

8.4.3. Pesticides

In general, application of pesticides to fields can result in a threat to air quality through volatilization and pesticide drift.

Concerning pesticides, compliance with the Agricultural Order will likely result in no impact to air quality. One management measure growers may implement to comply with the Agricultural Order would be to reduce the amount of pesticide applied to their field. Of the pesticides that are applied to agricultural fields, fumigants are the most likely to volatilize and be found in the air. At first glance, it may seem that applying less pesticides may result in less volatile contaminants in the air. However, there is not always a direct effect on air quality based on the amount of pesticides applied. Said another way, lower pesticide application does not necessarily equal better air quality because there are so many variables involved with volatilization. Because there is only an indirect effect between application and air quality, we anticipate effects to air quality to have no impact or perhaps a slight beneficial impact, depending on other environmental factors⁶¹.

8.4.4. Fertilizers

One of the reasonably foreseeable methods of compliance with the Agricultural Order is to reduce the amount of fertilizer applied to the fields. In reducing fertilizer application, emissions of N₂O (nitrous dioxide), a potent greenhouse gas and major air pollutant, will decrease in agricultural fields⁶². Estimates on the exact amount of N₂O lost to the environment vary, yet research has documented there are losses to the air.⁶³ Reductions in fertilizer application could have a beneficial environmental impact by subsequently reducing the amount of N₂O released into the environment.^{64,65}

8.4.5. Increased car trips due to monitoring and construction

The specifics of the Agricultural Order at the time of writing this Initial Study are unknown. However, it is reasonable to assume that there may be more monitoring required. If this is the case, there may be more car trips associated with the extra monitoring. Additionally, as discussed in section 8.4.6, there may be more vehicle and heavy machinery traffic for a short time frame due to installation of management practices. These extra trips may increase emissions for a short time and affect the air quality impact to less than significant.

8.4.6. Temporary construction due to installation of management practices

Construction emissions generated from heavy equipment used to install management practices may increase emissions temporarily. There may also be short-term emissions generated from machinery that may be used for maintenance of management practices. However, while the construction vehicles may increase emissions temporarily, the long-term impacts are likely an improvement to air quality. For example, if the equipment is used to create swales, buffers, install riparian habitat, etc., the long term air quality will improve due to the plants that will be planted and their ability to filter carbon dioxide and produce oxygen.

⁶¹ Water Board staff discussed this concept with California Department of Pesticide Regulation during informal agency consultation in December 2017 via phone calls and email.

⁶² <https://www.sciencenews.org/article/fertilizer-produces-far-more-greenhouse-gas-expected>, accessed 12/13/2017.

⁶³ <https://www.epa.gov/ghgemissions/overview-greenhouse-gases#nitrous-oxide>, accessed 12/13/2017.

⁶⁴ http://asi.ucdavis.edu/programs/sarep/research-initiatives/are/nutrient-mgmt/california-nitrogen-assessment/ExecutiveSummaryLayout_FINAL_reduced.pdf June 2016. Downloaded 12/8/2017.

⁶⁵ Informal agency consultation with staff at the Air Resources Control Board, December 2017.

8.4.7. Bioreactors

The City of Santa Maria filed a negative declaration for the installation of a bioreactor in Jim May Park. They state the following in their Initial Study⁶⁶:

The system uses perforated piping to distribute water flows over a wood chip bed (biofilter). If these flows remain in the wood chip bed with a longer retention time, all of the nitrate may be consumed and sufficient additional time may be available for the subsequent reduction of sulfate, which could increase the potential for the formation of odors on the site. The bacteria present in the system would utilize nitrate first, and therefore hydraulic retention time control should be an effective means of preventing odor potential in the bio-filter. The City of Santa Maria Utilities Division would manage the system flows and monitor odor control to prevent impacts to the neighboring school to the east and the residential neighborhood to the south. In addition, since this project is funded by the State Water Board, a monitoring plan and quality assurance project plan would also be implemented. Therefore, the project is not anticipated to have significant environmental impacts related to air quality.

Based on the City's conclusions, we anticipate that properly managed bioreactors will not have a significant impact on odors.

8.4.8. Additional monitoring wells drilled

To monitor the effectiveness of implementing the Agricultural Order, additional monitoring wells could be drilled. Approximately 100-200 wells could be drilled to better characterize our high priority basins.

Drilling wells can be associated with construction emissions because of the heavy machinery used to drill the wells. This may have an environmental impact for a short period of time.

We anticipate wells could be sampled quarterly. Air quality impacts associated with sampling these wells include truck trips, and the potential emissions associated with operating the equipment used to take the sample. Monitoring well samples may be taken without using a generator by using a bladder pump or by simply inserting a sampling tube into the well and extracting the water without pumping. These methods are expected to have substantially less of an air quality impact. Staff notes that the industry is moving towards these methods for well sampling and consequently, air quality impacts associated with sampling in these new manners will have less of an effect on the air quality.

8.4.9. Conclusion

There may be some environmental impacts associated with air quality in the short-term. Growers may implement appropriate construction mitigation measures to reduce operational emissions in the short-term. However, implementation practices should have long-term air quality benefits.

⁶⁶ City of Santa Maria – Initial Study/Negative Declaration for the Santa Maria Bio-filter project, February 26, 2016.

8.4.10. Mitigation measures

To reduce any impacts to a less than significant level, growers can apply applicable air district mitigation measures⁶⁷ to reduce any construction emissions below any district thresholds.

8.5. Biological Resources

Table 8-4. Biological resources, environmental checklist

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
4. BIOLOGICAL RESOURCES: Would the project:					
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

⁶⁷ For example, see [CEQA Air Quality Guidelines, Monterey Bay Unified, Air Pollution Control District, 2008](#). Specifically, see section 8.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
f) Conflict with the provisions of an adopted Habitat Conservation Plan , Natural Community Conservation Plan , or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

8.5.1. Discussion

Due to the complexities of ecosystems and the many factors involved in assessing the value of biological resources and project impacts, general qualitative guidelines are described in this section⁶⁸.

The first task in the assessment of biological impacts is an evaluation of the plant and animal resources on the project site and the second focuses on the project impact itself, using a series of assessment factors. The Initial Study evaluation determines whether an EIR or Mitigated Negative Declaration should be prepared based upon substantial evidence (not public controversy) that there is the potential for significant adverse biological impacts to occur as a result of a proposed project.⁶⁹

In general, implementation of the Agricultural Order is expected to improve habitat for biological communities through the reduction of excess nutrients, pesticides, and sediment leaving the field, entering waterbodies and leaching to the groundwater. Less nutrients, pesticides, and sediment in the water will make the water less prone to excess algal growth and reduce and/or eliminate toxicity in waterbodies. Reducing sedimentation can also be beneficial for aquatic habitat due to clarity of water, which allows fish to see through the water to find food. Additionally, a reduction in sediment can provide more opportunities for fish to lay their eggs as there will be more cobbles in certain reaches and less silty sediment. Reducing these constituents will be an overall benefit to the biological resources in the area.

In the long-term, we anticipate the effects of implementing the Agricultural Order to be a benefit to the environment. However, we need to take into account the potential environmental impacts that may result from implementing nutrient, pesticide, and sediment reduction management practices.

8.5.2. Potential flow reductions

One method of reducing the potential for nutrients, pesticides, and sediment leaving the farm is through implementation of improved irrigation efficiency. Irrigation efficiencies may result in less surface water leaving the farm, which in turn should result in less nutrients, pesticides, and sediment in the adjacent waterbodies. On the one hand, this should be a benefit to aquatic organisms as the water should contain less fertilizer, be less toxic, and clearer. On the other hand, this could result in less water for fish, other aquatic organisms, and riparian habitat. With potentially less water, riparian habitat, sensitive natural communities may incur some negative

⁶⁸ Santa Barbara County Environmental thresholds and Guidelines Manual, Published October 2008 and revised July 2015, p 24.

⁶⁹ Santa Barbara County Environmental thresholds and Guidelines Manual, Published October 2008 and revised July 2015, p 25

environmental impacts. Additionally, less water may interfere with the movement of fish or wildlife species. Therefore, there may be potentially significant environmental impacts associated with flow reductions.

It is important to note that pesticide-laden water leaving the farm is toxic to many aquatic organisms and should not be considered a desirable environmental condition. Through irrigation efficiencies and subsequent potential of less demand on the groundwater being pumped from the aquifer, there is the potential that the groundwater table may rise, due to less pumping. Depending on the site specifics, groundwater may recharge these waterbodies adjacent to farming operations, resulting in a less than significant impact or no impact.

Discerning a quantitative water volume entering the creeks and extrapolating the exact amount that may change due to implementation of various management practices is difficult and may not be able to be performed due to the complexities of the water cycle and variability of the grower's choice of management practices to install. Therefore, erring on the conservative side, we choose to identify that there may be potentially significant environmental impacts to biological species related to the potential to have less water in adjacent waterbodies.

8.5.1. Improved water quality as it relates to biological resources

As noted in section 8.5.2, there will be some beneficial impacts to biological resources due to implementation of management practices that will improve water quality. Improved water quality will be a beneficial impact to the biological resources in the area.

8.5.2. Construction activities

There may be short-term impacts to biological resources due to construction activities associated with installing a sedimentation basin or other similar structure. However, these impacts should be able to be reduced to less than significant by performing these construction activities to avoid any sensitive communities or special-status species.

Any construction activities associated with installing buffers or increasing riparian habitat should result in a beneficial impact to the biological community.

8.5.3. Conflict with any local policies, ordinances, plans

None of the reasonably foreseeable management practices identified in section 7 would be expected to conflict with ordinances protecting biological resources, such as a tree preservation policy or ordinance. Similarly, it is unlikely that any management practices would conflict with conservation strategies or goals. More than likely, management practices would comport with strategies and goals contained in any local policies, ordinances, and plans.

8.5.4. Conclusion

The requirements related to irrigation discharge are likely to provide growers with two options: either eliminate the discharge or treat and then monitor the discharge to ensure the discharge is not impacting beneficial uses. Therefore, depending on the option chosen, it is possible that there will still be irrigation discharge.

Consequently, because the growers have their choice of implementation options, it is difficult to quantify the impacts on a regional scale in this Initial Study. The EIR will research this area in more detail to the extent it is possible given the many variables associated with performing this type of calculation. Hence, to provide full disclosure on the possibility of any environmental impacts associated with complying with the Agricultural Order, staff determines there could be potentially significant environmental effects related to flow, acknowledging that in the long term,

the environmental effects would likely be beneficial. Based on the rationale provided, we anticipate potentially significant environmental impacts in areas 4.a – 4.d of Table 9-4. We do not anticipate any impacts in 4.e and 4.f of Table 9-4.

8.5.5. Mitigation Measures

Growers can mitigate impacts to biological resources when installing management practices by avoiding/minimizing construction in areas that have special status plant or animal species. If necessary, hiring a qualified biologist to identify special habitat or species before initiating construction may be appropriate. In general, growers should work to mitigate these impacts by avoiding them, looking at onsite mitigation, and, as a last resort, look at the potential for off-site mitigation.

In terms of mitigation measures related to flow, pumping less groundwater for irrigation may result in a higher groundwater table, which could potentially result in an increased baseflow in nearby waterbodies. Additionally, potential mitigation measures to prevent reduced flows or to reduce the impact of reduced flows include phasing in management practices that could result in reduced flows and/or use of riparian buffers and other vegetated treatment systems that will effectively treat the water to remove pollutants, but not necessarily reduce flows.

8.6. Cultural Resources

Table 8-5. Cultural Resources, environmental checklist

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
<u>5. CULTURAL RESOURCES.</u> Would the project:					
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5 ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5 ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8.6.1. Discussion

All areas within the United States have potential for yielding undiscovered archaeological resources, paleontological resources, and undocumented human remains not interred in

cemeteries or marked formal burial sites. These resources have the potential to contribute to knowledge of the fossil record or local, regional, or national prehistory or history.⁷⁰

Specific details on magnitude and type of impacts cannot be determined and would be dependent upon the amount of area disturbed and cultural sensitivity of the individual site. The types of cultural resources that may potentially be affected by construction activities might include, but are not limited to, prehistoric and historical archaeological sites, paleontological resources, historic buildings, structures, human remains, or archaeological sites.⁷¹

In the event of an accidental discovery or recognition of any human remains, California State Health and Safety Code Section 7050.5 dictates that no further disturbances shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Code Section 5097.98.

Some management practices that may be implemented could disturb undeveloped areas and may pose a potentially significant impact to cultural resources. Such management practices include the installation of sedimentation basins, vegetated swales, and planting/restoring riparian habitat. These practices may include grading and excavation. However, these impacts may be reduced to a less than significant level by mitigation at the local level. See section 8.6.3 for specific details.

8.6.2. Conclusion

We anticipate that significant environmental impacts in cultural resources can be mitigated to a less than significant impact for all areas in the checklist (5.a – d) through the implementation of mitigation measures listed in section 8.6.3.

8.6.3. Mitigation measures

These mitigation measures are taken directly from the State Water Resources Control Board's EIR for the General Composting Order (2015).

Examples of recognized and accepted measures that are routinely required by regulatory agencies include:

- Perform a cultural resources site survey by a qualified archaeologist or cultural specialist that conforms to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in 36 Code of Federal Regulations, section 61;
- Contact the State Historic Preservation Officer and federal lead agencies as appropriate for coordination of Nation-to-Nation consultations with the Native American Tribes.
- Consult a qualified paleontological resources specialist to determine whether paleontological resources would likely be disturbed in a project area on the basis of the sedimentary context of the area and a records search for past paleontological finds in the area. The assessment may suggest areas of high or known potential for containing resources. If the assessment is inconclusive, a surface survey is recommended to determine the fossil potential and extent of the pertinent sedimentary units within the project site. If the site contains areas of high potential for significant paleontological resources and avoidance is not possible, prepare a paleontological resources management and mitigation plan;

⁷⁰ EIR – SWRCB General Composting Order, 2015

⁷¹ EIR – SWRCB General Composting Order, 2015.

- Consult established archaeological and historical records and conduct a field survey of the project site prior to construction. Survey records shall be filed with appropriate archaeological or historical data centers;
- Consult with local Native American representatives as appropriate to obtain local knowledge of the project vicinity;
- Prepare site development and grading plans that avoid disturbance of known cultural sites and/or documented sensitive areas. Project plans shall include appropriate measures to protect sensitive resources;
- Retain a qualified archaeologist or Native American representative to monitor site development activities, particularly grading and trenching. If artifacts are observed during construction, require that construction be halted until a qualified archaeologist has been consulted;
- Alert onsite workers to the possibility of encountering human remains during construction activities, and prepare appropriate procedures. It is usually required that all construction activities near the location of identified human skeletal remains are halted until proper consultation and mitigation is arranged.

The Central Coast Water Board does not have the authority to impose specific mitigation measures. However, the Central Coast Water Board can include requirements for mitigation in the event that cultural resources are disturbed to protect these areas and minimize any disturbance. Therefore, we determine that the project will have less than significant impacts with mitigation incorporated.

8.7. Geology and Soils

Table 8-6. Geology and soils environmental checklist.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
6. GEOLOGY AND SOILS. Would the project:					
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42 .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil , as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

According to the Santa Barbara Environmental Thresholds and Guidelines Manual (2015, Page 64), impacts related to geology have the potential to be significant if the proposed project involves any of the following characteristics:

1. The project site or any part of the project is located on land having substantial geologic constraints. Areas constrained by geology include parcels located near active or potentially active faults and property underlain by rock types associated with compressible/collapsible soils or susceptible to landslides or severe erosion.
2. The project results in potentially hazardous geologic conditions such as the construction of cut slopes exceeding a grade of 1.5 horizontal to one vertical.
3. The project proposes construction of a cut slope over 15 feet in height as measured from the lowest finished grade.
4. The project is located on slopes exceeding 20 percent grade.

The Agricultural Order would result in no impacts to geology and soils and may result in a beneficial impact by reducing soil erosion or the loss of topsoil through implementing sedimentation control management practices.

8.7.1. Conclusion

Implementation of the Agricultural Order will not result in impacts to any areas in the geology and soils checklist (6.a, 6.c-e) and should result in beneficial impacts to item 6.b.

8.8. Greenhouse Gas Emissions

Table 8-7. Greenhouse gas emissions, environmental checklist

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact		No Impact	Potentially Beneficial	
			Short-term	Long-term		Short-term	Long-term
7. GREENHOUSE GAS EMISSIONS. Would the project:							
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable plan, policy or <u>regulation</u> adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	

8.8.1. Discussion

The primary greenhouse gas emission associated with agricultural operations is N₂O (Nitrous Oxide) from fertilizer applications. Management practices implemented to comply with the Agricultural Order should reduce the N₂O released into the atmosphere. This is discussed in the Air Quality section, subsection 8.4.4. Reduction of fertilizer application will result in a beneficial impact associated with greenhouse gas emissions.

Some of the management practices that growers may implement to comply with the Agricultural Order include preserving and expanding riparian and wetland habitat. Vegetation reduces air pollutants and stores and sequesters CO₂⁷². Preserving and expanding riparian and wetland habitat will result in a beneficial impact associated with greenhouse gas emissions.

To a lesser extent, there may be some emissions of CO₂, associated with extra monitoring trips, temporary construction,⁷³ and well drilling, as discussed in the Air Quality section, subsections 8.4.5, 8.4.6, and 8.4.8. As noted previously, these impacts are expected to be short-term in nature, have mitigation measures that can be implemented, and should be beneficial in the long-term.

Implementation of the Agricultural Order should not conflict with or violate any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

8.8.2. Conclusion

Implementation of the Agricultural Order should result in a beneficial impact regarding the emission of greenhouse gases (Table 9, 7.a) and should result in no impact (Table 9, 7.b) in terms of conflicting with any plan, policy, or regulation for the purpose of reducing greenhouse gases.

⁷² <https://www.epa.gov/heat-islands/using-trees-and-vegetation-reduce-heat-islands>, accessed 12/14/2017.

⁷³ <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions#agriculture>, accessed 12/13/2017.

8.8.3. Mitigation measures

In order to reduce any impacts to a less than significant level, growers can apply applicable air district mitigation measures to reduce any construction emissions below any district thresholds.

8.9. Hazards and Hazardous Materials

Table 8-8. Hazards and hazardous materials, environmental checklist.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
8. HAZARDS AND HAZARDOUS MATERIALS. Would the project:					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) 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, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
response plan or emergency evacuation plan?					
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

8.9.1. Discussion

Some agricultural activities currently taking place use hazardous materials to control agricultural pests and weeds. Pesticides and herbicides applied to crops must be applied in a certain manner and under strict controls. Failure to do so can result in injury or even death. Regulations on pesticide application are already in place at the state and federal level.⁷⁴ Even with regulations in place on pesticide application, it is not uncommon to have instances of pesticide drift that are harmful to humans.^{75 76 77} Implementation of the Agricultural Order seeks to minimize any toxic materials leaving farming operations.

Some classes of pesticides are less toxic to humans, but are more toxic to aquatic life. If growers were to switch from pesticides that are more toxic to aquatic life and less toxic to humans, to pesticides that are more toxic to humans, this could present an increased risk to human health. It is also possible that growers could switch to pesticides that are less toxic to human health. However, at this time, we do not anticipate that the project will result in pesticide switching because the focus will likely be on toxicity.

Regulations on pesticide application are in place and operators should be complying with the current laws on application requirements in part to avoid any impact to human health. However, because we are still finding these pesticides in the water we know the packaging and handling instructions that growers and pesticide applicators should be following are either 1) not sufficient for maintaining these products onsite or 2) applicators of these material are not following the instructions.

There are approximately 148 schools in the central coast region that are located within 0.25 miles of an irrigated agricultural field (Figure 8-3). Pesticide applicators should take special consideration in application of pesticides to fields close to schools. Because of the uncertainty associated with what growers will do with pesticide application, we cannot predict what will happen regarding pesticide application near school. However, implementation of the Agricultural

⁷⁴ The USEPA is responsible for regulating pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Food Quality Protection Act (FQPA). California Department of Pesticide Regulation is responsible for pesticide regulation in California.

⁷⁵ Pesticide Action Network – Kern Farmworkers Sickened Again by Pesticide Drift, August 2, 2017.

⁷⁶ Pesticide Action Network - Pesticide incident sends 18 farmworkers to hospital, June 27, 2017.

⁷⁷ Pesticide Action Network – California, stop the drift, August 11, 2017.

Order should not result in any more environmental impacts associated with hazardous materials near schools because the focus will likely be on toxicity.

The intention of the Agricultural Order is to reduce/eliminate toxicity and pesticides in the water. Theoretically, there should be a reduction in hazardous materials associated with irrigated agriculture.

In terms of this project:

- Being located on a site which is included on a list of hazardous materials sites,
- Creating a safety hazard in and around airports or private airstrips,
- Impairing emergency response or evacuation plans, or exposing people or structures to a significant loss, injury or death involving wildfires,

we find the project will have no impact on the environment.

These issues will be discussed and further developed in the EIR.

8.9.2. Conclusion

Implementation of the Agricultural Order should have no impacts on hazards and hazardous materials.

8.9.3. Mitigation measures

Although we determined there would be no impact on hazards and hazardous materials, all parties involved in the application and transportation of pesticides and herbicides should follow label restrictions. Each individual pesticide/herbicide has specific instructions based on their unique chemical properties.

Applicators should follow strategies that reduce the risk of any potentially significant environmental impacts by following strategies including, but not limited to:

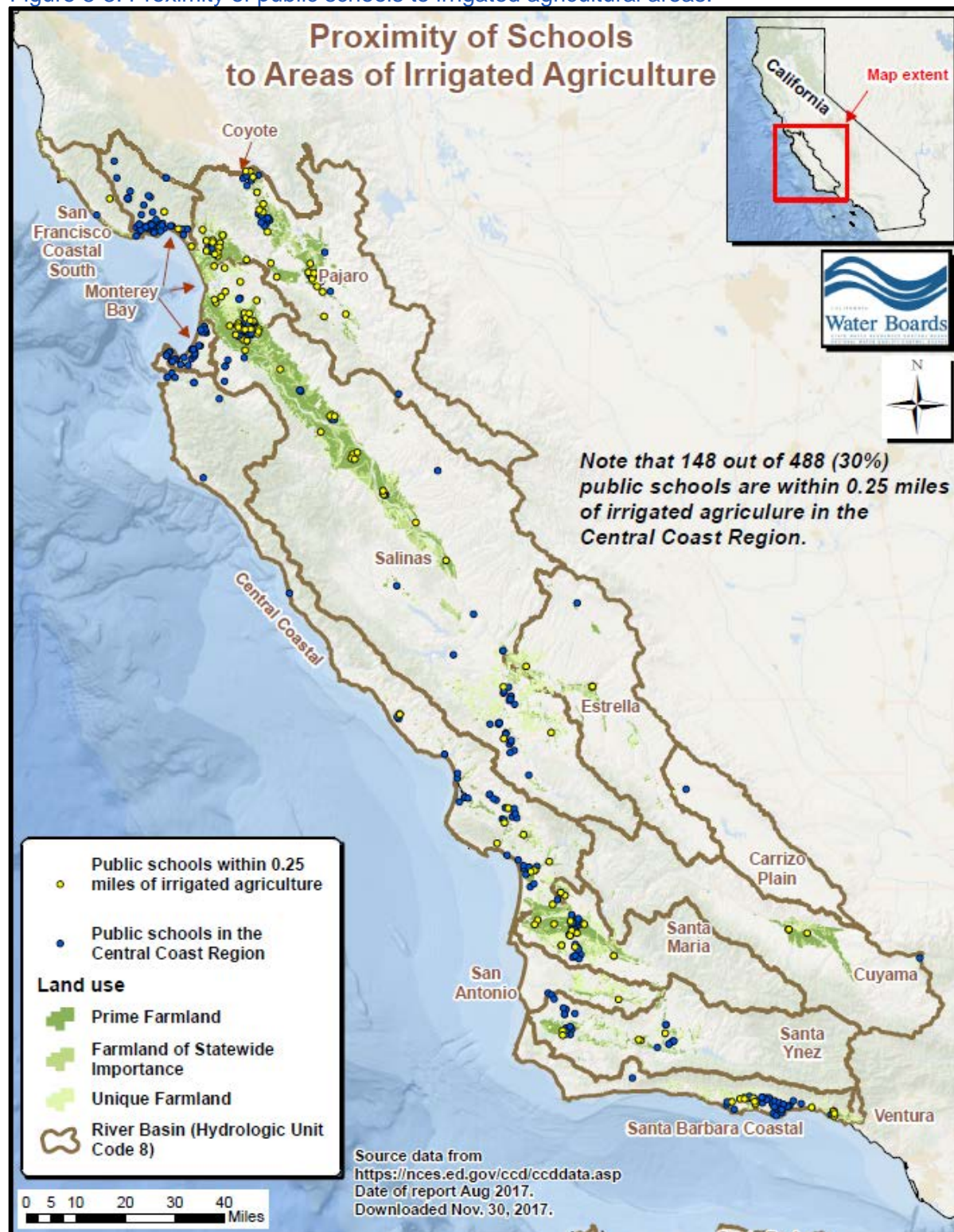
- California Department of Pesticide Regulation's "[A Strategy to Increase the Adoption of Reduced-Risk Pest Management Practices](http://www.cdpr.ca.gov/docs/pestmgmt/peststrat/pmstrat3.htm),"⁷⁸
- [USEPA's Integrated Pest Management Principles](https://www.epa.gov/safepestcontrol/integrated-pest-management-ipm-principles)⁷⁹
- Implementing organic growing methods⁸⁰

⁷⁸ <http://www.cdpr.ca.gov/docs/pestmgmt/peststrat/pmstrat3.htm>, downloaded 1/26/2018.

⁷⁹ <https://www.epa.gov/safepestcontrol/integrated-pest-management-ipm-principles>, downloaded 1/26/2018.

⁸⁰ <http://teca.fao.org/read/8364>, downloaded 1/26/2018.

Figure 8-3. Proximity of public schools to irrigated agricultural areas.



8.10. Hydrology and Water Quality

Table 8-9. Hydrology and water quality, environmental checklist.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
9. HYDROLOGY AND WATER QUALITY. Would the project:					
a) Violate any water quality standards or waste discharge requirements ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

8.10.1. Discussion

The Agricultural Order's goal is to improve water quality by regulating discharges from irrigated agriculture. As mentioned earlier in the document, there is widespread pollution associated with discharges from irrigated agriculture.

This section is divided into groundwater and surface water subsections to evaluate impacts through the lens of each system.

8.10.2. Groundwater

Groundwater supplies

The Agricultural Order will not authorize new pumping or any additional groundwater pumping as it is outside the authority of the Water Board to authorize new or additional pumping. However, irrigation efficiencies (using less water) should reduce the amount of groundwater removed from the basin, which may result in beneficial impacts to the groundwater volume. Therefore, we find that implementing the Order should not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume (Table 8-9, 9.b).

If irrigation efficiencies reduce the amount of groundwater pumped and increase the volume of groundwater basins, this may result in beneficial impacts associated with saltwater intrusion, experienced by many groundwater basins in our region⁸¹.

Land subsidence can occur in alluvial basins where water levels have dropped due to groundwater pumping.⁸² One method of implementing the Agricultural Order may be through irrigation efficiencies, which may result in reducing the amount land subsidence.

According to California Water Code, Section 10720.9 (part known as the Sustainable Groundwater Management Act):

All relevant state agencies, including, but not limited to, the board, the regional water quality control boards, the department, and the Department of Fish and

⁸¹ <http://www.co.monterey.ca.us/government/government-links/water-resources-agency/projects-facilities/salinas-valley-water-project-svwp#wra>, accessed 12/14/2017.

⁸² https://ca.water.usgs.gov/land_subsidence/, accessed 1/28/2018.

Wildlife, shall consider the policies of this part, and any groundwater sustainability plans adopted pursuant to this part, when revising or adopting policies, regulations, or criteria, or when issuing orders or determinations, where pertinent.

The Central Coast Water Board will considered the Sustainable Groundwater Management Act when developing the Agricultural Order.

Groundwater quality

In terms of water quality, reductions of the amount of pesticides and fertilizers applied to the land should positively affect the groundwater basins' water quality.

8.10.3. Surface water

Surface water quantity

Irrigation efficiency is a management measure available to growers implementing the Agricultural Order. Instituting irrigation efficiencies may reduce the amount of water in the creeks and ditches adjacent to agricultural operations. This may have an impact on biological resources. These impacts are discussed in the Biological Resources Section 8.5.

Surface water quality

Implementation of the Agricultural Order is expected to improve water quality, as that is the intention of the Agricultural Order. As growers implement more management practices, the quality of the water is expected to improve. Therefore, there should be no significant environmental impacts associated with violating water quality standards or waste discharge requirements (Table 8-9, 9. a), nor should there be any way complying with the Order should otherwise substantially degrade water quality (Table 8-9, 9. f.).

The Order should not create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff (Table 8-9, 9. e). This is because the Order will likely seek to reduce/eliminate runoff from agricultural operations.

There is the potential that the Agricultural Order may cause growers to switch pesticides that result in greater harm to water quality than current conditions. This issue is discussed in more detail in the Hazards and Hazardous Materials Section 8.9.

Potential for increasing flooding

Implementation of identified management practices could potentially increase the risk of flooding. For example, grassed waterways and channel vegetation could impede channel flows and cause water to flood adjacent lands. However, the potential for flooding could be mitigated by properly sizing channels and by implementing practices in the watershed such as cover crops, basins, and vegetative ditches that increase infiltration and reduce runoff into drainage systems.

In terms of the potential impacts due to housing or structures in the project area, we do not anticipate there to be additional structures built as a result of complying with the Agricultural Order. Therefore, we do not foresee any potentially significant impacts in this area.

Existing drainage patterns

Implementation of the Agricultural Order should not result in substantially altering the existing draining pattern of the site or area, including through the alteration of the course of a stream or

river, in a manner which would result in substantial erosion or siltation on- or off-site. On the contrary, the Order will likely require that riparian habitat and natural courses of streams or rivers be maintained or restored. Additionally the Order should contain language that reduce erosion from farms; not contribute to it.

Flooding

The Order will not encourage substantial altering of existing drainage patterns. However, certain management practices identified (see section 7), such as sedimentation basins and increasing riparian habitat could potentially result in surface flooding during rainstorms. This potentially significant impact is likely able to be reduced to less than significant with mitigation incorporated by designing these systems appropriately (Table 8-9, 9. d.).

The Order will not place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. Nor should the Order require anyone to place within a 100-year flood hazard area structures which would impede or redirect flood flows (Table 8-9, 9. g-h)

The Order will not expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. Additionally, implementation of the Order should not have any environmental impact on inundation by seiche, tsunami, or mudflow (Table 8-9, 9. i-j).

8.10.4. Conclusion

Implementation of the Agricultural Order should result in beneficial impacts to the environment (Table 9-9, 9.a – 9.b and Table 9-9, 9.e – 9.f), or no impact to the environment (Table 9-9, 9.c and Table 9-9, 9.g – 9.j). The exception to this is Table 9-9, 9.d, which is predicted to have a less than significant impact on the environment with mitigation incorporated.

8.10.5. Mitigation measures

Mitigation measures to reduce flooding include installing cover crops to increase infiltration, developing a Farm Water Quality Plan to evaluate drainage of the fields, ensure proper design of sedimentation/retention basins, and ensure proper design of grassed swales, buffer strips and riparian/wetland restoration.

8.11. Land Use and Planning

Table 8-10. Land use and planning, environmental checklist.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
<u>10. LAND USE AND PLANNING.</u> Would the project:					
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?					
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

8.11.1. Discussion

Management practices associated with complying with the Agricultural Order are not anticipated to have any potentially significant impact associated with land use and planning. Implementing the Agricultural Order should not physically divide an established community. Nor should it conflict with any applicable plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

We anticipate that management practices associated with implementing the Agricultural Order will be complementary to, and not in conflict with, any Habitat Conservation Plans or Natural Community Conservation Plans.

See the Agricultural and Forestry Resources Section 8.3, for a discussion on the possibility of the conversion of agricultural land to non-agricultural land as a result of complying with the Agricultural Order.

8.11.2. Conclusion

No impacts are identified in the land use and planning section.

8.12. Mineral Resources

Table 8-11. Mineral resources, environmental checklist.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
<u>11. MINERAL RESOURCES.</u> Would the project:					
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

8.12.1. Discussion

Management practices associated with complying with the Agricultural Order should not result in the loss of any mineral resources that would be of value to the region and the residents of the state; or result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

8.12.2. Conclusion

The Agricultural Order would not result in the foreseeable loss of any known mineral resource. Therefore, there is no impact associated with this area.

8.13. Noise

Table 8-12. Noise, environmental checklist.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
<u>12. NOISE</u> -- Would the project result in:					
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?					
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

8.13.1. Discussion

Management practices associated with complying with the Agricultural Order, such as installing woodchip bioreactors, constructed wetlands and sedimentation basins, would generate noise from heavy-duty equipment associated with excavation and grading during construction. A review of a similar project⁸³ found that these types of projects had potential noise impacts that were mitigated to a less than significant level.

There is the potential for more drilling of monitoring wells to provide higher resolution on the water quality condition of the groundwater basins in our region. There will be temporary noise level increases associated with this activity that could be potentially significant. These effects should be able to be mitigated to less than significant.

None of the reasonably foreseeable management practices identified in Section 7 would result in a substantial permanent increase in ambient noise levels. Noise generation is associated with the short-term, temporary use of heavy equipment. Therefore, staff concludes there is no impact pertaining to permanent increases in ambient noise.

8.13.2. Conclusion

While short-term noise impacts associated with temporary construction may occur, these impacts can be mitigated to less than significant. There should be no long-term impacts on noise associated with implementing the Agricultural Order.

8.13.3. Mitigation measures

Construction mitigation measures include restricting hours of operation, siting and staging portable equipment away from noise sensitive locations, notifying adjacent residences and businesses in advance of construction work, and requiring all equipment to have noise-abating measures.

If well pumps are installed, growers will ensure that they are enclosed or located behind barriers such that noise does not exceed applicable local noise standards or limits specified in applicable county ordinances and general plan noise elements.⁸⁴

⁸³ Central Valley Water Board (R5), [Draft Programmatic EIR for their Irrigated Lands Regulatory Program](#) (2010) pages 5.4-1 – 5.4-11.

⁸⁴ Central Valley Water Board (R5), [Draft Programmatic EIR for their Irrigated Lands Regulatory Program](#) (2010) page 5.4-11.

8.14. Population and Housing

Table 8-13. Population and housing, environmental checklist.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
13. POPULATION AND HOUSING. Would the project:					
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

8.14.1. Discussion

While we noted that implementation of the Agricultural Order may result in possible conversion of agricultural lands to non-agricultural land as a result of growers leaving agriculture due to increased management practice-related costs (see Agriculture and Forestry Resources, Section 8.3), no specific use for converted land can be identified, due to the unknown location of such lands. It is too speculative to determine whether such unknown converted uses would induce substantial population growth.⁸⁵

8.14.2. Conclusion

There should be no impact (Table 9-13, 13.a – 13.c) on population and housing from implementation of the Agricultural Order.

⁸⁵ Central Valley Water Board (R5), Draft Programmatic EIR for their Irrigated Lands Regulatory Program (2010).

8.15. Public Services

Table 8-14. Public services, environmental checklist.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
<u>14. PUBLIC SERVICES.</u>					
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

8.15.1. Discussion

The Agricultural Order and implementation thereof should have no effect on any of the public services listed in Table 8-14.

8.15.2. Conclusion

There should be no impact (14.a) on public services from implementation of the Agricultural Order.

8.16. Recreation

Table 8-15. Recreation, environmental checklist

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
<u>15. RECREATION.</u>					
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
substantial physical deterioration of the facility would occur or be accelerated?					
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

8.16.1. Discussion

The Agricultural Order and implementation thereof should have no effect on any increased use of existing neighborhood parks. Nor does it included any recreational facilities. Therefore, we anticipate no impacts associated with recreation in the project area.

8.16.2. Conclusion

There should be no impact (Table 9-15, 15.a – 15.b) on recreation from implementation of the Agricultural Order.

8.17. Transportation/Traffic

Table 8-16. Transportation/traffic, environmental checklist.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
<u>16. TRANSPORTATION/TRAFFIC.</u> Would the project:					
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
congestion management agency for designated roads or highways?					
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

8.17.1. Discussion

We do not anticipate that the Agricultural Order would substantially increase or decrease the existing traffic load in the project area. While additional onsite monitoring may increase vehicle trips, complying with the Agricultural Order may also decrease traffic flow through reduced needs for nutrients and pesticide applications. Additionally, many of the areas where monitoring will take place are located in remote areas and it is not anticipated that any additional onsite monitoring would increase existing traffic load to any measurable extent.⁸⁶

8.17.2. Conclusion

There should be no impact (Table 9-16, 16.a – 16.f) on transportation/traffic from implementation of the Agricultural Order.

8.18. Tribal Cultural Resources

Table 8-17. Tribal cultural resources, environmental checklist.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
<u>17. TRIBAL CULTURAL RESOURCES</u>					

⁸⁶ Central Valley Water Board (R5), [Draft Programmatic EIR for their Irrigated Lands Regulatory Program](#) (2010).

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

8.18.1. Discussion

Specific details on magnitude and type of impacts to tribal cultural resources cannot be determined and would be dependent upon the amount of area disturbed and cultural sensitivity of the individual site. Properties important to Native American communities and other ethnic groups, including tangible properties possessing intangible traditional cultural values, could also be impacted.⁸⁷

Some management practices that may be implemented as a result of complying with the Agricultural Order, could disturb undeveloped areas and may pose a potentially significant impact to cultural resources. Such management practices include the installation of sedimentation basins, grading and installation of riparian habitat. However, these impacts may be reduced to a less than significant level by mitigation at the local level.

At the time of completing this Initial Study, staff had not been able to determine a definite answer to item a.i. in the checklist. More details about this area will have to be developed in the EIR.

⁸⁷ EIR – SWRCB General Composting Order, 2015.

8.18.2. Conclusion

There is the potential for potentially significant environmental impacts that can be reduced to less than significant impacts with mitigation incorporated.

8.18.3. Mitigation measures

Mitigation measures include having an archeologist on site during the time of excavation, avoiding known areas of tribal cultural resources, protecting the resource, and permanent conservation easements that will preserve the resource.

8.19. Utilities and Service Systems

Table 8-18. Utilities and service systems, environmental checklist

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
18. UTILITIES AND SERVICE SYSTEMS. Would the project:					
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
g) Comply with federal , state , and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

8.19.1. Discussion

The Agricultural Order would likely result in a beneficial effect, if any, to utilities and service systems by improving water quality and thereby potentially lessening the burden on existing water treatment facilities. The Agricultural Order would result in no foreseeable significant impacts that would cause a burden on existing utilities or service systems.⁸⁸

8.19.2. Conclusion

There should be no impact (Table 9-18, 18.b – 18.g) on utilities and service systems from implementation of the Agricultural Order. For Table 9-18, 18.a, the environmental impacts should be beneficial.

8.20. Mandatory Findings of Significance

Table 8-19. Mandatory findings of significance, environmental checklist.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
19. MANDATORY FINDINGS OF SIGNIFICANCE					
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

⁸⁸ Central Valley Water Board (R5), [Draft Programmatic EIR for their Irrigated Lands Regulatory Program](#) (2010).

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Potentially Beneficial
past projects, the effects of other current projects, and the effects of probable future projects)?					
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

8.20.1. Discussion

Biological species

CEQA guidelines set forth certain mandatory findings of significance. If the project has the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, or substantially reduce the number or restrict the range of an endangered, rare or threatened species, the lead agency must make a mandatory finding of significance and complete an EIR.⁸⁹

The main issue associated with selecting a potentially significant impact for 19.a. is based on the flow issues identified in the Biological Resources Section 8.5. Besides identification of flow issues that may affect aquatic habitat and aquatic organisms, the goal of the Agricultural Order is to improve water quality, which should ultimately result in reduced effects on aquatic habitat and aquatic organisms.

Cumulative impacts

This project will likely have cumulative impacts. When this Order goes before the Central Coast Water Board in March 2020, this will be the fourth iteration of an Agricultural Order. CEQA defines effects as cumulative if “incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” Because this Order builds upon past Orders, the effects of regulating discharges from irrigated agricultural are cumulative.

For example, a grower may have improved irrigation efficiencies as a method of complying with Agricultural Order 2017. This may be considered an environmental effect, depending on the amount tailwater reduced by this practice. To comply with the 2020 Order, this same grower may install a sedimentation basin to capture the remaining runoff. Implementation of these two management measures together, due to regulations from Agricultural Order 2017 and then Agricultural Order 2020, would be considered a cumulative effect.

Adverse effects on human beings

This project should not cause substantial adverse effects on human beings, either directly or indirectly.

The Agricultural Order will seek to reduce/eliminate toxicity leaving farms, which should have a positive impact on human health.

⁸⁹ CCR 15065 (a)(1)

8.20.2. Conclusion

More research will have to be performed to answer these questions more robustly. In this Initial Study, we anticipate potentially significant impacts in 19.a and 19b while 19.c should be less than significant with mitigation incorporated.

9. Conclusion

This Initial Study provides a *cursory* analysis of the potentially significant environmental impacts associated with complying with the Agricultural Order. More research and work will be performed in the EIR to further develop the details associated with potentially significant environmental impacts. The intention of publishing this document is to provide the public an opportunity to provide early input and show transparency in our actions. We also set forth this document early, before the details of the Agricultural Order are defined, to determine if there are ways we can reduce any potentially significant environmental impacts.

The Board's intent in adopting the Agricultural Order is to improve water quality, which is a beneficial environmental impact. In our estimation, the project's benefits override and outweigh its potential unavoidable significant adverse impacts. The Central Coast Water Board has the authority and responsibility to regulate discharges of waste associated with irrigated agriculture. Many of those discharges have caused significant widespread degradation and pollution of waters of the state as described in the 2017 Agricultural Order and Staff Report and associated reference materials.

While some impacts could occur from implementing actions to comply with the Order, the benefits, which include contributing to the present and future restoration of beneficial water uses and reducing or eliminating pollution, nuisance, and contamination, warrant approval of the project, despite potential adverse impacts.

10. Reference Relied Upon

Adams, Edward B., in cooperation with Washington State Department of Ecology, Washington State University Cooperative Extension, and U.S. Department of Agriculture. Farming Practices for Groundwater Protection. EB1716.
<https://research.wsulibs.wsu.edu/xmlui/bitstream/handle/2376/6781/eb1716.pdf?sequence=1&isAllowed=y>. Published August 1992.

American Geosciences Institute. "How do groundwater and surface water interact?"
<https://www.americangeosciences.org/critical-issues/faq/how-do-groundwater-and-surface-water-interact>, accessed 10/6/2017.

California Code of Regulations (CCR)

- 15060
- 15063(C)(3)(A-C)
- 15063(a)
- 15063(d)(6)
- 15063(g)
- 15065 (a)(1)
- 15081
- 15125(a)

15378
15386
Exemptions - 15260, 15268, 15300

California Department of Conservation. Farmland Mapping and Monitoring Program (FMMP)
<http://www.conservation.ca.gov/dlrp/fmmp> - Important Farmland Categories, shapefiles
accessed 10/5/2017.

California Department of Fish and Wildlife. California Natural Diversity Database (CNDDDB)
<https://www.wildlife.ca.gov/Data/CNDDDB/About>. Information accessed 10/5/2017.

California Department of Pesticide Regulation. Pest Management Strategy for the State of California. A Strategy to increase the Adoption of Reduced-Risk Pest Management Practices.
<http://www.cdpr.ca.gov/docs/pestmgt/peststr/pmstrat3.htm>. November 1995, downloaded 1/26/2018.

California Department of Water Resources. Land Use Data (shapefiles).
<http://water.ca.gov/landwateruse/lusrvymain.cfm> accessed 11/9/2017.

California Water Code, Section 13050, "waste" definition.

Clean Water Act, Section 502, "pollutants" definition.

Coastal Resources Institute. "A Study of the Paso Robles Ground Water Basin to Establish Best Management Practices and Establish Salt Objectives", June 1993, as cited in the Central Coastal Basin Plan, September 2017 edition.

Conservation Technology Information Center. Indiana.
<http://www.ctic.purdue.edu/Core4/Conservation%20Choices/Conservation%20Practices/>

Government Code Section 51220(a)-(f).
http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=51220.&lawCode=GOV Accessed December 2017.

Luhdorff and Scalmanini Consulting Engineers. April 2009. Originally referenced in Agricultural Order 3.0, Attachment A, finding no. 5.

Lunt, Jessica; Delbert Smee. "Turbidity interferes with foraging success of visual but not chemosensory predators," PeerJ. September 2015. 8;3:e1212.

Monterey Bay Unified Air Pollution Control District. [CEQA Air Quality Guidelines](#). Specifically, see section 8. 2008.

Monterey County Water Resources Agency, 2007; originally referenced in Agricultural Order 3.0, Attachment A, finding no. 5.

Monterey County Water Resources Agency. Salinas Valley Water Project.
<http://www.co.monterey.ca.us/government/government-links/water-resources-agency/projects-facilities/salinas-valley-water-project-svwp#wra>, accessed 12/14/2017.

National Oceanic and Atmospheric Administration (NOAA), National Centers for Environmental Information <https://www.ncdc.noaa.gov/>. Accessed December 2017. Data for all drainages, courtesy of <https://www.ncdc.noaa.gov/cag/time-series> (data obtained through the web interface).

Natural Resources Conservation Service, Conservation Practice Standard, Nutrient Management, Code 590.
https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1046896.pdf January 2012.

Pajaro Valley Water Management Agency, PVWMA 2002; originally referenced in Agricultural Order 3.0, Attachment A, finding no. 5.

Personal Communication. Central Coast Water Board staff Shanta Keeling made telephone calls and/or emails to all Trustee Agencies and other interested agencies between November 2017 and February 2018.

Pesticide Action Network (PAN). California, stop the drift, August 11, 2017.

Pesticide Action Network (PAN). Kern Farmworkers Sickened Again by Pesticide Drift, August 2, 2017.

Pesticide Action Network (PAN). Pesticide incident sends 18 farmworkers to hospital, June 27, 2017.

Public Resources Code (PRC)

21065

21067

21069

21070

Regional Water Quality Control Board, Central Coast Region, Agricultural Order 3.0, Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands. Resolution number R3-2017-0002, adopted March 8, 2017.
https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/

Regional Water Quality Control Board, Central Coast Region. Agricultural Order's Final Subsequent EIR. March 17, 2011.

Regional Water Quality Control Board, Central Coast Region. Annual Compliance Form, self-reporting from growers. This information from a January 1, 2018 data download.

Regional Water Quality Control Board, Central Coast Region. Staff James Bishop, engineering geologist, groundwater analysis. January 2018.

Regional Water Quality Control Board, Central Coast Region. Staff Peter Osmolovsky, Engineering Geologist. "DRAFT Technical Memo on Wetlands and Riparian Habitat." September 2017.

Regional Water Quality Control Board, Central Coast Region. Staff Report, 2014 Integrated Report Assessing Waters of the Central Coast Region- Clean Water Act (CWA) Section 303(d) List of Water Segments not Meeting Water Quality Standards and CWA Section 305(b), Water

Quality Condition Report, summary.

[https://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/303\(d\)_2014_attachments/item15_staff_report.pdf](https://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/303(d)_2014_attachments/item15_staff_report.pdf).

Regional Water Quality Control Board, Central Coast Region. "[Water Quality Control Plan for the Central Coastal Basin \(Basin Plan\)](#)," 2017 edition.

Regional Water Quality Control Board, Central Valley Water Board, Region 5, Draft Environmental Impact Report, July 2010.

https://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_land/regulatory_information/program_environmental_impact_report/index.shtml

Regional Water Quality Control Board, North Coast Region. Staff Report Supporting the Policy for the Implementation of the Water Quality Objectives for Temperature and Action Plan to Address Temperature Impairment in the Mattole River Watershed, Action Plan to Address Temperature Impairment in the Navarro River Watershed, and Action Plan to Address Temperature Impairment in the Eel River Watershed.

https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/140516_temp/140327_Temp_Policy_Staff_Report_ADOPTED.pdf. March 13, 2014.

San Luis Obispo County, *Agricultural Element*, Adopted by the San Luis Obispo County Board of Supervisors, December 15, 1998, revised May 2010.

Santa Barbara County, Planning and Development. Environmental Thresholds and Guidelines Manual, which cites the County's (Santa Barbara) Comprehensive Plan Land Use Element, the Environmental Resources Management Element (ERME), the Local Coastal Plan, the Agricultural Element, and adopted Community Plans. Published October 2008 and revised July 2015.

Santa Maria, City of – Initial Study/Negative Declaration for the Santa Maria Bio-filter project, February 26, 2016.

Science News. Fertilizer produces far more greenhouse gas than expected.

<https://www.sciencenews.org/article/fertilizer-produces-far-more-greenhouse-gas-expected>, June 9, 2014, accessed 12/13/2017.

State of California, Department of Conservation. The Land Conservation Act commonly referred to as the Williamson Act. <http://www.conservation.ca.gov/dlrp/lca>

State Water Resources Control Board. [Environmental Impact Report. General Waste Discharge Requirements for Composting Operations](#). August 4, 2015.

State Water Resources Control Board, GeoTracker GAMA (Groundwater Ambient Monitoring and Assessment) online database, <http://geotracker.waterboards.ca.gov/gama/>.

State Water Resources Control Board. "Water Rights, frequently asked questions."

https://www.waterboards.ca.gov/waterrights/board_info/faqs.html#surfacewater, accessed 2/7/2018.

Technologies and practices for small agricultural producers. Step by Step Conversion to Organic Agriculture. <http://teca.fao.org/read/8364>, downloaded 1/26/2018.

United States Department of Agriculture-Natural Resources Conservation Service Standard 590. <http://www.aces.edu/departments/aawm/NutrientManagement/590.pdf>

United States Environmental Protection Agency (USEPA) Memorandum, Information Concerning 2016 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions. https://www.epa.gov/sites/production/files/2015-10/documents/2016-ir-memo-and-cover-memo-8_13_2015.pdf. August 13, 2015, accessed 10/6/2017.

United States Geologic Survey (USGS). Watershed Boundary Dataset (WBD) <https://nhd.usgs.gov/wbd.html>. WBDs for this project used the 9/7/2017 dataset.

United States Environmental Protection Agency (USEPA). Overview of Greenhouse Gases. <https://www.epa.gov/ghgemissions/overview-greenhouse-gases#nitrous-oxide>, accessed 12/13/2017.

University of California at Davis, Agricultural Sustainability Institute. Nitrogen Assessment. Challenges and solutions for People, Agriculture, and the Environment. http://asi.ucdavis.edu/programs/sarep/research-initiatives/are/nutrient-mgmt/california-nitrogen-assessment/ExecutiveSummaryLayout_FINAL_reduced.pdf June 2016. Downloaded 12/8/2017.

United States Environmental Protection Agency (USEPA). Using Trees and Vegetation to Reduce Heat Islands. <https://www.epa.gov/heat-islands/using-trees-and-vegetation-reduce-heat-islands>, accessed 12/14/2017.

United States Environmental Protection Agency (USEPA). Sources of Greenhouse Gas Emissions, Agriculture Sector Emissions. <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions#agriculture>, accessed 12/13/2017.

United States Environmental Protection Agency (USEPA). Integrated Pest Management Principles. <https://www.epa.gov/safepestcontrol/integrated-pest-management-ipm-principles>, last updated June 27, 2017; downloaded 1/26/2018.

United States Geologic Survey (USGS). Land Subsidence in California. https://ca.water.usgs.gov/land_subsidence/, accessed 1/28/2018.

United States Environmental Protection Agency (USEPA). Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters. <https://www.epa.gov/nps/guidance-specifying-management-measures-sources-nonpoint-pollution-coastal-waters>, (EPA 840-B-92-002). Chapters 1-2. January 1993.

United States Environmental Protection Agency (USEPA). National Management Measures to Control Nonpoint Source Pollution from Agriculture. <https://www.epa.gov/nps/national-management-measures-control-nonpoint-source-pollution-agriculture> (EPA 841-B-03-004), July 2003.

University of Illinois, Extension. 60 ways farmers can protect surface water. <http://www.thisland.illinois.edu/60ways/60ways.html> Accessed 1/9/2018.