California Environmental Quality Act (CEQA) Checklist and Analysis Report

to support

Total Maximum Daily Load for Total Phosphorus To Address Cyanobacteria Blooms in Pinto Lake

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Draft CEQA Checklist and Analysis Report

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Prepared under the California Environmental Quality Act (CEQA) Requirements of a Certified Regulatory Program

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California Environmental Quality Act Checklist and Analysis Report

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Total Maximum Daily Load for Total Phosphorus to Address Cyanobacteria Blooms in Pinto Lake (Resolution No. R3-2020-0034)

A Proposed Amendment to the Water Quality Control Plan for the Central Coastal Basin

Central Coast Regional Water Quality Control Board

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1. INTRODUCTION

The purpose of this report is to undertake an environmental review pursuant to the requirements of the California Environmental Quality Act (CEQA). Simply put, CEQA is a process designed to reveal potential adverse environmental impacts of a project. CEQA is California's broadest environmental law and helps guide public agencies during the approval of discretionary projects. Pursuant to state regulations[1] a government agency is required to comply with CEQA procedures when the agency proposes to carry out or approve an activity that is subject to CEQA.

> *"The California Environmental Quality Act (CEQA) requires that a public agency consider, as part of the decision-making process, the potential significant environmental effects of discretionary projects that it undertakes, funds, or authorizes and to avoid or mitigate those impacts, if feasible."*
>
> ➔ Metropolitan Water District of Southern California, CEQA summary

1.1. CEQA General Concepts

The overall goal of CEQA is to afford the environment the fullest possible protection:

> *"CEQA is intended to be interpreted in a manner that affords the fullest possible protection of the environment."*
>
> ➔ *Friends of Mammoth v. Board of Supervisors 8 Cal.3d 247*

As an administrative and legal process, CEQA is designed in a way to ensure public participation in government decision-making,

> *What is CEQA?*
>
> - *A process designed to reveal potential environmental impacts of a project*
> - *A vehicle that empowers citizens to influence environmental decision-making*
>
> ➔ *State Water Resources Control Board, Training Academy, CEQA for Certified Regulatory Programs, April 21,-23, 2008.*

A public agency must comply with CEQA when it undertakes an activity defined by CEQA as a "project." Thus, when the Central Coast Regional Water Quality Water Board[2] considers adoption of policies or plans that have potential to result in significant environmental impacts, those Board actions may be subject to compliance with CEQA[3].

The total maximum daily load (TMDL) project for Pinto Lake is an amendment to the Water Quality Control Plan for the Central Coastal Basin (Basin Plan) and therefore must address CEQA requirements. The Central Coast Regional Water Quality Control Board (Central Coast Water Board) is the lead agency under CEQA for evaluating the environmental impacts of the proposed amendment to the Basin Plan.

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[1] 14 California Code of Regulations (CCR) section 15002(e)

[2] Hereafter, referred to as the Central Coast Water Board.

[3] Some discretionary actions by the Central Coast Water Board, such as issuance of certain types of permits or waste discharge requirements, are exempt from CEQA.

"The [Regional Water Quality Control Boards] must comply with the California Environmental Quality Control Act when they amend their Basin Plans. CEQA requires that the RWQCBs analyze the reasonably foreseeable methods of compliance with proposed performance standards and treatment requirements."*

➔ State of California S.B. 469 TMDL Guidance, A Process for Addressing Impaired Waters in California, approved by Resolution 2007-0050

* Parenthetical clarification added by Central Coast Water Board staff

TMDL projects are plans or strategies to restore clean water. TMDLs are often adopted as basin plan amendments to the state's water quality control plans[4]. The Central Coast Water Board is required to develop and adopt TMDLs and associated implementation plans for surface waters that are not attaining water quality standards[5].

"CEQA, or the California Environmental Quality Act, is a statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible."

➔ California Natural Resources Agency webpage, accessed June 2017

1.2. Project Description

Pursuant to CEQA regulations[6], a "project" means the whole of an action, which has a potential for resulting in either direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.

A project description[7] is an essential element or starting point for every CEQA environmental document. A project description is a brief summary of the proposed action being contemplated and provides the focus for the environmental review. Text Box 1 presents a description of the Pinto Lake TMDL project.

Text Box 1. TMDL Project description.

TMDL Project Description: The Central Coast Water Board proposes an amendment to the Basin Plan to incorporate *Total Maximum Daily Load for Total Phosphorus to Address Cyanobacterial Blooms in Pinto Lake*. The TMDL project applies to Pinto Lake and areas draining to the lake, and includes the required elements[8] of a TMDL including an implementation strategy for the attainment of water quality standards. An implementation strategy contains a description of the regulatory and/or non-regulatory actions needed to restore or maintain water quality, and a discussion of potential management practices and additional investigation(s) that might be required to achieve water quality goals.

[4] The Basin Plan may be amended in accordance with California Water Code (Water Code) section 13240, et. seq

[5] 40 CFR 130.6(c)(1), 130.7, Water Code section 13242.

[6] 14 CCR. Division 6. Chapter 3. Guidelines for Implementation of the California Environmental Quality Act.

[7] 14 CCR. Division 6. Chapter 3. section 15378(a).

[8] State Water Resources Control Board TMDL webpage: http://www.waterboards.ca.gov/water_issues/programs/tmdl/background.shtml#elements

Pursuant to Public Resources Code section 21080.5, the California Natural Resources Agency has approved the Regional Water Quality Control Boards' basin planning process as a "certified regulatory program" that adequately satisfies the CEQA requirements for preparing environmental documents[9]. Central Coast Water Board staff has prepared Substitute Environmental Documentation (SED) for this project that contain the required environmental documentation as set forth in the State Water Resources Control Board's CEQA regulations (23 CCR section 3777). The SED includes the TMDL Staff Report and its attachments, including this CEQA Checklist and Analysis.

This CEQA Checklist and Analysis analyzes environmental impacts that may occur from reasonably foreseeable methods of implementing the TMDL for total phosphorus.

The SED will be considered for approval by the Central Coast Water Board when it considers adoption of the TMDL for total phosphorus (draft Resolution No. R3-2020-0034). Approval of the SED includes the process of: (1) addressing comments, (2) confirming that the Central Coast Water Board considered the information in the SED, and (3) affirming that the SED reflects independent judgment and analysis by the Central Coast Water Board of CEQA Guidelines (14 CCR section 15090).

1.3. Project Area

Pinto Lake and several creek tributaries are not attaining water quality standards due to nutrient-related impairments, thus requiring TMDL development. The geographic scope of this TMDL project[10] encompasses approximately 1,470 acres of the Pinto Lake catchment located in Santa Cruz County (see Figure 1), north of the City of Watsonville.

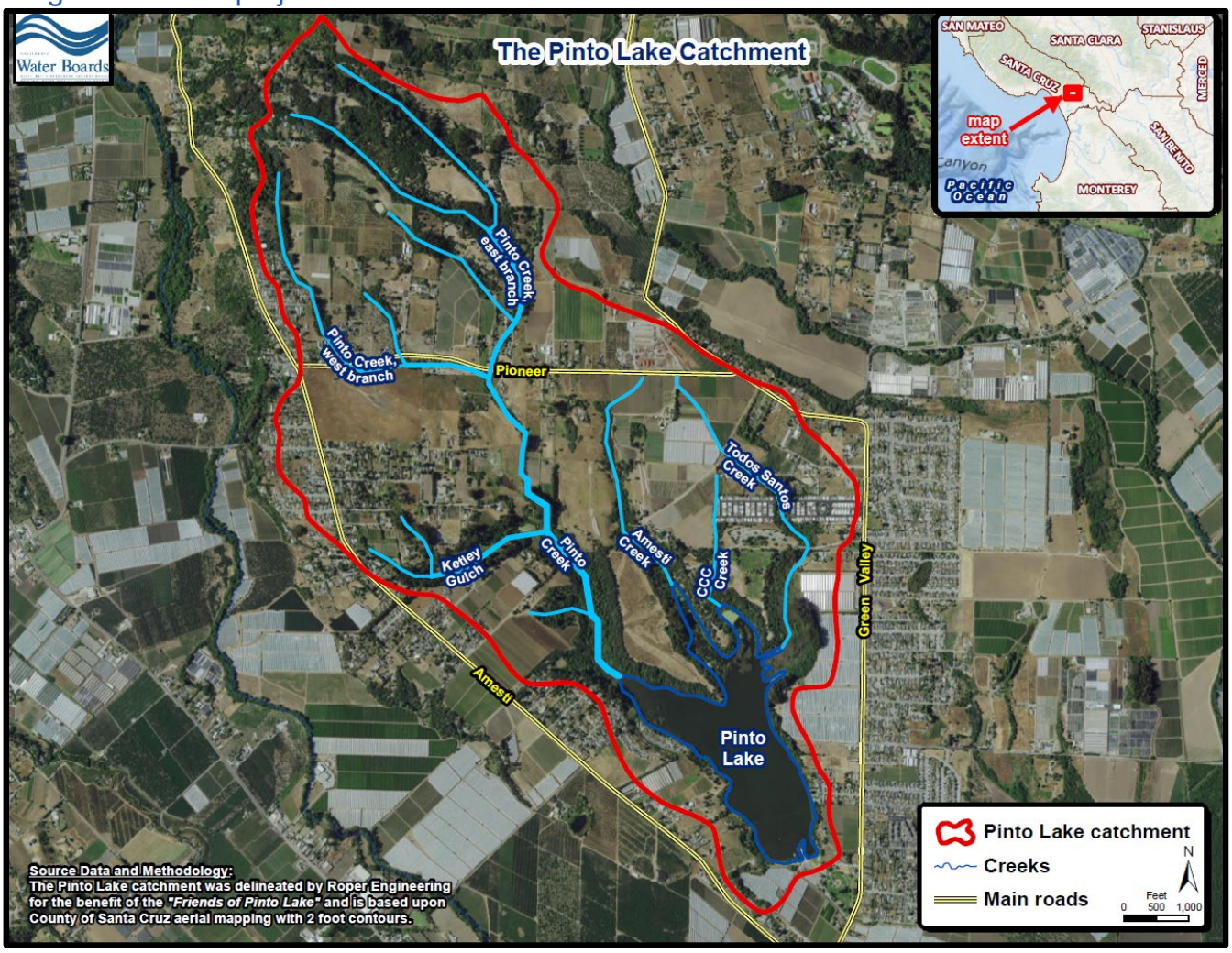
Pinto Lake is a natural, perennial lake that has existed for at least 8,000 years as a result of a tectonically-driven local topographic depression (Plater et al., 2006). The lake is an important recreational and aesthetic resource for the public, and historically has provided high quality habitat for aquatic species and wildlife.

Descriptions of the lake catchment setting, including current land use and land cover, human population, hydrology, geomorphology, climate, groundwater, geology, soils, aquatic habitat, and fish are presented in the associated TMDL report entitled *"Total Maximum Daily Load for Total Phosphorus to Address Cyanobacteria Blooms".*

[9] 14 CCR. Division 6. Chapter 3. Article 17 section 15251(g);

[10] In the context of this TMDL project, the terms "TMDL project area" and "Pinto Lake catchment" are used interchangeably and refer to the same geographic area.

Figure 1. TMDL project area – the Pinto Lake catchment.



The goal of this TMDL project is the restoration and protection of designated beneficial uses[11] of streams in Pinto Lake and its tributaries. All waterbodies are designated specific beneficial uses in the Basin Plan. Designated beneficial uses of Pinto Lake include: Municipal and Domestic Supply (MUN), Agricultural Supply (AGR), Ground Water Recharge (GWR), Water Contact Recreation (REC-1), Non-Contact Water Recreation (REC-2), Wildlife Habitat (WILD), Warm Fresh Water Habitat (WARM), Spawning, Reproduction, and/or Early Development (SPWN), and Commercial and Sport Fishing (COMM). Waterbodies not named in table 2-1 of the Basin Plan are designated MUN beneficial uses and protection of both recreation and aquatic life.

The 303(d) List waterbodies with nutrient or potential nutrient-related impairments in the Pinto Lake catchment are shown in Table 1. Because water quality data used for the 2014-2016 303(d) List (the current USEPA approved 303(d) List) are of older vintage (2010 is the most recent data associated with this list), additional water pollution problems were identified on the basis of more recent vintage data during development of a TMDL addressing cyanobacterial blooms. These additional impairments can be found in the associated TMDL

[11] See Chapter 2 of the Water Quality Control Plan for the Central Coastal Basin (June 2011).

report entitled *"Total Maximum Daily Load for Total Phosphorus to Address Cyanobacteria Blooms".*

Table 1. 2014-2016 303(d) List of nutrient or nutrient-related impairments in the Pinto Lake catchment.

Water Body Name	USGS Watershed Cataloging Unit*	Pollutant	Pollutant Category	Final Listing Decision
Pinto Lake	18060002 (Pajaro River basin)	Ammonia	Nutrients	List on 303(d) List (TMDL required list)
Pinto Lake	18060002 (Pajaro River basin)	Chlorophyll-a	Nutrients	List on 303(d) List (TMDL required list)
Pinto Lake	18060002 (Pajaro River basin)	Cyanobacteria hepatotoxic microcystins	Miscellaneous	List on 303(d) List (TMDL required list)
Pinto Lake	18060002 (Pajaro River basin)	Low Dissolved Oxygen	Nutrients	Do Not Delist from the 303(d) List (TMDL required list)
Pinto Lake	18060002 (Pajaro River basin)	Scum/Foam-unnatural	Nuisance	List on 303(d) List (TMDL required list)
Pinto Lake	18060002 (Pajaro River basin)	pH	Miscellaneous	List on 303(d) List (TMDL required list)

Practically speaking, a TMDL a pollutant budget[12] (aka, the "loading capacity"[13] in Clean Water Act terminology) for a surface waterbody. The TMDL distributes, or "allocates" the waterbody's loading capacity among the various sources of that pollutant. Pollutant sources characterized as point sources receive waste load allocations[14], nonpoint sources of pollution receive load allocations[15].

All identified allocations will be implemented through regulatory and non-regulatory actions consistent with California's Impaired Waters Policy[16].

[12] See: Water Research Foundation in collaboration with USEPA, 2010. *Drinking Water Source Protection Through Effective Use of TMDL Process.*

[13] Loading capacity – the greatest amount of a pollutant that a water can assimilate and still meet water quality standards.

[14] The portion of a receiving water's loading capacity that is allocated to NPDES-permitted point sources of pollution.

[15] The portion of the receiving water's loading capacity attributed to (1) nonpoint sources of pollution and (2) natural background sources.

[16] Formally known at the *Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options* (July 2005, adopted by Resolution 2005-0050).

2. REGULATORY REQUIREMENTS FOR ENVIRONMENTAL IMPACT ANALYSIS

This section presents the regulatory requirements for assessing environmental impacts of TMDLs implemented through a Basin Plan amendment. The proposed TMDL addressing cyanobacterial blooms in the Pinto Lake catchment (draft Resolution No. R3-2020-0034) are evaluated at a program level of detail under a Certified Regulatory Program and the information and analyses are presented in the SED, including this CEQA Checklist and Analysis.

The Staff Report and its attachments, including this CEQA Checklist and Analysis, together with responses to comments and the resolution approving the amendment, fulfill the requirements of California Code of Regulations (23 CCR section 3777 (a)), and the Central Coast Water Board's substantive CEQA obligations. In preparing these CEQA SED documents, the Central Coast Water Board considered the requirements of Public Resources Code section 21159 and 14 CCR section 15187, and intends the SED to serve as a tier-one environmental review.

Any potential environmental impacts associated with implementation of this TMDL project depend upon the specific compliance projects selected by the responsible parties, some of whom are public agencies subject to their own CEQA obligations (see Pub. Res. Code section 21159.2). There could be adverse environmental impacts if the responsible parties do not properly mitigate the effects at the project level. The SED identifies mitigation measures that should be implemented where necessary at the project level. Consistent with CEQA, the SED does not engage in speculation or conjecture but rather considers the reasonably foreseeable feasible mitigation measures, and the reasonably foreseeable alternative means of compliance, which would avoid, eliminate, or reduce the identified impacts.

2.1. Exemption from Certain CEQA Requirements

The California Secretary of Resources has certified the State and Regional Water Boards' basin planning process as exempt from certain requirements of CEQA, including preparation of an initial study, negative declaration, and environmental impact report (14 CCR section 15251(g)). As the proposed amendment to the Basin Plan is part of the basin planning process, the environmental information developed for and included with the amendment can substitute for an initial study, negative declaration, and/or environmental impact report.

2.2. California Code of Regulations and Resources Code Requirements

While the "certified regulatory program" of the Central Coast Water Board is exempt from certain CEQA requirements, it is subject to the substantive requirements of 23 CCR section 3777(a), which requires a written report that includes a description of the proposed activity, an analysis of reasonable alternatives, and an identification of mitigation measures to minimize any significant adverse environmental impacts. Section 3777(a) also requires the Central Coast Water Board to complete an environmental checklist as part of its SED. This checklist is provided in Section 6 of this document.

In addition, the Central Coast Water Board must fulfill substantive obligations when adopting performance standards such as TMDLs, as described in Public Resources Code section

21159. Section 21159, allows expedited environmental review for mandated projects, provides that an agency shall perform, at the time of the adoption of a rule or regulation requiring the installation of pollution control equipment, or a performance standard or treatment requirement, an Environmental Analysis of the reasonably foreseeable methods of compliance. The statute further requires that the environmental analysis at a minimum, include, all of the following:

> (1) An analysis of the reasonably foreseeable environmental impacts of the methods of compliance;
>
> (2) An analysis of reasonably foreseeable feasible mitigation measures to lessen the adverse environmental impacts; and
>
> (3) An analysis of reasonably foreseeable alternative means of compliance with the rule or regulation that would have less significant adverse impacts (Pub. Resources Code, section 21159(a)).

Section 21159(c) requires that the Environmental Analysis take into account a reasonable range of:

> (1) Environmental, economic, and technical factors;
>
> (2) Population and geographic areas; and
>
> (3) Specific sites.

2.3. Program and Project Level Analyses

Public Resources Code section 21159(d) specifically states that the public agency is not required to conduct a "project level analysis." Rather, a project level analysis must be performed by the local agencies that will implement the TMDLs (Pub. Res. Code section 21159.2.) Notably, the Central Coast Water Board is prohibited from specifying the manner of compliance with its regulations (Water Code section 13360), and accordingly, the actual environmental impacts will necessarily depend upon the compliance strategy selected by responsible parties.

This CEQA Checklist and Analysis identifies the reasonably foreseeable environmental impacts of the reasonably foreseeable methods of compliance (Pub. Res. Code, section 21159(a)(1)), based on information developed before, during, and after the CEQA scoping process that is specified in Public Resources Code section 21083.9. This analysis is a program level (i.e., macroscopic) analysis. CEQA requires the Central Coast Water Board to conduct a program level analysis of environmental impacts (Pub. Res. Code, section 21159(d)). Similarly, the CEQA Checklist and Analysis does not engage in speculation or conjecture (Pub. Res. Code, section 21159(a)). When the CEQA analysis identifies a potentially significant environmental impact, the accompanying analysis identifies reasonably foreseeable feasible mitigation measures (Pub. Res. Code, section 21159(a)(2)). Because responsible parties will most likely use a combination of implementation alternatives, the CEQA Checklist and Analysis has identified the reasonably foreseeable alternative means of compliance (Pub. Res. Code, section 21159(a)(3)).

2.4. Purpose of CEQA

CEQA's basic purposes are to: 1) inform the decision makers and public about the potential significant environmental effects of a proposed project, 2) identify ways that environmental damage may be mitigated, 3) prevent significant, avoidable damage to the environment by requiring changes in projects, through the use of alternative or mitigation measures when feasible, and 4) disclose to the public why an agency approved a project if significant effects are involved. (14 CCR section 15002(a).)

To fulfill these functions, a CEQA review need not be exhaustive, and CEQA documents need not be perfect. They need only be adequate, complete, and good faith efforts at full disclosure. (14 CCR section 15151.)

> *"An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure."*
>
> ➔ 14 CCR section 15151.

The California Appellate Court stated in *River Valley Preservation Project v. Metropolitan Transit Development Board* (1995) 37 Cal.App.4th 154, 178:

> *"[a]s we have stated previously, "[our] limited function is consistent with the principle that [t]he purpose of CEQA is not to generate paper, but to compel government at all levels to make decisions with environmental consequences in mind…" "We look 'not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.'*

Nor does a CEQA review require unanimity of opinion among experts. The analysis is satisfactory as long as those opinions are considered.

In this document, Central Coast Water Board staff has performed a good faith effort at full disclosure of the reasonably foreseeable environmental impacts that could be attendant with the proposed TMDL for phosphorus in the Pinto Lake catchment.

2.5. Determining Significant Impacts and Thresholds of Significance

A key component of CEQA review is determining whether adverse environmental impacts are significant. A significant effect on the environment is defined as a substantial or potentially substantial adverse change in the physical conditions of the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance (Public Resource Code section 21068, 21100(d); 14 CCR section 15382).

To assess the impact of a proposed project on the environment, the lead agency examines the changes to existing environmental conditions that would occur in the affected area if the proposed project were implemented (14 CCR section 15125.2, subd.(a); *San Joaquin Raptor*

Rescue Center v. County of Merced (2007) 149 Cal. App.4th 645). The basis of determining whether an impact is potentially significant is the comparison of project impacts to thresholds of significance for protecting the resource. Thresholds of significance are quantitative or qualitative analytical criteria used to determine the effects of a project on the environment. CEQA does not promulgate specific thresholds for significance, but instead states that "the determination…calls for careful judgment on the part of the agency involved, based to the extent possible on scientific and factual data"[17] and that "an ironclad definition of significant effect is not possible because the significance of an activity may vary with the setting".[18] Thus, thresholds of significance may vary with the setting of any given TMDL project and may be developed on the basis of an individual project. CEQA does *encourage* (emphasis added) lead agencies to develop and publish their own thresholds of significance the agency uses in the determination of the significance of environmental effects of their projects[19].

3. ENVIRONMENTAL SETTING OF THE CATCHMENT

This section describes the current environmental conditions of project area, the Pinto Lake catchment. The catchment environmental setting is also described in detail in the TMDL report associated with this CEQA analysis and entitled: *Total Maximum Daily Load for Total Phosphorus to Address Cyanobacteria Blooms (Draft Resolution No. R3-2020-0034).*

Aesthetic Resources: Currently, there are no California Department of Transportation–designated scenic highways or scenic vistas in the Pinto Lake catchment nor are there any National Wild and Scenic Rivers[20] or Nationwide Rivers Inventory[21] river segments in the catchment (see Figure 2). Other visual resources identified and discussed by the counties, and policies regarding protection of visual resources in the Pinto Lake catchment are available in the General Plan of Santa Cruz County.

[17] CEQA guidelines 14 CCR section 15064(b)

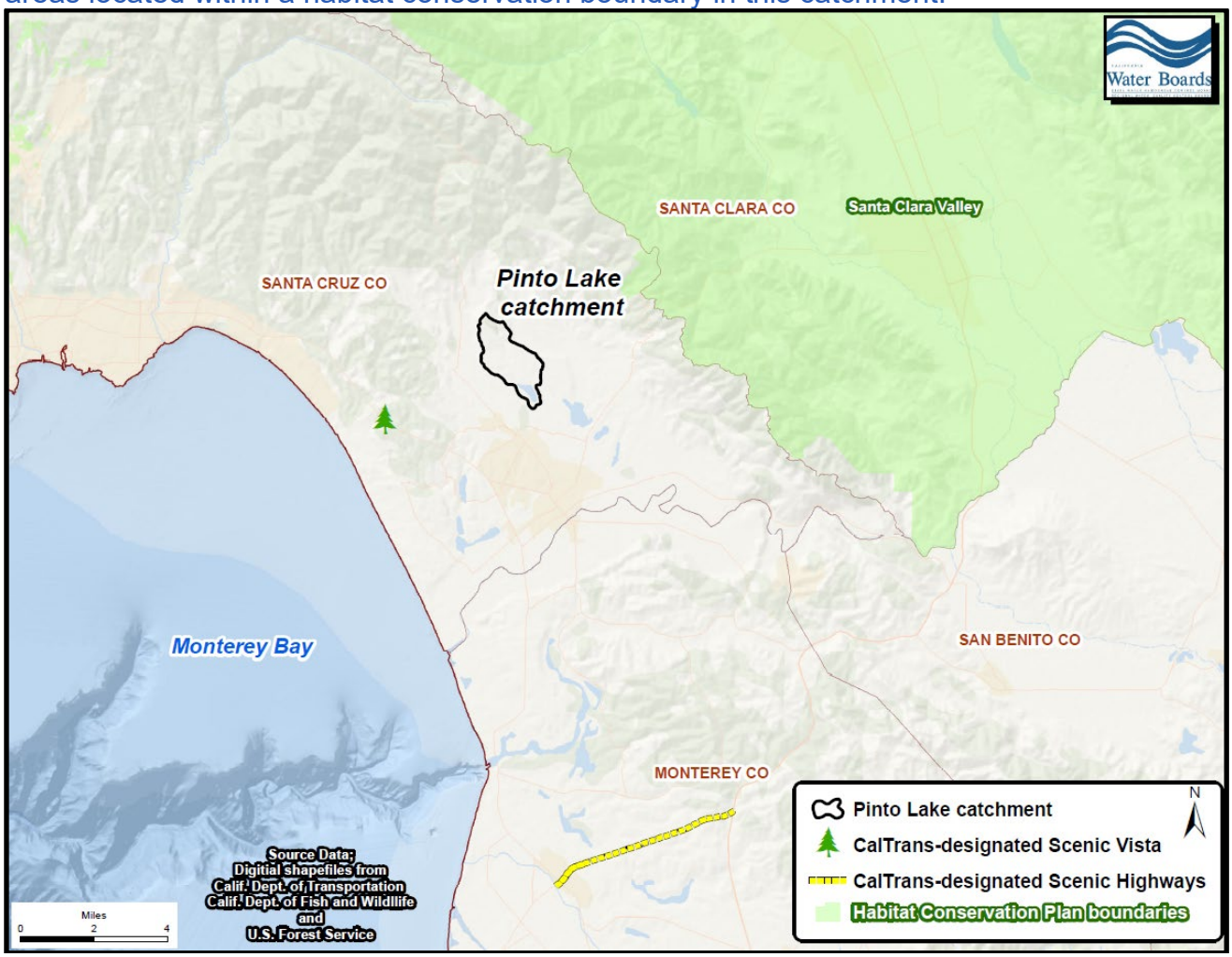
[18] *Ibid*

[19] CEQA guidelines 14 CCR section 15064.7(a)

[20] The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations.

[21] The Nationwide Rivers Inventory is a listing of river segments in the United States that are believed to possess one or more "outstandingly remarkable" natural or cultural values judged to be of more than local or regional significance.

Figure 2. Resources designated by state or federal agencies for outstanding aesthetic, natural, or visual value in central California. Additionally, habitat conservation plan areas are included on this map. Note that there are no designated scenic vistas, scenic highways, or areas located within a habitat conservation boundary in this catchment.



Land Use and Land Cover: Figure 3 illustrates land use and land cover in the Pinto Lake catchment. Table 2 tabulates the distribution of land cover in the Pinto Lake catchment. Half of the catchment is comprised of “other land” which is comprised of woodland, undeveloped or restricted areas. Agricultural lands make up just under a quarter of the land use in the catchment and urban lands make up about 15% of the area (see Figure 3). Grazing land and open water make up approximately the same amount of area (see Table 2). The human population in the Pinto Lake catchment is approximately 2,025 people, with an average of 3.2 people per housing unit according to 2010 Census Bureau data.

Figure 3. Land use - land cover in the Pinto Lake catchment (year 2014).

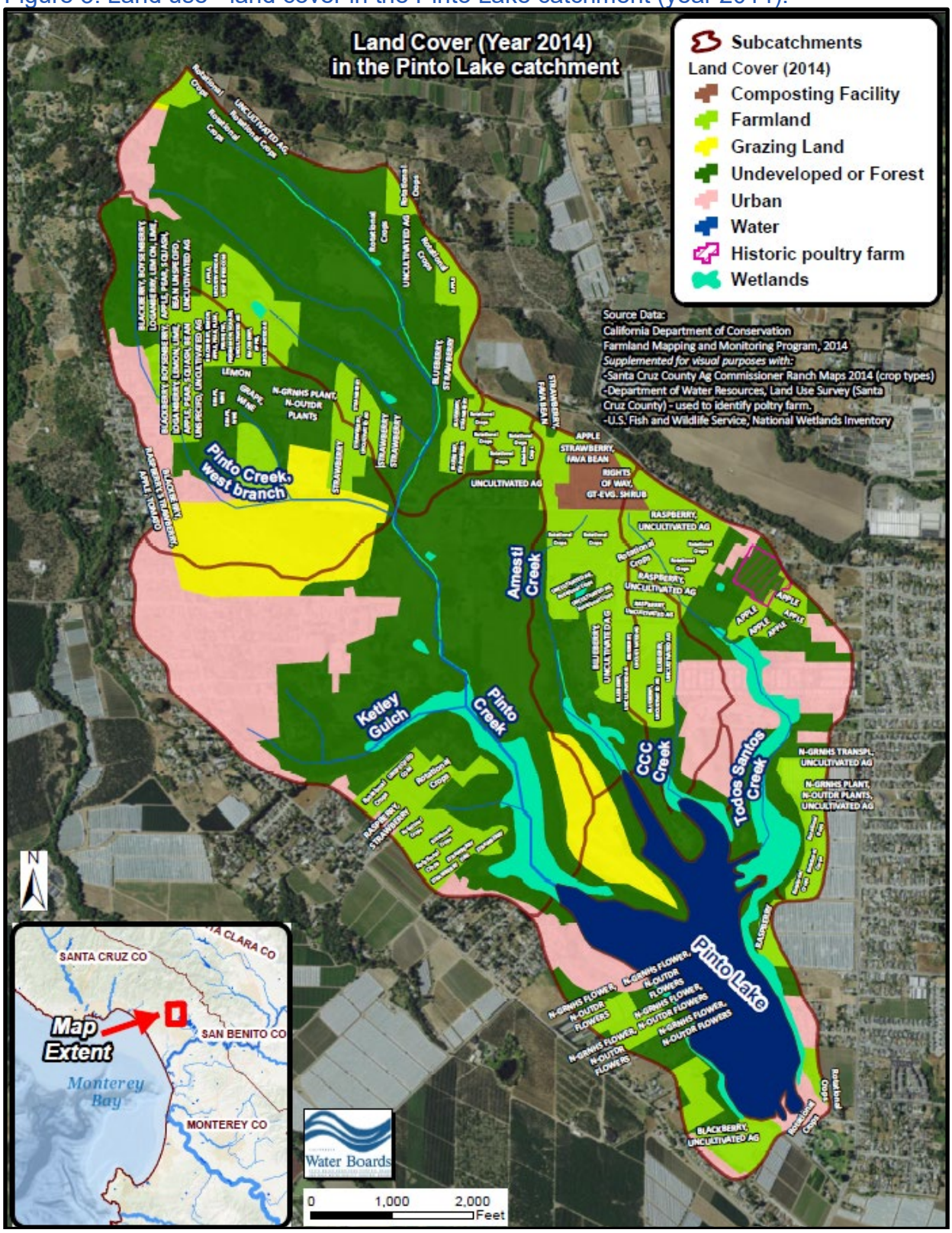
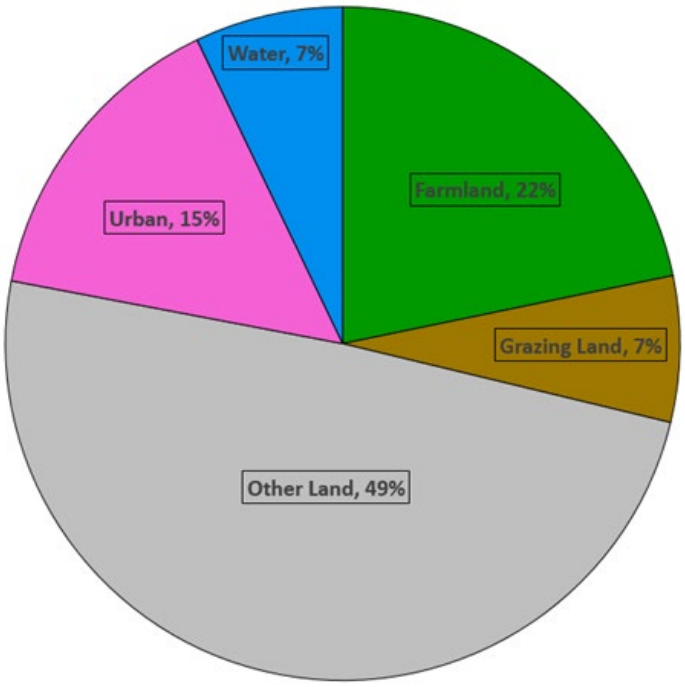


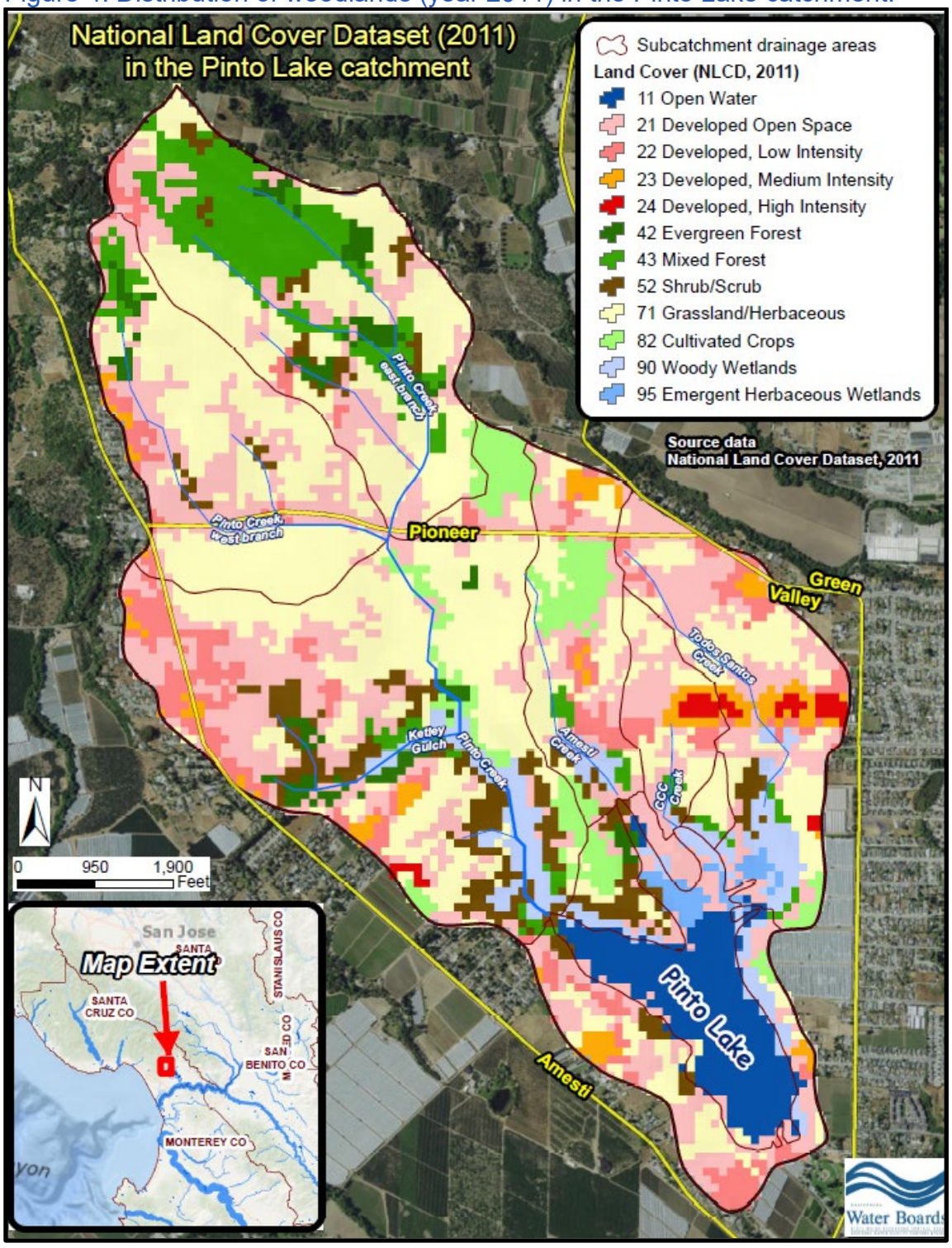
Table 2. Tabulation of estimated land use - land cover in the Pinto Lake catchment (year 2014).

Pinto catchment Land Cover (Year 2014)[A]	**U.S. Acres**	**Catchment Land Cover Pie Chart**
Urban and Built-Up Land	218.8	
Farmland	319.2	
Grazing Land	102.8	
Other Land (Woodland, Undeveloped, or Restricted) *In the Pinto Lake catchment this land use classification also includes a composting facility of about 15 acres, a 7 acre poultry farm (reported from legacy land use data and which may no longer be in operation), and about 80 acres of wetlands.*	722.2	
Open Water	104.2	
Total	1,467.1	

[A] Source: Calif. Dept. of Conservation, Farmland Mapping and Monitoring Program (2014)

Figure 4 illustrates the distributions of woodlands (National Land Cover Dataset, 2011). There are no timber harvesting and management plans (California Department of Forestry and Fire Protection, 2014) in the Pinto Lake catchment.

Figure 4. Distribution of woodlands (year 2011) in the Pinto Lake catchment.



Agriculture: According to the Department of Conservation's Farmland Mapping and Monitoring Program, in 2014 there were 319.2 acres of farmland in the Pinto Lake catchment (refer back to Table 2 on page 15). According to crop data from the Santa Cruz County Agricultural Commissioner, in 2014 the primary crops produced in Pinto Lake catchment included bush berries (e.g., strawberries, blackberries, raspberries, blueberries),

nursery/greenhouse products (e.g., outdoor plants and flowers), and rotational crops. In 2014, there were also a few dozen acres in the catchment producing grape and orchard products (e.g., apples, lemon, wine grapes, etc.). As of January 2017, there were 14 farming operations, entities, or operators in the Pinto Lake catchment enrolled in the Central Coast Water Board's irrigated lands regulatory program[22].

Soils and Geology: Detailed information on soils and geologic materials in the Pinto Lake catchment are compiled in the TMDL Report entitled: *Total Maximum Daily Load for Total Phosphorus to Address Cyanobacterial Blooms in Pinto Lake.* Additional geologic information to support CEQA analysis is included below.

Figure 5 illustrates the risk of landslides in the Pinto Lake catchment and vicinity. Low risks of landslides are seen in the catchment and vicinity.

Figure 6 illustrates the predicted seismic risk in the Pajaro River basin and vicinity, including the Pinto Lake catchment, on the basis of expected peak ground shaking associated with an earthquake.

Figure 7 illustrates Alqueist-Priolo fault zones in southern Santa Clara, southern Santa Cruz, and San Benito counties as established by the State Geologist. Pinto Lake itself is a tectonically-induced sag pond associated with the active Zayante Fault.

[22] Information available for State Water Resources Control Board's GeoTracker information management system.

Figure 5. Landslide risks – susceptibility to landslides in the Pinto Lake catchment and vicinity.

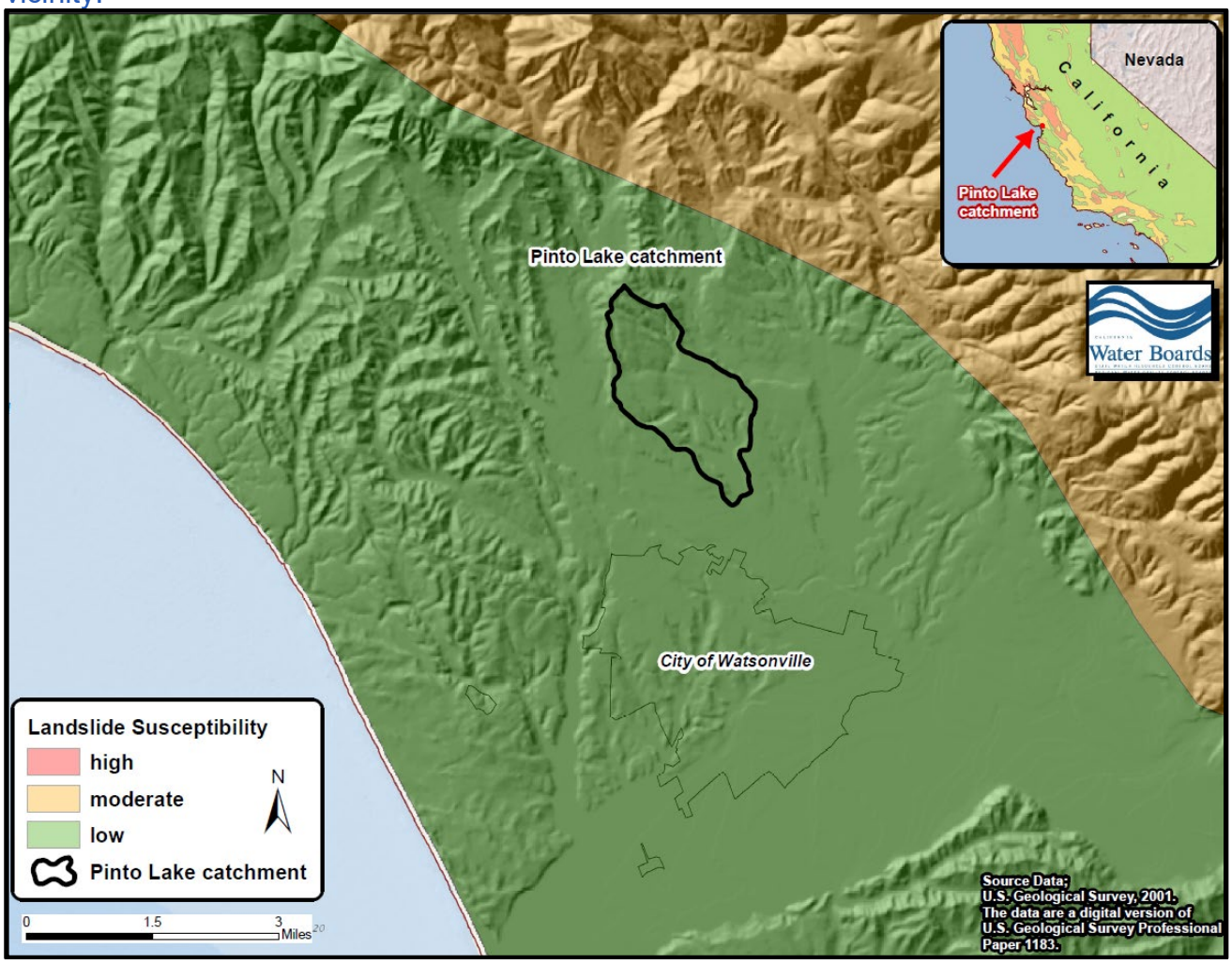


Figure 6. Expected peak ground shaking potential due to an earthquake. Ground shaking potential is represented as horizontal acceleration as a percent of the acceleration of gravity. Locations of historic earthquakes (years 1800-1999) are also shown on this map.

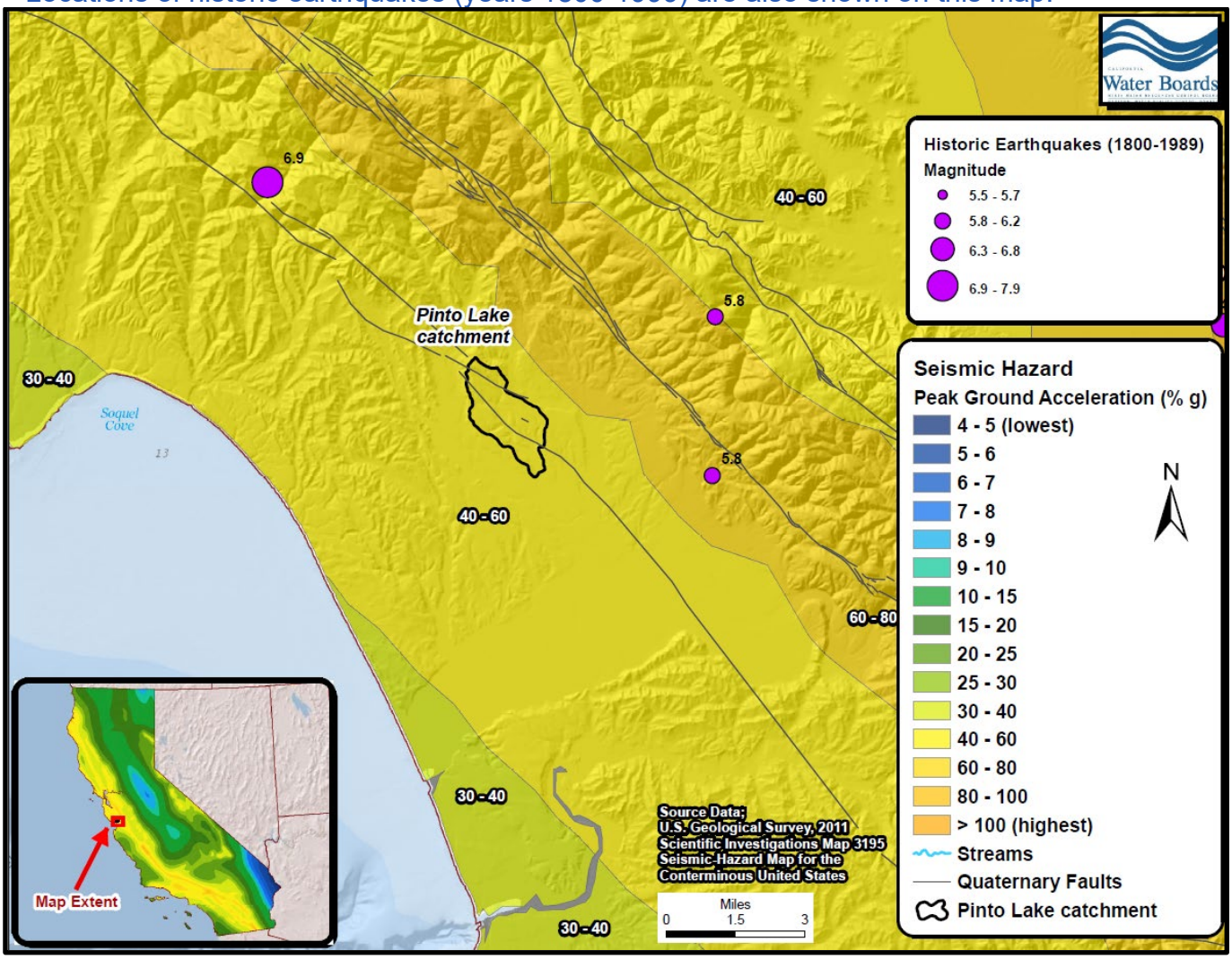
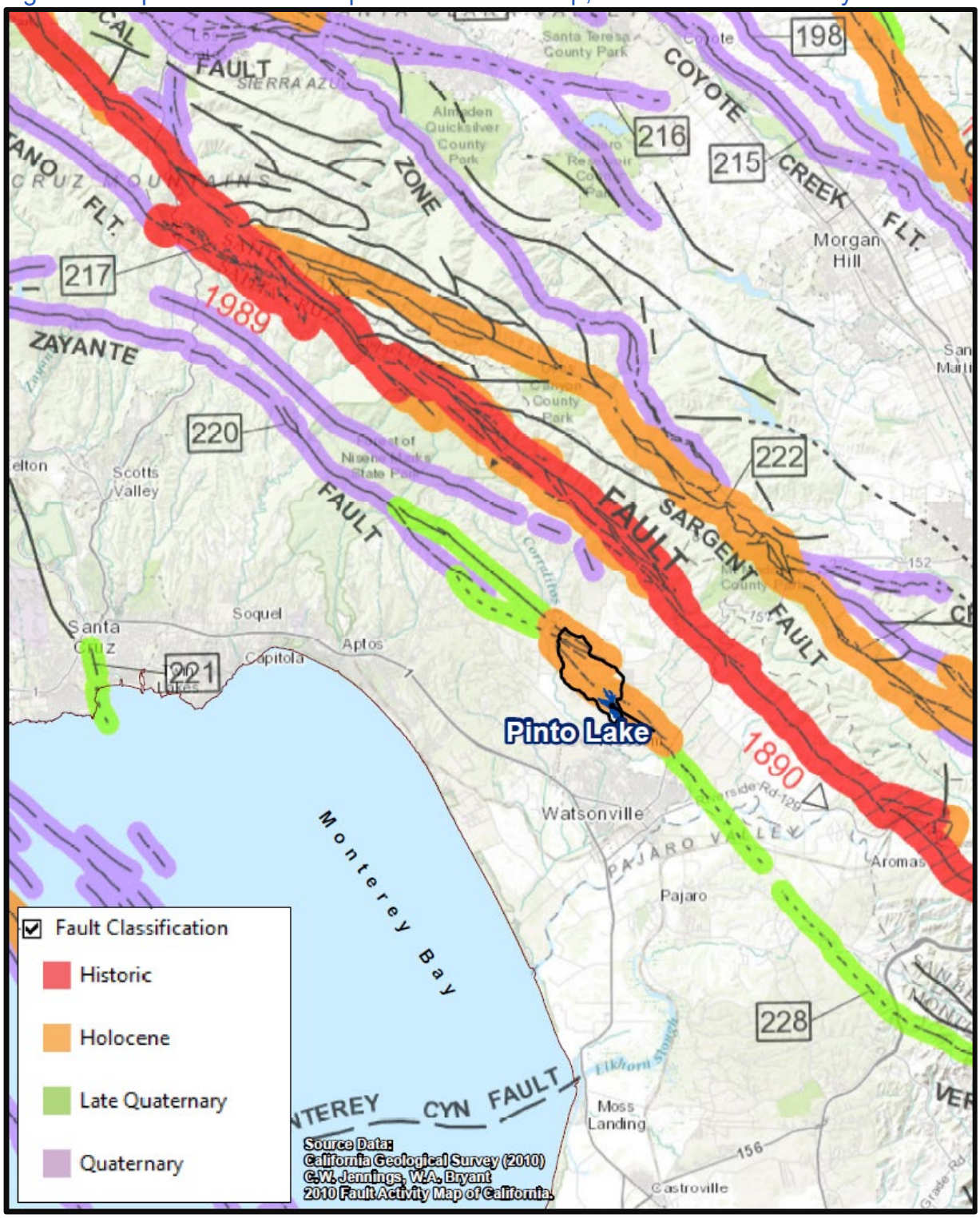
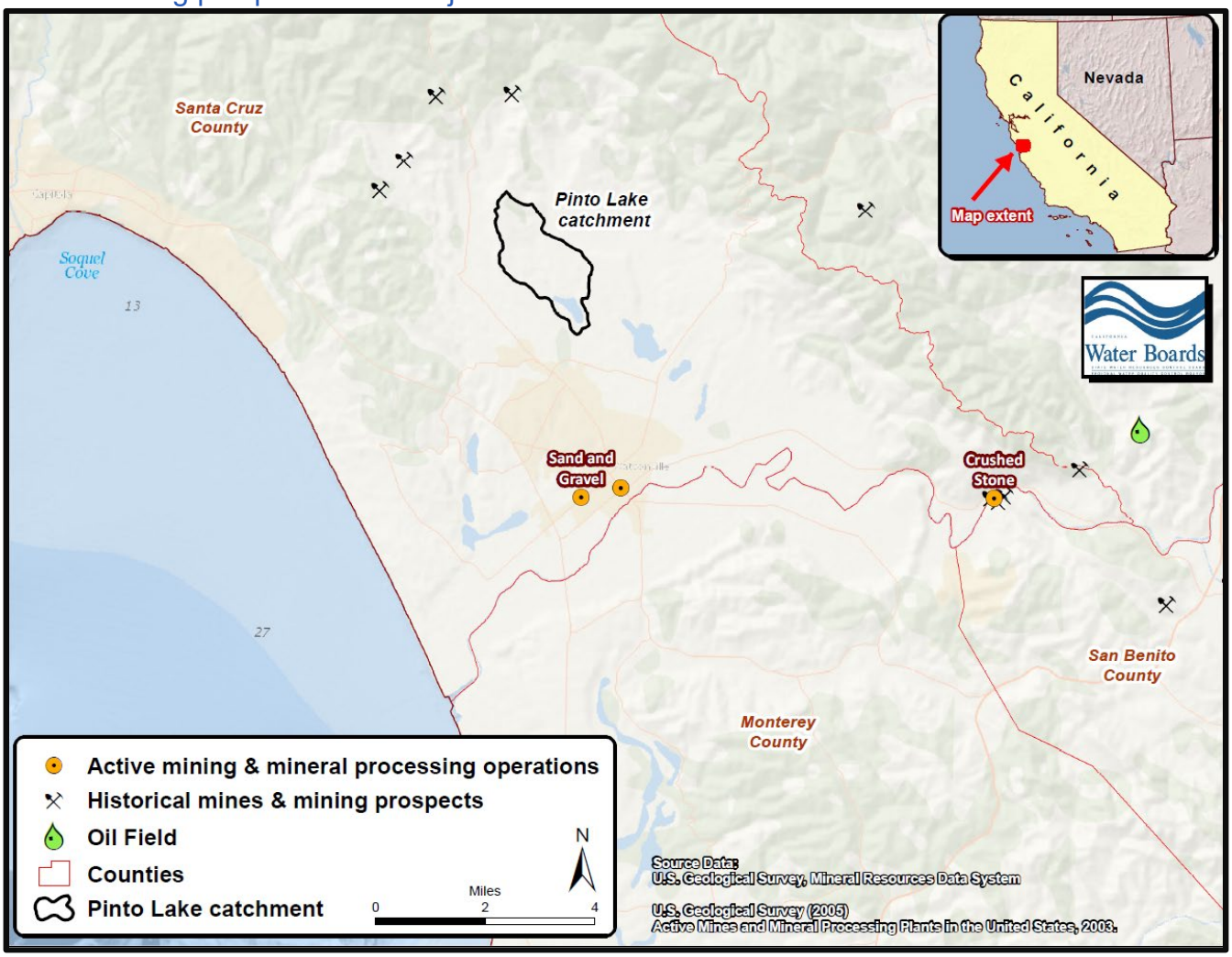


Figure 7. Alquiest-Priolo earthquake fault zone map, Pinto Lake and vicinity.



Mineral Deposits: Figure 8 illustrates mining activities and mining prospects in the vicinity of the Pinto Lake catchment. Noteworthy is that there are no active or historic mineral extraction and processing operations, or oil field extraction operations, in the Pinto Lake catchment.

Figure 8. Active mining and mineral processing operations, oil resources, and historical mines and mining prospects in the Pajaro River basin.



Biology (vegetation and wildlife): Information on existing fish, wildlife, and aquatic habitat resources in the Pinto Lake catchment are compiled in the report associated with this CEQA analysis and entitled: *Total Maximum Daily Load for Total Phosphorus to Address Cyanobacterial Blooms in Pinto Lake (Resolution No. R3-2020-0034).* CEQA also requires lead agencies to consider existing habitat and conservation plans in areas that the agency's programmatic action effects (see Figure 9).

Figure 9. Habitat Conservation Plan boundaries in the vicinity of Pinto Lake.

Air Quality: The Pinto Lake catchment is associated with the North Central Coast air basin. Air quality in this air basin is monitored and reported by the Monterey Bay Unified Air Pollution Control District (see Figure 10).

Air quality is assessed by comparison of monitoring data to federal and state government air quality standards and includes the following parameters: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, carbon monoxide, inhalable fine particulate matter ($PM_{2.5}$), inhalable particulate matter (PM_{10}), and lead (Monterey Bay Unified Air Pollution Control District, 2007, 2015). As of January 2015, air quality standards in North Central Coast air basin were attained for all pollutants except the *state* standards for ozone and inhalable particulate matter (PM_{10}); however the North Central Coast air basin meets the *national* PM_{10} particulate matter standard – see
Table 3.

Figure 10. Air basins and air pollution control districts associated with the Pinto Lake catchment.

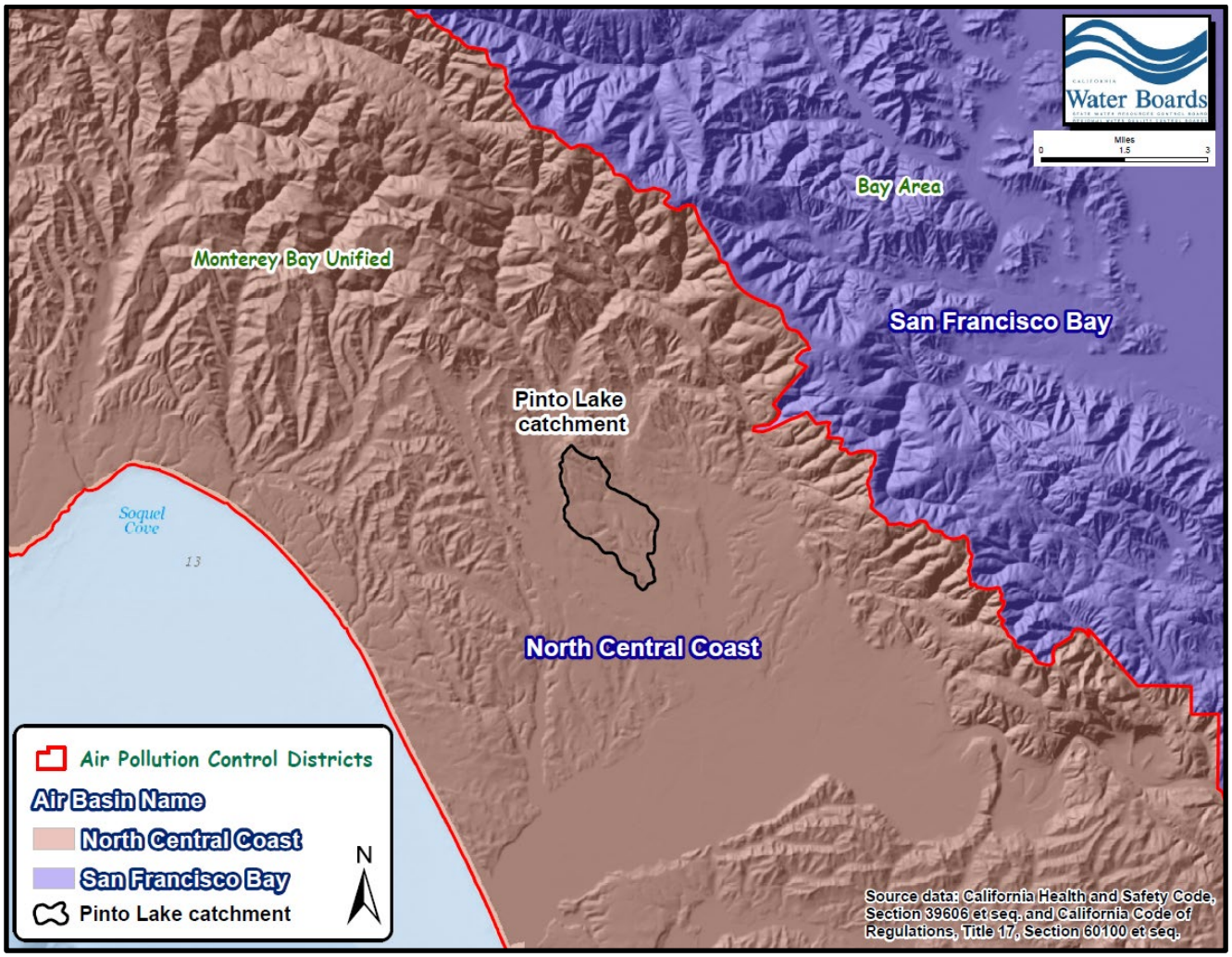


Table 3. North Central Coast air basin air quality attainment status, January 2015.

Pollutant	State Standards	National Standards
Ozone (O_3)	**Nonattainment**	Attainment/Unclassified
Inhalable Particulates (PM_{10})	**Nonattainment**	Attainment
Fine Particulates ($PM_{2.5}$)	Attainment	Attainment/Unclassified
Carbon Monoxide (CO)	Santa Cruz Co. - Unclassified	Attainment/Unclassified
Nitrogen Dioxide (NO_2)	Attainment	Attainment/Unclassified
Sulfur Dioxide (SO_2)	Attainment	Attainment
Lead	Attainment	Attainment/Unclassified

Water Resources and Water Use: Information on hydrology of the Pinto Lake catchment is compiled in the TMDL Report associated with this CEQA analysis and entitled: *Total Maximum Daily Load for Total Phosphorus to Address Cyanobacterial Blooms in Pinto Lake (Resolution No. R3-2020-0034).* Supplementary information on water usage in the river basin follows.

Table 4 presents estimates water usage in the Pinto Lake catchment for the year 2010 on the basis of county-level water usage reporting available from the U.S. Geological Survey. Estimated 2010 total (freshwater + saline water) water usage in the catchment was approximately 457,509 gallons per day. Groundwater is the main source of water for water users in the catchment. Irrigation freshwater withdrawals constituted the largest water use category in 2010 (56.0% of total water use in the catchment), followed by public supply (41.4%). Domestic self-supplied withdrawals (2.5%) and livestock watering withdrawals (0.1%) were negligible categories of water usage in the catchment (see Figure 11).

Table 4. Pinto Lake catchment water usage (year 2010) estimated on the basis of County-reported water usage data[A].

	Santa Cruz County	Pinto Lake catchment population[C] ratio relative to the Santa Cruz County total	**Pinto Lake catchment[B]**	**Pinto Lake catchment, units in gal/day**
Year of data	2010	2010	2010	–
Total population in Santa Cruz County	262,382	0.0077	2025	–
Public Supply, total population served	242,930	–	1874.9	–
Public Supply, groundwater withdrawals, total, in Mgal/d	13.61	–	0.1	105,039
Public Supply, surface-water withdrawals, total, in Mgal/d	10.96	–	0.1	84,587
Public Supply, total withdrawals, total (fresh+saline), in Mgal/d	24.57	–	0.2	189,625
Domestic, self-supplied population	19,452	–	150.1	-
Domestic, total self-supplied withdrawals, fresh, in Mgal/d	1.46	–	0.0	11,268
Domestic, deliveries from Public Supply, in Mgal/d	15.8	–	0.1	121,941
Domestic, total use (withdrawals + deliveries), in Mgal/d	17.26	–	0.1	133,208
Irrigation, groundwater withdrawals, fresh, in Mgal/d	32.85	–	0.3	253,528
Irrigation, surface-water withdrawals, fresh, in Mgal/d	0.36	–	0.0	2,778
Irrigation, total withdrawals, fresh, in Mgal/d	33.21	–	0.3	256,307
Irrigation, acres irrigated, total	19,620	–	151.4	151,422,354
Livestock, total withdrawals, fresh, in Mgal/d	0.04	–	0.0	309
Total withdrawals, total (fresh+saline), in Mgal/d[D]	-	–	0.5	**457,509**

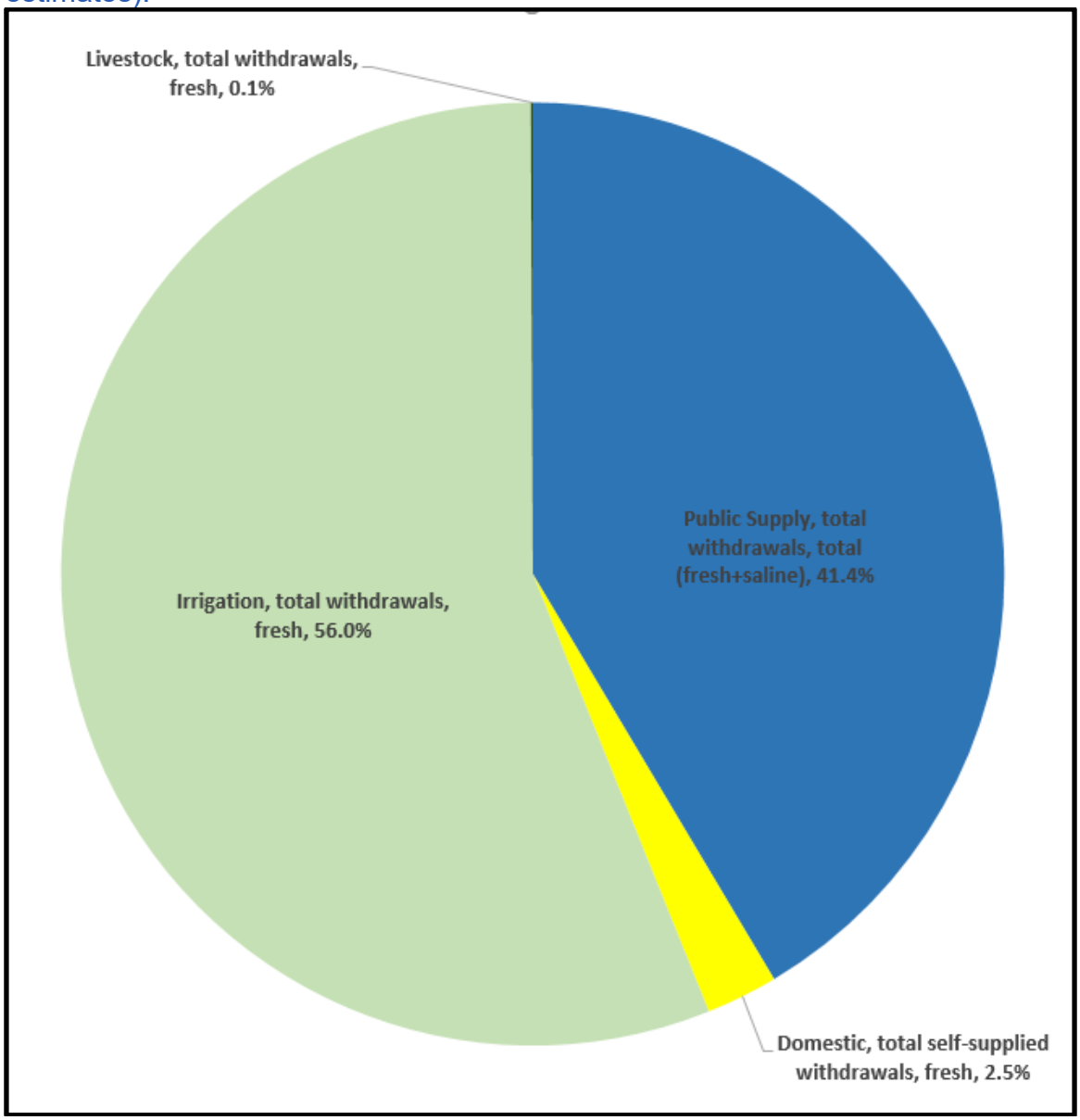
[A] Source Data: U.S. Geological Survey, National Water Use Information Program. *Estimated Use of Water in the United States County-Level Data for 2010.* Available from the National Water Information System. (As of May 2017, the 2010 version was the most recent version available.)

[B] Estimated by taking the water usage reporting for the population of Santa Cruz County and scaling it to the Pinto Lake catchment population. The population residing in the catchment is approximately 0.77 percent of the total population residing in Santa Cruz County. Estimated water use in the catchment is thus 0.0077 multiplied by the total water usage reported in Santa Cruz County.

[C] An estimate of the population residing within the Pinto Lake catchment was developed in the associated TMDL Report entitled "*Total Maximum Daily Load for Total Phosphorus to Address Cyanobacterial Blooms in Pinto Lake.*"

[D] Total withdrawals, total (fresh+saline) calculated from totals of public supply, domestic self-supplied, irrigation, and livestock; 189,625 + 11,268 + 256,307 + 309 = 457,509 gallons/day. Estimates for industrial supply and mining were not included as there is no known industry or mining in the Pinto Lake catchment.

Figure 11. Estimated distribution (%) of water usage by water use category within the Pinto Lake catchment, year 2010 (refer back to Table 4 for tabular summary of water usage estimates).

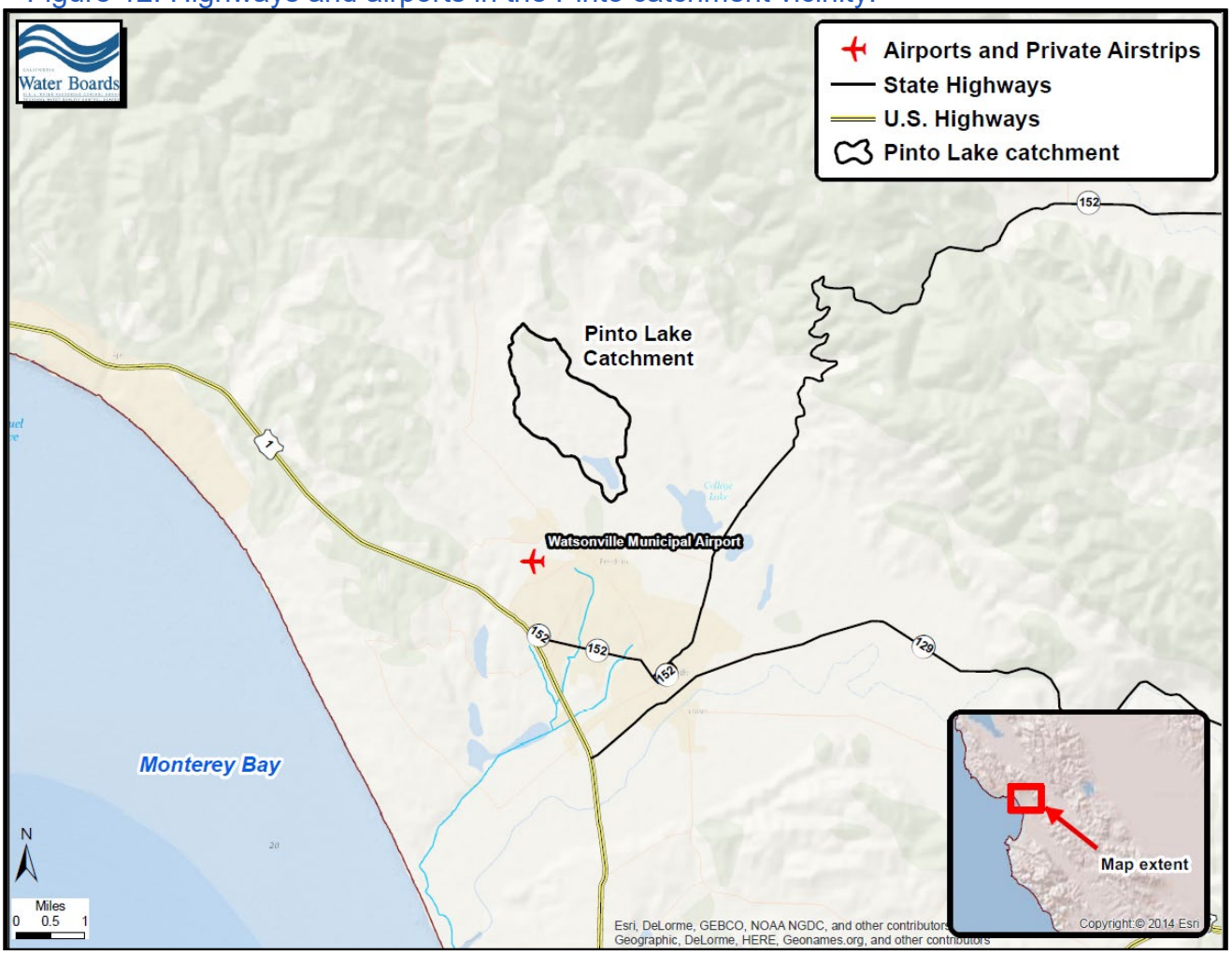


Waste Water Treatment Facilities: There are no permitted wastewater treatment facilities in the Pinto Lake catchment. A collection system collects wastewater from some urbanized areas in the catchment and this wastewater is then treated outside the catchment. The State Water Resources Control Board's website[23] that reports sewage spills and private lateral discharges indicated there were no spills in the catchment from 2007 to the writing of this report (June 2017).

[23] http://www.waterboards.ca.gov/water_issues/programs/sso/#ssomaps

Transportation/Traffic: Figure 12 presents an illustration of highways and airports near the Pinto Lake catchment. As can be seen by the figure, there are no highways nor airports in the catchment, yet there are several close by.

Figure 12. Highways and airports in the Pinto catchment vicinity.



4. TMDL ALTERNATIVES DISCUSSION

CEQA environmental analysis of this TMDL project includes an analysis of potentially feasible alternatives that encompass actions within the jurisdiction of the Central Coast Water Board and implementing parties. During development of the TMDL for total phosphorus, Central Coast Water Board staff considered several alternatives that are described below. The program alternatives considered are: 1) no action alternative, 2) concentration-based TMDL alternative, and 3) mass load-based TMDL for phosphorus (Resolution No. R3-2020-0034).

4.1. No Action Alternative

Because a TMDL is required by section 303(d) of the Clean Water Act, the No Action Alternative is analyzed to allow decision makers to compare the impacts of approving a

proposed alternative and its components compared with the impacts of not approving a proposed alternative.

Under a No Action alternative, the Central Coast Water Board would not adopt the TMDL nor require TMDL implementation or monitoring. It is important to recognize that the No Action Alternative is inconsistent with federal law. The federal Clean Water Act requires states to establish lists of impaired waters and develop TMDLs for those waters. Therefore, the failure to adopt and implement a TMDL for phosphorus would be incompatible with statutory requirements.

Under the No Action alternative the TMDL would rely on existing programs to address water quality impairments. Existing efforts would continue to implement management practices and monitor water quality if the TMDL was not adopted and it is likely that water quality would continue to improve. The efforts may not be directed towards the specific water quality impairments identified in the TMDL and progress towards meeting TMDL goals would not be monitored as efficiently as possible, and could leave designated beneficial uses surface waters unprotected or unrestored for a longer period of time.

Water quality impairments from nutrients to designated aquatic habitat beneficial uses are not specifically addressed in current Central Coast Water Board regulatory programs. This is in part due to the fact that Basin Plan has a narrative water quality objective for biostimulatory substances, but the Central Coast Water Board does not currently have recognized numeric water quality targets to measure nutrient-related water quality standards attainment for aquatic habitat beneficial uses in the Pinto Lake catchment. Additionally, USEPA, in part, relies on Central Coast Water Board efforts for their regulatory planning. Under federal regulations, stormwater programs implementing the TMDL would likely be the most effective mechanism to achieve point source pollution goals; however, current regulation of stormwater does not specifically address nutrient-related impacts to designated aquatic habitat beneficial uses in the catchment. Therefore, without TMDL implementation, it is less likely that attainment of water quality standards protective of aquatic habitat would be achieved. Further, regulations addressing biostimulatory impairments of waterbodies are relatively new and the proposed TMDL will provide a means to assess effectiveness of the regulations.

Assuming the responsible parties do not take action on their own to address nutrient-related impairments of surface waters, it is less likely that some water quality standards will be attained, more likely that some designated beneficial uses will be left unprotected, and thus the TMDL may not be achieved. Furthermore, beneficial uses of waterbodies in the TMDL project area will continue to be impaired and go unprotected.

4.2. Concentration and Toxicity-Based TMDL Alternative

TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure (40 CFR [Code of Federal Regulations] section 130.2(i)). A concentration-based TMDL is an approach that relies on the density of a pollutant (i.e., allowable milligrams per liter of water) in a receiving water to determine TMDL attainment. This approach may be relatively simple as it relies only on pollutant concentrations in a receiving water to determine TMDL attainment.

Since the primary water quality concern at Pinto Lake is the toxicity associated with nuisance cyanobacteria blooms, a concentration-based TMDL presumably would establish public health thresholds for cyanotoxins as a measure of TMDL attainment. However, since cyanotoxins are a biological water quality response to watershed conditions, and since dischargers do not actually discharge cyanotoxins themselves, a TMDL based on toxicity (aka, concentrations of microcystin) for Pinto Lake would not render itself particularly useful for establishing discharger pollutant allocations.

Another downside of a concentration-based TMDL for a lake is that while they measure attainment of water quality standards in receiving waters, they do not necessarily render themselves helpful to dischargers from a management perspective. Concentrations in receiving waters are not a direct measure of the effectiveness of management measures to reduce pollution, and they only offer indirect evidence of progress towards reducing pollutant loading to a receiving water.

Staff evaluated a concentration-based approach during development of the TMDL and determined that, at this time, it would not be effective in implementing the TMDL goal. We are thus not recommending the adoption of a concentration-based TMDL for toxicity.

4.3. Mass-Based TMDL Alternative for Total Phosphorus

Staff evaluated a mass-load based approach during development of the TMDL and determined that, at this time, it would the most effective method in implementing the TMDL goals. Therefore, this is the preferred alternative presented and proposed for Central Coast Water Board consideration. This alternative is based on the *TMDL for Total Phosphorus to Address Cyanobacterial Blooms in Pinto Lake (Resolution No. R3-2020-0034*). From a water quality management perspective, we supplement the phosphorus mass loading-based TMDL with proxy indicators of TMDL attainment based on proxy water quality indicators such as cyanotoxin concentration, dissolved oxygen concentration, and un-ionized ammonia concentration.

A mass-based TMDL alternative would achieve the TMDL by distributing or “allocating” amongst the dischargers a total maximum mass-based daily load (e.g. pounds per day or kilograms per day of phosphorus) that the receiving waters could receive and still meet water quality standards. This approach would require first the determination of the amount of nutrients that the impaired surface waters could assimilate and achieve the water quality standard. Then the TMDL would allocate that mass of nutrients between the dischargers, assigning a waste load allocation to point sources and a load allocation to nonpoint sources and natural background sources.

In this mass-loading based water quality approach, the total maximum daily load is based on water quality modeling which estimating algal response to nutrients using secondary factors such as chlorophyll, Secchi depth, and cyanobacteria concentrations to define allowable phosphorus loading.

There is significant uncertainty associated with mass-based load expressions because of data limitations and the myriad of assumptions which necessarily go into estimates of watershed nutrient loading. In view of these uncertainties, we supplement the phosphorus mass loading-based TMDL with proxy indicators of TMDL attainment based on proxy water

quality indicators such as cyanotoxin concentration, dissolved oxygen concentration, and un-ionized ammonia concentration. Having multiple approaches to assessing water quality management goals for Pinto Lake adds flexibility and a measure of confidence in the efficacy of the proposed TMDL approach.

To implement the TMDL for total phosphorus, the Implementation Report also describes existing and proposed implementation and monitoring programs to address impairments resulting from nutrients. Implementation alternatives are described in Section 5 and the environmental impacts of implementation are analyzed and discussed in Sections 6and 7of this document.

As discussed in Section 7, possible changes in irrigation and water management strategies, (as outlined in Section 5 of this document) could result in potentially significant adverse impacts to:

1) Aquatic habitat associated with a Biological Resources Checklist Category 4.a (a potential substantial adverse effect on species identified as a candidate, sensitive, or special status species in local or regional plans, policies for by the California Department of Fish and Wildlife[24] or U.S. Fish and Wildlife Service), and
2) Mandatory Findings of Significance Checklist Category 18.a - (potential to degrade the quality of the environment, substantially reduce the habitat of fish 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, and reduce the number or restrict the range of a rare or endangered plant or animal).

That said, staff concludes that adoption of the proposed TDML is both necessary and a long term benefit to the environment and to water quality. Currently, the Basin Plan does not include comprehensive implementation program designed to protect and restore the beneficial uses of surface waterbodies in the Pinto Lake. The proposed TMDL provides the framework for this comprehensive program. Staff acknowledges that the implementation of reasonably foreseeable compliance methods identified in Section 5 could result in potentially significant environmental impacts. However the Staff Report, the draft Basin Plan amendment, and the Environmental Checklist and associated analyses provide the necessary information pursuant to state law to conclude that the potential adverse environmental impacts from TMDL implementation are outweighed by the environmental benefits achieved from improving and protecting the beneficial uses of water.

4.4. Recommended Alternative

Staff concludes a mass-load based approach, as discussed in Section 4.3, is the preferred alternative presented and proposed for Central Coast Water Board consideration.

Staff concludes that the preferred alternative and most environmentally feasible option is adoption of *Total Maximum Daily Load for Total Phosphorus to Address Cyanobacterial Blooms in Pinto Lake (Resolution No. R3-2020-0034*). Staff concludes that adoption of the proposed TMDL and Implementation Plan is both necessary and beneficial. Currently the Basin Plan does not include a comprehensive implementation program designed to protect

[24] This agency was formerly known as the Department of Fish and Game.

and restore the beneficial uses of Pinto Lake. The TMDL implementation plan would provide the framework for this comprehensive program. The implementation of reasonably foreseeable compliance methods identified in Section 5 to comply with the proposed Implementation Plan will not result in significant adverse impacts that cannot be reduced to levels of insignificance with the implementation of thoughtfully designed and executed mitigation measures. Implementation of some of the identified compliance methods could result in temporary (short-term) adverse impacts to the environment. Most of these impacts, however, can be reduced to levels of less than significant with mitigation, as described in this document.

The Staff Report, the draft Basin Plan amendment, and the Environmental Checklist and associated analysis provide the necessary information pursuant to state law to conclude that the proposed TMDL, Implementation Plan, and the associated reasonably foreseeable methods of compliance will not have a significant adverse effect on the environment with the exception of *potentially* significant impacts to aquatic habitat associated with a Biological Resources Checklist Category 4.a) and Mandatory Findings of Significance Checklist Category 19(a). Staff made this determination based on best available information in an effort to fully inform the interested public and the decision makers of potential environmental impacts.

Although potentially significant adverse impacts to aquatic habitat were identified, it is not possible based on current information to know whether those potential impacts may be able to be mitigated to less than significant levels; or alternatively if the impacts ultimately turn out to be less than significant. The Central Coast Water Board, when considering approval Basin Plan amendments will balance the economic, legal, social, technological, or other benefits of TMDL implementation against the potentially significant adverse effects when determining whether to approve the Basin Plan amendment, and has the authority to make a statement of overriding considerations, if it finds that the adverse environmental effects are acceptable given the identified benefits. In this case staff recommends that the Central Coast Water Board approve a statement of overriding consideration (as articulated in Section 8of this report). The statement of overriding consideration finds that the benefits of the *Total Maximum Daily Load for Total Phosphorus to Address Cyanobacteria Blooms (Resolution No. R3-2020-0034*) override and outweigh the potential significant adverse impacts of this TMDL, for the reasons more fully set forth in the staff report and attachments.

5. REASONABLY FORESEEABLE METHODS OF COMPLIANCE

To meet load allocations and achieve the TMDL, owners and operators of irrigated agricultural land must comply with the Conditional Waiver of Waste Discharge Requirements for Irrigated Lands (Order R3-2017-0002; the “Agricultural Order”) and the Monitoring and Reporting Programs in accordance with Orders R3-2017-0002-01, R3-2017-0002-02, and R3-2017-0002-03, or with any future permit regulating the discharge of waste from irrigated agricultural land. One of the requirements in these orders is to implement practices to protect water quality.

Municipal Separate Storm Sewer Systems (MS4) entities required to comply with a Small MS4 Permit or future National Pollutant Discharge Elimination System (NPDES) stormwater permits regulating the discharge of stormwater are required to implement controls to reduce discharges of pollutants and to achieve waste load allocations established in TMDLs. The

following information outlines some generally accepted types of reasonably foreseeable management measures that implementing parties might consider.

The SWRCB, California Coastal Commission and other State agencies have identified management measures (MMs) to address agricultural sources of nutrient pollution that affect State waters. These are provided here as examples of management measures that can be employed to reduce nutrient pollution from nonpoint sources and from urban areas. These management measures are not provided here as examples of current or anticipated requirements, nor are they an exhaustive list of all possible, effective management measures. Staff utilized the State Water Resources Control Board's Nonpoint Source (NPS) Encyclopedia[25] for information and guidance on these foreseeable methods of compliance measures that reasonably could be implemented to implement with the Pinto Lake catchment TMDL. The NPS Encyclopedia is an on-line reference guide designed to facilitate a basic understanding of NPS pollution control and to provide quick access to essential information from a variety of sources by providing direct hyperlinks to resources available on the World Wide Web. Information provided below is reproduced from the NPS Encyclopedia. The NPS Encyclopedia uses the same designations for land use category and management practices which are similar to those identified in the State Water Resources Control Board's Plan for California's Nonpoint Source Pollution Control Program[26].

5.1. Potential Compliance Measures for Nutrient Management Practices (Source Category: Irrigated Agriculture)

Owners and operators of irrigated agricultural land must comply with the Conditional Waiver of Waste Discharge Requirements for Irrigated Lands (Order R3-2017-0002; the "Agricultural Order") and the Monitoring and Reporting Programs in accordance with Orders R3-2017-0002-01, R3-2017-0002-02, and R3-2017-0002-03, or any future permit regulating the discharge of waste from irrigated agricultural land, to meet load allocations and achieve the TMDL. One of the requirements in these orders is to implement practices to protect water quality.

The purpose of this management practice is to reduce the nutrient loss from agricultural lands, which occurs through edge-of-field runoff or leaching from the root zone. The most effective way to manage nutrients is to develop a nutrient management plan (NMP) in accordance with U.S. Department of Agriculture-Natural Resources Conservation Service Standard 590[27]. The goals of a nutrient management plan are to (1) apply nutrients at rates necessary to achieve realistic crop yields, (2) improve the timing of nutrient application, and (3) use agronomic crop production technology to increase nutrient use efficiency. Components of a NMP include the following:

- Farm and field maps with identified and labeled: acreage and type of crops, soil surveys, location of any environmental sensitive areas including any nearby waterbodies and endangered species habitats;

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[25] State Water Resources Nonpoint Source (NPS) Encyclopedia. Online linkage: http://www.waterboards.ca.gov/water_issues/programs/nps/encyclopedia/

[26] Online linkage: http://www.waterboards.ca.gov/water_issues/programs/nps/protecting.shtml

[27] NRCS Conservation Practice Standard Code 590. Online Linkage: http://www.aces.edu/department/aawm/NutrientManagemental590.pdf

- Realistic yield expectations for the crop(s) to be grown based primarily on the producer's yield history, State Land Grant University yield expectations for the soil series, or United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soils-5 information for the soil series;
- A summary of the nutrient resources available to the producer, which (at a minimum) include (a) soil test results for pH, phosphorus, nitrogen, and potassium; (b) nutrient analysis of manure, sludge, mortality compost (birds, pigs, etc.), or effluent (if applicable); (c) nitrogen contribution to the soil from legumes grown in rotation (if applicable); and (d) other significant nutrient sources (e.g., irrigation water);
- An evaluation of the field limitations and development of appropriate buffer areas, based on environmental hazards or concerns such as (a) sinkholes, shallow soils over fractured bedrock, and soils with high leaching potential; (b) lands near or draining into surface water; (c) highly erodible soils; and (d) shallow aquifers;
- Use of the limiting nutrient concept to establish a mix of nutrient sources and requirements for the crop based on realistic yield expectations;
- Identification of timing and application methods for nutrients to (a) provide nutrients at rates necessary to achieve realistic yields, (b) reduce losses to the environment, and (c) avoid applications as much as possible to frozen soil and during periods of leaching or runoff;
- Provisions for the proper calibration and operation of nutrient application equipment; and
- Vegetated Treatment Systems are discussed in Management Measure 6C of this NPS Encyclopedia (see footnote 25).

5.2. Potential Compliance Measures for Irrigation Water Management (Source Category: Irrigated Agriculture)

The purpose of this management measure is to reduce NPS pollution of surface and ground waters caused by irrigation. Irrigation water should be applied in a manner that ensures efficient use and distribution of the water and minimizes runoff and soil erosion. Recommended practices include the following:

- Determining and controlling the rate, amount, and timing of irrigation water in a planned and efficient manner. This entails knowing the daily water use of the crop, the water-holding capacity of the soil, and the lower limit of soil moisture for each crop and soil. It is also important to measure the amount of water applied to the field.
- Controlling the manner and application of water to minimize water runoff and soil erosion. USDA NRCS-recommended irrigation systems include micro irrigation, sprinklers, surface and subsurface systems, and tailwater recovery systems.
- Designing irrigation water transport systems to eliminate as much water loss as possible.
- Using a pipeline and apparatus to convey water to the irrigation system.
- Using a structure that controls the rate and timing of water conveyed to the irrigation system.
- Installing storage reservoirs to keep water for irrigation.
- Managing the drainage water from the irrigation system to control deep percolation, to move tailwater to the reuse system, and to control erosion and adverse impacts on surface and ground waters.

- Using filter strips to capture sediment and pollutants running off fields.
- Use grassed waterways to capture and trap sediment entering receiving waters.
- When irrigation water is conveyed down slopes that increase the velocity, causing erosion, install erosion controls, such as drops, chutes, buried pipelines, or erosion-resistant ditch linings.

5.3. Potential Compliance Measures for Groundwater Protection (Source Category: Irrigated Agriculture)

The purpose of this management measure is reduce or eliminate leaching of irrigation water to the extent necessary to protect drinking water wells, and protect beneficial uses of both groundwaters and surface waters. Potential practices include the following:

- Manage irrigation water volume and timing to reduce or eliminate runoff and/or leaching to ground water. Use crop and region specific evapotranspiration rates and/or soil moisture probes to determine when the best time and for how long to irrigate.
- The University of California- Davis Department of Land, Air and Water Resources (LAWR), drought tip 92-52, entitled *Irrigating Up Crops Efficiently with Sprinklers* provides guidance to help determine how long sprinklers should run and can be easily determined if the crop evapotranspiration rate and reference evapotranspiration rates are known.

5.4. Potential Compliance Measures Involving Construction and Maintenance of Vegetated Treatment Systems (All Source Categories: Irrigated Agriculture, Urban, Domestic Animal Operations including Grazing lands and Pastureland)

The purpose of these management measures involves strategic use of engineered vegetated treatment systems, which include constructed wetlands, vegetated filter strips, buffers, and swales.

Constructed wetlands increase the residence time (duration that water "ponds" on the ground surface) of surface waters so that interactions between sediments and vegetation is increased. Increasing the soil-plant-water interaction time also increases the ability of pollutants (nutrients, some metals, and some organic molecules) to be attenuated, transformed, absorbed, and volatilized by various processes. A degraded wetland has less ability to remove NPS pollutants and to attenuate stormwater peak flows (Bedford and Preston, 1988; Richardson and Davis, 1987; Richardson, 1988). A degraded wetland can deliver increased amounts of sediment, nutrients, and other pollutants to the adjoining waterbody, thereby acting as a source of NPS pollution instead of a treatment (Brinson, 1988; Richardson, 1988). Additionally, constructed wetlands are not usually designated for wildlife and aquatic habitat beneficial uses and can cause harm to wildlife. Kesterson National Wildlife Refuge is a case and point. This managed and constructed wetland was designed to treat agricultural runoff and provide habitat for aquatic birds. In 1983 it was discovered that breeding populations of stilts, grebes, shufflers, coots, and other aquatic birds were experiencing reduced fertility and severe birth defects. The surface waters at Kesterson National Wildlife Refuge had accumulated lead, boron, chromium, molybdenum, and other pollutants, specifically selenium which exposure was linked to teratogenic effects in exposed aquatic birds. USEPA (2001) recommends deterring wildlife from using vegetated treatment systems.

The practices listed below should be used where engineered systems of wetlands or vegetated treatment systems can treat NPS pollution. Vegetated treatment systems can be placed in upland regions and protect wetlands and aquatic resources from NPS pollution. For the purposes of this management measure, vegetated treatment systems are vegetated filter strips and constructed wetlands.

- Install vegetated filter strips to remove sediment, nutrients, and other pollutants from runoff and wastewater.
- Construct vegetated filter strips in areas adjacent to waterbodies that may be subject to suspended solids and/or nutrient runoff. Key elements to be considered in the design of such areas include the type and quantity of pollutant, slope, native/non-native species, length, detention time, monitoring performance, and maintenance.
- Construct properly engineered systems of wetlands for NPS pollution control. Several factors to consider in the design and construction of an artificial wetland include hydrology, soils, vegetation, influent water quality, geometry, pretreatment, and maintenance.
- Manage constructed wetland systems to avoid negative impacts on surrounding ecosystems or ground water.
- If measured concentrations of biological oxygen demand (BOD) or dissolved oxygen (DO) are low, use techniques to aerate the water column.

5.5. Potential Compliance Measures Involving Protection and Conservation of Wetlands and Riparian Areas (All Source Categories: Irrigated Agriculture, Urban, Domestic Animal Operations including Grazing lands and Pastureland)

The purpose of these management measures is to protect the water quality improvement and NPS pollution reduction benefits derived from wetlands and riparian areas.

Much of the planet's life depends on the existence of wetlands. They are vital to the survival of many fish and other aquatic life forms, birds, and plants. Wetlands that border first order streams were found by Whigham and others (1988) to be efficient at removing nitrate from ground water and sediment from surface waters. When located downstream from first-order streams, wetlands and riparian areas were found to be less effective than those located upstream at removing sediment and nutrient from the stream itself because of a smaller percentage of stream water coming into contact with the wetlands (Whigham et al., 1988). It has also been estimated that the portion of a wetland or riparian area immediately below the source of NPS pollution might be the most efficient at removing pollutants (Cooper et al., 1987; Lowrance et al., 1983; Phillips, 1989).

Functional wetlands and riparian systems provide services such as enhanced water quality, surface and ground water storage; flood control (adequate set-backs implied) and storm surge attenuation; contain valuable wildlife and aquatic habitats; and enable recreation and other cultural activities. These services are free of charge because they are self-sustaining. Highly modified wetlands and riparian systems are typically only managed for a few beneficial uses or services are very costly to maintain, and their long-term sustainability is uncertain.

Wetlands are characterized by a combination of standing water at the surface or root zone, unique soil conditions, and vegetation adapted to wet conditions (Mitsch and Gosselink, 1993). This management measure should combine structural and programmatic measures to

protect wetland and riparian areas so that they maintain their existing functions. Potential measures and practices include the following:

- Consider wetlands and riparian areas and their pollutant attenuation potential on a watershed or landscape and maintain their function as part of a continuum of filters along streams, and lakes.
- Use historical ecology to help determine what type of wetland to conserve and where to focus those conservation efforts.
- Identify existing functions of those wetlands and riparian areas with significant NPS control potential when implementing NPS management practices. Do not alter wetlands or riparian areas to improve their water quality function at the expense of their other functions.
- Do not place surface water runoff ponds or sediment retention basins in healthy wetland systems.
- Conduct permitting, licensing, certification, and non-regulatory NPS pollution abatement activities in a manner that protects wetland functions.
- Obtain easements or full acquisition rights for wetlands and riparian areas along streams and Pinto Lake.
- Use zoning and protective ordinances to control activities that have an adverse impact on these targeted areas through special area zoning and transferable development rights.
- Ensure that state water quality standards apply to wetlands.
- Establish, maintain, and strengthen regulatory and enforcement programs.
- Encourage the use of programs that restore wetlands and riparian areas.
- Educate landowners and agencies on the role of wetlands and riparian areas in protecting water quality and on management practices for restoring stream edges.
- Provide a mechanism for private landowners and agencies in mixed ownership watersheds to develop, by consensus, goals, management plans, and appropriate practices and to obtain assistance from federal and State agencies.
- Use appropriate pretreatment practices such as vegetated treatment systems or detention or retention basins to prevent adverse impacts on wetland functions that affect the abatement of NPS pollution from hydrologic changes, sedimentation, or contaminants.
- Reduce erosion and, to the extent practicable, retain sediment onsite during and after construction.

5.6. Potential Compliance Measures Involving Planning and Design for Watershed and Groundwater Protection (Source Category: Urban-MS4 Entities)

The intent of this management measure is to encourage land use and development planning on a watershed scale that takes into consideration sensitive areas that, by being protected, will maintain or improve water quality. Each element of the management measure addresses key issues that result in water quality degradation. The goals of these management measures are: 1) Avoid conversion, to the extent practicable, of areas that are particularly susceptible to erosion and sediment loss; 2) Preserve areas that provide important water quality benefits (e.g., wetlands) and/or are necessary to maintain riparian and aquatic biota; 3) Protect to the extent practicable the natural integrity of waterbodies and natural drainage systems (e.g., seeps and springs) associated with site development; and 4) Identify priority

local and/or regional watershed pollutant reduction opportunities (e.g., improve existing urban runoff control structures).

Potential measures and practices include the following:

- Development sites should be evaluated to identify areas that are less suitable for development (i.e., steep slopes, erodible soils, wetlands, land within the 100-year floodplain, and historically or culturally significant areas). Building footprints and infrastructure should be located away from these areas where feasible. Local governments can enact ordinances to protect specific resources such as wetlands or riparian areas, and landowners can be encouraged to voluntarily practice conservation of ecologically significant areas.
- Areas particularly susceptible to erosion and sediment loss, specifically areas with highly erodible soils or steep slopes, should be avoided when siting new developments. Arendt (1996) developed a process by which a development envelope could be defined based on factors such as soil type, slope, ecological significance, floodplain delineations, existing vegetation, and cultural/historical significance. On a larger scale, undeveloped areas can be ranked by overlaying data sets in a geographic information system (GIS) that describes factors such as those listed above to guide decisions regarding zoning classification.
- Protect areas that provide water quality benefits, including wetlands, riparian vegetation and wildlife. Wetlands and riparian areas can be protected by local governments through the implementation of buffer ordinances. In addition, landowners can chose to implement buffers and setbacks on their property and to protect wetlands and other ecologically sensitive areas from development. To formalize this process of protecting water resources, a variety of conservation mechanisms can be used, such as easements, deed restrictions, and covenants. Developers should be encouraged to protect water resources as a selling point (aesthetic and ecological amenity).
- Protect the integrity of water resources from the effects of site development and infrastructure. This can be accomplished by establishing setbacks from natural drainage areas; including seeps, springs, and groundwater recharge zones. Protect or promote vegetated buffers around natural drainage areas to provide additional protection. In addition, culverts and crossings can be designed to minimize impacts on riparian areas and to enhance natural drainage rather than impede or overwhelm it. Finally, grading plans can be designed to minimize the adverse hydrologic impacts of clearing and the creation of impervious areas by dispersing drainage to multiple outlets so as not to overwhelm a single drainage feature.
- Once applicable management practices are identified, areas within each watershed can be prioritized for implementation based on site characteristics such as location, ownership, drainage area, soils, and other conditions that may be applicable to specific management practices. These site assessments are conducted using existing data, such as aerial photographs, zoning maps and GIS data, and field surveys.

5.7. Potential Compliance Measures Involving Planning and Design for Impervious Surfaces (Source Category: Urban-MS4 Entities)

The intent of this management measure is to limit or reduce the amount of impervious areas. In most cases, when impervious cover is less than 10 percent of a watershed, streams

remain healthy. Above 10 percent impervious cover, common signs of stream degradation are evident.

Developers can use innovative site and structure designs that reduce building footprints, decrease the amount of paved infrastructure, and provide for dispersed drainage and infiltration of runoff from impervious surfaces to reduce "effective impervious surface," which can be defined as impervious surface that is connected to the storm water drainage system. The concept of effective impervious surface is important, because when runoff from these surfaces is directed to pervious areas rather to an impervious drainage system (i.e., curbs, gutters, street surfaces, and storm drain pipes), it can infiltrate, evaporate, or be taken up by vegetation, thereby reducing the total volume of runoff leaving a site.

The following techniques, among others, can be used as appropriate to reduce the impact of an individual development site to receiving waters. Municipalities can require that these types of practices be implemented through an ordinance that provides modified, environmentally friendly standards for infrastructure dimensions and layouts. In addition, these practices can be encouraged through storm water credits or density credits provided as incentives to developers. Some of the management measures include:

- Designing streets to be narrower;
- Placing sidewalks on only one side of the street;
- Providing pervious areas (via porous pavement) for on-street parking, parking lots, alley-ways, and drive ways – avoid using near toxic hot spots or 100 feet from drinking water wells;
- Redesigning the layout of buildings to reduce street length and preserve open space;
- Increasing density for residential housing;
- Reducing parking lot sizes and parking space sizes;
- Promoting shared parking among nearby businesses with different peak demands for parking (e.g., churches and retail businesses); and
- Disconnecting impervious surfaces through creative grading plans and distributed infiltration areas.

5.8. Potential Compliance Measures Involving Construction Activities (Source Category: Urban-MS4 Entities)

The intent of this management measure is to incorporate pollution prevention procedures into the operation and maintenance of roads, highways, and bridges to reduce pollutant loadings to surface waters. Some the potential management measures include:

Detention Ponds and Large-Scale Structural Controls:

- Temporary detention ponds or vaults that hold runoff and release it slowly but completely after a 72-hour or shorter period.
- Retention pond or wetlands in which a permanent pool of water is maintained and runoff is slowly released over time. Retention practices, by allowing water to stand for a longer period of time, achieve greater pollutant removal through settling and allow for biological uptake using wetland vegetation.
- Open channel practices, such as grassed swales, are commonly and effectively used to collect, convey, and infiltrate runoff, but they are not intended to drain large areas of

impervious surfaces and therefore are typically implemented in combination with other practices.

Devices that fit into the storm water conveyance system:

- Infiltration practices, such as basins, trenches, and French drains that collect runoff and convey it through a porous matrix such as sand or organic filters and bioretention practices.
- Trash racks.
- Proprietary practices that are typically installed underground use mechanisms such as settling, absorption, and micro filtration as well as other mechanisms such as centrifugal force and gross filtration to remove solids and floatable debris.

Pollution prevention for the operation and maintenance of roads, highways, and bridges - Road Repairs:

- Potholes and cracks in road surfaces and retaining walls should be repaired promptly to prevent further degradation of the road surface. When these activities, along with road expansion and repaving, disturb vegetated areas, the exposed soils should be protected from erosion using erosion and sediment controls and denuded areas should be renegotiated using seed, mulch, or sod immediately after road work has been completed.
- When performing bridge maintenance activities, use enclosures, and containment and collection systems to collect pollutants. Recommended enclosures include free hanging enclosures, total structure enclosures, and negative pressure systems, and recommended containment and collection systems include: cofferdams, barges, containment booms, and vacuum sanders. A runoff control plan should be in place for each large project, and smaller projects should be governed by standard operating procedures to prevent contamination of storm flows and to control spills.

5.9. Potential Compliance Measures Involving Landscaping Activities (Source Category: Urban-MS4 Entities)

The intent of this management measure is to increase pollutant attenuation through bioretention. Some potential management measures include:

- Increase groundwater infiltration and recharge by exposing native soils
  If possible, remove impervious surfaces and expose native soils. Planting vegetation and trees will provide shade and improve bioattenuation of polluted runoff, as well as increasing the aesthetics and provide a park-like setting for recreation.
- Increase pollutant attenuation through bioretention
  Polluted runoff is treated by natural soil process (or if natural soils are unavailable, then an engineered soil medium) and phytoremediation. The ideal application is for median strips, parking lot islands, and vegetated swales. Bioretention is not appropriate where soils are subject to freeze and thaw, where groundwater is less than 6 feet below ground surface or groundwater recharge zones, for slopes greater than 20 percent, or in sensitive habitats such as areas where mature trees are growing. Vegetated swales should be planted with grasses that require minimal maintenance and grow at least twice as tall as the maximum height of standing water

or at least 4 inches, and side slopes should not exceed 3:1. Vegetated buffers should be planted with native grasses that require minimal maintenance. The width of the vegetated buffer should be at least an order of magnitude less than the width of the area draining into it, e.g. 150 feet wide area would need a vegetated buffer of at least 15 feet. Ensure that soils are permeable enough and the infiltration area is large enough so that water drains in three (3) or less days; this is necessary to ensure mosquito breeding is unsuccessful. Some areas may have mosquitos that take longer to complete their life cycle.

- Collect and store non-potable water on-site for use in landscaping
  Disconnect downspouts from roof or other impervious surface runoff collection systems and store water in a cistern, rain barrel, or other small scale water containment device. Make sure that water is stored in a closed container. Use this water on-site for landscaping irrigation, assuming the water is good quality. Always have water tested to be sure. Underground vaults can also be installed to capture and re-use irrigation water.
- Use landscaping to restore or maintain predevelopment hydrographs
  Install green roofs in highly urbanized areas. A green roof consists of vegetation and soil, or a growing medium, planted over a waterproofing membrane. Additional layers, such as a root barrier and drainage and irrigation systems may also be included. Green roofs can be used in many applications, including industrial facilities, residences, offices, and other commercial property. In Europe, they are widely used for their stormwater management and energy savings potential, as well as their aesthetic benefits (source: EPA Heat Island Effect). Green roofs can also provide habitat for birds and flying insects (e.g. honey bees).
- Replace lawns with rain gardens
  Rain gardens are small bioretention cells landscaped with plants, trees, and grasses. They are a particularly good way for individual homeowners to enhance their landscaping while protecting water quality. By planting easy-care native wildflowers, hardy perennials and grasses, attractive gardens can be constructed that have the added environmental benefits. Ensure that soils are permeable enough and the infiltration area is large enough so that water drains in three (3) or less days; this is necessary to ensure mosquito breeding is unsuccessful. Some areas may have mosquitos that take longer to complete their life cycle.

  Install planter boxes to use urban runoff from disconnected downspouts in landscaping. Pollutants can be attenuated by phytoremediation and soil microbial activity. To make sure that soils contain the correct amount and type of microorganisms use soil amendments such as microbial inoculations or good quality compost.

  Curbs should be eliminated to allow highway and road runoff to be filtered through vegetated shoulders and medians. Eliminating curbs also increases infiltration to ground water. If eliminating curbs is not possible, curbs can be designed with breaks and energy dissipaters to direct sheet flow to vegetated surfaces. These infiltration areas will require periodic inspection for damage, rilling, ponding, and trash accumulation, and will also require mowing or cropping of vegetation to prevent nuisance conditions.

- Plant and maintain urban forests
  Urban forests provide shade and reduce the urban heat island effect; improve soil and enhance bioretention; and improve air quality by absorbing nitrogen oxides, sulfur oxides, particulate matter, and carbon dioxide.

5.10. Potential Compliance Measures Involving Public Outreach and Education (Source Category: Urban-MS4 Entities)

The intent of this management measure is to implement educational programs to provide greater understanding of watersheds and to raise awareness and increase the use of applicable urban management measures and practices to control and prevent adverse impacts on surface and ground waters. Public education, outreach, and training programs should involve targeted groups in the community. Implementation of urban pollution prevention and education programs can include the following subjects:

- Household
  Everyday household chemicals can be considered pollutants if they are improperly handled, stored, or disposed of. Automotive substances, household cleaners, fertilizers, pesticides, and home improvement materials must all be carefully managed to prevent contamination of runoff or ground water. Car washing can flush nutrients, metals and hydrocarbons into storm drains. Watershed managers can address these problems through public outreach and education efforts such as pamphlet distribution, training on proper lawn care practices, and storm drain stenciling. Municipalities should also provide facilities for the disposal of household chemicals. In residential neighborhoods, pet waste can also be a major contributor to NPS pollution. Pet owners can be informed about proper disposal of waste, and municipalities can install "pet waste stations," pass and enforce “pooper scooper” ordinances, and post signs. Additionally, in the Pinto Lake park, the Resources Conservation District installed an informational sign to increase public awareness. Other signs may be added in the future in an effort to inform the public on pollution prevention.
- Landscaping
  Outreach campaigns should also inform both commercial lawn care specialists and residents of the importance of proper application of fertilizers and pesticides. In particular, techniques such as Integrated Pest Management and timing of fertilizer application should be emphasized to provide citizens with the tools to use these substances efficiently and reduce overall pesticide and fertilizer use.
- Commercial
  One way commercial activities can generate NPS pollution is through the release of wastewater into a storm sewer system without a permit (this is known as an illicit discharge). Municipalities must develop programs to help detect and eliminate these illicit discharges, as well as educate businesses and their employees. Commercial and industrial establishments should also implement good housekeeping practices, employee education and training programs and spill prevention plans. Measures should be taken to reduce the possibility of spills or leaks during general operation, maintenance, washing, construction, or repairs and to limit the exposure of pollutants to areas where they might come in contact with storm water.

- Municipal
  Municipalities should implement good housekeeping practices, including programs to control trash, debris collected from street sweeping, stockpiled material, and corporation yard pollutant sources, and reduce pollutants from activities such as park and road maintenance. Programs that reduce the amount of trash on the streets include public education, increased waste disposal facilities and cleanup campaigns. Municipalities can also clean streets and prevent trash from entering storm water with street sweeping and trash collection devices for storm drain inlets.

5.11. Potential Compliance Measures Involving Nitrogen and/or Phosphorus Removal from Municipal Wastewater

Processes for biological nutrient removal from municipal water have been reported by USEPA (2007b). There are a number of BNR process configurations available. Some BNR systems are designed to remove only total nitrogen (TN) or total phosphorus (TP), while others remove both. The configuration most appropriate for any particular system depends on the target effluent quality, operator experience, influent quality, and existing treatment processes, if retrofitting an existing facility. BNR configurations vary based on the sequencing of environmental conditions (i.e., aerobic, anaerobic, and anoxic) and timing (Jeyanayagam, 2005). Common BNR system configurations include:

- Modified Ludzack-Ettinger (MLE) Process – continuous-flow suspended-growth process with an initial anoxic stage followed by an aerobic stage; used to remove TN
- A/O Process – MLE process preceded by an initial anaerobic stage; used to remove both TN and TP
- Step Feed Process – alternating anoxic and aerobic stages; however, influent flow is split to several feed locations and the recycle sludge stream is sent to the beginning of the process; used to remove TN
- Bardenpho Process (Four-Stage) – continuous-flow suspended-growth process with alternating anoxic/aerobic/anoxic/aerobic stages; used to remove TN
- Modified Bardenpho Process – Bardenpho process with addition of an initial anaerobic zone; used to remove both TN and TP
- Sequencing Batch Reactor (SBR) Process – suspended-growth batch process sequenced to simulate the four-stage process; used to remove TN (TP removal is inconsistent)
- Modified University of Cape Town (UCT) Process – A/O Process with a second anoxic stage where the internal nitrate recycle is returned; used to remove both TN and TP
- Rotating Biological Contactor (RBC) Process – continuous-flow process using RBCs with sequential anoxic/aerobic stages; used to remove TN
- Oxidation Ditch – continuous-flow process using looped channels to create time sequenced anoxic, aerobic, and anaerobic zones; used to remove both TN and TP

Although the exact configurations of each system differ, biological nitrogen removal systems designed to remove TN must have an aerobic zone for nitrification and an anoxic zone for denitrification, and biological nitrogen removal systems designed to remove TP must have an anaerobic zone free of dissolved oxygen and nitrate. Often, sand or other media filtration is used as a polishing step to remove particulate matter when low TN and TP effluent concentrations are required. Sand filtration can also be combined with attached growth denitrification filters to further reduce soluble nitrates and effluent TN levels,

Choosing which system is most appropriate for a particular facility primarily depends on the target effluent concentrations, and whether the facility will be constructed as new or retrofit with BNR to achieve more stringent effluent limits. New plants have more flexibility and options when deciding which biological nitrogen removal configuration to implement because they are not constrained by existing treatment units and sludge handling procedures.

5.12. Potential Compliance Measures Involving Grazing Management (Source category: Livestock, Domestic Animal Waste)

It is important to note that the Pajaro River basin, and therefore the Pinto Lake catchment, is subject to the Domestic Animal Waste Discharge Prohibition and is subject to compliance with an approved indicator bacteria TMDL load allocation[28]. Implementation efforts by responsible parties to comply with this prohibition and with indicator bacteria load allocations will, as a practical matter, also reduce the risk of phosphorus loading to surface waters from domestic animal waste.

The intent of this management measure is to protect sensitive areas in range, pasture, and other grazing lands. California-approved USDA NRCS standards required for a conservation management systems should be applied to the entire grazing area. These components include erosion control, adequate pasture stand density, and rangeland condition. Some of the foreseeable management measures include:

- Carefully plan the use of grazing areas by developing a grazing management plan with the goal of improving or maintaining water quality. Use prescribed grazing techniques to harvest vegetation in a controlled manner by managing the intensity, frequency, and duration of grazing.
- Prevent erosion from wind or water by maintaining sufficient vegetative cover to stabilize soils. Where feasible, consider installing windrows or wind fences to reduce wind velocity and erosion.
- Keep animals out of surface waters: exclude animals, people, or vehicles to protect and maintain plant and water quality and prevent or minimize direct loading of animal waste and sediment into surface waters. Install alternative drinking sources (e.g., pipelines, ponds, troughs, tanks, and wells) to keep animals away from sensitive waters and install hardened access points so animals have access to drinking water sources. Use fences, hedgerows, moats, and other practices to keep animals away from sensitive areas and place mineral supplements and additional shade away from sensitive areas.
- Provide designated, stabilized stream crossings for livestock and equipment to minimize impacts on stream habitat and water quality.
- Use structural range improvements like access roads, grade stabilizers, sediment ponds, stalk trails or walkways, troughs and tanks, pipelines, and streambank protection to maintain vegetation and slopes and prevent waterway degradation.
- Use non-structural practices such as planting of native vegetation, especially along channels or in critical areas; prescribed burning; range seeding; brush management; stream corridor improvement; and wetland and upland wildlife management to manage vegetation, prevent erosion, and protect wildlife habitat.

[28] Central Coast Water Board Resolution No. R3-2010-0017 (Sept. 2010).

- Allow for a vegetative buffer strip/filter strip to remain around sensitive areas (such as streambanks, ponds, lake shores, and riparian zones) to help facilitate infiltration and ultimately prevent polluted runoff from directly entering surface waters.
- Periodically monitor the conditions of grazing lands to ensure that management practices are effective, and if not, implement new practices or modify existing practices to maintain vegetation and protect soils and waterways.

5.13. Potential Compliance Measures Involving Animal Waste (Source category: confined animal facilities that are not a Concentrated Animal Feeding Operation)

It is important to note that Pajaro River basin, and therefore the Pinto Lake catchment, is subject to the Domestic Animal Waste Discharge Prohibition and are subject to compliance with an approved indicator bacteria TMDL load allocation[29]. Implementation efforts by responsible parties to comply with this prohibition and with indicator bacteria load allocations will, as a practical matter, also reduce the risk of phosphorus loading to surface waters from domestic animal waste. Accordingly, the Central Coast Water Board has already developed an approved the appropriate

The intent of this management measure is to limit the discharge from the confined animal facility that is not a Concentrated Animal Feeding Operation (CAFO) by: containing both facility wastewater and the contaminated runoff from confined animal facilities at all times, up to and including storms exceeding a 25-year, 24-hour frequency event, and managing stored runoff and accumulated solids from the facility through an appropriate waste utilization system that is consistent with recognized nutrient management measures. Some of the foreseeable management measures include:

- Liquid manure storage structures should be designed to store facility wastewater and the contaminated runoff from confined animal facilities at all times, up to and including storms exceeding a 25-year, 24-hour frequency event, and should be consistent with nutrient management plans designed for the facility;
- Dry manure should be stored in production buildings or storage facilities, or otherwise covered to prevent manure from coming into contact with rainwater and entering surface waters through runoff;
- Compost manure where appropriate, and reuse as fertilizer and/or soil amendment;
- Each facility should have a nutrient management plan that is consistent with Management Measure 1C (nutrient management);
- Clean water should be diverted from contact with feedlots and holding pens, animals, and manure storage facilities through the use of berms, dikes, diversions, roofs, or enclosures;
- Dead animals should be buried an adequate distance from surface and/or ground water so that quality of water is not affected; and
- Seepage of liquid wastes to ground and surface water should be prevented through the use of impermeable linings for liquid storage ponds and concrete pads or other suitable material for solid storage and heavy animal traffic areas.

[29] Central Coast Water Board Resolution No. R3-2010-0017 (Sept. 2010).

5.14. Compliance measure related to alum treatment of Pinto Lake sediments

Aluminum sulfate (alum) was applied to Pinto Lake in April 2017 as a management measure to reduce in-lake phosphorus loading. This action is complete and CEQA analysis was completed by the City of Watsonville. However, as a matter of inclusion in this document, we wanted to acknowledge that this management measure was discussed during our June 2, 2015 CEQA scoping meeting. Additionally, future alum treatment may take place in the future in an effort to bind the in lake phosphorus concentrations and reduce phosphorus loading from the lake itself.

6. ENVIRONMENTAL CHECKLIST

Table 5 presents the 2016 CEQA Checklist, as published on the Governor's Office of Planning & Research under CEQA Guidelines Appendix G (accessed May 2017).

Table 5. 2016 CEQA Checklist, as published on the Forms section of the Governor's Office of Planning & Research website, Appendix G.

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

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☒	☐	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
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))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☒	☐	☐
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?	☐	☒	☐	☐
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:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
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)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☒	☐	☐
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?	☒	☐	☐	☐
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?	☐	☒	☐	☐
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?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
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?	☐	☐	☐	☒
5. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐
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:	☐	☐	☐	☒
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.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency 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?	☐	☐	☐	☒
9. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
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)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?				
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
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?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
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?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
10. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency 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?	☐	☒	☐	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
11. MINERAL RESOURCES. 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
12. NOISE -- 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?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
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 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?	☐	☐	☐	☒
13. POPULATION AND HOUSING. Would the project:				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
14. PUBLIC SERVICES.				
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:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒
15. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that 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?	☐	☐	☐	☒
16. TRANSPORTATION/TRAFFIC.				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
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 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?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
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?	☐	☐	☐	☒
<u>17. TRIBAL CULTURAL RESOURCES</u> 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				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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	☐	☐	☐	☒
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.	☐	☐	☐	☒
18. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☒	☐	☐
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	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
projected demand in addition to the provider's existing commitments?				
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒
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?	☒	☐	☐	☐
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 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?	☐	☐	☒	☐

7. ENVIRONMENTAL EVALUATION DISCUSSION

The Substitute Environmental Documentation must include an analysis of the reasonably foreseeable environmental impacts of the methods of compliance, and the reasonably foreseeable mitigation measures relating to those impacts.

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."*

The following includes Central Coast Water Board staff's environmental evaluation discussion on the basis of the CEQA checklist presented previously in Section 6

1) AESTHETICS

Would the project:

(a) – Have a substantial adverse effect on a scenic vista?

Answer: No impact.

Discussion: None of the reasonably foreseeable non-structural (e.g., nutrient management, and other source controls) or structural methods (e.g., vegetated treatment systems) of compliance methods identified in Section 5 are expected to have an adverse impact on a scenic vista. Structural methods of compliance do not require the permanent construction of a sizable structure that would either block a scenic vista or substantially degrade a scenic vista. Further, the TMDL project area does not have designated vista sites located on the California State Highway System, according to GIS data available from the California Department of Transportation (refer back to Figure 2 on page 13).

(b) – Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Answer: No impact.

Discussion: Reasonably foreseeable methods of compliance identified in Section 5 do not require the building of structures that would damage natural or human made resources to the extent that it would impede the scenic quality of the area or scenic resources associated with state scenic highways. Indeed, some of the methods of compliance, for example, increases in riparian vegetation, and some types of vegetative treatment systems, may be aesthetic improvements to the TMDL project area. For example, efforts by stakeholders to improve watersheds and increase riparian habitat can increased the aesthetic value of creeks.

(c) – Substantially degrade the existing visual character or quality of the site and its surroundings?

Answer: No impact.

Discussion: Reasonably foreseeable methods of compliance identified in Section 5 are of such a nature such that they are not expected to degrade the visual character or quality within the TMDL project area. Indeed, some of the methods of compliance, for example increases in riparian vegetation, and some types of vegetative treatment systems, may be aesthetic improvements to the TMDL project area.

(d) – Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Answer: No impact.

Discussion: Reasonably foreseeable methods of compliance identified in Section 4are of a nature such they would not expected to create new sources of substantial light or glare which adversely affect day or nighttime views in the TMDL project area.

2) AGRICULTURE RESOURCES:

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?

Answer: Less than significant with mitigation incorporation.

Discussion: The proposed TMDL project does not propose or require any person to take agricultural lands out of production. Rather, the proposed TMDL project relies on implementation based on an existing regulatory program adopted by the Central Coast Water Board (the Agricultural Order). The Agricultural Order requires growers to comply with the Water Code and the Basin Plan by reducing or eliminating discharges of pollutants into surface and groundwater using management practices. None of the reasonably foreseeable non-structural (e.g., nutrient management, and other source controls) compliance methods identified in Section 5 would be expected to cause a substantial adverse change in Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use, because non-structural methods of compliance do not reasonably include changes to land use patterns. Structural (e.g., vegetated treatment systems) compliance methods identified in Section 4 could result in a substantial adverse change pertaining to conversion to non-agricultural use of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance because some incidental amounts of these lands could be converted to non-agricultural uses (e.g., constructed wetlands or filter strips) as described below. These actions can be expected to be less than significant with mitigation incorporation as described below.

Nutrient control strategies and measures in agricultural watersheds have been underway for many years in various agricultural watersheds in the State and throughout the nation. Based on the literature, research, and information staff has surveyed for this project, we are unaware of any cases where nutrient control strategies have directly been responsible for substantial or widespread adverse impacts resulting in the conversion of farmland to non-agricultural uses.

Dischargers may choose to install riparian habitat buffer strips or vegetated treatment systems as identified in Section 5 to implement the proposed TMDL and comply with the Agricultural Order. These actions could result in taking incidental amounts of land out of crop production. Where dischargers choose to install riparian habitat buffers to control discharges of waste, some farm land could be taken out of production.

Some structural treatment practices identified in Section 5 such as riparian buffers and vegetated treatment systems (e.g., wetlands) could result in conversion of farmland to non-agricultural uses. As discussed in the Agricultural Order's Final Subsequent Environmental Impact Report (March 17, 2011), if all growers in Tier 3 chose to install buffer strips to comply with the Agricultural Order, approximately 82 to 233 acres or 0.002 to 0.004% of the 540,000 acres of agricultural lands within the Region, would be taken out of production. This is because riparian buffers only affect a very narrow band of land on either side of a waterbody. Given the total number of acres farmed in the Central Coast Region, the impact on acres farmed does not constitute a substantial adverse conversion of farmland to non-agricultural uses even if all 233 acres in the Central Coast Region were converted to some other use. This estimate represents the acreage of land that would be taken out of production if all growers chose to install riparian habitat buffers and all of those buffers did not yield any agricultural products. The estimate may be less than this because of alternative means of compliance and/or mitigation. The TMDL project and the Agricultural Order which is proposed to implement the TMDL do not require the use of buffers; other methods may be used or the discharges may not be significant due to existing practices.

Constructed wetlands or other types of vegetated treatment systems could potentially result in a substantial adverse conversion of farmland because these types of systems are anticipated to require more acreage than buffer strips. Mitigation strategies to reduce the adverse impacts of these systems to less than significant have previously been identified by reputable local resource professionals[30]; these include appropriate design and location strategies as outlined below:

1) Building vegetated treatments systems on small parcels that are already out of production and with minimal intrinsic habitat (e.g., woodchip reactors on the small vacant area that is often adjacent to existing tile-drain pumps);

2) Use larger-area cooperative systems – larger systems have a low circumference to area ratios, and thus result in less agricultural/habitat contact per unit of water quality improvement; and

3) Utilize other location strategies to mitigate impacts; e.g., using the lowest lying areas whose inundation is already increasingly problematic (for example, due to sea level rise, urban expansion, and higher impervious area), or identifying areas of currently non-productive agricultural land adjacent to waterbodies that could be used for treatment wetlands. Indeed, a prominent local resource professional has indicated to Central Coast Water Board staff that they have already identified hundreds of acres of non-productive agricultural land (left fallow because it is too wet to be used for viable crops) adjacent to channels and waterbodies that might be used for vegetated treatment systems (personal

[30] Dr. Fred Watson, Assistant Professor, California State University Monterey Bay and Mr. Ross Clark, Director of Central Coast Wetlands Group at Moss Landing Marine Laboratories.

communication, Mr. Ross Clark, Director of Central Coast Wetlands Group at Moss Landing Marine Laboratories, May 2, 2012).

(b) – Conflict with existing zoning for agricultural use, or a Williamson Act contract?

Answer: No Impact.

Discussion: None of the reasonably foreseeable non-structural or structural compliance methods identified in Section 5 would be expected to conflict with existing zoning for agricultural uses, or a Williamson Act contract.

(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))?

Answer: No Impact.

Discussion: Implementation activities associated with the proposed TMDL would not be expected to occur in forest or woodland zoned areas of the Pinto Lake catchment. There are not timber plans in the Pinto Lake catchment. Available data indicate that stream reaches in the forested upland areas of the river basin are not adversely impacted by nutrient pollution.

(d) – Result in the loss of forest land or conversion of forest land to non-forest use?

Answer: Less than significant with mitigation incorporation.

Discussion: Implementation activities associated with the proposed TMDL may occur in forest or woodland areas of the Pinto Lake catchment in an effort to control erosion. An illustration of the distribution of woodlands in the catchment was previously presented in Figure 4 on page 16. However, there is a sedimentation basin[31] constructed in the Amesti Creek subcatchment that results in 0.2 acres of wetland impacts. Wetland impacts will be mitigated at a 1:1 ratio through the rehabilitation of 0.2 acres of wetland habitat.

Besides construction of a sedimentation basin, loss of forest land or conversion of forest land to non-forest land is not expected as a result of this TMDL. In fact, forest land contributes less nutrient loading than agricultural and urban areas and there are no portions of this TMDL project that would encourage this type of loss or conversion as it is contrary to what the project is trying to achieve.

(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?

Answer: Less than significant with mitigation incorporation.

Discussion: Refer back to previous responses under Heading 2(a) and Heading 2(d). Further, an additional potentially substantial adverse conversion of farmland to non-

[31] 401 Certification No. 34416WQ05, issued July 26, 2016.

agricultural land could possibly indirectly result from food safety issues. Concerns have been raised about vegetated treatment systems attracting wildlife which might impact leafy green production and risk food safety, thereby indirectly taking viable farmland out of viable production due to issues arising from food safety risks. Possible mitigation strategies to reduce these adverse impacts to less than significant have been provided to Central Coast Water Board staff by a prominent local resource professional (Mr. Ross Clark, Director Central Coast Wetlands Group at Moss Landing Marine Laboratories, via personal communication May 2, 2012). There are several food safety task forces working to develop better guidelines describing what wetland, creek and treatment wetland related sources and vectors can potentially impact leafy green production and risk food safety. Resource professionals at the Central Coast Wetlands Group at Moss Landing Marine Laboratories could be working with these experts to design treatment wetlands that do not attract wildlife. It should be noted that many animals (birds, rodents, dear etc.) in fact presently use degraded drainages. Food safety risk can be mitigated through rodent fencing, raptor poles to reduce rodent populations, proper selection of plant species that deter pest species, and proper wetland feature design and planting to minimize open water habitat that attract geese and other waterfowl. Also, because these are isolated systems within the landscape they cannot be used as migration corridors by animals.

Finally, it should be noted that nutrient pollution control strategies have been underway for many years across the nation through state TMDL programs and across Europe through the European Commission Nitrate Directive; staff is unaware of any reporting that implementation of these programs has been responsible for substantial and adverse losses or conversions of agricultural lands to non-agricultural uses.

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:

(a) – Conflict with or obstruct implementation of the applicable air quality plan?

Answer: No Impact

Discussion: None of the reasonably foreseeable methods of compliance methods identified in Section 5 would be expected to result in any conflicts with or obstruction to the implementation of the applicable air quality plan. The implementation measures would not be expected to result in significant changes in traffic, which could cause an increase in emission. Therefore, the TMDL is consistent with plans such as the Air Quality Attainment Plan, the Congestion Management Plan and the Regional Transportation Plan (CSBPD, 2008).

(b) – Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Answer: Less than significant.

Discussion: Please refer to subsection (c) below for a discussion of violation of air quality standards.

(c) – **Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is not attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?**

Answer: Less than significant.

Discussion: The north central coast air basin (Santa Cruz County) – refer back to Figure 10 on page 23) does not attain state clean air standards for ozone and inhalable particular matter-PM_{10} (refer back to
Table 3 on page 23). Some of the structural and the non-structural reasonably foreseeable compliance methods identified in Section 5 could potentially result in short-term net increase of these pollutants during construction at localized scales. These impacts are expected to be insignificant in the long-term in the Pinto Lake catchment.

Standard dust control construction management practices should mitigate inhalable particulate matter from soil disturbance activities such as grading and excavating basins or tilling for vegetation plantings. Note that for most construction projects in Santa Cruz County, dust control measures are required by county grading ordinances.

Implementation of this TMDL should not result in long-term impacts to air quality since the TMDL implementation would be expected to increase vegetation locally on bare ground along farms and in drainage channels, or in riparian zones. In addition, there should not be any long-term increases in emissions because implementation project construction would occur over short periods of time. Lastly, implementation of TMDLs has been occurring across the nation for over two decades and staff is unaware of any reported examples of TMDL implementation having significant adverse impacts on air quality by a cumulatively considerable net increase of air pollutants of concern.

(d) – Expose sensitive receptors to substantial pollutant concentrations?

Answer: Less than significant.

Discussion: Construction of structural management practices could potentially, temporarily, expose sensitive receptors such as schools, residences, apartments, and hospitals to increased levels of fine particulate matter. In the Pinto catchment, houses can be in close proximity to irrigated agricultural land uses and drainage channels that may be subject to excavation and grading for the construction of structural management practices identified in Section 5.

Standard dust control construction management practices should mitigate inhalable particulate matter from soil disturbance activities such as grading and excavating basins or tilling for vegetation plantings. Note that for most construction projects in Santa Cruz counties, dust control measures are required by county grading ordinances. However, as stated above, structural management practices could locally result in increased levels of particulate matter. Construction of the management practices would likely occur over a short periods of time; therefore, the impact would be temporary. Lastly, implementation of TMDLs has been occurring across the nation for over two decades and staff is unaware of any reported examples of TMDL implementation having significant adverse impacts on sensitive

receptors above and beyond that normally associated with construction, tilling, and grading activities in an agricultural watershed.

(e) – **Create objectionable odors affecting a substantial number of people?**

Answer: Less than significant with mitigation incorporation.

Discussion: If not properly maintained, woodchip bioreactors have the potential to produce hydrogen sulfide gas, which has an objectionable odor. Whether the odor could affect a "substantial" number of people, per the Environmental Checklist significance threshold, would depend on the location of the bioreactor. If objectionable odors would affect a substantial number of people, the impact could potentially be significant. The impact could be temporary because the woodchip bioreactor could be removed or rendered inoperable. This impact is also avoidable if systems are designed to a suitable treatment capacity and operated properly.

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?**

Answer: Potentially significant impact.

Discussion: The Central Coast Water Board requires implementation by responsible parties who own property that may potentially contain special-status species. As of 2016, according to data available from the California Natural Diversity Database (CNDDB 2016) there were nine rare, sensitive, threatened or endangered species in the Pinto Lake catchment – see Table 6. The CNDDB is a program that inventories the status and location of rare plants, animals and insects in California. These nine sensitive species occur in, or near, lands classified by the Department of Conservation's Farmland Mapping and Monitoring Program (2014) as farmland or urban areas – these areas are where most TMDL compliance activities are expected to take place. Some of these species may live in habitats similar to those in areas where TMDL compliance methods will be needed.

Structural or non-structural compliance methods identified in Section 5 that may potentially result in reduced flows in waterbodies (e.g., reductions in tailwater discharge) may have the potential to have a substantial adverse impact on rare, sensitive, threatened or endangered species or their habitats. However, at this time, specific data and evidence to support this position were not found. Both U.S. Fish and Wildlife Service and the California Department of Parks have previously opined that there may be potentially significant adverse impacts related to reduction in flows[32], however U.S. Fish and Wildlife Service indicated that there are a range of possibilities. Reduced flow may benefit native species in the long run, making it harder for invasive species to survive. Reduced flows would likely allow the hydrology to go back to a more natural state; however, it could have negative effects by potentially reducing

[32] See Final Subsequent Environmental Impact Report, Staff Recommendations for Agricultural Order, March 2011, Central Coast Regional Water Quality Control Board.

stream flows and associated freshwater aquatic habitat in areas inhabited by sensitive, rare, threatened or endangered species. The potential negative effects noted above are dependent on many variables including where the flow is reduced, by how much and at what times of the year. State Parks' position was similar. State Parks discussed that there would likely be an adjustment period. They suggested further hydrological analysis in these areas where there are special status species with certain water requirements. Additionally, State Parks suggested mitigation measures such as phasing in implementation of requirements in some areas and adjusting them on a watershed basis. In addition, note that reductions in surface runoff (tailwater discharge) may in fact result in increased percolation to groundwater resulting in an increased potential for shallow groundwater baseflow which could continue to support viable stream flows. Also worth noting is that if there is reduced flow from a point source, the State Water Resources Control Board Division of Water Rights would have to execute a change petition, involving an evaluation of impacts created by the reduced flow/discharge.

It is anticipated that in most cases, installation of structural compliance measures would be of relatively small scale and any impacts could be avoided by adjusting the timing and/or location of the compliance measures to take into account rare, sensitive, threatened or endangered species or their habitats. In addition, alternatives to activities that involve land disturbance may be employed, such as irrigation and nutrient non-structural control measures, or moving crops rows in in a direction parallel to riparian zones to reduce runoff.

Further, while rare, sensitive, threatened or endangered species are found on or adjacent to irrigated agricultural lands or census-designated urbanized areas in the project area, there are likely negative effects on these species because of current water quality degradation and excess nutrients associated with agricultural discharges. In other words, while rare, sensitive, threatened or endangered species may be present, excessive levels of nutrients, low dissolved oxygen, toxicity due to un-ionized ammonia and water quality degradation are not a desirable condition for the health and long term sustainability of these species. It is widely-acknowledged by many resource professionals and in the scientific literature (refer to TMDL Project Report) that water quality degradation, stream alteration, and human activities have, on balance, constituted an adverse impact to the natural biodiversity of the Pinto Lake catchment.

Consequently, while sensitive species may be present in some areas because of the discharged water, continuing to discharge water of low quality is not an environmentally desirable or sustainable practice with respect to the viability of sensitive species. 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 use of riparian buffers and other vegetated treatment systems that will effectively treat the water to remove pollutants, but not necessarily reduce flows.

Alum application to Pinto Lake, which was applied in April 2017, should have a less than significant impact on biological resources. The alum solution is applied with a buffer solution in order to maintain a near neutral pH and protect wildlife. Alum was not applied in the

"fingers" of the lake, in order to be protective of the western pond turtle[33]. The alum should not affect the benthic organisms. Additionally, the bottom of the lake is anaerobic and most benthic organism are unable to survive these conditions, save bloodworms. Bloodworms are mainly food for adult carp, which are in introduced species the City of Watsonville is trying to remove from the Lake. The population of bloodworms should not have a significant impact upon juvenile or adult populations of other fish species.

Because of the mitigation strategies shown above, and because of the net corollary benefits to wildlife resulting from foreseeable compliance measures, potential substantial adverse effects are possible to a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service, but are not anticipated to occur.

Table 6. Sensitive, rare, threatened or endangered species in the Pinto Lake catchment on the basis the information from the California Natural Diversity Database (year 2016).

Species	Common Name	State Rank	Federal Legal Status	California Legal Status	Other Status
Lavinia exilicauda harengus	Monterey hitch	S2S4	None	None	CDFW:SSC
Lavinia symmetricus subditus	Monterey roach	S2S3	None	None	CDFW:SSC
Entosphenus tridentatus	Pacific lamprey	S4	None	None	AFS:VU BLM:S CDFW:SSC USFS:S
Cottus gulosus	riffle sculpin	S3S4	None	None	CDFW:SSC
Hysterocarpus traskii	Sacramento tule perch	S2S3	None	None	NA
Acipenser transmontanus	white sturgeon	S2	None	None	AFS:EN CDFW:SSC IUCN:LC
Emys marmorata	western pond turtle	S3	None	None	BLM:S CDFW:SSC IUCN:VU USFS:S
Holocarpha macradenia	Santa Cruz tarplant	S1	Threatened	Endangered	NA
Monolopia gracilens	woodland woollythreads	S2S3	None	None	NA

STATE RANKING
The *state rank* (S-rank) refers to the overall imperilment status within California's state boundaries. State ranks represent a letter and number score that reflects a combination of Rarity, Threat, and Trend factors, with weighting being heavier on Rarity than the other two.
S1 = **Critically Imperiled** - Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.

[33] California Fish and Wildlife requirement, March 10, 2017, Final Lake alteration agreement, notification No. 1600-2016-0362-R3, Pinto Lake; Pinto Lake Restoration Project.

S2 = **Imperiled** - Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.
S3 = **Vulnerable** - Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.
S4 = **Apparently Secure** - Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors.
S5 = **Secure** - Common, widespread, and abundant in the state.
OTHER STATUS: CODE ABBREVIATIONS
AFS:VU - American Fisheries Society - Vulnerable
BLM:S - Bureau of Land Management – Sensitive
CDFW:SSC - California Department of Fish & Wildlife - Species of Special Concern
IUCN:LC - The International Union for Conservation of Nature - Least Concern
IUCN:VU - The International Union for Conservation of Nature - Vulnerable
USFS:S – U.S. Forest Service – Sensitive

(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?

Answer: Less than significant with mitigation incorporated.

Discussion: In general, substantial adverse effects on any riparian habitat or other sensitive natural community are not anticipated because the reasonably foreseeable compliance methods identified in Section 5 promote the protection of riparian areas and increases in the amount of riparian vegetation. To the extent these compliance methods result in increased amounts of riparian vegetation in the project area, these are expected to be a net benefit to sensitive communities. None of the reasonably foreseeable compliance methods would have the potential to adversely affect any riparian habitat or other sensitive natural community of plants identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service.

However, there are plans to construct a sedimentation basin in Amesti Creek, which will result in the removal of 0.2 acres of riparian habitat. Wetland impacts will be mitigated at a 1:1 ratio through the rehabilitation of 0.2 acres of wetland habitat.[34] Thus, any adverse environmental impact associated with this action will be mitigated to a less than significant level in the context of CEQA. Sediment basin nutrient reduction strategies is not expected to be constructed in other tributaries, as there is already a sedimentation basin on CCC Creek, and future plans should focus on controlling nutrients at their source.

Alum application should not have any substantial adverse effect on riparian habitat as California Department of Fish and Wildlife's 1600 permit states that no alum shall be applied within 20 feet of shallow water areas within the "fingers" of Pinto Lake.

(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?

Answer: Less than significant.

Discussion: Neither the structural nor the non-structural reasonably foreseeable compliance methods identified in Section 5 are anticipated to have a substantial adverse impact on

[34] 401 Certification No. 34416WQ05, issued July 26, 2016.

federally protected wetlands as defined by Section 404 of the Clean Water Act, with the exception of the planned Amesti Creek sedimentation basin described in Biological Resources (4)(b). This is because compliance methods identified would generally promote and envision the protection of wetlands, or the construction of new, engineered wetlands to the extent these compliance methods pertain to wetlands. The application of compliance measures in federally protected wetland areas would not be allowed if doing so would affect the beneficial uses associated with that wetland. All activities in federally protected wetlands, except those with a statutory exemption like agricultural, require the responsible party to obtain a Clean Water Act 404 permit. The federal permit must include compliance measures that ensure that all water quality objectives for the wetland are protected. Implementation of most BMPs would not be allowed within a wetland because doing so would interfere with the protection of the beneficial uses of that wetland. For example, any BMP that required construction, such as a filtration or siltation basin, would have to go through a 401 certification process in order to make sure the activity either prevents or mitigates or environmental impact in the wetland because it would interfere with the beneficial uses of the wetland.

(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?**

Answer: Less than significant

Discussion: Reasonably foreseeable compliance methods identified in Section 5 will not substantially interfere with migratory fish or wildlife because structural compliance methods are not required within stream beds or in waters of the steams Also, reasonably foreseeable compliance methods are not anticipated to be spatially large-scale, contiguous, or numerous enough to block migration or use of wildlife nursery sites. Indeed to the extent riparian and wetland protection, restoration and enhancement occurs in the project area consistent with identified compliance methods, the movement of any native resident or migratory fish or wildlife species should be expected to be enhanced.

(e) – **Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

Answer: No impact.

Discussion: None of the reasonably foreseeable non-structural or structural compliance methods identified in Section 5 would be expected to conflict with ordinances protecting biological resources, such as a tree preservation policy or ordinance.

(f) – **Conflict with the provision of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan**?

Answer: No impact.

Discussion: Based on available data there are no Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans (NCCPs) currently located in the Pinto Lake catchment (refer to Figure 9 on page 22).

5) CULTURAL RESOURCES

Would the project:

(a) –Cause a substantial adverse change in the significance of a historical resource as defined in section 15064.5?

Answer: Less than significant.

Discussion: Substantial, or potentially substantial, adverse changes to the significance of historical resources as defined in CEQA regulations are not expected to result from implementation of the proposed TMDL. The implementation of non-structural reasonably foreseeable compliance methods identified in Section 5 would not result in a substantial adverse change of a significant historical resource. This is because non-structural compliance methods do not involve land-disturbance or physical effects. Similarly, staff concludes it is unlikely that implementation of any structural compliance method identified in Section 5 would result in a substantial adverse change in the significance of a historical resource. Most of these compliance methods do not involve substantial or large-scale land disturbance to land, which has not been previously disturbed (e.g., irrigated cropland or urban stormwater conveyance structures). If installation of structural BMPs which may involve large scale excavation or land-disturbance activities, or if the construction of a large scale infrastructure is to be conducted, a cultural resources investigation should be conducted before any substantial disturbance of land that has not been disturbed previously. The cultural resources investigation will include, at a minimum, a records search for previously identified cultural resources and previously conducted cultural resources investigations of the project parcel and vicinity.

Also worth noting, nutrient pollution control strategies have been underway for many years across the state and throughout the nation through TMDLs and other water quality control programs; staff is unaware of any reporting that implementation of these programs has been responsible for substantial and adverse losses or changes to historical resources.

(b) –Cause a substantial adverse change in the significance of an archaeological resource pursuant to section 15064.5?

Answer: Less than significant.

Discussion: Substantial, or potentially substantial, adverse changes to the significance of an archaeological resource as defined in CEQA regulations is not expected to result from the TMDL project. The implementation of non-structural foreseeable compliance methods identified in Section 5 would not result in a substantial adverse change of a significant archaeological resource. This is because non-structural compliance methods do not involve land-disturbance or physical effects. Similarly, staff concludes it is unlikely that implementation of any structural compliance method identified in Section 5 would result in a substantial adverse change in the significance of an archaeological resource. Most of these compliance methods do not involve substantial or large-scale land disturbance to land which

has not been disturbed previously (e.g., irrigated cropland or urban stormwater conveyance structures).

If installation of structural BMPs which may involve large scale excavation or land-disturbance activities, or if the construction of a large scale infrastructure is to be conducted, a cultural resources investigation should be conducted before any substantial disturbance of land that has not been disturbed previously. The cultural resources investigation will include, at a minimum, a records search for previously identified cultural resources and previously conducted cultural resources investigations of the project parcel and vicinity. This record search should also include, at a minimum, contacting the appropriate information center of the California Historical Resources Information System, operated under the auspices of the California Office of Historic Preservation. In coordination with the information center or a qualified archaeologist, a determination regarding whether previously identified cultural resources will be affected by the proposed project must be made and if previously conducted investigations were performed to satisfy the requirements of CEQA. If not, a cultural resources survey would need to be conducted. The purpose of this investigation would be to identify resources before they are affected by a proposed project and avoid the impact. If the impact is unavoidable, mitigation will be determined on a case-by-case basis, as warranted.

Also worth noting, nutrient pollution control strategies have been underway for many years across the state and throughout the nation through TMDLs and other water quality control programs; staff is unaware of any reporting that implementation of these programs has been responsible for substantial and adverse losses or changes to archeological resources.

(c) –Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Answer: Less than significant.

Discussion: Direct or indirect destruction of a unique paleontological resource or site or unique geologic feature is not expected to result from the TMDL project. The implementation of non-structural foreseeable compliance methods identified in Section 5 would not be expected to destroy a unique paleontological resource or site or unique geologic feature because these compliance methods do not involve land-disturbance or physical effects. Similarly, it is unlikely that implementation of any structural BMP would result in the destruction of a unique paleontological resource or site or unique geologic feature. Most of these compliance methods do not involve substantial or large-scale land disturbance to land which has not been disturbed previously (e.g., irrigated cropland or urban stormwater conveyance structures). However, in cases where the installation of structural BMPs may involve excavation activities, an investigation of paleontological resources may need to be conducted by a trained professional before any substantial disturbance of land that has not been disturbed previously.

Also worth noting, nutrient pollution control strategies have been underway for many years across the state and throughout the nation through TMDLs and other water quality control programs; staff is unaware of any reporting that implementation of these programs has been responsible for substantial and adverse losses or changes to paleontological resources.

(d) –Disturb any human remains, including those interred outside of formal cemeteries?

Answer: Less than significant

Discussion: Staff concluded reasonably foreseeable non-structural compliance methods identified in Section 5 are not expected to disturb any human remains, including those interred outside of formal cemeteries because these compliance methods do not involve land-disturbance or physical effects.

Staff also concludes the foreseeable structural compliance methods identified in Section 5 involving land disturbance or excavation (e.g., construction of retention basins, modification or alteration of stormwater drainage structures) is not expected to disturb any human remains, including those interred outside of formal cemeteries. Most of these compliance methods do not involve substantial or large-scale land disturbance to land which has not been disturbed previously (e.g., irrigated cropland or urban stormwater conveyance structures). If installation of structural BMPs which may involve large scale excavation or land-disturbance activities on previously undisturbed land, or if the construction of a large scale infrastructure is to be conducted and which result in the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the steps identified in CEQA Section 15064.5(e) shall be taken.

Also worth noting, nutrient pollution control strategies have been underway for many years across the state and throughout the nation through TMDLs and other water quality control programs; staff is unaware of any reporting that implementation of these programs has been responsible for substantial and adverse disturbance of human remains.

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:

- **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.**
- **ii. Strong seismic ground shaking**
- **iii. Seismic-related ground failure, including liquefaction?**
- **iv. Landslides?**

Answer: No impact.

Discussion: The reasonably foreseeable compliance methods identified in Section 5 will not have significant adverse effects as described above. Although some implementation strategies could potentially occur below ground, they are not to such a depth or on such a slope, or at such a scale as to result in the ground failure and liquefaction conditions described in VI(a) above, nor would the compliance methods substantially increase the risk of loss, injury or death of people or structures due to seismic activity above and beyond seismic risks that already exist.

Furthermore, the in-lake treatments and lakeside areas of the Pinto Lake catchment where most TMDL implementation would be expected, occur in a region which the U.S. Geological Survey has delineated as being at low risk for landslide incidence and susceptibility – refer back to Figure 5. Regarding seismicity, the Pinto Lake catchment occurs within an area prone to strong seismic shaking and earthquake activity – refer back to Figure 6 on page 19. Nutrient management strategies will not expose people or structures to seismic risks.

Finally, it should be noted that nutrient pollution control strategies have been underway for many years across the nation through state TMDL programs and throughout Europe through the European Commission Nitrate Directive; staff is unaware of any reporting that implementation of these programs has been responsible for exposing people or structures to risk of loss, injury, or death involving earthquakes, seismic shaking, seismic-related ground failure, or landslides.

(b) – Result in substantial soil erosion or the loss of topsoil?

Answer: Less than significant.

Discussion: Reasonably foreseeable methods of compliance identified in Section 5 that could necessitate soil removal, for example construction of certain structural controls such as retention ponds, should not cause a substantial, or potentially substantial adverse change in soil erosion or the loss of topsoil. Staff expects topsoil to be replaced and/or erosion to be minimal. In fact, some of the methods of compliance, for example increases in riparian vegetation, vegetated treatment systems, impervious area management practices to reduce overland flow, and improved irrigation timing and efficiency would be net improvements to reduce soil loss and erosion in the TMDL project area.

(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?

Answer: No impact.

Discussion: Reasonably foreseeable methods of compliance identified in Section 5 should not occur at such a scale as to a substantial, or potentially substantial risk that causes soil instability, landslides, subsidence, liquefaction, or collapse. Further, in-lake treatments and lakeside areas of the Pinto Lake catchment, where TMDL implementation is generally expected to occur, are not anticipated to be areas of landslide susceptibility (see Figure 5 on page 18).

Finally, it should be noted that nutrient pollution control strategies have been underway for many years across the nation through state TMDL programs and throughout Europe through the European Commission Nitrate Directive; staff is unaware of any reporting that implementation of these programs has been a substantial, adverse risk or cause of landslides, lateral spreading, subsidence, liquefaction, or collapse.

(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?

Answer: No impact.

Discussion: Implementation of the proposed TMDL should not result in building new structures intended for human occupancy.

(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?

Answer: No impact.

Discussion: The TMDL project will not 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.

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?

Answer: Less than significant

Discussion: Substantial, or potentially substantial, adverse changes to the environment due to generation of greenhouse gas emissions is not expected to result from the TMDL project. The implementation of non-structural foreseeable compliance methods identified in Section 5 would not result in a substantial adverse change because non-structural compliance methods (such as irrigation and nutrient management) do not involve energy consumption or energy generation in any significant way. Similarly, staff concludes that implementation of any structural compliance method identified in Section 5 would be unlikely to result in a substantial adverse change.

There could be short term, temporary increases in traffic during the construction and installation of structural compliance methods, or lake alum treatments, but these activities would be the same as typical construction and maintenance activities in urbanized or rural areas, such as ordinary road and infrastructure maintenance and building activities, or farm operations, and would not be anticipated to rise to the level of a substantial adverse change on the climate through greenhouse gas emissions.

(b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Answer: No impact.

Discussion: The implementation of the reasonably foreseeable compliance methods identified in Section 5 does not conflict with implementation of State's AB 32 Scoping Plan[35] to reduce the greenhouse gases that cause climate change. Moreover the Scoping Plan and the TMDL both support efficient use of water, which results in reduced the consumption of energy and reductions in carbon emissions. Moreover, the TMDL contemplates more efficient

[35] Calif. Air Resource Control Board, 2008. http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm

use of synthetic fertilizers, which could be expected to have benefits on managing emissions nitrous oxide, a known greenhouse gas.

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?

(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?

(c) – Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

(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?

(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?

(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?

(g) – Impair implementation of or physically interfere with an adopted emergency 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?

Answer to all of the above questions concerning Hazards and Hazardous Materials: No impact.

Discussion: Staff determined that here are no reasonably foreseeable methods of compliance as identified in Section 5 that would be expected to use or produce hazardous waste, or that would generate hazardous conditions. Therefore, staff determined there would be no impact in terms of Hazards and Hazardous Materials.

9) HYDROLOGY AND WATER QUALITY

Would the project:

(a) – **Violate any water quality standards or waste discharge requirements?**

Answer: Less than significant impact.

Discussion: The purpose of the proposed TMDL is to provide for attainment of water quality standards and restoration of beneficial uses – not to increase pollution, increase water quality degradation, or violate water quality standards. By requiring the implementation of structural and non-structural methods of compliance identified in Section 5 to reduce pollutants, it is expected that implementation of the proposed TMDL will have an overall beneficial impact on water quality in the TMDL project area.

Reasonably foreseeable structural compliance methods that involve land disturbance could cause increases in turbidity and suspended sediment loads episodically and at local-scales,

which may violate Basin Plan water quality standards for turbidity and suspended sediment. However, short term, infrequent, localized water quality violations should be acceptable in cases where long term benefits to the beneficial uses or surface waters outweigh episodic and ephemeral local impacts based on site-specific findings and information. Therefore, staff anticipates that there will be no substantial adverse impacts that result in violation of water quality standards or waste discharge requirements.

(b) – **Substantially deplete ground water supplies or interfere substantially with ground water recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water 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)?**

Answer: No Impact.

Discussion: The reasonably foreseeable methods should not result in an increase in groundwater pumping or interfere with recharge. The reasonably foreseeable methods of compliance identified in Section 5 have only one compliance measure that could potentially adversely affect ground water supplies. This measure contemplates the use of groundwater (via well construction) in lieu of on-stream livestock watering. Due to the likely dispersed nature of this compliance measure and the relatively high cost in well development, staff anticipates that the use of wells in lieu of other off-stream watering systems (e.g. spring development) will result in a less than significant risk of substantially depleting groundwater.

Also worth noting, irrigation efficiency will likely be a continuing practice to implement the proposed TMDL. The majority of irrigation source water in the TMDL project area is from groundwater (not surface water). Since irrigation efficiency typically reduces the use of irrigation water, which is ground water, there will not be a negative impact. In fact, irrigation efficiency would be expected to have a net benefit on groundwater supplies.

(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?

Answer: Less than significant impact.

Discussion: Reasonably foreseeable structural methods of compliance identified in Section 5 such as retention basins, constructed wetlands and associated construction activities could potentially cause an alteration of the existing drainage pattern locally. However, these methods of compliance are not expected to result in a substantial adverse change resulting in substantial erosion and siltation. In most cases however, these compliance measures would be anticipated to occur at a geographically-small scale, and when installed with appropriately designed mitigation measures, would not be expected to result in substantial erosion of siltation on- or off-site. In addition, some of the compliance methods – particularly structural and vegetative systems for urban runoff management – are intended to approximate, restore, or mimic natural, pre-development runoff and hydrograph patterns which is a desirable environmental result and ultimately beneficial to water quality, and erosion and siltation issues.

(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?

Answer: Less than significant impact.

Discussion: Some of the reasonably foreseeable methods of compliance identified in Section 5 such as grassed waterways and channel vegetation could potentially cause an alteration of the existing drainage pattern locally in such a manner that would result in flooding on or off-site. While vegetation prevents channel erosion and pollutant loading, vegetation can also slow down channel stream flows so channels must be larger to support greater capacity. When these drainage systems are sized properly, they should not cause flooding. Also other on-farm conservation practices such as cover crops and sediment basins reduce the amount of flow into drain systems and would mitigate the flow reduction from channel vegetation.

(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?

Answer: Less than significant impact.

Discussion: It is unlikely that the reasonably foreseeable methods of compliance identified in Section 5 would constitute a substantial adverse change that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. In fact, many of the methods of compliance for urbanized areas with storm drainage systems are intended to approximate, restore, or mimic natural, pre-development runoff and hydrograph patterns which would be expected to actually reduce the risk of exceedances of stormwater drainage capacities. Further, the implementation of properly designed compliance measures would not result in increases in additional sources of polluted runoff; in fact the methods of compliance are intended to reduce concentrations in polluted runoff.

(f) – Otherwise substantially degrade water quality?

Answer: Less than significant impact.

Discussion: As the goal of this TMDL project is to provide for attainment of water quality standards and restoration of designated beneficial uses in Pinto Lake and the streams of the Pinto Lake catchment, it is staff's judgment that it is extremely unlikely that thoughtfully selected, well-designed and implemented methods of compliance would result in the substantial adverse change and degradation of water quality. In fact, the reasonably foreseeable methods of compliance identified in Section 5 are expected to result in water quality improvements.

(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?

Answer: No impact.

Discussion: None of the reasonably foreseeable methods of compliance identified in Section 5 would 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.

(h) – Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Answer: No impact.

Discussion: None of the reasonably foreseeable methods of compliance identified in Section 5 would be expected to place structures and have a substantial adverse impact within a 100-year flood hazard area which would impede or redirect flood flows.

(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?

Answer: No impact.

Discussion: None of the reasonably foreseeable methods of compliance identified in Section 5 contemplate the use of non-structural or structural methods of compliance that would 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.

(j) – Inundation by seiche, tsunami, or mudflow?

Answer: No impact.

Discussion: None of the reasonably foreseeable methods of compliance identified in Section 5 contemplate the use of non-structural or structural BMPs that would cause inundation by seiche, tsunami, or mudflow.

10) LAND USE AND PLANNING

Would the project:

(a) – **Physically divide an established community?**

Answer: No impact.

Discussion: The reasonable foreseeable methods of compliance identified in Section 5 which might have a significant impact include nutrient management, irrigation water management strategies, riparian buffers, retention ponds, and vegetated treatment systems. Staff determined that the reasonably foreseeable methods of compliance do not constitute the risk of a substantial, or potentially substantial, adverse change that would divide a community, because the methods of compliance are individual in nature and will not be at a large geographic (community-sized) scale.

(b) – Conflict with any applicable land use plan, policy, or regulation of an agency 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?

Answer: Less than significant with mitigation incorporation.

Discussion: Reasonably foreseeable compliance measures identified in Section 5 to implement this TMDL could potentially conflict with the goals and policies of Agricultural Elements published in the general plans of Santa Cruz, Santa Clara, and San Benito counties that recognize agriculture as a priority land use. Land use policy goals include the preservation and promotion of agriculture on designated agricultural lands. As discussed previously in Heading II (a), reasonably foreseeable TMDL compliance measures could result in a potential substantial adverse change pertaining to conversion to non-agricultural use of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance because some incidental amounts of these lands could be converted to non-agricultural uses (such as constructed wetlands and other vegetated treatment systems, for example). These compliance measures can be expected to be less than significant with mitigation incorporation, as described previously under Heading II (a).

Also worth noting, nutrient pollution control strategies have been underway for many years across the nation through state TMDL programs and across Europe through the European Commission Nitrate Directive; staff is unaware of any reporting that implementation of these water quality programs has been responsible for substantial and adverse losses or conversions of agricultural lands to non-agricultural uses.

(c) – Conflict with any applicable habitat conservation plan or natural community conservation plan?

Answer: No impact.

Discussion: According to available data, there are not habitat conservation plans or natural community conservation plans in the Pinto Lake catchment (refer to Figure 9 on page 22).

The purpose of the TMDL is to provide for long-term improvements in water quality and aquatic habitat. To the extent methods of compliance identified in Section 5 result in increased amounts of riparian vegetation, wetlands, and improved aquatic habitat these will be a net benefit to present or future wildlife, and conservation plans.

11) MINERAL RESOURCES

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?

(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?

Answer to both questions (a) and (b) above regarding Mineral Resources**:** No impact.

Discussion: An illustration of the mineral resources of the vicinity of the Pinto Lake catchment was previously presented in Figure 8 on page 21. According to available data, there are not current, active, or historic mining or mineral extraction operations in the Pinto Lake catchment.

12) NOISE

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?

Answer: Less than significant.

Discussion: The Santa Cruz County General Plan specifies compliance with land use compatibility noise exposure standards to assure a compatible noise level for various land uses and activities Thus, the foreseeable structural compliance methods identified in Section 5 would be expected to conform to land use compatibility noise standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

(b) – Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Answer: Less than significant

Discussion: None of the reasonably foreseeable compliance methods identified in Section 5 contemplate the use of structural BMPs that would result in the exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels. The implementation of some structural BMPs may result in localized increased groundborne vibration or ground-borne noise levels. Such increased levels would likely be associated with heavy equipment operation associated with construction of structural BMPs. These impacts would, however, be temporary and associated directly with the use of heavy equipment. Therefore, staff judges that the impact would less than significant.

(c) – A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Answer: No impact.

Discussion: The Santa Cruz County General Plan specifies compliance with land use compatibility noise exposure standards to assure a compatible noise level for various land uses. None of the reasonably foreseeable compliance methods identified in Section 5 contemplate the use of structural BMPs that would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels currently existing, as 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.

(d) – A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Answer: Less than significant.

Discussion: The Santa Cruz County General Plan specifies with land use compatibility noise exposure standards to assure a compatible noise level for various land uses. Thus, the foreseeable structural compliance methods identified in Section 5 would be expected to

conform to land use compatibility noise standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

(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 expose people residing or working in the project area to excessive noise levels?

Answer: No impact.

Discussion: There are no airport land use plans in the Pinto Lake catchment (refer to Figure 12 on page 27).

(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?

Answer: No impact.

Discussion: There are no airport land use plans in the Pinto Lake catchment (refer to Figure 12 on page 27).

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)?

Answer: No impact.

Discussion: None of the reasonably foreseeable compliance methods identified in Section 5 contemplate the use of structural BMPs that would 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).

(b) – Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Answer: No impact.

Discussion: None of the reasonably foreseeable compliance methods identified in Section 5 contemplate the use of structural BMPs that would displace substantial numbers of existing housing or necessitating the construction of replacement housing elsewhere.

(c) – Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Answer: No impact.

Discussion: None of the reasonably foreseeable compliance methods identified in Section 5 would displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

14) PUBLIC SERVICES

(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:

Fire protection?
Police protection?
Schools?
Parks?
Other public facilities?

Answer to all of the above questions having to do with Public Services: No impact.

Discussion: None of the reasonably foreseeable compliance methods identified in Section 5 contemplate the use of structural BMPs that would have an effect upon, or result in a need for new or altered fire protection services, schools, parks, or other public facilities.

15) RECREATION:

(a) – Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Answer: No impact.

Discussion: None of the reasonably foreseeable compliance methods identified in Section 5 contemplate the use of structural BMPs that would increase the use of existing neighborhood and regional parks or other recreational facilities such that 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?

Answer: No impact.

Discussion: None of the reasonably foreseeable compliance methods identified in Section 5 contemplate the use of structural BMPs that would require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

16) TRANSPORTATION/TRAFFIC

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?

Answer: Less than significant impact.

Discussion: None of the reasonably foreseeable compliance methods identified in Section 5 would be expected to cause a substantial, or potentially substantial, adverse conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections). Construction of structural BMPs could temporarily increase traffic in localized areas. However, due to the size and dispersal of such BMPs, the impact would not be significant.

(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 congestion management agency for designated roads or highways?

Answer: Less than significant impact.

Discussion: None of the reasonably foreseeable compliance methods identified in Section 5 would be expected to conflict with a congestion management plan or other standards established by the counties for designated roads or highways. Construction of structural BMPs could temporarily increase traffic in localized areas. However, due to the size and dispersal of such BMPs, the impact would not be significant.

(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?

Answer: No impact.

Discussion: None of the reasonably foreseeable compliance methods identified in Section 5 contemplate the use of structural BMPs that would 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.

(d) – Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Answer: No impact.

Discussion: None of the reasonably foreseeable compliance methods identified in Section 5 contemplate the use of structural BMPs that would substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses.

(e) – Result in inadequate emergency access?

Answer: No impact.

Discussion: None of the reasonably foreseeable compliance methods identified in Section 5 contemplate the use of structural BMPs that would affect emergency access.

(f) – Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

Answer: No impact.

Discussion: None of the reasonably foreseeable compliance methods identified in Section 5 contemplate the use of structural BMPs that would conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

17) TRIBAL CULTURAL RESOURCES

Would the project:
(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**

Answer: No impact.

Discussion: To our knowledge, none of the reasonably foreseeable compliance methods identified in Section 5 contemplate the use of structural BMPs that would 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.

> **(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.**

Answer: No impact.

Discussion: To our knowledge, none of the reasonably foreseeable compliance methods identified in Section 5 contemplate the use of structural BMPs that would affect 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

18) UTILITIES AND SERVICE SYSTEMS

Would the project:
(a) – Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Answer: No impact.

Discussion: None of the reasonably foreseeable compliance methods identified in Section 5 contemplate the use of structural BMPs would cause any exceedance of wastewater treatment requirements.

(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?

Answer: No Impact.

Discussion: None of the reasonably foreseeable compliance methods identified in Section 5 contemplate the use of structural BMPs that would result in a wastewater treatment provider needing to expand existing treatment facilities.

(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?

Answer: Less than significant impact.

Discussion: Staff anticipates that MS4 entities will evaluate the need for structural improvements or changes to stormwater drainage systems areas in urban and residential areas. However, because stormwater infrastructure is already in place, staff does not anticipate that structural changes or large-scale construction, resulting in a substantial, or potentially substantial, adverse change in the environment, will occur. Also, stormwater discharges are currently subject to Water Board permitting requirements which require protection of water quality and prevention of nuisance. Depending on the type of actions to modify or construct stormwater drainage systems, separate environmental review may be required.

(d) – Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Answer: Less than significant impact.

Discussion: None of the reasonably foreseeable compliance methods identified in Section 5 contemplate the use of structural BMPs that would require new or expanded entitlements for water supplies.

A number of compliance methods identified in Section 5 may include use of water supplies; for example irrigation for riparian restoration (tree-planting) and planting of vegetation for certain types of bioretention BMPs (e.g., vegetated swales). The selection of the appropriate compliance measures by responsible parties will need to take into consideration their existing water resources. Basing selection of compliance measures on existing water resources will prevent the need to seek new entitlements. Furthermore, compliance methods identified in the State Water Resources Control Board NPS encyclopedia (see Section 5 also recommends that vegetated treatment options should incorporate native species to the extent feasible such that minimal maintenance is required.

(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?

Answer: Less than significant impact.

Discussion: It is unlikely that implementation of the reasonably foreseeable compliance methods identified in Section 5 will result in the need for a treatment provider to make this determination. Should connection to an existing wastewater treatment plant be necessary, consultation with the treatment plant will determine if capacity is adequate. If capacity is not adequate, the parties needing wastewater treatment should develop an alternate plan for treatment of their wastewater.

(f) – Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Answer: No impact.

Discussion: None of the reasonably foreseeable compliance methods identified in Section 5 contemplate the use of structural BMPs that would generate a significant source of solid waste, thus there are no significant adverse effects with respect to landfill permitted capacities.

(g) – Comply with federal, state, and local statutes and regulations related to solid waste?

Answer: No impact.

Discussion: Reasonably foreseeable compliance methods identified in Section 5 should generate little, if any, solid waste disposal nor would cause significant adverse effects with respect to compliance with federal, state, or local statutes related to solid waste disposal.

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?

Answer: Potentially significant impact.

Discussion: The purpose of the TMDL is to provide for attainment of water quality standards and restoration of beneficial uses. All of these compliance measures identified in this environmental analysis will likely improve water quality from the current baseline, where many discharges of pollutants are currently occurring in the watershed and will likely continue without the application of these additional protections. Attainment of water quality standards and restoration of designated beneficial uses are expected to result in a net benefit for the quality of the environment.

Reasonably foreseeable non-structural methods of compliance identified in Section 5 will not result in the substantial degradation of the environment for plant and animal species because none of the non-structural BMPs would have any physical effects that could degrade the environment or impact plant or animal species.

However, as discussed previously, under Biological Resources- Category 4.a) wildlife plant and animal species could *potentially* be substantially adversely affected by the installation and operation of structural methods of compliance that involve substantial earth movement. If a responsible party proposed installation of a BMP that would require substantial earth movement, the discharger should consult with federal, state and local agencies, including but not limited to the county the project is located in, California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service, and implement mitigation identified by the agencies to avoid impacts to rare, threatened or endangered species. If no such mitigation is available, the use of that compliance measure in the specific area should not be implemented. In most cases the installation of structural methods of compliance would be temporary, and any impacts could be avoided by adjusting the timing and/or location of the methods of compliance to take into account any candidate, sensitive, or special status species or their habitats.

Structural or non-structural compliance methods identified in Section 5 that may potentially result in reduced flows in waterbodies (e.g., reductions in tailwater discharge) may have the potential to have a substantial adverse impact on rare, sensitive, threatened or endangered species, other wildlife, or their habitats. However, at this time, specific data and evidence to support this position were not found. Both U.S. Fish and Wildlife Service and the California Department of Parks have previously opined that there may be potentially significant adverse impacts related to reduction in flows[36], however U.S. Fish and Wildlife Service indicated that there are a range of possibilities. Reduced flow may benefit native species in the long run, making it harder for invasive species to survive. Reduced flows would likely allow the hydrology to go back to a more natural state; however, it could have negative effects by potentially reducing stream flows and associated freshwater aquatic habitat in areas inhabited by sensitive, rare, threatened or endangered species. The potential negative effects noted above are dependent on many variables including where the flow is reduced, by how much and at what times of the year. State Parks' position was similar. State Parks discussed that there would likely be an adjustment period. They suggested further hydrological analysis in these areas where there are special status species with certain water requirements. Additionally, State Parks suggested mitigation measures such as phasing-in implementation of requirements in some areas and adjusting them on a watershed basis. In addition, note that reductions in surface runoff (tailwater discharge) may in fact result in increased percolation to groundwater resulting in an increased potential for shallow groundwater baseflow which could continue to support viable stream flows.

Further, while rare, sensitive, threatened or endangered species are found on or adjacent to irrigated agricultural lands or census-designated urbanized areas in the project area, there are likely negative effects on these species because of current water quality degradation and

[36] See Final Subsequent Environmental Impact Report, Staff Recommendations for Agricultural Order, March 2011, Central Coast Regional Water Quality Control Board.

excess nutrients associated with agricultural discharges. In other words, while rare, sensitive, threatened or endangered species may be present in areas with substantial amounts of regulated flows and agricultural return flows. Excessive levels of nutrients, low dissolved oxygen, and toxicity due to un-ionized ammonia and cyanobacteria toxins causing water quality degradation are not considered to be a desirable condition for the health and long term sustainability of these species. It is widely acknowledged by many resource professionals and in the scientific literature (refer to TMDL Project Report) that water quality degradation, stream alteration, and human activities have, on balance, have constituted an adverse impact to the natural biodiversity of the Pinto Lake catchment. Consequently, while sensitive species or other wildlife may be present in some areas because of the discharged water, continuing to discharge water of low quality is not an environmentally desirable or sustainable practice with respect to the viability of sensitive species. 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 use of riparian buffers and other vegetated treatment systems that will effectively treat the water to remove pollutants, but not necessarily reduce flows.

Also noteworthy is the fact that nutrient control strategies and measures in agricultural watersheds have been underway for many years in various agricultural watersheds in the State and throughout the nation. Based on the literature, research, and information staff has surveyed for this project, we are unaware of any cases where nutrient control strategies have directly been responsible for substantial or widespread adverse impacts resulting in the degradation of the environment, substantial reductions in the habitat of fish and wildlife, caused a fish or wildlife population to drop below self-sustaining levels, threatens to eliminate a plant or animal community, reduces the number or restrict the range of a rare or endangered plant or animal, or eliminates important examples of the major periods of California history or prehistory.

Because of the mitigation strategies shown above, and because of the net corollary benefits to wildlife resulting from foreseeable compliance measures, potential substantial adverse effects are possible to a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service, but are not anticipated to occur.

(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 past projects, the effects of other current projects, and the effects of probable future projects)?

Answer: Potentially significant impact.

Discussion: Cumulative impacts, defined in section 15355 of the CEQA Guidelines, refer to two or more individual effects, that when considered together, are considerable or that compound or increase other environmental impacts. Cumulative impact assessment must consider not only the impacts of the proposed TMDL implementation plan, but also the impacts from other Basin Plan amendments, municipal, and private projects, which have occurred in the past, are presently occurring, and may occur in the future, in the TMDL project area during the period of implementation.

There are several approved TMDLs addressing water quality impairments in the Pajaro River basin, and therefore the Pinto Lake catchment, and staff assessed the potential for these projects to cumulatively impact the environment. The other TMDLs in the Pajaro River basin are:

- Total Maximum Daily Loads for chlorpyrifos and diazinon;
- Total Maximum Daily Loads for fecal coliform; and
- Total Maximum Daily Loads for sediment.

Implementation of the proposed TMDL for total phosphorus in Pinto Lake, in connection to the other TMDLs in the greater Pajaro River basin could have potentially significant impacts on the environment due to overlapping implementation schedules and milestones. With multiple TMDLs being implemented in the watershed, there could be an increase in funding available for implementation which could accelerate activities to address management practices. Additionally, the approval the Pinto Lake TMDL might increase regulatory activity in the watershed, which may lead to increased response by dischargers to implement management practices and subsequently more potential impacts to the environment.

Staff evaluated the cumulative impacts of these potential implementation alternatives on the environment and potential significant impacts are outlined below:

Biological Resources – Implementation of the other approved TMDLs in the Pajaro River basin in conjunction with the proposed total phosphorus TMDL for Pinto Lake might substantially reduce the habitat of a fish or wildlife species due to reduced flows from irrigated lands into aquatic habitat. Reduced flows may occur as a result of irrigation efficiencies, retention basis, or other BMPs that pertain to water management practices.

(c) – Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Answer: Less than significant

Discussion: The goal of the proposed TMDL and associated actions are intended to improve long term water quality by providing a program designed to protect and restore beneficial uses of surface waters in the TMDL project area. The net result of these actions is anticipated to be improvements to drinking water quality (MUN, GWR) and improvements to aquatic habitat beneficial uses. Therefore there should be no substantial adverse effects on human beings.

8. STATEMENT OF OVERRIDING CONSIDERATIONS AND DETERMINATION

In some cases, a lead agency may find that any significant adverse environmental impact associated with programmatic action may be outweighed by the benefits of taking the action. CEQA Guidelines [14 CCR section 15093(a)] states:

> *CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental*

benefits, of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposal project ***outweigh the unavoidable adverse environmental effects,*** *the adverse environmental effects may be considered "acceptable."*

➔ 4 CCR section 15093(a)

(emphasis added by Central Coast Water Board staff)

Specific environmental benefits justify the adoption of this TMDL despite the project's potential significant adverse environmental impacts. The Central Coast Water Board has the authority and responsibility to regulate discharges of waste associated with the sources of pollution causing impairment to water quality. Many of those discharges have caused significant widespread degradation and/or pollution of Pinto Lake as described in the *Total Maximum Daily Loads Report for Total Phosphorus to Address Cyanobacterial Blooms in the Pinto Lake Catchment, Santa Cruz County* and associated reference materials. Consequently, the Central Coast Water Board is making a statement of overriding consideration and determination as follows in Text Box 2

Text Box 2 . Statement of overriding considerations and determination.

Pursuant to CEQA Guidelines 14 CCR section 15093(a) and in view of the entire record supporting the need for the TMDL, the Central Coast Water Board hereby finds that the benefits of the TMDL for Phosphorus Addressing Cyanobacterial Blooms in the Pinto Lake Catchment (Resolution No. R3-2020-0034) override and outweigh the potential significant adverse impacts of this TMDL, for the reasons more fully set forth in the Staff Report and attachments thereto, including the CEQA Checklist and Analysis.

The TMDL for total phosphorus would result in actions to restore the quality of the waters of the state and protect and restore their beneficial uses. While some impacts could potentially occur due to reduced flows, earth-moving, or from implementing other actions to comply with the TMDL as described in the CEQA Checklist and Analysis, the benefits, which include contributing to the present and future restoration of beneficial water uses, and reducing or eliminating pollution and contamination, warrant approval of the proposed TMDL, despite the potential for unavoidable adverse impacts.

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