



**REGIONAL WATER QUALITY CONTROL BOARD,  
CENTRAL VALLEY REGION**

**2021 JOINT TRIENNIAL REVIEW  
OF THE WATER QUALITY CONTROL PLANS FOR THE  
SACRAMENTO RIVER AND SAN JOAQUIN RIVER BASINS  
AND TULARE LAKE BASIN**

**Workplan**

**17 February 2022**



CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

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## **I. INTRODUCTION**

To meet requirements of Section 303(c)(1) of the Federal Clean Water Act and Section 13240 of the Water Code, the Central Valley Regional Water Quality Control Board (Central Valley Water Board or Board) reviews the Water Quality Control Plans for the Sacramento River and San Joaquin River Basins and the Tulare Lake Basin (Basin Plans) every three years. The process is known as the Triennial Review. The Basin Plans are the foundation for the Central Valley Water Board's water quality regulatory programs. The Basin Plans contain:

- Designated beneficial uses for both surface and ground water bodies in the three basins that make up the Central Valley
- Water quality objectives to protect those beneficial uses
- Implementation plans that describe the actions necessary to achieve water quality objectives
- Descriptions of the surveillance and monitoring activities needed to determine regulatory compliance and assess the health of the Basins' water resources

This Triennial Review workplan will be used to direct basin planning efforts over the next three years. Implementation depends upon the Central Valley Water Board's program priorities, resources, and other mandates and commitments. The 2021 Triennial Review Workplan includes a review of Basin Plan Amendments since the 2018 Triennial Review, an overview of the proposed projects (Appendix I), available Board resources, and project prioritization and ranking.

## **II. TRIENNIAL REVIEW PROCESS**

Each Triennial Review begins with a solicitation where the Board asks the public to propose water quality issues that may need to be addressed with basin plan amendments. The Board initiated the 2021 Triennial Review on 24 March 2021 with a 45-day project solicitation. Board staff included an information document with the solicitation that provided a status of the 2018 Triennial Review Workplan, as well as issues that have arisen since 2018.

The project solicitation notice was emailed to nearly 1,200 entities. The Central Valley Water Board received 11 written comment letters during the public comment period. Additionally, Board staff received an additional comment letter after the public comment deadline that was accepted into the administrative record. Board staff received one comment letter to the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) State Board Basin Plan Amendment that included comments outside of the scope of the purpose of that action and was included among the comments addressed by the 2021 Triennial Review Workplan.

Staff reviewed all comments and used the comments to help develop the 2021 Triennial Review Workplan. The Fact Sheets in Appendix I list commenters for each project. The comments received were on a variety of issues impacting water quality. In response to the comments received, staff are proposing adding five new projects presented in Section IV (Table 3).

Board staff developed Project Prioritization Criteria as part of the 2018 Triennial Review that is continuing to be applied to projects considered as part of the 2021 Triennial Review. The Prioritization Criteria is included as Table 1 below.

**Table 1: Prioritization Criteria**

Criteria	Definition
Project Addresses Tribal Interests or Specifically Addresses the Human Right to Water	While all Basin Planning Projects must be consistent with the Human Right to Water, certain projects specifically address this need in disadvantaged communities or in tribal communities.
Projects that Represent an Efficient Use of Board or Public Resources	Projects with resource commitments from other agencies and/or stakeholders or that build upon existing studies or research and represent an efficient use of Board or Public resources. Factors to be considered include cost effectiveness, environmental benefit, and correction of Basin Plan provisions, especially where addressing unnecessary public cost.
Projects to Address Impediments to Water Recycling/ Efficient Use/ Integrated Water Management	These projects modify Basin Plan provisions that may interfere with statewide goals of promoting water recycling, efficient water use, and integrated water management. Such projects may also further Sustainable Groundwater Management Act (SGMA) implementation goals.
Projects that Complement Prior Work	Certain projects may compliment the regulatory intent or directives in separate Board-issued Orders or Basin Plan Amendments.
Projects of Special Stakeholder Interest	Projects of special importance due to their value to stakeholders, including federal agencies (including the United States Environmental Protection Agency (USEPA)), State Agencies, Local Agencies, or NGOs.
Projects that address a 303(d) listed water quality impairment or threat of impairment	Projects that would result in a delisting from the Clean Water Act Section 303(d) list of impaired water bodies for one or more pollutants. Or projects that may mitigate one or more pollutants that may result in addition to the 303(d) list of water bodies.
Projects that support the Board's efforts on climate change	Projects that implement climate change adaptation priorities, including actions taken to build resilience and to adjust to the impacts of climate change on society and the environment.

Staff also identified five categories that projects will be grouped into once ranked using the above criteria. **Table 2** summarizes the categories.

**Table 2: Ranking Categories**

<b>Category</b>	<b>Definition</b>
Rank 1: Existing Commitments	Projects that the Board has made a legally-enforceable regulatory commitment to completing
Rank 2: Special Status	Projects are a Board high-priority
Rank 3	Projects that meet 3 or more of the prioritization criteria
Rank 4	Projects that meet at least 2 of the prioritization criteria
Rank 5	Projects that meet 1 of the prioritization criteria

### III. **BASIN PLAN AMENDMENTS ADOPTED SINCE LAST TRIENNIAL REVIEW (2018)**

Since the last Triennial Review (2018), the following basin plan amendments were adopted for the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins and/or the Tulare Lake Basin and are now in effect:

- Control of Pyrethroid Pesticide Discharges (R5-2017-0057)
- Add Electrical Conductivity Water Quality Objectives in the San Joaquin River (R5-2017-0062)
- Amendments to Establish a Central Valley-wide Salt and Nitrate Control Program (R5-2018-0034)

The following Basin Plan Amendments for the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins and/or the Tulare Lake Basin have been adopted by the Central Valley Water Board but are not yet fully approved and in effect:

- Region-Wide MUN Evaluation Process in Agriculturally Dominated Surface Water Bodies and Removing MUN from 231 Constructed or Modified Ag Drains in the San Luis Canal Company District (R5-2017-0088)

### IV. **EXISTING AND POTENTIAL PROJECTS**

The 2018 Triennial Review Workplan identified twenty-seven proposed projects to address water quality issues specified during the 2018 Triennial Review Solicitation and in prior Triennial Reviews. The projects from the 2018 Triennial Review are as follows:

1. Support for Basin Planning and Implementation Activities Related to the Salt and Nitrate Control Program
2. Tribal Beneficial Uses
3. Guidance for Seasonal Beneficial Uses and Diurnal Variations
4. MUN and AGR in Oil Production Zones
5. Grower-proposed Basin Plan Amendment Work Plans under Irrigated Lands General Waste Discharge Requirements
6. Individual Beneficial Use Evaluation for West Squaw Creek
7. Individual Beneficial Use Evaluation for Grassland Water Supply Channels

8. Individual Beneficial Use Evaluation for Groundwater Beneath Sulphur Bank Mine in Lake County
9. Appropriate Aquatic Life Beneficial Use Designation in Agriculturally-dominated Water Bodies and Agricultural Conveyance Facilities
10. Evaluation of Effluent-dominated and Individual Water Bodies Dominated by NPDES Discharges
11. Temperature Criteria and Objectives
12. Dissolved Oxygen Objectives
13. Ammonia Water Quality Objectives
14. Review of Proposed USEPA Water Quality Criteria and 304(a) Criteria
15. Re-evaluation of the prospective-incorporation-by- reference of the Maximum Contaminant Levels
16. Delta Nutrient Research Plan
17. Fungicides and Herbicides
18. Comprehensive Pesticides Control Program
19. Pyrethroid Research Plan
20. Sacramento and San Joaquin Rivers Organochlorine Pesticides Re-evaluation
21. Statewide Mercury Control Program for Reservoirs
22. Central Valley Rivers Mercury Control Program
23. Delta Methylmercury Control Program
24. Watershed-based Plan Implementation and Update for Battle Creek
25. Reassessment of Beneficial Uses and Water Quality Objectives in Specific Reaches of the Pit River
26. Implementation of Clear Lake Nutrient Control Program
27. Development of Procedures to Define and Determine Naturally-occurring Background Conditions

Six new proposed projects were developed to help address the issues identified in comments submitted to the Central Valley Water Board. These projects will be proposed to the Central Valley Water Board to guide the Board planning staff for the next three years. The projects are summarized in **Table 3**.

**Table 3: Proposed Projects to Address Basin Planning Issues Identified During the 2021 Joint Triennial Review**

<b>Project Number</b>	<b>Project Name</b>	<b>Sacramento River – San Joaquin River Basin</b>	<b>Tulare Lake Basin</b>
28	Evaluation of Selenium Criteria's Protectiveness of Beneficial Uses	X	X
29	Addressing Water Quality Issues Associated with Trash and Pathogens in the City of Stockton, the San Joaquin River Basin, and the Sacramento-San Joaquin River Delta	X	
30	Addressing Harmful Algal Blooms in City of Stockton Waters	X	
31	Reviewing and Clarifying the Beneficial Uses and Monitoring in the California Aqueduct	X	X
32	Designate RARE Beneficial Uses for Waterbodies in the Sacramento River Basin and San Joaquin River Basin	X	
33	Consideration of Outstanding National Resource Water (ONRW) Designation for Medicine Lake Volcanic Basin	X	

#### **V. CENTRAL VALLEY WATER BOARD CORE BASIN PLANNING AND TOTAL MAXIMUM DAILY LOAD PROGRAM WORK**

Central Valley Water Board staff also have core planning work that is on-going throughout the year. It includes work related to statewide plans and policies, as well as routine basin planning tasks such as non-regulatory updates to the Basin Plans and initiation of subsequent Triennial Reviews. The effort required for this core work can be difficult to predict as statewide priorities change. Additionally, the Total Maximum Daily Load (TMDL) Program also conducts core planning work at the Central Valley Water Board and must share the limited resources described in the subsequent section.

#### **VI. BASIN PLANNING AND TOTAL MAXIMUM DAILY LOAD RESOURCES**

The Central Valley Water Board has limited resources dedicated to basin planning efforts and the TMDL Program. Resources for these efforts are leveraged between Waste Discharge Permit Fees and federal USEPA funding for a total of 19 person years (PYs), where a PY equates to the resources needed to fund one Central Valley Water Board staff for one year.

The combined basin planning resources are utilized to implement the Triennial Review Workplan, which includes activities related to basin planning, the TMDL Program, the CV-SALTS initiative, and Delta activities.



## **VII. PROJECT PRIORITIZATION**

To efficiently use Board resources, staff prioritized the 32 proposed projects identified as part of this 2021 Triennial Review Workplan. This would ensure that staff time is spent on those issues and projects most important to the Board and to the public. The final project prioritization criteria, identified in Section II, were used to evaluate the projects. The process resulted in five projects categorized in Rank 1 (Existing Commitment); one project in Rank 2 (Special Status); 13 projects in Rank 3; three projects in Rank 4; and seven projects in Rank 5. Three projects were unranked as they are being considered for removal from the list of projects. (See below.)

Of the ranked projects, it should be noted that some are currently being worked on and have resources allocated for FY 21/22. Should the Board decide that these projects are not a high-priority, resource availability for new projects may increase, allowing for other ranked projects to be prioritized and worked on. Tables 4 and 5, found on the following pages, summarize staff's recommended prioritization and ranking.

Central Valley Water Board staff reviewed the projects from the 2018 Triennial Review to determine if any could be removed from the 2021 Triennial Review Project list. The following projects are being considered for removal in the 2021 Triennial Review Project list:

- Project 17 – Fungicides and Herbicides – This project is being recommended for removal from the 2021 Triennial Review Project List as Central Valley Water Board staff have completed review of the UC Davis study conducted for this project and no additional work is currently being scheduled.
- Project 20 – Sacramento and San Joaquin Rivers Organochlorine Pesticides Re-evaluation – This project is being recommended for removal from the 2021 Triennial Review Project List as concentrations of organochlorine pesticides have been decreasing over time and other projects may benefit from reallocated resources.
- Project 21 – Statewide Mercury Control Program for Reservoirs – This project is being considered for removal from the 2021 Triennial Review Project List as this is a statewide effort that is being led by the State Water Resources Control Board (State Water Board). Removal of this project from the 2021 Triennial Review Project List would allow Central Valley Water Board staff to prioritize Regional projects while also staying informed on the State Board's progress with respect to this project.

If the Board agrees with staff recommendation to remove these three projects the remaining projects will be renumbered accordingly.

## **VIII. NEXT STEPS**

Following Board adoption of the 2021 Triennial Review Workplan, Central Valley Water Board staff will prioritize Basin Planning resources as part of the annual Portfolio Management work planning process to implement projects identified in Ranks 1 through 3. As projects are completed, staff will begin work on other ranked projects as resources allow.

Under the Portfolio Management process, proposed program priorities are discussed with the Central Valley Water Board at the last board meeting of the calendar year (usually December). During this meeting, the Board has input on the annual priorities, which are used to craft the following year's annual program workplan. The annual workplan includes items such as, resource allocation, priority projects, milestones, and performance measures for priority projects and core program activities. By this process, the Board will have input into which of the highest priority Basin Planning projects are implemented each year.

There is also an annual update to the Board required under the Portfolio Management Process. This update is scheduled for the first meeting following the close of the fiscal year (usually in August). During the annual update, the Board receives information on each program, to include fact sheets that describe progress on workplan priority projects.

**Table 4: Project Prioritization Summary Table**

Project No.	Project Name	Tribal Interests/ Human Right to Water	Efficient Use of Board or Public Resources	Addresses Impediments to Water Recycling/ Efficient Use/Integrated Waste Management	Complements Prior Work	Special Stakeholder Interest	Addresses 303(d) Water Quality Impairment or Threat to Impairment	Supports Board Climate Change Efforts
1	Support for basin planning and implementation activities related to the Salt and Nitrate Control Program							
2	Tribal Beneficial Uses	X	X <sup>2</sup>		X	X		
3	Guidance for Seasonal Beneficial Uses and Diurnal Variations					X		
4	MUN and AGR in Oil Production Zones		X <sup>2</sup>	X	X	X		
5	Grower Proposed Basin Plan Amendment Work Plans under Irrigated Lands General Waste Discharge Requirements				X	X		

<sup>1</sup> Grayed out rows represent projects that are not ranked because they are either an existing commitment and the Board is obligated to complete them, or it has been identified as a Special Status project.

<sup>2</sup> It is the Board’s understanding that there is a potential for resource support from stakeholders for this work. However, there are no current agreements in place for funding.

**Table 4: Project Prioritization Summary Table (Continued)**

<b>Project No.</b>	<b>Project Name</b>	<b>Tribal Interests/ Human Right to Water</b>	<b>Efficient Use of Board or Public Resources</b>	<b>Addresses Impediments to Water Recycling/ Efficient Use/Integrated Waste Management</b>	<b>Complements Prior Work</b>	<b>Special Stakeholder Interest</b>	<b>Addresses 303(d) Water Quality Impairment or Threat to Impairment</b>	<b>Supports Board Climate Change Efforts</b>
6	Individual Beneficial Use Evaluation for West Squaw Creek					X		
7	Individual Beneficial Use Evaluation for Grassland Water Supply Channels					X		
8	Individual Beneficial Use Evaluation for Groundwater beneath Sulphur Bank Mine in Lake County					X		
9	Appropriate Aquatic Life Beneficial Use Designation in Agriculturally-dominated Water Bodies and Agriculture Conveyance Facilities		X	X	X	X		X

**Table 4: Project Prioritization Summary Table (Continued)**

<b>Project No.</b>	<b>Project Name</b>	<b>Tribal Interests/ Human Right to Water</b>	<b>Efficient Use of Board or Public Resources</b>	<b>Addresses Impediments to Water Recycling/ Efficient Use/Integrated Waste Management</b>	<b>Complements Prior Work</b>	<b>Special Stakeholder Interest</b>	<b>Addresses 303(d) Water Quality Impairment or Threat to Impairment</b>	<b>Supports Board Climate Change Efforts</b>
10	Evaluation of Effluent-dominated and Individual Water Bodies Dominated by NPDES Discharges			X		X		
11	Temperature Criteria and Objectives				X	X	X	X
12	Dissolved Oxygen Objectives							
13	Ammonia Water Quality Objectives		X		X	X		
14	Review of proposed USEPA Water Quality Criteria and 304(a) Criteria					X		

**Table 4: Project Prioritization Summary Table (Continued)**

<b>Project No.</b>	<b>Project Name</b>	<b>Tribal Interests/ Human Right to Water</b>	<b>Efficient Use of Board or Public Resources</b>	<b>Addresses Impediments to Water Recycling/ Efficient Use/Integrated Waste Management</b>	<b>Complements Prior Work</b>	<b>Special Stakeholder Interest</b>	<b>Addresses 303(d) Water Quality Impairment or Threat to Impairment</b>	<b>Supports Board Climate Change Efforts</b>
15	Re-evaluation of the prospective-incorporation-by-reference of the Maximum Contaminant Levels		X			X		
16	Delta Nutrient Research Plan							
17	Fungicides and Herbicides							
18	Comprehensive Pesticides Control Program	X	X		X	X	X	
19	Pyrethroid Research Plan							
20	Sacramento and San Joaquin Rivers Organochlorine Pesticides Re-evaluation							

**Table 4: Project Prioritization Summary Table (Continued)**

<b>Project No.</b>	<b>Project Name</b>	<b>Tribal Interests/ Human Right to Water</b>	<b>Efficient Use of Board or Public Resources</b>	<b>Addresses Impediments to Water Recycling/ Efficient Use/Integrated Waste Management</b>	<b>Complements Prior Work</b>	<b>Special Stakeholder Interest</b>	<b>Addresses 303(d) Water Quality Impairment or Threat to Impairment</b>	<b>Supports Board Climate Change Efforts</b>
21	Statewide Mercury Control Program for Reservoirs							
22	Central Valley Rivers Mercury Control Program	X			X	X	X	
23	Delta Methylmercury Control Program							
24	Watershed-based plan implementation and update for Battle Creek		X		X	X		
25	Reassessment of Beneficial Uses and Water Quality Objectives in Specific Reaches of the Pit River	X	X <sup>2</sup>			X		
26	Implementation of the Clear Lake Nutrient Control Program							

**Table 4: Project Prioritization Summary Table (Continued)**

<b>Project No.</b>	<b>Project Name</b>	<b>Tribal Interests/ Human Right to Water</b>	<b>Efficient Use of Board or Public Resources</b>	<b>Addresses Impediments to Water Recycling/ Efficient Use/Integrated Waste Management</b>	<b>Complements Prior Work</b>	<b>Special Stakeholder Interest</b>	<b>Addresses 303(d) Water Quality Impairment or Threat to Impairment</b>	<b>Supports Board Climate Change Efforts</b>
27	Development of Procedures to Define and Determine Naturally-occurring Background Conditions		X <sup>2</sup>			X		X
28	Evaluation of Selenium Criteria's Protectiveness of Beneficial Uses		X <sup>2</sup>		X	X		
29	Addressing Water Quality Issues Associated with Trash and Pathogens in the City of Stockton, the San Joaquin River Basin and the Sacramento-San Joaquin River Delta	X	X <sup>2</sup>		X	X	X	



**Table 4: Project Prioritization Summary Table (Continued)**

<b>Project No.</b>	<b>Project Name</b>	<b>Tribal Interests/ Human Right to Water</b>	<b>Efficient Use of Board or Public Resources</b>	<b>Addresses Impediments to Water Recycling/ Efficient Use/Integrated Waste Management</b>	<b>Complements Prior Work</b>	<b>Special Stakeholder Interest</b>	<b>Addresses 303(d) Water Quality Impairment or Threat to Impairment</b>	<b>Supports Board Climate Change Efforts</b>
30	Addressing Harmful Algal Blooms in City of Stockton Waters	X	X <sup>2</sup>		X	X	X	
31	Reviewing and Clarifying the Beneficial Uses and Monitoring Requirements in the California Aqueduct				X	X		
32	Designate RARE Beneficial Uses for Waterbodies in the Sacramento River Basin and San Joaquin River Basin		X			X		

**Table 5: Project Ranking Summary Table<sup>3</sup>**

<b>Rank 1: Existing Commitments</b>	<b>Rank 2: Special Status Projects</b>	<b>Rank 3: Meets <math>\geq</math> 3 Criteria</b>	<b>Rank 4: Meets 2 Criteria</b>	<b>Rank 5: Meets 1 Criterion</b>	<b>Projects Proposed for Removal</b>
Project 12: Dissolved Oxygen Objectives	Project 1: Support for basin planning and implementation activities related to the Salt and Nitrate Control Program	Project 2: Tribal Beneficial Uses	Project 5: Grower-Proposed Basin Plan Amendment Work Plans under Irrigated Lands General Waste Discharge Requirements	Project 3: Guidance for Seasonal Beneficial Uses and Diurnal Variations	Project 17: Fungicides and Herbicides
Project 16: Delta Nutrient Research Plan		Project 4: MUN and AGR in Oil Production Zones	Project 10: Evaluation of Effluent-dominated and Individual Water Bodies Dominated by NPDES Discharges	Project 6: Individual Beneficial Use Evaluation for West Squaw Creek	Project 20: Sacramento and San Joaquin Rivers Organochlorine Pesticides Re-evaluation
Project 19: Pyrethroid Research Plan		Project 9: Appropriate Aquatic Life Beneficial Use Designation in Agriculturally-dominated Water Bodies and Agriculture Conveyance Facilities	Project 15: Re-evaluation of the prospective-incorporation-by-reference of the Maximum Contaminant Levels	Project 7: Individual Beneficial Use Evaluation for Grassland Water Supply Channels	Project 21: Statewide Mercury Control Program for Reservoirs

<sup>3</sup> Listings in ranked categories do not imply a prioritization within each rank.

**Table 5: Project Ranking Summary Table (Continued)**

Rank 1: Existing Commitments	Rank 2: Special Status Projects	Rank 3: Meets ≥ 3 Criteria	Rank 4: Meets 2 Criteria	Rank 5: Meets 1 Criterion	Projects Proposed for Removal
Project 23: Delta Methylmercury Control Program		Project 11: Temperature Criteria and Objectives	Project 31: Reviewing and Clarifying the Beneficial Uses and Monitoring Requirements in the California Aqueduct	Project 8: Individual Beneficial Use Evaluation for Groundwater beneath Sulphur Bank Mine in Lake County	
Project 26: Implementation of the Clear Lake Nutrient Control Program		Project 13: Ammonia Water Quality Objectives	Project 32: Designate RARE Beneficial Uses for Waterbodies in the Sacramento River Basin and San Joaquin River Basin	Project 14: Review of proposed USEPA Water Quality Criteria and 304(a) Criteria	
		Project 18: Comprehensive Pesticides Control Program			
		Project 22: Central Valley Rivers Mercury Control Program			

**Table 5: Project Ranking Summary Table (Continued)**

Rank 1: Existing Commitments	Rank 2: Special Status Projects	Rank 3: Meets ≥ 3 Criteria	Rank 4: Meets 2 Criteria	Rank 5: Meets 1 Criterion	Projects Proposed for Removal
		Project 24: Watershed-based plan implementation and update for Battle Creek			
		Project 25: Reassessment of Beneficial Uses and Water Quality Objectives in Specific Reaches of the Pit River			
		Project 27: Development of Procedures to Define and Determine Naturally-occurring Background Conditions			
		Project 28: Evaluation of Selenium Criteria's Protectiveness of Beneficial Uses			

**Table 5: Project Ranking Summary Table (Continued)**

<b>Rank 1: Existing Commitments</b>	<b>Rank 2: Special Status Projects</b>	<b>Rank 3: Meets ≥ 3 Criteria</b>	<b>Rank 4: Meets 2 Criteria</b>	<b>Rank 5: Meets 1 Criterion</b>	<b>Projects Proposed for Removal</b>
		Project 29: Addressing Water Quality Issues Associated with Trash and Pathogens in the City of Stockton, the San Joaquin River Basin and the Sacramento-San Joaquin River Delta			
		Project 30: Addressing Harmful Algal Blooms in City of Stockton Waters			

**APPENDIX 1:**  
**2021 TRIENNIAL REVIEW PROJECT FACT SHEETS**

**Project 1 – Support for Basin Planning and Implementation Activities Related to the Salt and Nitrate Control Program**

**Watershed:**

Sacramento River/San Joaquin River Basins/Tulare Lake Basin

**2021 Comment Letters Received:**

Restore the Delta  
Valley Water Management Company  
North Coast Rivers Alliance  
Pacific Gold Agriculture

**2018 Comment Letters Received:**

None

**Other Public Interest:****Past Board Commitment:**

Resolution R5-2018-0034 (Amendments to the Water Quality Control Plans for the Sacramento River and San Joaquin River Basins and the Tulare Lake Basin to incorporate a Central Valley-Wide Salt and Nitrate Control Program)

**Project's Triennial Review History:**

Rank 2 Project (Special Status) in 2018 Triennial Review Workplan

**Project Description:**

Elevated levels of salinity and nitrates in surface waters and groundwater are an increasing problem in California's Central Valley. High nitrate concentrations in groundwater impair or threaten to impair the region's drinking water quality. Salt accumulations in the soil have resulted in the removal of large portions of farmland from agricultural production. The recently adopted and approved Central Valley Salt and Nitrate Control Program (SNCP) is designed to address both legacy and ongoing salt and nitrate accumulation issues in surface and groundwater throughout the basin. The Central Valley Water Board approved the SNCP Basin Plan Amendments and accompanying Staff Report on 31 May 2018.

Goals from the 2018 Triennial Review Workplan included:

**Complete the final steps of the Basin Plan Amendment Approval Process:**

The SNCP Basin Plan Amendments were approved by the State Water Board in October 2019. The approving resolution (2019-0057) directed that targeted revisions be incorporated into the SNCP Basin Plan Amendments by January 2021. The SNCP Basin Plan Amendments were approved by the Office of Administrative Law (OAL) on 15 January 2020 and approved by the USEPA on 2 November 2020.

The Central Valley Water Board revised the SNCP Basin Plan Amendments accordingly, including Central Valley Water Board clarification revisions and removal of provisions disapproved of by the USEPA. The Central Valley Water Board adopted the revised SNCP Basin Plan Amendments and accompanying Staff Report on 10 December 2020, with [Resolution R5-2020-0057](#)

([https://www.waterboards.ca.gov/centralvalley/board\\_decisions/adopted\\_orders/resolutions/r5-](https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/resolutions/r5-)

2020-0057\_res.pdf). The revised SNCP Basin Plan Amendments were approved by the State Water Board on 1 June 2021 with Resolution No. 2021-0019. The Central Valley Water Board is preparing submittal documents for OAL and USEPA approval considerations of the revised SNCP Basin Plan Amendments.

Prepare, Issue, and Track Notices and Responses: The SNCP salinity and nitrate permitting strategies each contain two compliance pathways with associated implementation schedules that permittees and the Central Valley Water Board must adhere to.

The nitrate portion of the SNCP is a prioritized program that applies to groundwater, while the salinity portion is a phased program that applies to surface waters and groundwater. As such, the SNCP will impact several thousand permittees across most regulatory programs at the Central Valley Water Board. Staff resources are needed to manage the issuance of Notices to Comply (NTCs) and track permittee responses in the Notices of Intent (NOIs), and other implementation deliverables for both the salt and nitrate portions of the program.

The NTCs for the Nitrate Control Program were sent out to Priority 1 permittees on 29 May 2020. Since that time, six Management Zones have formed to encompass the six high priority sub-basins. The Management Zones submitted Preliminary Management Zone Proposals (PMZPs) and Early Action Plans (EAPs) on 8 March 2021 to comply with the Nitrate Control Program. On 7 May 2021 the Central Valley Water Board sent response letters to the Management Zones regarding EAP submittals.

NOIs from permittees not listed in the PMZPs as management zone participants were also due 7 May 2021.

NTCs for the Salt Control Program were sent out on 5 January 2021. NOI forms were due on 15 July 2021. The Prioritization and Optimization Study Work Plan was approved by the Central Valley Water Board in March 2021.



## **Project 2 – Tribal Beneficial Uses**

### **Watershed:**

Region-wide

### **2021 Comment Letters Received:**

Restore the Delta

### **2018 Comment Letters Received:**

Tuolumne Me-Wuk Tribal Council  
Big Valley Band of Pomo Indians  
Elem Indian Colony  
The Robinson Rancheria Environmental Center  
The Pit River Tribe

### **Other Public Interest:**

### **Past Board Commitment:**

### **Project's Triennial Review History:**

Rank 3 Project (Meets  $\geq 3$  Criteria) in 2018 Triennial Review Workplan

### **Project Description:**

Beneficial use definitions relating to California Native American tribes were established by the State Water Board in 2017 through Resolution 2017-0027 which adopted Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California— Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions. The new beneficial use definitions are Tribal Tradition and Culture (CUL), and Tribal Subsistence Fishing (T-SUB). In addition, the State Water Board also defined a beneficial use for Subsistence Fishing (SUB). The SUB, T-SUB and Commercial and Sportfishing (COMM) beneficial uses relate to the risks to human health from the consumption of noncommercial fish or shellfish. In addition, the definition for CUL also includes consumption of aquatic resources to support cultural, spiritual, ceremonial and traditional rights.

The two subsistence fishing beneficial uses normally involve higher rates of consumption of fish or shellfish than those protected under the COMM and CUL beneficial uses. The function of the CUL, T-SUB and SUB beneficial uses are not to protect or enhance fish populations or aquatic habitats. Fish populations and aquatic habitats are protected and enhanced by other beneficial uses, including but not limited to Fish Spawning, Migration of Aquatic Organisms, Aquaculture, Warm Freshwater Habitat, and Cold Freshwater Habitat, that are designed to support aquatic habitats for the reproduction or development of fish. The Central Valley has few water bodies that have been designated to be protected for COMM and none, yet, that are designated to be protected for CUL, T-SUB or SUB.

In the 2018 Triennial Review cycle several tribes in the Central Valley requested that the Central Valley Water Board designate tribal beneficial uses. When evaluating designation of CUL and T-SUB beneficial uses into the Sacramento and San Joaquin, and Tulare Lake Basin Plans, the Board should also evaluate designation of the COMM and SUB beneficial use.

The Central Valley Water Board has begun the process of designating waterbodies in the

Central Valley Region for CUL and, subsequently, T-SUB. Central Valley Water Board staff developed an approach and process for CUL designation and held a series of meetings in spring 2021 to receive feedback, including two Tribal Summits, a public stakeholder meeting, and an information item at the June 2021 Board Meeting.

Additionally, staff were granted discretionary funds for supporting Tribes in the T-SUB designation process and have secured a CivicSpark Fellow to assist with both CUL and T-SUB designations.

### **Project 3 – Guidance for Seasonal Beneficial Uses and Diurnal Variations**

**Watershed:**

Region-wide

**2021 Comment Letters Received:**

None

**2018 Comment Letters Received:**

Fresno Metropolitan Flood Control District

**Other Public Interest:****Past Board Commitment:**

None

**Project's Triennial Review History:**

Rank 5 (Meets 1 Criterion) Project in 2018 Triennial Review Workplan

**Project Description:**

Federal regulations (Title 40 Code of Federal Regulations (CFR) § 131.10(f.)) allow states to adopt seasonal uses as an alternative to reclassifying a water body or segment thereof to uses requiring less stringent water quality criteria. Beneficial uses, such as aquatic life, recreation, and other uses may only occur during certain seasons in certain water bodies. In those cases, it may be appropriate to recognize the seasonality of the use and refine water quality objectives to protect the uses that are present during each season.

In addition, some surface water bodies are subject to varying water quality that occurs with daylight and nighttime conditions. Two primary causes of diurnal variations are photosynthesis and aerobic respiration from algal or aquatic plants. Parameters that are most often affected are dissolved oxygen pH and specific conductance. A concern was expressed during the Central Valley Water Board development of the 2014 Integrated Report that the water quality objectives did not account for diurnal variability and do not provide reasonable protection of beneficial uses at some sites. However, the commenter anticipated that the Statewide Biostimulatory Substances Project would provide information on what the conditions ought to be.

The concept of seasonal beneficial uses is new to the Central Valley. Before de-designating an aquatic life or recreational beneficial use, the Board could consider whether the use is appropriate seasonally. It would be helpful to develop guidance for how seasonality will be considered when evaluating appropriate beneficial uses.

For the diurnal variations, staff could identify Central Valley water bodies that have water quality fluctuations that appear to violate the water quality objectives. Staff could work with stakeholders to investigate these water bodies to determine if the water quality objectives are appropriate or need to be modified. The Statewide Biostimulatory Substances Project (currently under development) may generate relevant information.

This project was a Rank 5 in the 2018 Triennial Review and was not allocated resources through the Triennial Review process.

**Project 4 – MUN and AGR in Oil Production Zones****Watershed:**

Tulare Lake Basin

**2021 Comment Letters Received:**

Valley Water Management Company

**2018 Comment Letters Received:**

Seneca Resources Corporation

California Independent Petroleum Association

**Other Public Interest:****Past Board Commitment:**

R5-2017-0036 (Waste Discharge Requirements General Order for Oil Field Discharges to Land – General Order Number Three)

**Project's Triennial Review History:**

Rank 3 (Meets ≥ 3 Criteria) Project in 2018 Triennial Review Workplan  
Referenced in 2014 Triennial Review Workplan

**Project Description:**

Waste Discharge Requirements General Order R5-2017-0036 provides coverage for discharge of oil field produced wastewater to ponds where the first encountered groundwater is of such poor quality that it cannot support beneficial uses designated in the Basin Plan, or there is no first encountered groundwater. The order applies to discharges to pond(s) that began prior to 26 November 2014. Dischargers under the Order must demonstrate that the groundwater beneath the discharge is of poor quality as defined in the Basin Plan. The discharger must also demonstrate that its discharges will not migrate from the areas where the beneficial uses will be de-designated into areas of higher quality groundwater. Applications for over 40 facilities have been submitted for coverage under this General Order. Dischargers in close proximity to each other and with similar hydrogeological conditions are encouraged to participate in a regional or group effort to provide technical information necessary that demonstrates coverage under the General Order is appropriate and to obtain Basin Plan Amendments for de-designation of MUN and AGR beneficial uses, if applicable.

Staff have initiated the process for amending the Basin Plan for one oil field site by initiating a CEQA scoping meeting in November 2020. Staff have also begun writing the Staff Report to support this Basin Plan Amendment.

**Project 5 - Grower-proposed Basin Plan Amendment Work Plans Submitted  
under Irrigated Lands General Waste Discharge Requirements**

**Watershed:**

Region-wide

**2021 Comment Letters Received:**

None

**2018 Comment Letters Received:**

None

**Other Public Interest:****Past Board Commitment:****Project's Triennial Review History:**

Rank 4 (Meets 2 Criteria) Project in 2018 Triennial Review Workplan

**Project Description:**

The General Waste Discharge Requirements recognize that some areas within the Tulare Lake Basin and San Joaquin Basin areas overlie groundwater containing naturally occurring constituents, including salts, that may exceed water quality objectives associated with certain beneficial use designations. In such cases, the use may be unattainable, even in the absence of any waste discharge, and de-designation or modification of the designated use may be appropriate. The Orders allow dischargers to temporarily operate under reduced monitoring and reporting requirements when 1) a third-party entity, board, or other group is actively pursuing a basin plan amendment to de-designate or modify the beneficial use; and 2) the third-party provides the required information indicating that it is reasonably likely that the beneficial use is not appropriate in the area of the proposed de-designation. To date, two Basin Plan Amendment Workplans have been received pursuant to the Irrigated Lands Regulatory Program General Orders, one each in the Tulare Lake Basin and the San Joaquin River Basin.

This project was not allocated resources through the Triennial Review process.

**Project 6 - Individual Beneficial Use Evaluation for West Squaw Creek****Watershed:**

Sacramento River

**2021 Comment Letters Received:**

None

**2018 Comment Letters Received:**

None

**Other Public Interest:****Past Board Commitment:**

R5-2004-0090 (Amending the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins to Modify the Beneficial Uses for Freshwater Aquatic Habitat (WARM and COLD) and Remove Spawning (SPWN) for West Squaw Creek, Shasta County)

**Project's Triennial Review History:**

Rank 5 (Meets 1 Criterion) Project in 2018 Triennial Review Workplan  
Referenced in the Triennial Review Workplans for: 2005, 2011, and 2014

**Project Description:**

Stakeholders have indicated that there is information that supports reviewing specific beneficial uses of the water bodies. West Squaw Creek, tributary to Lake Shasta, has been significantly impacted by copper mining in the watershed. The Mining Program staff have been evaluating the measures that have been implemented to control mine discharges.

**Project 7 - Individual Beneficial Use Evaluation for Grassland Watershed  
Water Supply Channels**

**Watershed:**

Grassland Watershed

**2021 Comment Letters Received:**

None

**2018 Comment Letters Received:**

USEPA, Region 9

**Other Public Interest:****Past Board Commitment:****Project's Triennial Review History:**

Rank 5 (Meets 1 Criterion) Project in 2018 Triennial Review Workplan  
Referenced in the Triennial Review Workplans for 2011 and 2014

**Project Description:**

Stakeholders have indicated that there is information that supports reviewing specific beneficial uses of the water bodies. The Grassland water supply channels are not currently designated as having existing REC-1 or REC-2 beneficial uses. This project would evaluate the Grasslands wetland water supply channels to determine if the REC-1 or REC-2 beneficial uses are an appropriate designation. This project was not allocated resources through the 2018 Triennial Review process due to its ranking.

**Project 8 - Individual Beneficial Use Evaluation for Groundwater Beneath the Sulphur Bank Mine in Lake County**

**Watershed:**

Clear Lake Watershed

**2021 Comment Letters Received:**

None

**2018 Comment Letters Received:**

USEPA, Region 9  
Elem Indian Colony

**Other Public Interest:****Past Board Commitment:****Project's Triennial Review History:**

Rank 5 (Meets 1 Criterion) Project in 2018 Triennial Review Workplan

**Project Description:**

Stakeholders have indicated that there is information that supports reviewing specific beneficial uses of the water bodies. De-designation would potentially allow consideration of a broader range of remediation alternatives at the closed mine site, which is regulated by USEPA pursuant to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Tribal stakeholders oppose beneficial use de-designations in this area.

This project would evaluate the groundwater beneficial uses beneath the Sulphur Bank Mine in Lake County to determine if the municipal and domestic water supply beneficial use designation is appropriate.

This project was not allocated resources through the 2018 Triennial Review process.



**Project 9 - Appropriate Aquatic Life Beneficial Use Designations in  
Agriculturally-dominated Water Bodies and Agricultural Conveyance  
Facilities**

**Watershed:**

Region-wide

**2021 Comment Letters Received:**

Central Valley Clean Water Association

**2018 Comment Letters Received:**

Kaweah Basin Water Quality Association  
Kern River Watershed Coalition Authority

**Other Public Interest:****Past Board Commitment:**

R5-2017-0088 (Amendments to the Water Quality Control Plans for the Sacramento River and San Joaquin River Basins and Tulare Lake Basin to Establish a Region-wide Municipal and Domestic Supply (MUN) Beneficial Use Evaluation Process in Agriculturally Dominated Surface Water Bodies and to Remove the MUN Beneficial Use from 231 Constructed or Modified Ag Drains in the San Luis Canal Company District)

**Project's Triennial Review History:**

Rank 3 (Meets  $\geq$  3 Criteria) Project in the 2018 Triennial Review Workplan  
Included 2014, 2011, 2005, 2002, 1998 Triennial Review Workplans

**Project Description:**

In agricultural environments, a complex network of modified, natural and constructed channels conveys irrigation supplies to farms and exports agricultural drainage water to natural streams. Many of these waterways lack habitat and physical flow characteristics to sustain the full range of aquatic life and other beneficial uses.

In Resolution R5-2017-0088, the Central Valley Water Board adopted a process for evaluating the MUN beneficial use in these agriculturally-dominated waterbodies. Through this project staff would evaluate the existing ecologic functionality of these waterbodies and would assess aquatic life beneficial use protections and designations within these waterbodies.

Board staff are continuing to work with State Board staff to address questions and concerns that were raised during a 10 July 2018 State Board hearing while drafting revisions to the amendments.

**Project 10 - Evaluation of Effluent-dominated and Individual Water Bodies  
Dominated by NPDES Discharges**

**Watershed:**

Region-wide

**2021 Comment Letters Received:**

None

**2018 Comment Letters Received:**

Central Valley Clean Water Association

**Other Public Interest:****Past Board Commitment:****Project's Triennial Review History:**

Rank 4 (Meets 2 Criteria) Project in the 2018 Triennial Review Workplan  
Referenced in the 1998, 2002, 2005, 2011, and 2014 Triennial Review Workplans

**Project Description:**

It is sometimes difficult and expensive for dischargers to meet water quality objectives in water bodies dominated by surfacewater discharges, also known as effluent dominated water bodies (EDWs). Where little or no dilution is available, effluent limits are set at the applicable water quality criterion/objective which may be more stringent than drinking water maximum contaminant levels (MCLs) to protect aquatic life beneficial uses. Beneficial uses in EDWs have generally been designated through broad policies and have not generally been subject to use attainability analyses to determine appropriate uses.

The consistent flows provided by the wastewater discharge may enhance some aquatic life beneficial uses but be detrimental to others that depend on the ephemeral nature of the stream (i.e. cause a shift from the uses of ephemeral waters to the uses of perennial waters). There are questions of whether the discharger should be required to fully protect these shifted uses when it is the discharge itself that allows the modified uses to exist. There are also questions regarding the fate of the original uses that are lost due to the discharge.

Stakeholders have suggested that the assigned beneficial uses of these water bodies are inappropriate and have requested that various alternatives be explored for assigning beneficial uses to EDWs.

This project was not allocated resources through the 2018 Triennial Review process.

## **Project 11 – Temperature Criteria and Objectives**

### **Watershed:**

Sacramento River and San Joaquin River

### **2021 Comment Letters Received:**

Restore the Delta  
The Conservation Groups  
San Francisco Baykeeper

### **2018 Comment Letters Received:**

Sacramento Regional County Sanitation District  
USEPA  
San Joaquin Tributaries Authority  
The Pacific Coast Federation of Fishermen's Association  
Institute for Fisheries Resources  
Save California's Salmon  
California's Sportfishing Protection Alliance  
Modesto Irrigation District  
US Department of Commerce  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Turlock Irrigation District

### **Other Public Interest:**

### **Past Board Commitment:**

University of California, Santa Cruz Temperature Criteria Contract: Agreement #16-048-150

### **Project's Triennial Review History:**

Rank 3 (Meets  $\geq 3$  Criteria) Project in the 2018 Triennial Review Workplan  
Referenced in the following Triennial Review Workplans: 1998, 2002, 2005, 2011, 2014

### **Project Description:**

The Basin Plans identify water bodies that require aquatic life protection by designating the following beneficial uses: warm freshwater habitat (WARM), cold freshwater habitat (COLD), fish migration (MIGR) and fish spawning (SPWN). The Basin Plans include water quality objectives for dissolved oxygen and temperature that provide protections for these aquatic life beneficial uses. Stakeholders have indicated that water quality objectives for dissolved oxygen and temperature may need to be re-evaluated to provide appropriate protection of the aquatic life beneficial uses.

The Sacramento River and San Joaquin River Basin Plan has specific numeric temperature objectives for the Sacramento River, Lake Siskiyou and Deer Creek, source to Cosumnes River. Both Basin Plans also have narrative temperature objectives that specify protection of beneficial uses.

In previous Triennial Reviews, the California Department of Fish and Wildlife requested that temperature objectives be established to provide protection of spring-run Chinook salmon and steelhead in the Sacramento River Basin and fall-run Chinook salmon in the San Joaquin River Basin. USEPA Region 10, which has jurisdiction over the Northwestern United States, issued

regional guidance for developing numeric temperature standards for the Pacific Northwest to protect cold water (salmonid) beneficial uses. While USEPA Region 9, which has jurisdiction over California, has not adopted similar guidance, it is supportive of the scientific approach used in the USEPA Region 10 guidance for development of numeric temperature standards to protect salmonid beneficial uses in the Central Valley. The Department of Fish and Wildlife also supports the use of the USEPA Region 10 guidance to develop numeric temperature objectives. However, there are also comments that the USEPA Region 10 guidance is inappropriate for use in the Central Valley and requests to develop temperature objectives that are specific to the various Central Valley water ways.

Commenters from previous Triennial Reviews also point out that some of the Basin Plans' named water bodies are very long and have different characteristics from one end to the other end. In many of these cases, these long water body reaches are designated both WARM and COLD, and thus protection of aquatic life is based on the COLD criteria, which is generally more stringent. However, this may not be adequately protective of either the warm or cold-water ecosystems. Suggestions include subdividing these reaches to appropriate sizes and designating appropriate beneficial uses for each sub reach, or developing water quality objectives that take into consideration the species that may be present at any particular place or time and, thus, provide seasonality to the water quality objectives.

Central Valley Water Board staff are coordinating with the State Water Board's Division of Water Rights on the next steps to identify studies and secure funding needed to develop a long-term approach to address unresolved temperature criteria questions and uncertainties. Central Valley Water Board staff participated in discussions with Water Rights staff and various stakeholders, including state and federal agencies and academic researchers, on temperature studies.

## **Project 12 – Dissolved Oxygen Objectives**

### **Watershed:**

Sacramento-San Joaquin Delta and Stanislaus River Watershed

### **2021 Comment Letters Received:**

Restore the Delta  
San Francisco Baykeeper

### **2018 Comment Letters Received:**

San Joaquin Tributaries Authority  
California Sportfishing Protection Alliance  
Save California Salmon  
Pacific Coast Federation of Fisherman's Association  
Institute for Fisheries Resources

### **Other Public Interest:**

### **Past Board Commitment:**

2014 Delta Strategic Work Plan

### **Project's Triennial Review History:**

Rank 1 (Existing Commitments) Project in 2018 Triennial Review Workplan  
Referenced in the 1998, 2002, 2005, 2011, and 2014 Triennial Review Workplans

### **Project Description:**

The Basin Plans identify water bodies that require aquatic life protection by designating the following beneficial uses: warm freshwater habitat (WARM), cold freshwater habitat (COLD), fish migration (MIGR) and fish spawning (SPWN). The Basin Plans include water quality objectives for dissolved oxygen and temperature that provide protections for these aquatic life beneficial uses. Stakeholders have indicated that water quality objectives for dissolved oxygen and temperature may need to be re-evaluated to provide appropriate protection of the aquatic life beneficial uses. [See the factsheet for Project 11 for development of temperature criteria and objectives.]

The basin plans include: (1) general dissolved oxygen objectives that apply to all water bodies designated as supporting WARM, COLD and SPWN; and (2) site-specific objectives for certain water bodies that are typically higher than the general objectives. Both general and site-specific objectives are applied as minimum levels that are to be equaled or exceeded at all times. These objectives have existed in the Basin Plan since its original adoption in 1975. In 1986, the USEPA developed ambient water quality criteria for dissolved oxygen. The recommended national criteria have not been evaluated for use in the Central Valley. This project includes reviewing the objectives and developing site-specific dissolved oxygen objectives for the Sacramento-San Joaquin Delta, the Lower Stanislaus River, and the Old and Middle Rivers.

In June of 2020 the Department of Water Resources (DWR) submitted a draft report detailing the effects of the South Delta Temporary Barriers Project's effects on dissolved oxygen in Old and Middle Rivers to meet a requirement of their 401 Water Quality Certification. Board staff reviewed DWR's draft report and have been meeting with DWR to discuss the findings from that

study. DWR is currently revising the report based on feedback from Central Valley Water Board staff.

## **Project 13 – Ammonia Water Quality Objectives**

### **Watershed:**

Region-wide

### **2021 Comment Letters Received:**

None

### **2018 Comment Letters Received:**

None

### **Other Public Interest:**

Central Valley Clean Water Association

### **Past Board Commitment:**

### **Project's Triennial Review History:**

Rank 3 (Meets  $\geq$  3 Criteria) Project in 2018 Triennial Review Workplan

### **Project Description:**

The Porter-Cologne Water Quality Control Act requires the Water Boards to develop water quality objectives for the reasonable protection of beneficial uses in surface water and a program of implementation for achieving water quality objectives. Federal regulations require States to adopt narrative or numeric water quality criteria to protect designated beneficial uses. (40 CFR § 131.11(a)(1).) Federal regulations require that states consider establishing water quality criteria based on criteria that USEPA publishes under Clean Water Act section 304(a) (40 CFR § 131.11 and 131.20).

Ammonia is discharged to surface water and is a critical pollutant that due to its potential adverse impact on aquatic life, causing lower reproduction, growth, or death to the aquatic organisms at concentrations of concern. The Central Valley Water Board has adopted numeric criteria for unionized ammonia (NH<sub>3</sub>) for the Tulare Lake Basin that generally protects beneficial uses but has not adopted numeric ammonia criteria into water quality standards for the Sacramento and San Joaquin River Basins of the Central Valley. The Central Valley Water Board has adopted narrative water quality criteria for toxicity that prohibit the discharge of substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. To interpret these narrative criteria, the Central Valley Water Board relies on recommendations from federal and state agencies as well as peer-reviewed scientific studies. The Central Valley Water Board previously used water quality criteria based on criteria that USEPA publishes under Clean Water Act section 304(a), which is the National Recommended Water Quality Criteria developed in 1999 for ammonia.

In 2013 the USEPA updated the 1999 ammonia criteria for the protection of aquatic life from the toxic effects of ammonia in freshwater. The 2013 ammonia criteria vary based on pH and temperature and reflect the latest scientific knowledge on the toxicity of ammonia to freshwater aquatic life, including new data on sensitive freshwater mussels and gill-breathing snails. Therefore, the 2013 freshwater acute and chronic aquatic life criteria for ammonia are more protective for the aquatic community than the 1999 ammonia criteria.

USEPA recommended a single national acute and a single national chronic criterion be applied to all waters rather than different criteria based on the presence or absence of mussels.

However, these freshwater mussel species included in the 2013 ammonia criteria are different than the freshwater mussel species in the Central Valley Region. The water quality standards regulation at 40 CFR § 131.11(b)(1)(ii) provides states with the opportunity to adopt water quality criteria that are "...modified to reflect site-specific conditions." As with any criteria, site-specific criteria must be based on a sound scientific rationale in order to protect the designated use and are subject to review and approval or disapproval by USEPA. The 2013 ammonia criteria provide recalculation procedures for site-specific criteria derivation. In the case of ammonia, where a state can demonstrate that mussels are not present on a site-specific basis, the recalculation procedure may be used to remove the mussel species from the national criteria dataset to better represent the species present at the site.

Staff has been working with the Central Valley Clean Water Association (CVCWA) to review their data to establish numeric ammonia water quality objectives for the Central Valley to provide reasonable protection of the aquatic life in the region and to provide a consistent process for its regulatory programs.

CVCWA organized a coordinated effort for publicly-owned treatment works (POTWs) within the Central Valley Region, the Freshwater Mussel Collaborative Study for Wastewater Treatment Plants, to determine how the latest scientific knowledge on the toxicity of ammonia reflected in the 2013 ammonia criteria could be implemented in the Central Valley Region. Phase I, completed in June 2015, included a State of Knowledge Report developed by a consultant team consisting of Robertson-Bryan, Inc., Larry Walker Associates, and Pacific EcoRisk. The collaborative study involved policy and permitting discussions among representatives from the Central Valley Water Board, USEPA, United States Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and regional mussel experts regarding the implementation of the 2013 ammonia criteria in POTW NPDES permits. The discussions evaluated permitting approaches that provide reasonable protection of aquatic life beneficial uses, including protection of freshwater mussels.

The State of Knowledge Report explained that the species of freshwater mussels in waters within the Central Valley Region are different than the species USEPA used in the toxicity dataset for development of the 2013 ammonia criteria. The State of Knowledge Report indicated that one resident freshwater mussel species was shown to be less sensitive than the eastern mussel species used to derive the 2013 Criteria. However, the sensitivity of the other Central Valley Region mussel species was unknown.

Phase IIc Freshwater Mussel Collaborative Study for Wastewater Treatment Plants: Ammonia Criteria Recalculation Final Report, dated January 2020 (Criteria Recalculation Report) included toxicity studies for the remaining freshwater mussel species present in Central Valley Region waters and demonstrated the resident species are less sensitive than the eastern species used to develop the 2013 ammonia criteria.

The Criteria Recalculation Report utilized toxicity bioassays conducted on resident mussel species to recalculate the ammonia criteria using USEPA's recalculation guidelines [Guidelines for Deriving Numerical Aquatic Site-Specific Water Quality Criteria by Modifying National Criteria (EPA-600/S3-84-099 December 1984) and Revised Deletion Process for the Site-Specific Recalculation Procedure for Aquatic Life Criteria (EPA-823-R-13-001, April 2013)]. Using the toxicity data for the resident mussel species to replace the toxicity data for the eastern mussel



species in the national dataset, site-specific ammonia criteria were developed for waters within the Central Valley Region, including all surface waters in the Sacramento River, San Joaquin River, and Tulare Lake Basin Plans.

A draft Criteria Recalculation Report was provided to the Central Valley Water Board, USEPA Region 9, USEPA Office of Science and Technology, USFWS, and the Nature Conservancy. Comments were provided by Central Valley Water Board staff and USEPA Office of Science and Technology. USEPA agreed with the recalculation procedure for developing site-specific acute criterion. However, USEPA recommended a more conservative approach for utilizing the acute-to-chronic ratio procedure for developing the site-specific chronic criterion. The final Criteria Recalculation Report addressed the comments and provided revised equations for the chronic criterion.

The site-specific ammonia criteria provided in the January 2020 Criteria Recalculation Report with the adjustments to the chronic criterion recommended by USEPA is being used for the Central Valley Water Board regulatory programs to implement the Basin Plan's narrative toxicity objective to protect aquatic life beneficial uses. By implementing the site-specific ammonia criteria provided in the January 2020 Criteria Recalculation Report—with adjustments by USEPA—that protect aquatic life beneficial uses this project is now complete and is being proposed for removal from the 2021 Triennial Review Project List.

**Project 14 - Review of Proposed USEPA Water Quality Criteria and 304(a) Criteria**

**Watershed:**

Region-wide

**2021 Comment Letters Received:**

None

**2018 Comment Letters Received:**

USEPA

**Other Public Interest:****Past Board Commitment:****Project's Triennial Review History:**

Rank 5 (Meets 1 Criterion) Project in 2018 Triennial Review Workplan  
Referenced in the 2005, 2011, and 2014 Triennial Review Workplans

**Project Description:**

The Central Valley Water Board is implementing criteria promulgated by the USEPA as of 2000. These criteria are known as the California Toxics Rule (CTR) and include the toxic pollutants (priority pollutants). USEPA also publishes guidance for non-priority pollutants. These non-priority pollutants were not included in the USEPA promulgation of the CTR. USEPA publishes updates of criteria pursuant to Section 304(a) of the Clean Water Act.

The Basin Plans include narrative objectives and a *Policy for Application of Water Quality Objectives* that indicates that the Central Valley Water Board can use available information, numerical criteria, and guidelines from other authoritative bodies to assist in determining compliance with narrative objectives. This project would involve the evaluation of the applicability of USEPA National Recommended Water Quality Criteria in the Central Valley through a stakeholder-based process.

This project was not allocated resources through the Triennial Review process.

**Project 15 - Re-evaluation of the Prospective-incorporation-by-reference of the Maximum Contaminant Levels**

**Watershed:**

Region-wide

**2021 Comment Letters Received:**

Valley Water Management Company  
Central Valley Clean Water Association  
Sacramento River Source Water Protection Program

**2018 Comment Letters Received:**

Central Valley Clean Water Association

**Other Public Interest:**

**Past Board Commitment:**

**Project's Triennial Review History:**

Rank 4 (Meets 2 Criteria) Project in 2018 Triennial Review Workplan

**Project Description:**

The Basin Plan identifies MCLs, as tabulated in Title 22, as Water Quality Objectives for both surface and groundwater designated as MUN. This incorporation by reference is prospective, which means that future changes to the MCLs are automatically applicable as water quality objective once the revised regulations take effect.

MCL revisions are made in accordance with Health and Safety Code section 116365. This section requires that the State Water Board consider the following criteria when adopting a primary drinking water standard: 1) the public health goal for the contaminant published by the Office of Environmental Health Hazard Assessment; 2) the national primary drinking water standard for the contaminant, if any, adopted by the United States Environmental Protection Agency; and 3) the technological and economic feasibility of compliance with the proposed primary drinking water standard. When the Central Valley Water Board prescribes waste discharge requirements, it must consider the provisions in Water Code section 13241. However, if the Central Valley Water Board has considered the factors when establishing the water quality objectives, it is not obliged to consider the factors again when implementing the objectives in waste discharge requirements.

This project would evaluate, and potentially modify, existing prospective incorporation language in the Basin Plan to address perceived inconsistencies between the legal requirements for the adoption of new drinking water standards by State Water Board and the criteria in Water Code section 13241 that the Central Valley Water Board must evaluate when issuing waste discharge requirements.

This project was not allocated resources through the Triennial Review process.

## **Project 16 – Delta Nutrient Research Plan**

### **Watershed:**

Sacramento-San Joaquin Delta

### **2021 Comment Letters Received:**

Restore the Delta

San Francisco Baykeeper

### **2018 Comment Letters Received:**

Sacramento Regional County Sanitation District

### **Other Public Interest:**

Delta Nutrient Research Plan Stakeholder and Technical Advisory Group

### **Past Board Commitment:**

R5-2018-0059 (Delta Nutrient Research Plan for Development of Information Prior to Consideration of Nutrient Numeric Objectives)

2014 Delta Strategic Work Plan

California Nonpoint Source Program Implementation Plan – 2014-2020

### **Project's Triennial Review History:**

Rank 1 (Existing Commitments) Project in 2018 Triennial Review Workplan

### **Project Description:**

Nitrogen and phosphorus contribute to water quality problems in the freshwater Sacramento-San Joaquin Delta. These problems include: harmful algal blooms (HABs) and associated toxins and nuisance compounds, excess aquatic plant growth, low abundance of phytoplankton species that support the food web, and low dissolved oxygen in some waterways.

More information is needed about the roles of nutrients and other factors in driving these conditions and variations in the drivers across the Delta. The goal of the Delta Nutrient Research Plan is to develop and implement a study plan to determine whether numeric water quality objectives for nutrients are needed to protect water quality in the Delta. Staff worked with a stakeholder and technical advisory group (STAG) to review the state of science, identify information gaps, and identify monitoring, special studies, and modeling to fill the gaps.

The Delta Nutrient Research Plan—approved by the Central Valley Water Board in August 2018—identifies information gaps for assessing needs and developing water quality objectives for nutrients in the Delta. Efforts are now focused on filling the information gaps through special studies, monitoring, data evaluation, and modeling.

- Board staff are part of a team that have been monitoring HABs and cyanotoxins in water and benthic organisms (clams, crayfish, and smaller sediment dwelling animals) in the Delta.
- Board staff helped with Discovery Bay mitigation method experiments and developed a proposal to conduct similar experiments in the Stockton waterfront and an in-situ field study in Discovery Bay.
- Board staff completed a report with calculations detailing mass load estimates of

phosphorous and nitrogen in the Delta for 2008-2019. The load estimates utilize nutrient data and flow estimates collected by multiple monitoring programs and permitted entities.

- Central Valley Water Board funded a study through the San Francisco Estuary Institute (SFEI) to develop computer models for nutrient transport and transformations, phytoplankton growth, hydrodynamics, and other processes in the Delta and Suisun Bay.

The Central Valley Water Board is committed to continuing to prioritize the Delta Nutrient Research Plan. The project was ranked Rank 1 in the 2018 Triennial Review and has resources allocated. The project is still ranked Rank 1 in this Triennial Review Workplan.

## **Project 17 – Fungicides and Herbicides**

### **Watershed:**

Sacramento-San Joaquin Delta

### **2021 Comment Letters Received:**

None

### **2018 Comment Letters Received:**

None

### **Other Public Interest:**

### **Past Board Commitment:**

2014 Delta Strategic Work Plan

Resolution R5-2018-0059 Approval of Delta Nutrient Research Plan

University of California, Davis Herbicides and Fungicides: State Water Board Contract No.16-046-150

### **Project's Triennial Review History:**

Rank 1 (Existing Commitments) Project in 2018 Triennial Review Workplan

### **Project Description:**

The patterns of species and total abundance of phytoplankton (free-floating algae, bacteria, and cyanobacteria) in the Delta have changed over the last several decades. Changes in algal quality and quantity or “bottom up” effects are factors believed to contribute to the decline in some native fish species. Also, since the early 2000s, there has been an increase in detections of fungicides and herbicides in Delta waters. Little is known about the potential toxicities of these compounds to multiple species of algae and whether the chemicals are contributing to shifts in the quantity and quality of the lower food web.

A priority project in the 2014 Delta Strategic Work Plan is to conduct a toxicological assessment of some current-use fungicides and herbicides using Delta algal species. This project also supports the Delta Nutrient Research Plan by helping to identify factors affecting phytoplankton growth and species' abundances.

The Central Valley Water Board contracted \$375,000 with UC Davis to develop toxicity reference values for current use fungicides and herbicides found in the Delta on resident algal species. This work involved phytoplankton LC50 determination following four-day growth tests with up to four herbicides and fungicides commonly detected in Delta waters.

Based on the final project report, results of the study were sufficient for Water Board staff to identify certain chemicals as likely having a low risk of causing algal toxicity in the Delta as individual pollutants. However, additional testing would likely be required to confirm the results and improve quality control.

With the completion of the UC Davis study and no comments received during the solicitation period for the 2021 Triennial Review, Central Valley Water Board staff are considering removing this project from the list of Triennial Review Projects.

## **Project 18 – Comprehensive Pesticides Control Program**

### **Watershed:**

Region-wide

### **2021 Comment Letters Received:**

Sacramento River Source Water Protection Program

### **2018 Comment Letters Received:**

None

### **Other Public Interest:**

### **Past Board Commitment:**

### **Project's Triennial Review History:**

Rank 3 (Meets  $\geq$  3 Criteria) Project in 2018 Triennial Review Workplan

### **Project Description:**

Pesticides, when used properly, protect people and their environment from pests (animal, plant, or microbial) that threaten human health and human activities. However, pesticide residues that escape their intended use area may enter waters of the state and cause beneficial use impairments, particularly aquatic life impacts. Various pesticides have been detected at toxic levels in the Central Valley water bodies. The Basin Plan contains requirements relevant to pesticides, including narrative and numeric water quality objectives to protect beneficial uses. However, there are currently very few numeric water quality objectives for pesticides.

The Central Valley Water Board has identified many Central Valley waterways as impaired due to ambient pesticide levels on the Clean Water Act section 303(d) list. The Clean Water Act requires the development of TMDL allocations to address impairments. The Basin Plan outlines a specific review process that the Central Valley Water Board must follow to address pesticide detections and problems that are identified and for coordination with the Department of Pesticide Regulation (DPR), which regulates pesticide registration and use in California.

The Basin Plan currently has provisions that are applicable to all pesticides, as well as provisions for the specific control programs. These provisions should be reviewed and modified as necessary to provide a comprehensive regulatory approach to pesticide discharges in the Region. The Central Valley Water Board has adopted in the following TMDLs and Basin Plan Amendments to address pesticide impacts. More detail about these TMDL projects can be found on the [Central Valley Water Board's TMDL webpage](https://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/) ([https://www.waterboards.ca.gov/centralvalley/water\\_issues/tmdl/](https://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/))

Completed Pesticide TMDL Development Projects:

- Central Valley Pesticide TMDL and Basin Plan Amendment
  - Diazinon and Chlorpyrifos TMDL and Basin Plan Amendment
- Central Valley Pyrethroid Pesticides TMDL and Basin Plan Amendment
- Sacramento and Feather Rivers Diazinon and Chlorpyrifos TMDL and Basin Plan Amendment
- Sacramento County Urban Creeks Diazinon and Chlorpyrifos TMDL
- Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos TMDL
- San Joaquin River Diazinon and Chlorpyrifos TMDL

Since adoption of the 2018 Triennial Review, Central Valley Water Board staff have been implementing the Pyrethroid Pesticides TMDL and Basin Plan Amendment as detailed in [Resolution R5-2017-0057](#):

- Central Valley Water Board staff Issued Water Code Section 13267 and Water Code Section 13383 Orders to all municipal separate storm sewer systems (MS4) permittees requiring baseline monitoring or management plans.
  - Approved three MS4 management plans and two baseline monitoring reports.
  - Approved seven pyrethroid baseline monitoring plans for MS4 permittees.
- Staff worked with the State Water Board's Environmental Lab Accreditation Program (ELAP) to validate and approve three laboratories' new analytical methods that can quantify pyrethroids at the low levels required by the BPA.
- Staff also coordinated with the State Water Resource Control Board's Office of Information Management and Analysis (OIMA) and the laboratories to attain USEPA confirmation that an Alternative Test Protocol is not needed for the new pyrethroid methods.
- Reviewed and approved all Irrigated Lands Regulatory Program (ILRP) Coalition Baseline Monitoring Plans and have ensured that baseline monitoring requirements are included in NPDES permits.
- Staff submitted comments on USEPA's proposed Ecological Mitigations for Pyrethroid Pesticides in coordination with the State Water Board and other Regional Boards.
- Staff continue to participate in development of the statewide urban pesticides program.

The Central Valley Water Board reviewed the Diazinon and Chlorpyrifos Control Programs in December 2020. Future Board review of the control programs for Diazinon and Chlorpyrifos are not planned, since the existing control programs are expected to continue to result in attainment of the water quality objectives for these pesticides, and since nearly all uses of chlorpyrifos have been cancelled in California, effective December 2020.



## **Project 19 – Pyrethroid Research Plan**

### **Watershed:**

Sacramento River and San Joaquin River Basin

### **2021 Comment Letters Received:**

None

### **2018 Comment Letters Received:**

None

### **Other Public Interest:**

### **Past Board Commitment:**

R5-2017-0057 – Amendment to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Pyrethroid Pesticide Discharges

### **Project's Triennial Review History:**

Rank 1 (Existing Commitment) Project in 2018 Triennial Review Workplan

### **Project Description:**

The Central Valley Water Board adopted a control program for pyrethroids pesticides in 2017. The pyrethroid control program in the Basin Plan requires that the Board work with stakeholders and other agencies to develop a Pyrethroid Research Plan within two years of the effective date, to address a number of topics where additional data and information could help inform potential revisions to the pyrethroid control program. These topics include pyrethroid bioavailability, temperature effects on toxicity, chronic and sublethal effects, fate and transport, and monitoring and laboratory methods for toxicity and pyrethroids.

When the Pyrethroid Research Plan is completed, additional resources will be needed to conduct investigations on pyrethroid bioavailability, temperature effectson toxicity, chronic and sublethal effects, fate and transport, and monitoring and laboratory methods for toxicity and pyrethroids.

Due to resource limitations and impacts due to COVID-19, the Pyrethroid Research Plan has been delayed. Additionally, staff have been addressing other components of the Pyrethroid Control Program. A Pyrethroid Research Plan, incorporating input from stakeholders and other agencies, is scheduled to be completed in fiscal year 2022-23.

**Project 20 – Sacramento and San Joaquin Rivers Organochlorine Pesticides  
Re-evaluation**

**Watershed:**

Sacramento River and San Joaquin River

**2021 Comment Letters Received:**

None

**2018 Comment Letters Received:**

None

**Other Public Interest:****Past Board Commitment:****Project's Triennial Review History:**

Rank 1 (Existing Commitment) Project in the 2018 Triennial Review Workplan

**Project Description:**

Organochlorine (OC) pesticides have been detected in the water column, sediment and biota collected from water bodies throughout the Sacramento and San Joaquin River Basins at high enough concentrations to include these water bodies on the Clean Water Act section 303(d) list of impaired water bodies, even though nearly all OC pesticides have been banned for use in the United States for decades.

Stakeholders have expressed concern regarding the water quality objectives for organochlorine pesticides which states that:

*Total identifiable persistent chlorinated hydrocarbon pesticides shall not be present in the water column at concentrations detectable within the accuracy of analytical methods approved by the Environmental Protection Agency or the Executive Officer.*

Stakeholders have expressed concerns that the above water quality objective fluctuates with the accuracy of analytical methods and would prefer numeric water quality objectives that are protective of beneficial uses. Since the adoption of this water quality objective, the USEPA has developed water quality criteria for water column concentrations of organochlorine pesticides that are protective of human health and aquatic life and in 2000 promulgated the criteria in the California Toxics Rule (CTR). At this time, the detection limits for analytical methods approved by the USEPA are higher than the CTR criteria for the organochlorine pesticides.

Concentrations are substantially declining through over time due to practices to reduce erosion and through natural attenuation. As a result of the decline in concentrations of OC pesticides in Region waters Central Valley Water Board staff recommend that this project be removed from the 2021 Triennial Review Project List in order to allow resources to be allocated to other projects.

**Project 21 – Statewide Mercury Control Program for Reservoirs****Watershed:**

Statewide

**2021 Comment Letters Received:**

None

**2018 Comment Letters Received:**

Tuolumne Me-Wuk Tribal Council

**Other Public Interest:****Past Board Commitment:****Project's Triennial Review History:**Rank 3 (Meets  $\geq 3$  Criteria) Project in the 2018 Triennial Review Workplan**Project Description:**

Elevated mercury levels in soil, water, and fish can be expected in areas where mercury was mined (Coast Range), where mercury was used to extract gold (Sierra Nevada and Cascade Range), and in downstream water bodies where mercury is methylated (Delta, rivers and reservoirs). In addition, elevated mercury levels in some waters are due to modern point and non-point sources as well as atmospheric deposition. Mercury is a problem because it accumulates in aquatic organisms to levels that pose a threat to predator species and people that eat some types of fish.

Statewide, there are about 130 reservoirs with fish tissue mercury concentrations that exceed water quality objectives. To address the mercury problem in these reservoirs, the State Water Board has undertaken development of a statewide program ("Statewide Mercury Control Program for Reservoirs") with the goal of reducing mercury levels in fish through a multifaceted approach; (1) reduce loading of mercury to the reservoirs; (2) and develop and test management practices in the reservoirs to reduce methylmercury production and subsequent bioaccumulation.

This multiyear project has been led by technical staff from the Central Valley Water Board, the San Francisco Bay Water Board, and the State Water Board. A staff report and implementation provisions have been submitted to external scientific peer review and are posted on the project website. Staff have been meeting with many reservoir owners and operators to discuss development of coordinated reservoir water chemistry and fisheries management pilot tests. Staff have also evaluated alternatives to the typical TMDL approach to addressing impaired waters.

Board staff attended meetings and conferences with reservoir owners, operators, stakeholders, researchers, and State Water Board. This project is being considered for removal from the Triennial Review Project list as it is a statewide project being led by the State Water Board.

**Project 22 – Central Valley Rivers Mercury Control Program****Watershed:**

Region-wide

**2021 Comment Letters Received:**

None

**2018 Comment Letters Received:**

Central Valley Clean Water Association  
Tuolumne Me-Wuk Tribal Council

**Other Public Interest:****Past Board Commitment:**

R5-2010-0043 (Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Methylmercury and Total Mercury in the Sacramento-San Joaquin Delta Estuary)

**Project's Triennial Review History:**

Rank 3 (Meets ≥ 3 Criteria) Project in 2018 Triennial Review Workplan

**Project Description:**

Elevated mercury levels can be expected in areas where mercury was mined (Coast Range), where mercury was used to extract gold (Sierra Nevada and Cascade Range), and in downstream water bodies where mercury is methylated (Delta, rivers and reservoirs). In addition, elevated mercury levels in some waters are due to modern point and non-point sources as well as atmospheric deposition. Mercury is a problem because it accumulates in aquatic organisms to levels that pose a threat to predator species and people that eat fish.

Because of elevated mercury levels in fish tissue, numerous water bodies, including the Delta, its tributaries, and numerous reservoirs and streams have been included on the Clean Water Act Section 303(d) list of impaired water bodies. The Clean Water Act mandates that the Regional Water Board develop load reduction programs to resolve these water quality problems through a TMDL allocation process. Health advisories have been issued for many water bodies in the Central Valley due to the mercury levels in fish. Additional studies may result in health advisories being issued for additional water bodies as well as more water bodies being added to the Clean Water Act 303(d) list for mercury impairments.

In the past, the Central Valley Water Board adopted Basin Plan Amendments that include fish tissue objectives, implementation programs, and TMDL allocations for controlling mercury and methylmercury in Clear Lake, Cache Creek and its tributaries, and the Delta.

The Delta Mercury Control Program (Resolution No. R5-2010-0043) identified methylmercury allocations for tributary inputs to the Delta and Yolo Bypass and specifically notes control programs are needed for the American, Cosumnes Feather, Mokelumne, Sacramento, and San Joaquin Rivers, and Marsh, Morrison and Putah Creeks. Staff began developing mercury control programs for Central Valley Rivers, focusing on these tributaries to the Delta downstream of major reservoirs.

In an effort to focus limited staff resources on the Delta Methylmercury TMDL, only limited work has been completed on this project since the 2018 Triennial Review.

**Project 23 – Delta Methylmercury Control Program****Watershed:**

Sacramento-San Joaquin Delta

**2021 Comment Letters Received:**

Restore the Delta

**2018 Comment Letters Received:**

None

**Other Public Interest:****Past Board Commitment:**

R5-2010-0043 (Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Methylmercury and Total Mercury in the Sacramento-San Joaquin Delta Estuary)

California Nonpoint Source Program Implementation Plan –2014-2020

**Project's Triennial Review History:**

Rank 1 (Existing Commitment) Project in 2018 Triennial Review Workplan

**Project Description:**

Elevated mercury levels can be expected in areas where mercury was mined (Coast Range), where mercury was used to extract gold (Sierra Nevada and Cascade Range), and in downstream water bodies where the mercury is methylated (Delta, rivers and reservoirs). In addition, elevated mercury levels in some waters are due to modern point and non-point sources as well as atmospheric deposition. Mercury is a problem because it accumulates in aquatic organisms to levels that pose a threat to predator species and people that eat fish. Because of elevated mercury levels in fish tissue, numerous water bodies, including the Delta, its tributaries, and numerous reservoirs and streams have been included on the Clean Water Act Section 303(d) list of impaired water bodies. Health advisories have been issued for the Delta due to the mercury levels in fish. Additional studies may result in health advisories being issued for additional water bodies as well as more water bodies being added to the Clean Water Act 303(d) list for mercury impairments.

In the past, the Central Valley Water Board adopted Basin Plan Amendments that include fish tissue objectives, implementation programs, and TMDL allocations for controlling mercury and methylmercury in Clear Lake, Cache Creek and its tributaries, and the Delta.

For the Delta Mercury Control Program review, the Board committed to consider modification of methylmercury goals, objectives, allocations, compliance dates, implementation of management practices, schedules for methylmercury controls, and consideration of a mercury offset program for dischargers who cannot meet their load and waste load allocations. Board staff reviewed the mercury control studies and the report by a Review Panel. Board staff met with dischargers to discuss the control study reports and participated in a meeting for control study participants to summarize control study findings. Board staff initiated the CEQA process by mailing AB 52 letters to applicable tribes on the Native American Heritage Commission List in December 2019. No consultation requests were received during the consultation period.

Board staff held a virtual CEQA scoping meeting and public workshop on 24 February 2021. A second Review Panel was convened to review two delayed control studies. The Review Panel submitted its Final Report in July 2021. Information from these studies and recommendations from the Review Panel will be used to consider revisions to the Delta Mercury Control Program.

Board staff will continue to evaluate new data and literature to determine if modifications to the TMDL are necessary. If modifications are warranted, Central Valley Water Board staff will continue the Basin Plan Amendment process by developing draft staff reports and submitting them to scientific peer review. Tribes and stakeholders will be engaged throughout the process.

**Project 24 - Watershed-based Plan Implementation and Update for Battle Creek**

**Watershed:**

Battle Creek Watershed (HSA# 5507.120000)

**2021 Comment Letters Received:**

None

**2018 Comment Letters Received:**

None

**Other Public Interest:****Past Board Commitment:**

California Nonpoint Source Program Implementation Plan –2014-2020

**Project's Triennial Review History:**

Rank 3 (Meets ≥ 3 Criteria) Project in 2018 Triennial Review Workplan

**Project Description:**

Battle Creek is one of the northernmost major tributaries to the Sacramento River and is considered a high priority stream because it contains critical cold-water habitat for endangered Spring Run Chinook salmon, supports important populations of Chinook salmon and Central Valley steelhead, contains numerous fish hatcheries, and is the location of an ongoing salmonid habitat restoration project that is receiving substantial funding from local, state, and federal agencies, as well as private entities. There is concern of excessive sedimentation endangering the aquatic habitat beneficial uses. Staff from the Forest Activities Program is working with stakeholders to design a Watershed-Based Plan (WBP) which will coordinate watershed restoration efforts and disseminate information relevant to all stakeholders in the watershed.

Board staff participated in the development of the WBP through multiple activities including participation in Greater Battle Creek Working Group meetings, organization of the WBP Technical Advisory Committee, and coordination with watershed stakeholders. Board staff conducted three site inspections to assess BMP effectiveness and implementation associated with the Hazard Tree removal project.

Central Valley Water Board staff are in the process of identifying funding to implement the WBP. Staff continue to oversee a contract with 34 North for hosting Battle Creek watershed data on the Sacramento River Watershed portal.

**Project 25 - Reassessment of Beneficial Uses and Water Quality Objectives  
in Specific Reaches of the Pit River**

**Watershed:**

Pit River

**2021 Comment Letters Received:**

Modoc Resource Conservation District

Pam Giacomini (Comment received after deadline)

**2018 Comment Letters Received:**

North Eastern California Water Association

Pit River Tribe

Shasta County Board of Supervisors

**Other Public Interest:****Past Board Commitment:****Project's Triennial Review History:**

Rank 3 (Meets ≥ 3 Criteria) Project in 2018 Triennial Review Workplan

Referenced in the 2011 and 2014 Triennial Review Workplans

**Project Description:**

The Basin Plan identifies beneficial uses for the South and North Forks of the Pit River, the Pit River from the confluence of the forks to the mouth of Hat Creek, and the Pit River from the mouth of Hat Creek to Shasta Lake. The Pit River is over 200 miles long and varies in elevation from about 4,300 feet above mean sea level at the confluence of the forks to about 1,000 feet above mean sea level at Lake Shasta.

Commenters have requested that the Central Valley Water Board re-evaluate existing beneficial uses in these reaches of the Pit River, consider designating reaches of the Pit River as supporting CUL and T-SUB beneficial uses, and divide the Pit River into additional reaches to provide more appropriate protection of the beneficial uses. Commenters have also requested that the Central Valley Water Board re-evaluate water quality objectives, including pH and temperature, for the protection of aquatic life in the Pit River and to reflect the environmental conditions in the Pit River. Several stakeholders have conducted assessments of the Pit River and have indicated an interest in conducting additional assessments that could lead to basin plan amendments to address beneficial uses and water quality objectives in the Pit River.

Board staff attended meetings with Modoc Resource Conservation District (MRCD) representatives and members of the Pit River Tribe to discuss the Pit River reassessment project and tour the upper Pit River watershed. These discussions culminated in an agreement with MRCD to collate all existing temperature-related water quality data and to work with Board staff to determine if additional field surveys are needed to fill data gaps. Additionally, Board staff organized and participated in a meeting between members of the MRCD and the Pit River Tribe in January 2020. During that meeting Board staff provided a brief presentation on the history of the temperature criteria ascribed to the Pit River. The MRCD and Pit River Tribe agreed to continue discussions on this topic and Board staff agreed to facilitate these discussions if



requested.

## **Project 26 – Implementation of the Clear Lake Nutrient Control Program**

### **Watershed:**

Clear Lake

### **2021 Comment Letters Received:**

None

### **2018 Comment Letters Received:**

Elem Indian Colony

### **Other Public Interest:**

### **Past Board Commitment:**

R5-2006-0060 (Amendment to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Nutrients in Clear Lake)  
California Nonpoint Source Program Implementation Plan – 2014-2020

### **Project's Triennial Review History:**

Rank 1 (Existing Commitment) Project in 2018 Triennial Review Workplan

### **Project Description:**

In 2007, the Central Valley Water Board adopted a basin plan amendment to establish a TMDL control program to reduce phosphorus contributions to Clear Lake and decrease the incidence of nuisance algal blooms in Clear Lake. The Basin Plan states that compliance with load and waste load allocations for phosphorus in Clear Lake is required by 19 June 2017. Many implementation actions have been completed and are in progress. However, more data and information is needed to assess whether responsible parties are meeting their respective allocation. As a result, staff is working with the responsible parties and stakeholders to obtain load assessments and determine next steps for the TMDL and Control Program.

Board staff worked with those responsible parties identified in the TMDL to obtain information regarding compliance with phosphorus load allocations. There have been delays in this process due to restrictions caused by COVID-19. Board staff are summarizing the information received from these parties into a Technical Memo that will evaluate whether the TMDL load allocations have been met and recommend next steps. Board staff began initiating the process to revise the Nutrient TMDL. The revisions will incorporate much of the information being gathered through studies and projects in the watershed, including the Board's Environmental Drivers study, the UC Davis study, Tribal monitoring data, and other stakeholder efforts. Implementation of the existing TMDL will continue.

More information can be found on the [Clear Lake Nutrient TMDL website](https://www.waterboards.ca.gov/clearlake/nutrient/tmdl/).

(<https://www.waterboards.ca.gov/clearlake/nutrient/tmdl/>).

Board staff have continued to participate in the Blue-Ribbon Committee for the Rehabilitation of Clear Lake. Meeting details are publicly noticed by the California Natural Resources Agency. More information regarding the Committee can be found on the [Natural Resources Agency's Blue-Ribbon Committee website](https://resources.ca.gov/Initiatives/BlueRibbon-Committee-for-the-Rehabilitation-of-Clear-Lake) (<https://resources.ca.gov/Initiatives/BlueRibbon-Committee-for-the-Rehabilitation-of-Clear-Lake>).

Board staff developed a joint brochure with agencies, organizations, and Tribes in Lake County

focused on educating residents about nutrient management and steps they can take to reduce nutrient impacts/erosion into Clear Lake.

**Project 27 – Development of Procedures to Define and Determine Naturally-occurring Background Conditions**

**Watershed:**

Sacramento River

**2021 Comment Letters Received:**

None

**2018 Comment Letters Received:**

Sacramento River Source Water Protection Program

**Other Public Interest:****Past Board Commitment:**

None

**Project's Triennial Review History:**

Rank 3 (Meets ≥ 3 Criteria) Project in 2018 Triennial Review Workplan

**Project Description:**

The Basin Plans contain a provision that “the water quality objectives do not require improvement over naturally occurring background concentrations. In cases where the natural background concentration of a particular constituent exceeds an applicable water quality objective, the natural background concentration will be considered to comply with the objective.” (CVRWQCB 2018a Section 4.2.2.1.9 and CVRWQCB 2018b Section 4.2.2) However, this provision is rarely used because of lack of agreement on how to determine naturally occurring background concentrations.

This project proposes to identify procedures to define and determine naturally-occurring background conditions. Due to resource limitations and lack of additional implementation actions identified, minimal progress was made on this project since the 2018 Triennial Review.

**Project 28 – Evaluation of Selenium Criteria's Protectiveness of Beneficial Uses**

**Watershed:**

Region-wide

**2021 Comment Letters Received:**

Richard Denton  
Restore the Delta  
California Sportfishing Protection Alliance  
The Bay Institute  
San Francisco Baykeeper

**2018 Comment Letters Received:**

None; New Proposed Project as of 2021 Triennial Review

**Other Public Interest:****Past Board Commitment:****Project's Triennial Review History:**

New Proposed Project as of 2021 Triennial Review

**Project Description:**

Stakeholders in the 2021 Triennial Review cycle brought a number of issues related to selenium in area waters to the attention of Central Valley Water Board staff. Specific issues included:

- Concerns related to recent studies showing a link between selenium exposure and deformities in Sacramento Splittail and other migratory fish in the Central Valley and Delta.
- Concerns about longstanding selenium dischargers and contamination from Salt and Mud slough watersheds tributary to the lower San Joaquin River. The commenters expressed that the concerns are linked with the Grasslands Bypass.
- Recommendation to revise the chronic selenium water quality objectives in both the Sacramento-San Joaquin River Basin Plan and the Tulare Lake Basin Plan to be more protective of fish and wildlife beneficial uses.
- Recommendation to rescind the acute selenium objectives from both Basin Plans.
- Recommendation that the Central Valley Water Board require daily monitoring of selenium within the California Aqueduct.
- Recommendation that the Central Valley Water Board revise the lower San Joaquin River and Mud Slough selenium objectives to match the USEPA's 2016 national guidance for selenium and issue objectives for the Delta to match USEPA's national guidance.
- Recommendation that the Central Valley Water Board evaluate all its basin plan objectives and actions for selenium to determine whether more protective objectives and/or other actions are necessary to ensure the attainment of downstream San

Francisco Bay aquatic life uses and selenium load limits contained in the San Francisco Bay Basin Plan adopted by the San Francisco Bay Regional Water Quality Control Board.

Selenium loads in the Sacramento River watershed are from naturally-occurring sources and are expected to remain at current levels or less. The San Joaquin River system conveys selenium-enriched agricultural drainage and runoff to the Delta and the North Bay. Attainment of the Central Valley watershed load allocation relies on continued efforts to manage and reduce discharges of agricultural subsurface drainage in the San Joaquin River watershed.

The Central Valley Water Board has taken extensive measures to address selenium impacts in Central Valley waters. The Central Valley Water Board has established three TMDLs for selenium in San Joaquin River system water bodies receiving agricultural drainage. These TMDLs are implemented through the Grasslands Bypass Project, and implementation actions have substantially reduced the load of selenium discharged to these water bodies.

In addition to the above TMDLs, the Central Valley Water Board has also entered into a contract with the United States Geological Survey to study the occurrence, distribution, and sources of Sacramento Splittail deformities believed to be caused by selenium in the San Joaquin River, Sacramento River and Delta system. The contract is set to run through March 2024.

A new WDRs Order for the Grassland Bypass Project was adopted by the Board in December 2019. Dischargers are implementing new requirements under the Order, including an updated Drainage Management Plan, enhanced monitoring, and evaluation of fish tissue selenium levels and estimated water column selenium thresholds for protection of fish and human health.

**Project 29 – Addressing Water Quality Issues Associated with Trash and Pathogens in the City of Stockton, the San Joaquin River Basin and the Sacramento-San Joaquin River Delta**

**Watershed:**

City of Stockton waters, San Joaquin River, and the Delta

**2021 Comment Letters Received:**

Restore the Delta

**2018 Comment Letters Received:**

None; New Proposed Project as of 2021 Triennial Review

**Other Public Interest:****Past Board Commitment:****Project's Triennial Review History:**

New Proposed Project as of 2021 Triennial Review

**Project Description:**

Central Valley Water Board staff have become increasingly aware of the impact that California's unhoused population and illegal dumping is having on water quality. The Central Valley Water Board participates in regional efforts to address the water quality impacts associated with illegal dumping and homeless encampments in the Stockton area. These activities include working with local agencies and volunteers to implement clean-up activities; working with flood control agencies and local government to institute agreements for clean-up activities; and gathering information on properties with trash and debris that can impact waterways.

In addition to trash impacts, sampling for pathogen indicators has led to listing several Stockton area waterways on *USEPA's Section 303(d) List of Impaired Waterways*. A TMDL was approved by USEPA in 2008 to address the impairments identified in Smith Canal, Mosher Slough, Calaveras River, Five Mile Slough, Mormon Slough, and Walker Slough. Work conducted under the TMDL includes monitoring source identification and management practices. Initial DNA source analyses identified multiple sources. Central Valley Water Board staff are working with the local stormwater permittees to conduct follow-up DNA source analysis to better understand sources given the technology for DNA source studies has substantially improved since the initial work conducted. Better understanding of sources will help to determine what can be done to achieve attainment of the TMDL.

Central Valley Water Board staff will continue to:

- Assist local agencies in planning and coordinating clean-up activities in areas that could impact water quality;
- Consider options for enforcing illegal dumping (not associated with illegal camping activities) prohibitions to waterways (e.g., permitting/enforcement actions);
- Implement the existing TMDL for pathogen indicators as described above.

Additionally, this project proposes to investigate Stockton-area waterways to estimate trash levels and impacted areas and prioritize where trash and debris have the highest threat to water quality. This information could then be utilized to inform new impairments under USEPA's 303(d) List of Impaired Waterways, prioritize clean-up efforts, and inform illegal dumping (not associated with illegal camping activities) enforcement options. Listing of impairment would inform the need for additional Basin Planning activities such as control programs, TMDLs, and standards.



**Project 30 – Addressing Harmful Algal Blooms in City of Stockton Waters****Watershed:**

City of Stockton Waters

**2021 Comment Letters Received:**

Restore the Delta  
San Francisco Baykeeper  
The Bay Institute

**2018 Comment Letters Received:**

None (New Proposed Project as of 2021 Triennial Review)

**Other Public Interest:****Past Board Commitment:****Project's Triennial Review History:**

New Proposed Project as of 2021 Triennial Review

**Project Description:**

During the 2021 Triennial Review solicitation period staff received comments requesting enhanced water quality monitoring and enforcement in Stockton waterways to address HABs. Central Valley Water Board staff have already prioritized addressing harmful algal blooms (HABs) in the Delta in the previous Triennial Review by prioritizing the Delta Nutrient Research Plan Project. (See Project 16.) Staff have increased the frequency of HAB monitoring at the Stockton waterfront and have begun coordination of sampling events with stakeholders. This project will look to assess causes of HABs in Stockton waters and identify short- and long-term measures appropriate to address the causes. First steps will include seeking to establish partnerships with community members and stakeholders and identifying funding resources.

**Project 31 - Reviewing and Clarifying the Beneficial Uses and Monitoring Requirements for the California Aqueduct**

**Watershed:**

Sacramento River Basin-San Joaquin River Basin and Tulare Lake Basin

**2021 Comment Letters Received:**

California Sportfishing Protection Alliance

**2018 Comment Letters Received:**

None; New Proposed Project as of 2021 Triennial Review

**Other Public Interest:**

**Past Board Commitment:**

**Project's Triennial Review History:**

New Project in 2021 Triennial Review

**Project Description:**

Commenters in the 2021 Triennial Review Solicitation noted Central Valley Water Board should designate a WARM beneficial use for the California Aqueduct in the San Joaquin Basin. Additionally, commenters pointed out the ambiguous beneficial uses associated with the California Aqueduct in the Tulare Lake Basin Plan. The proposed project would be to evaluate the appropriate Beneficial Uses for the California Aqueduct and amend the Basin Plans accordingly, as needed.

**Project 32 - Designate RARE Beneficial Use for waterbodies in the Sacramento River Basin and San Joaquin River Basin**

**Watershed:**

Sacramento-San Joaquin River Basin

**2021 Comment Letters Received:**

California's Sportfishing Protection Alliance  
San Francisco Baykeeper

**2018 Comment Letters Received:**

None; New Proposed Project as of 2021 Triennial Review

**Other Public Interest:****Past Board Commitment:****Project's Triennial Review History:**

New Proposed Project as of 2021 Triennial Review

**Project Description:**

Stakeholders requested that the Central Valley Water Board designate waterbodies in the Sacramento River – San Joaquin River Basin for the Rare, Threatened, or Endangered Species (RARE) beneficial use. Stakeholders have specifically identified the following waterbodies as warranting the RARE beneficial use:

- Mouth of the Merced River to Vernalis
- Mud Slough (north),
- San Joaquin River from Sack Dam to the mouth of Merced River
- Salt Slough
- Grassland wetland water supply channels
- Sacramento-San Joaquin Delta
- Delta Mendota Canal
- California Aqueduct
- Sacramento River
- Clear Creek
- Battle Creek
- Deer Creek
- Mill Creek

The Sacramento River Basin – San Joaquin River Basin Plan states that surface waters with the beneficial uses of Groundwater Recharge (GWR), Freshwater Replenishment (FRSH), and RARE have not been identified in this plan. Surface waters of the Sacramento and San Joaquin River Basins falling within these beneficial use categories will be identified in the future as part of the continuous planning process to be conducted by the State Water Board. This project would involve Central Valley Water Board staff assessing waters in the Sacramento River Basin – San Joaquin River Basin for the RARE Beneficial Use. Considerations would include the efficacy of existing beneficial uses (e.g., WILD, WARM, COLD, and SPAWN) protecting aquatic and aquatic-dependent species.

**Project 33 – Consideration of Outstanding National Resource Waters  
Designation for Medicine Lake Volcanic Basin**

**Watershed:**

Sacramento River Basin

**2021 Comment Letters Received:**

Mount Shasta Bioregional Ecology Center  
Pit River Tribe

**2018 Comment Letters Received:**

None; New Proposed Project as of 2021 Triennial Review

**Other Public Interest:**

**Past Board Commitment:**

**Project's Triennial Review History:**

New Proposed Project as of 2021 Triennial Review

**Project Description:**

This section is intentionally left blank consistent with 1 February 2022 Addendum to Workplan that states staff will develop a project fact sheet for inclusion in the 2024 Triennial Review.