



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

**2018 JOINT TRIENNIAL REVIEW  
OF THE WATER QUALITY CONTROL PLANS FOR THE  
SACRAMENTO RIVER AND SAN JOAQUIN RIVER BASINS  
AND TULARE LAKE BASIN**

**Workplan**

**6 December 2018**



**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 2018 Triennial Review Workplan includes a review of Basin Plan Amendments since the 2014 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 2018 Triennial Review in June 2017 with a 45-day project solicitation. Board staff included an information document with the solicitation that provided a status of the 2014 Triennial Review Workplan, as well as issues that have arisen since 2014.

The project solicitation notice was mailed to over 2,600 entities and emailed to over 1,300 entities. Public workshops to receive oral comments were held on 16 August 2017 in Fresno and 23 August 2017 in Rancho Cordova. The 23 August workshop included a videoconference link for public access through the Central Valley Water Board's office in Redding. The Central Valley Water Board received 21 written comments during the public comment period. Board staff prepared responses to all comments and used the comments to help develop the 2018 Triennial Review Workplan. In addition to the comments submitted during the comment period, staff also considered comments submitted during other Board processes that raised Basin Planning issues outside the scope of the referenced project. A copy of the Response to Comments can be found on the Current Triennial Review webpage in the September 2018 [Proposed Project Prioritization Factors Staff Report](#).

On 4 October 2018, Central Valley Water Board staff held a public workshop to receive Board member and public input on a proposed prioritization process and criteria that Board staff would use to develop the 2018 Triennial Review Workplan. The following criteria for project evaluation were released in the Proposed Project Prioritization Factors Staff Report on 4 September 2018 and presented to the Board during the 4 October 2018 workshop:

**Table 1: Proposed Prioritization Criteria**

| <b>Criteria</b>  | <b>Definition</b>   |
|--|---|
| 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 Resources                                  | Projects with resource commitments from other agencies and/or stakeholders or that build upon existing studies or research represent an efficient use of Board resources  |
| 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 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 USEPA), State Agencies, Local agencies, or NGOs  |

In addition, Staff proposed to set aside a category of projects that would include those projects that the Board has made a legally-enforceable regulatory commitment to completing or that the Board deems, in its discretion, high-priority projects.

Based on the written and oral input received from the Board and the public, staff has developed the following equally-weighted criteria for prioritizing the Triennial Review projects:

**Table 2: Final Prioritization Criteria**

| <b>Criteria</b>  | <b>Definition</b>   |
|--|---|
| 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 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 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 USEPA), State Agencies, Local agencies, or NGOs.   |
| Projects that address a 303(d) listed water quality 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.   |
| Project supports 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 3 summarizes the categories.

**Table 3: 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 (2014)**

Since the last Triennial Review (2014), the following basin plan amendments were adopted for the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins or Tulare Lake Basin and are now in effect:

- Amendment to Remove MUN in Twelve Constructed and/or Modified Water Bodies in the Sacramento River Basin (R5-2015-0022)

- Amendment to Remove MUN and AGR from Groundwater Within the Tulare Lake Bed (R5-2017-0032)
- Amendments to Reformat the Basin Plans (R5-2017-0106)

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

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

#### IV. **POTENTIAL PROJECTS**

Developing proposed projects began by identifying 19 broad issues that face the waters of the Region. These issues include those that were identified in previous Triennial Reviews and new ones. A list of these broad issues is included in Table 4.

**Table 4: Basin Planning Issues Identified During the 2018 Joint Triennial Review**

| Issue Number | Issue Name  | Affected Basin                           |                   |
|--------------|---|--|-------------------|
|              |   | Sacramento River/San Joaquin River Basin | Tulare Lake Basin |
| 1            | Salt and Nitrate Management for Surface and Ground Waters   | X  | X                 |
| 2            | Beneficial Use Designations for Surface and Ground Waters   | X  | X                 |
| 3            | Appropriate Beneficial Use Designations in Agriculturally-dominated Water Bodies and Agricultural Conveyance Facilities | X  | X                 |
| 4            | Regulatory Guidance to Address Water Bodies Dominated by NPDES Discharges   | X  | X                 |
| 5            | Participation in State Water Board Plans and Policies and Other Statewide Issues  | X  | X                 |
| 6            | Secondary Maximum Contaminant Levels (MCLs) as Water Quality Objectives for Surface and Ground Waters                   | X  | X                 |
| 7            | Protection of Central Valley Fisheries and Other Aquatic Life   | X  | X                 |
| 8            | Evaluating Current United States Environmental Protection Agency (USEPA) Criteria                                       | X  | X                 |
| 9            | Prospective Incorporation by Reference of the Maximum Contaminant Levels in the Basin Plans                             | X  | X                 |
| 10           | Updating the Basin Plans  | X  | X                 |

**Table 4: Basin Planning Issues Identified During the 2018 Joint Triennial Review**

| Issue Number | Issue Name  | Affected Basin                           |                   |
|--------------|---|--|-------------------|
|              |   | Sacramento River/San Joaquin River Basin | Tulare Lake Basin |
| 11           | Diurnal Variations in Water Quality and the Effect to Water Quality Objectives        | X  | X                 |
| 12           | Naturally Occurring Background Conditions   | X  | X                 |
| 13           | 2021 Triennial Review   | X  | X                 |
| 14           | Implementation of the Delta Strategic Work Plan                                       | X  |                   |
| 15           | Pesticide Control Efforts   | X  | X                 |
| 16           | Mercury Load Reduction Program  | X  |                   |
| 17           | Battle Creek (Sedimentation Impacting Endangered Species)                             | X  |                   |
| 18           | Pit River (Reassess Beneficial Uses and Water Quality Objectives in Specific Reaches) | X  |                   |
| 19           | Clear Lake Nutrients  | X  |                   |

Twenty-seven proposed projects were developed to help address some of these broad issues. These projects will be proposed to the Central Valley Water Board to guide the Board planning staff for the next three years. The project list includes projects that are already in progress, as well as new projects. The projects are summarized in Table 5. Fact Sheets for each proposed project are included in Appendix I.

**Table 5: Proposed Projects to Address Basin Planning Issues Identified During the 2018 Joint Triennial Review**

| Project Number | Issue Number | Project Name   | Existing Project | New Project |
|----------------|--------------|--|------------------|-------------|
| 1              | 1            | Support for basin planning and implementation activities related to the proposed Salt and Nitrate Control Program      | X                |             |
| 2              | 2            | Tribal Beneficial Uses   |                  | X           |
| 3              | 2            | Guidance for seasonal beneficial uses and diurnal variations   |                  | X           |
| 4              | 2            | MUN in Oil Production Zones  |                  | X           |
| 5              | 2            | Basin Plan Amendment Work Plans under Irrigated Lands General Waste Discharge Requirements                             |                  | X           |
| 6              | 2            | Individual Beneficial Use Evaluation for West Squaw Creek  |                  | X           |
| 7              | 2            | Individual Beneficial Use Evaluation for Grassland water supply channels   |                  | X           |
| 8              | 2            | Individual Beneficial Use evaluation for Groundwater beneath Sulphur Bank Mine in Lake County                          |                  | X           |
| 9              | 3            | Appropriate Beneficial Use Designation in Agriculturally-dominated Water Bodies and Agricultural Conveyance Facilities |                  | X           |

**Table 5: Proposed Projects to Address Basin Planning Issues Identified During the 2018 Joint Triennial Review**

| Project Number | Issue Number | Project Name  | Existing Project | New Project |
|----------------|--------------|---|------------------|-------------|
| 10             | 4            | Evaluation of Effluent-dominated and Individual Water Bodies Dominated by NPDES Discharges                          |                  | X           |
| 11             | 7            | Temperature Criteria and Objectives   |                  | X           |
| 12             | 7            | Dissolved Oxygen Objectives   | X                |             |
| 13             | 8            | Ammonia Water Quality Objectives  | X                |             |
| 14             | 8            | Review of proposed United States Environmental Protection Agency (USEPA) Water Quality Criteria and 304(a) Criteria |                  | X           |
| 15             | 9            | Re-evaluation of the prospective-incorporation-by-reference of the Maximum Contaminant Levels                       |                  | X           |
| 16             | 14           | Delta Nutrient Research Plan  | X                |             |
| 17             | 14           | Fungicides and Herbicides   | X                |             |
| 18             | 15           | Comprehensive Pesticides Control Program  |                  | X           |
| 19             | 15           | Pyrethroid Research Plan  | X                |             |
| 20             | 15           | Sacramento and San Joaquin Rivers Organochlorine Pesticides Re-evaluation   | X                |             |
| 21             | 16           | Statewide Mercury Control Program for Reservoirs  | X                |             |
| 22             | 16           | Central Valley Rivers Mercury Control Program   |                  | X           |
| 23             | 16           | Delta Methylmercury Control Program   | X                |             |
| 24             | 17           | Watershed-based Plan Implementation and Update for Battle Creek   | X                |             |
| 25             | 18           | Reassessment of Beneficial Uses and Water Quality Objectives in Specific Reaches of the Pit River                   |                  | X           |
| 26             | 19           | Implementation of Clear Lake Nutrient Control Program   | X                |             |
| 27             | 12           | Development of Procedures to Define and Determine Naturally-occurring Background Conditions                         |                  | X           |

## **V. CENTRAL VALLEY WATER BOARD CORE BASIN PLANNING 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. The following are State Board Plans and Policies under revision/development that contribute to basin planning core work:

- Development of bacterial standards for Ocean and Inland Surface Waters;
- Biostimulatory Substances Project;
- Development of Cadmium Objective and Hardness Implementation Policy;
- Chlorine Residual Objectives and Implementation;
- Mercury TMDLs in Reservoirs;
- Revision of Nonpoint Source Implementation Policy;

- Updates of the Bay-Delta Plan;
- Procedures for Discharges of Dredged or Fill Materials to Waters of the State;
- Recycled Water Policy Amendments;
- Sediment Quality Objectives for Enclosed Bays and Estuaries;
- Toxicity Water Quality Control Plan Amendments; and
- Statewide Urban Pesticide Reduction

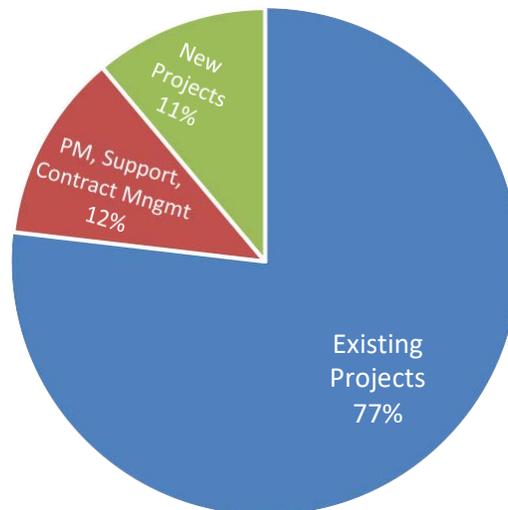
## VI. **BASIN PLANNING RESOURCES**

The Central Valley Water Board has limited resources dedicated to basin planning efforts. Resources for these efforts are leveraged between Waste Discharge Permit Fees and federal USEPA funding for a total of 21.6 person years (PYs), where a PY equates to the resources needed to fund one Central Valley Water Board staff.

The combined basin planning resources are utilized to implement the Triennial Review Work Plan, which includes activities related to basin planning, the Total Maximum Daily Load (TMDL) Program, the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative, and Delta activities.

Currently, 16.6 PYs, or about 80% of the allotted PYs, are dedicated to existing projects. Another 2.6 PYs are allotted for the on-going work of project management, outreach, coordination, report review, contract management and support to other programs. This totals 19.2 PYs, or 89% of the allocated PYs for existing projects and staff workload, and 2.4 PYs or 11% available for new projects.

Figure 1 provides a summary of the resource allocation for the Basin Planning Program, along with those resources available for new projects.



**Figure 1: Basin Planning Project Resources**

## **VII. PROJECT PRIORITIZATION**

To efficiently use Board resources, staff prioritized the 27 proposed projects identified as part of the Triennial Review. 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. Board staff applied the prioritization criteria to the list of projects following the 4 October 2018 workshop. The process resulted in seven projects categorized as an Existing Commitment; one project as Special Status; eleven projects in Rank 3; four projects in Rank 4; and five projects in Rank 5. Of the ranked projects (Rankings 3, 4, and 5), it should be noted that some of the projects are currently being worked on and have resources allocated to the project for FY 18/19. 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 6 and 7, found on the following pages, summarize staff's recommended prioritization and ranking.

## **VIII. NEXT STEPS**

Following Board adoption of the 2018 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 6: Project Prioritization Summary Table**

| Project No. | Existing Commitments <sup>1</sup> | Special Status | Ranked Projects | Resources Currently Allocated | Project Name  | Project Criteria                          |  |  |                        |                              |   |                                       |  |
|-------------|-----------------------------------|----------------|-----------------|-------------------------------|---|---|--|--|------------------------|------------------------------|---|---------------------------------------|--|
|             |                                   |                |                 |                               |   | Tribal Interests/<br>Human Right to Water | Efficient Use of Board or Public Resources | Addresses Impediments to Water Recycling/<br>Efficient Use/Integrated Waste Management | Complements Prior work | Special Stakeholder Interest | Addresses 303(d) water quality impairment | Supports Board climate change efforts |  |
| 1           |                                   | X              |                 | X                             | Support for basin planning and implementation activities related to the proposed Salt and Nitrate Control Program     |   |  |  |                        |                              |   |                                       |  |
| 2           |                                   |                | X               |                               | Tribal Beneficial Uses  | X   | X <sup>2</sup>                             |  | X                      | X                            |   |                                       |  |
| 3           |                                   |                | X               |                               | Guidance for seasonal beneficial uses and diurnal variations  |   |  |  |                        | X                            |   |                                       |  |
| 4           |                                   |                | X               |                               | MUN in Oil Production Zones   |   | X <sup>2</sup>                             | X  | X                      | X                            |   |                                       |  |
| 5           |                                   |                | X               |                               | Basin Plan Amendment Work Plans under Irrigated Lands General Waste Discharge Requirements                            |   |  |  | X                      | X                            |   |                                       |  |
| 6           |                                   |                | X               |                               | Individual Beneficial Use Evaluation for West Squaw Creek   |   |  |  |                        | X                            |   |                                       |  |
| 7           |                                   |                | X               |                               | Individual Beneficial Use Evaluation for Grassland Water Supply Channels  |   |  |  |                        | X                            |   |                                       |  |
| 8           |                                   |                | X               |                               | Individual Beneficial Use Evaluation for Groundwater beneath Sulphur Bank Mine in Lake County                         |   |  |  |                        | X                            |   |                                       |  |
| 9           |                                   |                | X               | X                             | Appropriate Beneficial Use Designation in Agriculturally-dominated Water Bodies and Agriculture Conveyance Facilities |   |  | X  | X                      | X                            |   |                                       |  |
| 10          |                                   |                | X               |                               | Evaluation of Effluent-dominated and Individual Water Bodies Dominated by NPDES Discharges                            |   |  | 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 6: Project Prioritization Summary Table**

| Project No. | Existing Commitments <sup>1</sup> | Special Status | Ranked Projects | Resources Currently Allocated | Project Name  | Project Criteria                          |  |  |                        |                              |   |                                       |
|-------------|-----------------------------------|----------------|-----------------|-------------------------------|---|---|--|--|------------------------|------------------------------|---|---------------------------------------|
|             |                                   |                |                 |                               |   | Tribal Interests/<br>Human Right to Water | Efficient Use of Board or Public Resources | Addresses Impediments to Water Recycling/<br>Efficient Use/Integrated Waste Management | Complements Prior work | Special Stakeholder Interest | Addresses 303(d) water quality impairment | Supports Board climate change efforts |
| 11          |                                   |                | X               | X                             | Temperature Criteria and Objectives   |   |  |  | X                      | X                            |   | X                                     |
| 12          | X                                 |                |                 | X                             | Dissolved Oxygen Objectives   |   |  |  |                        |                              |   |                                       |
| 13          |                                   |                | X               | X                             | Ammonia Water Quality Objectives  |   | X <sup>2</sup>                             |  | X                      | X                            |   |                                       |
| 14          |                                   |                | X               |                               | Review of proposed USEPA Water Quality Criteria and 304(a) Criteria                               |   |  |  |                        | X                            |   |                                       |
| 15          |                                   |                | X               |                               | Re-evaluation of the prospective-incorporation-by-reference of the Maximum Contaminant Levels     |   | X  |  |                        | X                            |   |                                       |
| 16          | X                                 |                |                 | X                             | Delta Nutrient Research Plan  |   |  |  |                        |                              |   |                                       |
| 17          | X                                 |                |                 | X                             | Fungicides and Herbicides   |   |  |  |                        |                              |   |                                       |
| 18          |                                   |                | X               |                               | Comprehensive Pesticides Control Program  | X   | X  |  | X                      |                              | X   |                                       |
| 19          | X                                 |                |                 | X                             | Pyrethroid Research Plan  |   |  |  |                        |                              |   |                                       |
| 20          | X                                 |                |                 | X                             | Sacramento and San Joaquin Rivers Organochlorine Pesticides Re-evaluation                         |   |  |  |                        |                              |   |                                       |
| 21          |                                   |                | X               | X                             | Statewide Mercury Control Program for Reservoirs  | X   |  |  | X                      |                              | X   |                                       |
| 22          |                                   |                | X               |                               | Central Valley Rivers Mercury Control Program   | X   |  |  | X                      | X                            | X   |                                       |
| 23          | X                                 |                |                 | X                             | Delta Methylmercury Control Program   |   |  |  |                        |                              |   |                                       |
| 24          |                                   |                | X               | X                             | Watershed-based plan implementation and update for Battle Creek                                   |   | X  |  | X                      | X                            |   |                                       |
| 25          |                                   |                | X               |                               | Reassessment of Beneficial Uses and Water Quality Objectives in Specific Reaches of the Pit River | X   | X <sup>2</sup>                             |  |                        | X                            |   |                                       |
| 26          | X                                 |                |                 | X                             | Implementation of the Clear Lake Nutrient Control Program   |   |  |  |                        |                              |   |                                       |

**Table 6: Project Prioritization Summary Table**

| Project No. | Existing Commitments <sup>1</sup> | Special Status | Ranked Projects | Resources Currently Allocated | Project Name  | Project Criteria                       |  |   |                        |                              |   |                                       |
|-------------|-----------------------------------|----------------|-----------------|-------------------------------|---|--|--|---|------------------------|------------------------------|---|---------------------------------------|
|             |                                   |                |                 |                               |   | 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 | Supports Board climate change efforts |
| 27          |                                   |                | X               |                               | Development of Procedures to Define and Determine Naturally-occurring Background Conditions |  | X <sup>2</sup>                             |   |                        | X                            |   | X                                     |

**Table 7: Project Ranking Summary Table<sup>3</sup>**

| Rank 1:<br>Existing Commitments                          | Rank 2:<br>Special Status Projects  | Rank 3:<br>Meets ≥3 Criteria   | Rank 4:<br>Meets 2 Criteria   | Rank 5:<br>Meets 1 Criterion   |
|--|---|--|---|--|
| <a href="#">Project 12: Dissolved Oxygen Objectives</a>  | <a href="#">Project 1: Support for basin planning and implementation activities related to the proposed Salt and Nutrient Control Program</a> | <a href="#">Project 2: Tribal Beneficial Uses</a>  | <a href="#">Project 5: Basin Plan Amendment Work Plans under Irrigated Lands General Waste Discharge Requirements</a>     | <a href="#">Project 3: Guidance for seasonal beneficial uses and diurnal variations</a>                                  |
| <a href="#">Project 16: Delta Nutrient Research Plan</a> |   | <a href="#">Project 4: MUN in Oil Production Zones</a>   | <a href="#">Project 10: Evaluation of Effluent-dominated and Individual Water Bodies Dominated by NPDES Discharges</a>    | <a href="#">Project 6: Individual Beneficial Use Evaluation for West Squaw Creek</a>                                     |
| <a href="#">Project 17: Fungicides and Herbicides</a>    |   | <a href="#">Project 9: Appropriate Beneficial Use Designation in Agriculturally-dominated Water Bodies and Agriculture Conveyance Facilities</a> | <a href="#">Project 15: Re-evaluation of the prospective-incorporation-by-reference of the Maximum Contaminant Levels</a> | <a href="#">Project 7: Individual Beneficial Use Evaluation for Grassland water supply channels</a>                      |
| <a href="#">Project 19: Pyrethroid Research Plan</a>     |   | <a href="#">Project 11: Temperature Criteria and Objectives</a>  |   | <a href="#">Project 8: Individual Beneficial Use Evaluation for Groundwater beneath Sulphur Bank Mine in Lake County</a> |

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

**Table 7: Project Ranking Summary Table<sup>3</sup>**

| Rank 1:<br>Existing Commitments   | Rank 2:<br>Special Status Projects | Rank 3:<br>Meets $\geq 3$ Criteria  | Rank 4:<br>Meets 2 Criteria | Rank 5:<br>Meets 1 Criterion  |
|---|------------------------------------|---|-----------------------------|---|
| <a href="#">Project 20: Sacramento and San Joaquin Rivers Organochlorine Pesticides Re-evaluation</a> |                                    | <a href="#">Project 13: Ammonia Water Quality Objectives</a>  |                             | <a href="#">Project 14: Review of proposed USEPA water quality criteria and 304(a) Criteria</a> |
| <a href="#">Project 23: Delta Methylmercury Control Program</a>                                       |                                    | <a href="#">Project 18: Comprehensive Pesticides Control Program</a>  |                             |   |
| <a href="#">Project 26: Implementation of the Clear Lake Nutrient Control Program</a>                 |                                    | <a href="#">Project 21: Statewide Mercury Control Program for Reservoirs</a>  |                             |   |
|   |                                    | <a href="#">Project 22: Central Valley Rivers Mercury Control Program</a>   |                             |   |
|   |                                    | <a href="#">Project 24: Watershed-based Plan Implementation and Update for Battle Creek</a>                                   |                             |   |
|   |                                    | <a href="#">Project 25: Reassessment of Beneficial Uses and Water Quality Objectives in Specific Reaches of the Pit River</a> |                             |   |
|   |                                    | <a href="#">Project 27: Development of Procedures to Define and Determine Naturally-occurring Background Conditions</a>       |                             |   |

**APPENDIX 1:**  
**2018 TRIENNIAL REVIEW PROJECT FACT SHEETS**

## **PROJECT FACT SHEET** **2018 Triennial Review**

|   |  |
|---|--|
| <b><u>Project Number:</u></b>                     | 1  |
| <b><u>Project Name:</u></b>                       | Basin planning and implementation activities related to the proposed Salt and Nitrate Control Program  |
| <b><u>Triennial Review Issue No.:</u></b>         | 1 - Salt and Nitrate Management for Surface and Groundwaters   |
| <b><u>Watershed:</u></b>                          | Sacramento River/San Joaquin River Basins<br>Tulare Lake Basin   |
| <b><u>2018 Comment Letters Received:</u></b>      |  |
| <b><u>Other Public Interest:</u></b>              |  |
| <b><u>Past Board Commitment:</u></b>              | 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)  |
| <b><u>Project's Triennial Review History:</u></b> | New project  |
| <b><u>Project Description:</u></b>                | <p>Elevated levels of salinity and nitrates in surface and ground water 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 proposed 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.</p> <p>The Central Valley Water Board approved the SNCP Basin Plan Amendments and accompanying Staff Report on 31 May 2018. The next steps of the amendment process include review and approval by the State Water Resources Control Board (State Board), the Office of Administrative Law (OAL), and the United States Environmental Protection Agency (USEPA), where applicable. Once the amendments become effective, there are many activities that must be initiated by the Central Valley Water Board and impacted permittees to ensure that the SNCP is successfully implemented.</p> |

This project includes support over the next three years for the following planning and implementation activities:

1. Complete the final steps of the Basin Plan Amendment approval process  
As described above, the effort to incorporate a SNCP into the Basin Plans is still undergoing the amendment approval process. All the proposed amendments will need to be approved by the State Board and OAL prior to becoming effective, but only the amendments that fall under federal jurisdiction require approval by USEPA. This approval process is tentatively scheduled to be completed during the second half of 2019.
2. Prepare, issue and track notices and responses  
Both the SNCP's salinity and nitrate permitting strategies 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 groundwaters, while the salinity portion is a phased program that applies to surface and groundwaters. 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, or Notices of Intent (NOIs), and other implementation deliverables for both the salt and nitrate portions of the program.
3. Manage a grant agreement to support the SNCP  
A Cleanup and Abatement Account-funded grant agreement shall be used to facilitate salinity and nitrate management in partnership with the Central Valley Salinity Alternatives for Long Term Sustainability (CV-SALTS) stakeholder initiative by supporting early implementation of Central Valley salt and nitrate management strategies. This funding includes technical assistance for pilot studies that can support the creation of Management Zone document templates and data requirements for the alternative nitrate permitting strategy, as well as the development of the Prioritization and Optimization (P&O) Study Work Plan to support the alternative salinity permitting strategy. Additional grant funding will be used to support outreach activities to help permittees understand the regulatory requirements of the SNCP and provide overall program management.

## **PROJECT FACTSHEET** **2018 Triennial Review**

|   |  |
|---|--|
| <b><u>Project Number:</u></b>                     | 2  |
| <b><u>Project Name:</u></b>                       | Tribal Beneficial Uses   |
| <b><u>Triennial Review Issue No.:</u></b>         | 2 - Beneficial Use Designations for Surface and Ground Waters  |
| <b><u>Watershed:</u></b>                          | Region-wide  |
| <b><u>2018 Comment Letters Received:</u></b>      | Tuolumne Me-Wuk Tribal Council<br>Big Valley Band of Pomo Indians<br>Elem Indian Colony<br>The Robinson Rancheria Environmental Center<br>The Pit River Tribe  |
| <b><u>Other Public Interest:</u></b>              |  |
| <b><u>Past Board Commitment:</u></b>              |  |
| <b><u>Project's Triennial Review History:</u></b> | New  |
| <b><u>Project Description:</u></b>                | 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 are designated to be protected for CUL, T-SUB or SUB.

Several tribes in the Central Valley have 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.

This project involves the need for significant coordination with tribes and other affected entities and stakeholders to develop guidance for identifying spatial extent, designating the new beneficial use categories, comprehensively evaluating the attainability of water quality objectives that would protect any newly designated beneficial use, and for deriving appropriate criteria for the reasonable protection of tribal uses. It would be useful to develop a coordinated contract proposal with the other Water Boards for facilitation to assure consistency, as appropriate.

## **PROJECT FACTSHEET** **2018 Triennial Review**

|   |   |
|---|---|
| <b><u>Project Number:</u></b>                     | 3   |
| <b><u>Project Name:</u></b>                       | Guidance for Seasonal Beneficial Uses and Diurnal Variations  |
| <b><u>Triennial Review Issue No.:</u></b>         | 2 - Beneficial Use Designations for Surface and Ground Waters   |
| <b><u>Watershed:</u></b>                          | Region-wide   |
| <b><u>2018 Comment Letters Received:</u></b>      | Fresno Metropolitan Flood Control District  |
| <b><u>Other Public Interest:</u></b>              |   |
| <b><u>Past Board Commitment:</u></b>              | None  |
| <b><u>Project's Triennial Review History:</u></b> | New   |
| <b><u>Project Description:</u></b>                | <p>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.</p> <p>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.</p> |

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.

## **PROJECT FACTSHEET** **2018 Triennial Review**

|   |  |
|---|--|
| <b><u>Project Number:</u></b>                     | 4  |
| <b><u>Project Name:</u></b>                       | MUN in Oil Production Zones  |
| <b><u>Triennial Review Issue No.:</u></b>         | 2 - Beneficial Use Designations for Surface and Ground Waters  |
| <b><u>Watershed:</u></b>                          | Tulare Lake Basin  |
| <b><u>2018 Comment Letters Received:</u></b>      | Seneca Resources Corporation<br>California Independent Petroleum Association   |
| <b><u>Other Public Interest:</u></b>              |  |
| <b><u>Past Board Commitment:</u></b>              | R5-2017-0036 (Waste Discharge Requirements General Order for Oil Field Discharges to Land – General Order Number Three)  |
| <b><u>Project's Triennial Review History:</u></b> | Referenced in 2014 Triennial Review Work Plan  |
| <b><u>Project Description:</u></b>                | <p>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 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.</p> |

## **PROJECT FACTSHEET** **2018 Triennial Review**

**Project Number:** 5

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

**Triennial Review Issue No.:** 2 - Beneficial Use Designations for Surface and Ground Waters

**Watershed:** Region-wide

**2018 Comment Letters Received:**

**Other Public Interest:**

**Past Board Commitment:**

**Project's Triennial Review History:**

**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.

## **PROJECT FACTSHEET** **2018 Triennial Review**

|   |   |
|---|---|
| <b><u>Project Number:</u></b>                     | 6   |
| <b><u>Project Name:</u></b>                       | Individual Beneficial Use Evaluation for West Squaw Creek   |
| <b><u>Triennial Review Issue No.:</u></b>         | 2 - Beneficial Use Designations for Surface and Ground Waters   |
| <b><u>Watershed:</u></b>                          | Sacramento River  |
| <b><u>2018 Comment Letters Received:</u></b>      |   |
| <b><u>Other Public Interest:</u></b>              |   |
| <b><u>Past Board Commitment:</u></b>              | 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)  |
| <b><u>Project's Triennial Review History:</u></b> | Referenced in the following Triennial Review Work Plans: 2005, 2011, and 2014   |
| <b><u>Project Description:</u></b>                | <p>Stakeholders have indicated that there is information that supports reviewing specific beneficial uses of the water bodies.</p> <p>West Squaw Creek, tributary to Lake Shasta, has been significantly impacted by copper mining in the watershed. Staff has been evaluating West Squaw Creek to determine appropriate beneficial uses for the waterbody. The project has been on hold until Mine Program staff have a chance to evaluate the measures that have been implemented to control mine discharges.</p> |

## **PROJECT FACTSHEET** **2018 Triennial Review**

|   |   |
|---|---|
| <b><u>Project Number:</u></b>                     | 7   |
| <b><u>Project Name:</u></b>                       | Individual Beneficial Use evaluation for Grassland Watershed water supply channels  |
| <b><u>Triennial Review Issue No.:</u></b>         | 2 - Beneficial Use Designations for Surface and Ground Waters   |
| <b><u>Watershed:</u></b>                          | Grassland Watershed   |
| <b><u>2018 Comment Letters Received:</u></b>      | US EPA, Region 9  |
| <b><u>Other Public Interest:</u></b>              |   |
| <b><u>Past Board Commitment:</u></b>              |   |
| <b><u>Project's Triennial Review History:</u></b> | Referenced in the Triennial Review Work Plans for: 2011, 2014   |
| <b><u>Project Description:</u></b>                | <p>Stakeholders have indicated that there is information that supports reviewing specific beneficial uses of the water bodies.</p> <p>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.</p> |

## **PROJECT FACTSHEET** **2018 Triennial Review**

|   |  |
|---|--|
| <b><u>Project Number:</u></b>                     | 8  |
| <b><u>Project Name:</u></b>                       | Individual Beneficial Use evaluation for Groundwater beneath the Sulphur Bank Mine in Lake County  |
| <b><u>Triennial Review Issue No.:</u></b>         | 2 - Beneficial Use Designations for Surface and Ground Waters  |
| <b><u>Watershed:</u></b>                          | Clear Lake Watershed   |
| <b><u>2018 Comment Letters Received:</u></b>      | US EPA, Region 9<br>Elem Indian Colony   |
| <b><u>Other Public Interest:</u></b>              |  |
| <b><u>Past Board Commitment:</u></b>              |  |
| <b><u>Project's Triennial Review History:</u></b> |  |
| <b><u>Project Description:</u></b>                | <p>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 CERCLA. Tribal stakeholders oppose beneficial use de-designations in this area.</p> <p>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.</p> |

## **PROJECT FACTSHEET** **2018 Triennial Review**

|   |   |
|---|---|
| <b><u>Project Number:</u></b>                     | 9   |
| <b><u>Project Name:</u></b>                       | Appropriate Aquatic Life Beneficial Use Designations in Agriculturally-dominated Water Bodies and Agricultural Conveyance Facilities  |
| <b><u>Triennial Review Issue No.:</u></b>         | 3 - Appropriate Aquatic Life Beneficial Use Designations in Agriculturally-dominated Water Bodies and Agricultural Conveyance Facilities  |
| <b><u>Watershed:</u></b>                          | Region-wide   |
| <b><u>2018 Comment Letters Received:</u></b>      | Kaweah Basin Water Quality Association<br>Kern River Watershed Coalition Authority  |
| <b><u>Other Public Interest:</u></b>              |   |
| <b><u>Past Board Commitment:</u></b>              | 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)   |
| <b><u>Project's Triennial Review History:</u></b> | Included in 2014, 2011, 2005, 2002, 1998 Triennial Review work plans  |
| <b><u>Project Description:</u></b>                | <p>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.</p> <p>In Resolution R5-2017-0088, the Central Valley Water Board adopted a process for evaluating the MUN beneficial use in these agriculturally-dominated waterbodies. This project would evaluate the existing ecologic functionality of these waterbodies and would assess aquatic life beneficial use protections and designations within these waterbodies.</p> |

## **PROJECT FACTSHEET** **2018 Triennial Review**

|   |   |
|---|---|
| <b><u>Project Number:</u></b>                     | 10  |
| <b><u>Project Name:</u></b>                       | Evaluation of Effluent-dominated and Individual Water Bodies Dominated by NPDES Discharges  |
| <b><u>Triennial Review Issue No.:</u></b>         | 4 – Regulatory Guidance to Address Water Bodies Dominated by NPDES Discharges   |
| <b><u>Watershed:</u></b>                          | Region-wide   |
| <b><u>2018 Comment Letters Received:</u></b>      | Central Valley Clean Water Association  |
| <b><u>Other Public Interest:</u></b>              |   |
| <b><u>Past Board Commitment:</u></b>              |   |
| <b><u>Project's Triennial Review History:</u></b> | Referenced in the following Triennial Review Work Plans: 1998, 2002, 2005, 2011, and 2014   |
| <b><u>Project Description:</u></b>                | <p>It is sometimes difficult and expensive for dischargers to meet water quality objectives in water bodies dominated by surface water 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 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.</p> <p>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.</p> <p>Stakeholders have suggested that the assigned beneficial uses of these water bodies are inappropriate and have</p> |

requested that various alternatives be explored for assigning beneficial uses to EDWs.

## **PROJECT FACTSHEET** **2018 Triennial Review**

|   |   |
|---|---|
| <b><u>Project Number:</u></b>                     | 11  |
| <b><u>Project Name:</u></b>                       | Temperature Criteria and Objectives   |
| <b><u>Triennial Review Issue No.:</u></b>         | 7 – Protection of Central Valley Fisheries and other Aquatic Life   |
| <b><u>Watershed:</u></b>                          | Sacramento River and San Joaquin River  |
| <b><u>2018 Comment Letters Received:</u></b>      | Sacramento Regional County Sanitation District<br>US EPA<br>San Joaquin Tributaries Authority<br>The Pacific Coast Federation of Fishermen’s Association<br>Institute for Fisheries Resources<br>Save California’s Salmon<br>California’s Sportfishing Protection Alliance<br>Modesto Irrigation District<br>US Department of Commerce<br>National Oceanic and Atmospheric Administration<br>National Marine Fisheries Service<br>Turlock Irrigation District   |
| <b><u>Other Public Interest:</u></b>              |   |
| <b><u>Past Board Commitment:</u></b>              | University of California, Santa Cruz Temperature Criteria Contract: Agreement #16-048-150   |
| <b><u>Project’s Triennial Review History:</u></b> | Referenced in the following Triennial Review Work Plans: 1998, 2002, 2005, 2011, 2014   |
| <b><u>Project Description:</u></b>                | 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.

A Study is under way at UC Santa Cruz that should result in a description of additional studies that will be needed to develop site-specific criteria. Studies may include investigations that take into consideration the different types of salmonids and the life stages when they are present.

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.

## **PROJECT FACTSHEET** **2018 Triennial Review**

|   |  |
|---|--|
| <b><u>Project Number:</u></b>                     | 12   |
| <b><u>Project Name:</u></b>                       | Dissolved Oxygen Objectives  |
| <b><u>Triennial Review Issue No.:</u></b>         | 7 – Protection of Central Valley Fisheries and other Aquatic Life  |
| <b><u>Watershed:</u></b>                          | Sacramento-San Joaquin Delta and Stanislaus River Watershed  |
| <b><u>2018 Comment Letters Received:</u></b>      | San Joaquin Tributaries Authority<br>California Sportfishing Protection Alliance<br>Save California Salmon<br>Pacific Coast Federation of Fisherman's Association<br>Institute for Fisheries Resources   |
| <b><u>Other Public Interest:</u></b>              |  |
| <b><u>Past Board Commitment:</u></b>              | 2014 Delta Strategic Work Plan   |
| <b><u>Project's Triennial Review History:</u></b> | Referenced in the following Triennial Review Work Plans:<br>1998, 2002, 2005, 2011, 2014   |
| <b><u>Project Description:</u></b>                | <p>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 Project Fact 11 for development of temperature criteria and objectives.]</p> <p>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</p> |

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 the development of site-specific dissolved oxygen objectives for:

- Sacramento-San Joaquin Delta

The specific dissolved oxygen objectives for the Delta contain ambiguous language regarding applicable water quality objectives for “bodies of water which are constructed for special purposes and from which fish have been excluded or where the fishery is not important as a beneficial use.” There is an unresolved disapproval from the USEPA on the editing of the language that created this ambiguity.

- Lower Stanislaus River

Commenters have requested that site specific dissolved oxygen objectives be developed for the Stanislaus River because the current dissolved oxygen water quality objectives do not provide adequate protection of the fisheries present in the River.

- Old and Middle Rivers

Low Oxygen Levels in Old and Middle Rivers: Staff is working on a white paper addressing the low dissolved oxygen levels in Old and Middle Rivers. Low dissolved oxygen levels in Old and Middle Rivers was identified as a priority project in the Delta Strategic Workplan.

## **PROJECT FACTSHEET** **2018 Triennial Review**

**Project Number:** 13

**Project Name:** Ammonia Water Quality Objectives

**Triennial Review Issue No.:** 8 – Current Water Quality Criteria

**Watershed:** Region-wide

**2018 Comment Letters Received:**

**Other Public Interest:** Central Valley Clean Water Association

### **Past Board Commitment:**

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

#### **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 United States Environmental Protection Agency (USEPA) publishes under Clean Water Act section 304(a) (40 CFR § 131.11 and 131.20).

Ammonia is a critical pollutant that is discharged to surface water due to its potential adverse impact on aquatic life, causing lower reproduction and 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. Currently, the Central Valley Water Board uses 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 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 is working with the Central Valley Clean Water Association 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.

## **PROJECT FACTSHEET** **2018 Triennial Review**

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| <b><u>Project Number:</u></b>                     | 14  |
| <b><u>Project Name:</u></b>                       | Review of Proposed US EPA Water Quality Criteria and 304(a) Criteria  |
| <b><u>Triennial Review Issue No.:</u></b>         | 8 – Current Water Quality Criteria  |
| <b><u>Watershed:</u></b>                          | Region-wide   |
| <b><u>2018 Comment Letters Received:</u></b>      | US EPA  |
| <b><u>Other Public Interest:</u></b>              |   |
| <b><u>Past Board Commitment:</u></b>              |   |
| <b><u>Project’s Triennial Review History:</u></b> | Reference in the following Triennial Review Work Plans: 2005, 2011, and 2014  |
| <b><u>Project Description:</u></b>                | <p>The Central Valley Water Board is implementing criteria promulgated by the United States Environmental Protection Agency (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.</p> <p>The Basin Plans include narrative objectives and a <i>Policy for Application of Water Quality Objectives</i> 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.</p> |

## **PROJECT FACTSHEET** **2018 Triennial Review**

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| <b><u>Project Number:</u></b>                     | 15  |
| <b><u>Project Name:</u></b>                       | Re-evaluation of the Prospective-incorporation-by-reference of the Maximum Contaminant Levels   |
| <b><u>Triennial Review Issue No.:</u></b>         | 9 – Prospective Incorporation by Reference of the Maximum Contaminant Levels in the Basin Plan  |
| <b><u>Watershed:</u></b>                          | Region-wide   |
| <b><u>2018 Comment Letters Received:</u></b>      | Central Valley Clean Water Association  |
| <b><u>Other Public Interest:</u></b>              |   |
| <b><u>Past Board Commitment:</u></b>              |   |
| <b><u>Project's Triennial Review History:</u></b> |   |
| <b><u>Project Description:</u></b>                | <p>The Basin Plan identifies Maximum Contaminant Levels (MCL), 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.</p> <p>MCL revisions are made in accordance with Health and Safety Code section 116365. This section requires that the State Water Resources Control Board (State 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 Regional Water Board prescribes waste discharge requirements, it must consider the provisions in Water Code section 13241. However, if the Regional Water Board has considered the</p> |

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.

## **PROJECT FACTSHEET** **2018 Triennial Review**

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|---|---|
| <b><u>Project Number:</u></b>                     | 16  |
| <b><u>Project Name:</u></b>                       | Delta Nutrient Research Plan  |
| <b><u>Triennial Review Issue No.:</u></b>         | 14 – Implementation of the Delta Strategic Plan   |
| <b><u>Watershed:</u></b>                          | Sacramento-San Joaquin Delta  |
| <b><u>2018 Comment Letters Received:</u></b>      | Sacramento Regional County Sanitation District  |
| <b><u>Other Public Interest:</u></b>              | Delta Nutrient Research Plan Stakeholder and Technical Advisory Group (STAG)  |
| <b><u>Past Board Commitment:</u></b>              | R5-2018-0059 (Delta Nutrient Research Plan for Development of Information Prior to Consideration of Nutrient Numeric Objectives)<br><br>2014 Delta Strategic Work Plan<br><br>California Nonpoint Source Program Implementation Plan – 2014-2020  |
| <b><u>Project's Triennial Review History:</u></b> |   |
| <b><u>Project Description:</u></b>                | <p>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.</p> <p>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.</p> |

In addition to developing partnerships and securing funding, near-term priorities for Delta Nutrient Research Plan implementation are:

- Completing existing and contracted work supporting the 2014 Delta Strategic Plan
- Prioritizing new projects for HAB monitoring and special studies;
- Integrating efforts with the Delta Regional Monitoring Program;
- Initiating review of nutrient thresholds and policies and developing initial nutrient mass balance framework; and
- Developing a Science Action Plan to systematically fill research gaps through enhanced collaboration and funding opportunities.

## **PROJECT FACTSHEET** **2018 Triennial Review**

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|---|---|
| <b><u>Project Number:</u></b>                     | 17  |
| <b><u>Project Name:</u></b>                       | Fungicides and Herbicides   |
| <b><u>Triennial Review Issue No.:</u></b>         | 14 – Implementation of the Delta Strategic Plan   |
| <b><u>Watershed:</u></b>                          | Sacramento-San Joaquin Delta  |
| <b><u>2018 Comment Letters Received:</u></b>      |   |
| <b><u>Other Public Interest:</u></b>              |   |
| <b><u>Past Board Commitment:</u></b>              | 2014 Delta Strategic Work Plan<br>Resolution R5-2018-0059 Approval of Delta Nutrient Research Plan<br><br>University of California, Davis Herbicides and Fungicides:<br>State Water Resources Control Board Contract No.16-046-150  |
| <b><u>Project's Triennial Review History:</u></b> |   |
| <b><u>Project Description:</u></b>                | <p>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.</p> <p>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.</p> |

The Board has 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 involves phytoplankton LC50 determination following four-day growth tests with up to four herbicides and fungicides commonly detected in Delta waters. The toxicity thresholds will be compared to existing monitoring data to evaluate potential impacts of these active ingredients on Delta phytoplankton. Additionally, UC Davis will perform cyanobacteria competition testing in the presence and absence of specific herbicides and fungicides to determine whether the presence of these active ingredients has any impact on competition.

## **PROJECT FACTSHEET** **2018 Triennial Review**

**Project Number:** 18

**Project Name:** Comprehensive Pesticides Control Program

**Triennial Review Issue No.:** 15 – Pesticide Control Efforts

**Watershed:** Region-wide

**2018 Comment Letters  
Received:**

**Other Public Interest:**

**Past Board Commitment:**

**Project's Triennial Review  
History:**

**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 Total Maximum Daily Load (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.

In addition, the Basin Plan requires that some existing pesticide provisions be reviewed as follows:

| <b><u>Program</u></b>   | <b><u>Status</u></b>  | <b><u>Next Review</u></b>  |
|---|---|--|
| Diazinon and Chlorpyrifos Runoff Control Program for the San Joaquin River and Sacramento-San Joaquin Delta Waterways | Review is required every five years. The Board last reviewed these provisions in March 2014   | March 2019   |
| Basin-wide Diazinon and Chlorpyrifos Discharge Control Program in the Sacramento River and San Joaquin River Basins   | Review is required no later than 16 August 2024.  | 16 August 2024   |
| Control Program for Pyrethroids   | Review is required no later than 2033.<br><br>Updates to the Board are required to be included as part of triennial review process. | 2022<br><br>Updates to the Board will be included as part of triennial reviews beginning after 2020. |

In addition, the Basin Plan required a detailed assessment of the rice pesticides carbofuran, malathion, molinate, methyl parathion and thiobencarb on the impacts to aquatic life and consideration of water quality objectives for these pesticides.

## **PROJECT FACTSHEET** **2018 Triennial Review**

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|---|---|
| <b><u>Project Number:</u></b>                     | 19  |
| <b><u>Project Name:</u></b>                       | Pyrethroid Research Plan  |
| <b><u>Triennial Review Issue No.:</u></b>         | 15 – Pesticide Control Efforts  |
| <b><u>Watershed:</u></b>                          | Sacramento River and San Joaquin River Basin  |
| <b><u>2018 Comment Letters Received:</u></b>      |   |
| <b><u>Other Public Interest:</u></b>              |   |
| <b><u>Past Board Commitment:</u></b>              | 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   |
| <b><u>Project's Triennial Review History:</u></b> |   |
| <b><u>Project Description:</u></b>                | <p>The Central Valley Water Board has 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 2 years 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 and partitioning, temperature effects on toxicity, chronic and sublethal effects, fate and transport, and monitoring and laboratory methods for toxicity and pyrethroids.</p> <p>Staff is working with stakeholders to develop and implement a Pyrethroid Research Program. A study of \$100,000 has been funded for through FY2020 to investigate pyrethroid partition coefficients.</p> <p>When the Pyrethroid Research Plan is completed, additional resources will be needed to conduct investigations on pyrethroid bioavailability and partitioning, temperature effects on toxicity, chronic and sublethal effects, fate and transport, and monitoring and laboratory methods for toxicity and pyrethroids.</p> |

## **PROJECT FACTSHEET** **2018 Triennial Review**

**Project Number:** 20

**Project Name:** Sacramento and San Joaquin Rivers Organochlorine Pesticides Re-evaluation

**Triennial Review Issue No.:** 15 – Pesticide Control Efforts

**Watershed:** Sacramento River and San Joaquin River

**2018 Comment Letters Received:**

**Other Public Interest:**

**Past Board Commitment:**

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

**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 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 are concerned 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.

Staff started working on a control program for OC pesticides in 21 impaired reaches of water bodies within the Central Valley. However, since the listings are due to widespread legacy uses of the pesticides, there are not any identified actions that can be implemented to further reduce concentrations except for limiting erosion, which is already a requirement of existing regulatory programs. It is possible that there could be some hot spots in these watersheds that could be identified and prioritized for cleanup, but generally the concentrations of concern are widespread in soils throughout the areas of use and in sediments and biota of downstream waters. Concentrations are gradually declining through over time due to practices to reduce erosion and natural attenuation. Staff is preparing a report of its findings, which is expected to be completed in 2019.

## **PROJECT FACTSHEET** **2018 Triennial Review**

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| <b><u>Project Number:</u></b>                     | 21   |
| <b><u>Project Name:</u></b>                       | Statewide Mercury Control Program for Reservoirs   |
| <b><u>Triennial Review Issue No.:</u></b>         | 16 – Mercury Load Reduction Program  |
| <b><u>Watershed:</u></b>                          | Statewide  |
| <b><u>2018 Comment Letters Received:</u></b>      | Tuolumne Me-Wuk Tribal Council   |
| <b><u>Other Public Interest:</u></b>              |  |
| <b><u>Past Board Commitment:</u></b>              |  |
| <b><u>Project's Triennial Review History:</u></b> |  |
| <b><u>Project Description:</u></b>                | <p>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 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 some types of fish.</p> <p>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 Resources Control 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.</p> <p>This multiyear project has been led by technical staff from the Central Valley Water Board, the San Francisco Bay Water</p> |

Board, and the State Water Board. A draft staff report and implementation provisions have been submitted to external scientific peer review and are posted on the project website. Over the past few years, staff has been meeting with many reservoir owners and operators to discuss development of coordinated reservoir water chemistry and fisheries management pilot tests. Staff is also currently evaluating alternatives to the typical TMDL approach to addressing impaired waters.

## **PROJECT FACTSHEET** **2018 Triennial Review**

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| <b><u>Project Number:</u></b>                     | 22  |
| <b><u>Project Name:</u></b>                       | Central Valley Rivers Mercury Control Program   |
| <b><u>Triennial Review Issue No.:</u></b>         | 16 – Mercury Watershed Control Program for the Rivers of the Central Valley Lowlands  |
| <b><u>Watershed:</u></b>                          | Region-wide   |
| <b><u>2018 Comment Letters Received:</u></b>      | Central Valley Clean Water Association<br>Tuolumne Me-Wuk Tribal Council  |
| <b><u>Other Public Interest:</u></b>              |   |
| <b><u>Past Board Commitment:</u></b>              | 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)  |
| <b><u>Project's Triennial Review History:</u></b> |   |
| <b><u>Project Description:</u></b>                | <p>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. The Clean Water Act mandates that the Regional Water Board develop load reduction programs to resolve these water quality problems through a Total Maximum Daily Load (TMDL) allocation process. Health advisories have been issued for many water bodies in the Central Valley due to the mercury levels in fish. Recent studies may result in health advisories being issued for additional water bodies as well as more water</p> |

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 is beginning to develop mercury control programs for Central Valley Rivers, focusing on these tributaries to the Delta downstream of major reservoirs.

## **PROJECT FACTSHEET** **2018 Triennial Review**

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| <b><u>Project Number:</u></b>                     | 23   |
| <b><u>Project Name:</u></b>                       | Delta Methylmercury Control Program  |
| <b><u>Triennial Review Issue No.:</u></b>         | 16 – Mercury Load Reduction Program  |
| <b><u>Watershed:</u></b>                          | Sacramento-San Joaquin Delta   |
| <b><u>2018 Comment Letters Received:</u></b>      |  |
| <b><u>Other Public Interest:</u></b>              |  |
| <b><u>Past Board Commitment:</u></b>              | 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)<br><br>California Nonpoint Source Program Implementation Plan – 2014-2020   |
| <b><u>Project's Triennial Review History:</u></b> |  |
| <b><u>Project Description:</u></b>                | 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. Recent 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. The Delta Methylmercury Control Program review is due October 2022. Note that the Basin Plan requires submittal of the final reports for Control Studies by 20 October 2018. In 2016 the Executive Officer granted a one-year due date extension for the tidal wetland and open water studies. The Control Studies will be used to modify compliance dates and allocations, as appropriate. Currently staff is compiling information for the review, outlining options for an offset program, and will be working with stakeholders to develop final recommendations for the program.

## **PROJECT FACTSHEET** **2018 Triennial Review**

**Project Number:** 24

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

**Triennial Review Issue No.:** 17 – Battle Creek (Sedimentation Impacting Endangered Species)

**Watershed:** Battle Creek watershed (HSA# 5507.120000)

**2018 Comment Letters Received:**

**Other Public Interest:**

**Past Board Commitment:** California Nonpoint Source Program Implementation Plan – 2014-2020

**Project's Triennial Review History:**

**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. There are 4 main tasks remaining for this project and are described below:

1. Watershed Assessment report is in the final review stage. This technical document provides the basis from which the WBP draws, and will be finalized in early September 2018. The findings of the Watershed Assessment required a change in the planning approach necessary for the WBP, nevertheless the available information will be sufficient to complete the project.

2. The Watershed Based Plan (WBP) document that describes methods to:
  - Host the WBP via the web as an interactive system and provide a clearinghouse for information useful to stakeholders.
  - Align existing and future sediment reduction assessments with EPA's 9-elements to expedite 319h funding for implementation.
  - Develop a prioritized list of assessments and sediment reduction projects, including efforts that are currently in planning or are underway.
  - Develop a strategy to track sediment delivery assessments and sediment reduction implementation projects for all stakeholders and land owners using the Sac River Watershed Program's online data portal.
  - Enable adaptive prioritization of needed projects in response to future major climate-driven events (e.g. fires and extreme precipitation)

Forest Activities staff will use available GIS resources to support the WBP and assist developing the data portal with staff of the Sacramento River Watershed Program (via a separate discretionary contract funding) and are using the timelines below for the remaining deliverables:

- Draft Watershed Based Plan – January 30, 2019
  - TAC review/meeting on Draft WBP – February 2019
  - Final Watershed Based Plan – April 31, 2019
  - WBP and data embedded in Sac River Watershed Program portal - 2019 (date dependent upon contract processing).
3. Public outreach will take the form of the information portal, mentioned above, that is currently under development. This portal will be used to store information, maps, and data for a wide variety of physical parameters of the watershed, as well as all relevant reports, background information, and planning documents available for the basin, including the WBP documentation. Expected completion in 2019.
  4. The sediment reduction demonstration pilot project is scheduled to begin in September 2018. Project duration is expected to be 2 weeks. Effectiveness monitoring is planned this fall and winter, and the results will be documented by late spring 2019.

## **PROJECT FACTSHEET** **2018 Triennial Review**

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| <b><u>Project Number:</u></b>                     | 25   |
| <b><u>Project Name:</u></b>                       | Reassessment of Beneficial Uses and Water Quality Objectives in Specific Reaches of the Pit River  |
| <b><u>Triennial Review Issue No.:</u></b>         | 18 – Pit River (Reassess Beneficial Uses and Water Quality Objectives in Specific Reaches)   |
| <b><u>Watershed:</u></b>                          | Pit River  |
| <b><u>2018 Comment Letters Received:</u></b>      | North Eastern California Water Association<br>Pit River Tribe<br>Shasta County Board of Supervisors  |
| <b><u>Other Public Interest:</u></b>              |  |
| <b><u>Past Board Commitment:</u></b>              |  |
| <b><u>Project's Triennial Review History:</u></b> | Referenced in the following Triennial Review Work Plans: 2011 and 2014   |
| <b><u>Project Description:</u></b>                | <p>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.</p> <p>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 Tribal Cultural (CUL) and Tribal Subsistence Fishing (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.</p> |

This project would dedicate staff resources to reviewing information on the Pit River ecosystem and to convening stakeholder discussions with the goal of refining the Pit River's beneficial use designations and their associated water quality objectives.

## **PROJECT FACTSHEET** **2018 Triennial Review**

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| <b><u>Project Number:</u></b>                     | 26   |
| <b><u>Project Name:</u></b>                       | Implementation of the Clear Lake Nutrient Control Program  |
| <b><u>Triennial Review Issue No.:</u></b>         | 19 – Clear Lake Nutrients  |
| <b><u>Watershed:</u></b>                          | Clear Lake   |
| <b><u>2018 Comment Letters Received:</u></b>      | Elem Indian Colony   |
| <b><u>Other Public Interest:</u></b>              |  |
| <b><u>Past Board Commitment:</u></b>              | 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)<br><br>California Nonpoint Source Program Implementation Plan – 2014-2020  |
| <b><u>Project's Triennial Review History:</u></b> |  |
| <b><u>Project Description:</u></b>                | <p>In 2007, the Central Valley Water Board adopted a basin plan amendment to establish a total maximum daily load 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.</p> <p>This project includes the following elements to inform the Board's next steps for the TMDL and Control Program:</p> <ul style="list-style-type: none"><li>• Load allocation compliance assessment<br/>Staff is coordinating with responsible parties to obtain data and information demonstrating load allocation compliance.</li></ul> |

- Environmental Drivers of Cyanobacteria Blooms and Cyanotoxins in Clear Lake  
Funding (\$510,000) has been allocated through the State Water Board's discretionary contract process for Phase I of a two-phase project to evaluate cyanobacteria environmental drivers in Clear Lake. Phase I will involve in-field studies and data analysis. Phase II is for a predictive model to evaluate options for additional TMDL numeric targets, allocations, and implementation actions for the Nutrient Control Program. Funding for Phase II is still needed.
- Evaluation of Shoreline Septic System Inputs to Clear Lake: evaluate the impact of shoreline septic systems to identify and rank areas where onsite wastewater treatment systems contribute nutrients and bacteria directly to Clear Lake.

## **PROJECT FACTSHEET**

**Project Number:** 27

**Project Name:** Development of Procedures to Define and Determine Naturally-occurring Background Conditions

**Triennial Review Issue No.:** 12 – Naturally-occurring Background Conditions

**Watershed:**  
**2018 Comment Letters Received:** Sacramento River Source Water Protection Program  
**Other Public Interest:**

**Past Board Commitment:** None

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

**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.