

Issue List and Work Plan for the 2014 Triennial Review of the Water Quality Control Plan for the Tulare Lake Basin

To meet requirements of Section 303(c)(1) of the Federal Clean Water Act and Section 13240 of the California Water Code, the Central Valley Regional Water Quality Control Board (Central Valley Water 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, hence the Triennial Review. The Basin Plans are the foundation for the Central Valley Water Board's water quality regulatory programs. The Basin Plans designate beneficial uses for both surface and ground water bodies in the three basins that make up the Central Valley, establish water quality objectives to protect those beneficial uses, contain implementation plans that describe the actions necessary to achieve water quality objectives, and describe the surveillance and monitoring activities needed to determine regulatory compliance and assess the health of the Basins' water resources. While the Triennial Review is used to direct the Central Valley Water Board's basin planning activities, it is not the venue to amend the basin plans.

The Triennial Review begins with a solicitation for comments on water quality issues that may need to be addressed with basin plan amendments in preparation for the development of a work plan for each Basin Plan which describes the actions the Central Valley Water Board may take to investigate and respond to issues. A public workshop before the Central Valley Water Board is held to receive verbal comments. After public input is received, the Central Valley Water Board develops and adopts by resolution a priority list of potential issues that may result in Basin Plan amendments. The priority list is used to direct basin planning efforts over the next three years. Implementation of the work plan depends upon the Central Valley Water Board's program priorities, resources, and other mandates and commitments.

For the 2014 Triennial Review, both Basin Plans were reviewed concurrently. This triennial review work plan is for the Water Quality Control Plan for the Tulare Lake Basin. There is a separate work plan available for the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins.

Since the 2010 Triennial Review, the Central Valley Water Board has completed the following basin planning projects for the Water Quality Control Plan for the Tulare Lake Basin:

- Water Quality Protection Strategy for the Central Valley Region a "Roadmap" (R5-2010-0095)
- Cost Estimate and Potential Sources of Financing for a Long-Term Irrigated Lands Program (R5-2011-0075)
- Onsite Wastewater System Implementation Program (R5-2014-0036)
- Edit and Updates (R5-2014-0038)

The Central Valley Water Board began the 2014 Triennial Review by providing a 45-day public notice, culminating in two public workshops, to solicit comments on water quality issues that could result in basin plan amendments in the Central Valley. An information document was prepared to provide a status of the high priority issues from the last Triennial Reviews. The notice was mailed to almost 3,000 entities and emailed to almost 1,400 entities that requested electronic notification.

The public workshops were held on 24 October 2012 in Fresno and 6 December 2012 in Rancho Cordova to receive verbal comments. All written comments submitted in response to the public notice were considered in this review. The Central Valley Water Board received written comments from seven entities prior to both workshops and 1 after the workshops. Seven individuals provided verbal comments at the workshops. Staff prepared responses to all comments and used the comments to develop coordinated work plans for both Basin Plans.

While working on the Triennial Review staff was diverted to work on Amendments to the Water Quality Control Plans for the Sacramento River and San Joaquin River Basins and the Tulare Lake Basin regarding Onsite Wastewater System Implementation Program (Resolution R5-2014-0036) and Amendments to the Water Quality Control Plan for Sacramento River and San Joaquin River Basins and the Tulare Lake Basin to Edit and Update Language (Resolution R5-2014-0037 and Resolution R5-2014-0038). Redirection of staff to work on these amendments took precedence over the Triennial Review process and, once completed, staff resumed work on the Triennial Review. The redirection resulted in an extended time frame between the solicitation of issues in late 2012 and the presentation of the proposed work plans during early 2015.

The issues numbered below reflect the water quality issues identified from public comments received during this review period and staff's knowledge about problems in the Basins. The Triennial Review work plans consist of issues that are in various stages of development. Many of the issues have not been investigated by staff and detailed information was not provided in comments. These issues are described in broad conceptual terms. Before an issue can result in basin plan amendments, staff must investigate the issue to identify the scope of potential basin plan amendments in conformance with applicable federal and state laws and regulations. After determining that a basin plan amendment is the appropriate means to address the issue, information, including the development of scientific justification, is prepared to support the amendment. Then the potential amendment undergoes a structured public participation process before it can be presented to the Central Valley Water Board for its consideration.

The list of issues exceeds the staff resources of 7.9 staff positions per year (PYs) allocated to planning activities. Existing resources only allow a small portion of the highest priority issues to be addressed. In addition to prioritizing the activities, the work plan identifies unfunded and inadequately funded issues for which the Central Valley Water Board will actively seek funding and will accept funding to accomplish.

For the unfunded issues, the issue description is meant to provide sufficient information to show where more investigation is necessary and the scope of the investigation to support the staff estimate of the necessary resources. While the issue description may be the basis of future investigations, it is not an exhaustive compilation of all available information on the issue. After resources are allocated and projects near completion, the issue description will shorten unless the completion of a project results in recommendations for additional projects.

Two levels of actions are specified: Current Actions and Needed Actions. Current Actions represent the staff's best judgment on what can be accomplished from FY 14/15 through FY 16/17 based on available resources. In addition to basin planning resources, other internal programs, such as the Total Maximum Daily Loads (TMDL) program, include resources to complete basin plan amendments. Some stakeholders, such as CV-SALTS and the Central Valley Clean Water Association, have provided funding for staff and studies to move certain issues forward. Needed Actions are those issues that cannot be addressed until more resources become available. Estimates of funding needs are identified in the work plan. The priority for each issue indicates the intended order to address the issues.

Based on the public input and staff analysis, the following broad issues have been identified as issues that may result in amendments to one or both Basin Plans. Many of the issues have several components so the work plan identifies the portions that are slated for work during the next three years (Current Actions) and those that require additional resources (Needed Actions).

Potential amendments to both basin plans:

1. Salt and Nitrate Management for Surface and Ground Waters
2. Beneficial Use Designations for Surface and Ground Waters
3. Appropriate Beneficial Use Designations in Agricultural Dominated Water Bodies and Agricultural Conveyance Facilities
4. Regulatory Guidance to Address Water Bodies Dominated by NPDES Discharges
5. Participation in State Water Board Plans and Policies and Other Statewide Issues
6. Secondary Maximum Contaminant Levels (MCLs) as Water Quality Objectives for Surface and Ground Waters
7. Protection of Central Valley Fisheries and Other Aquatic Life
8. Evaluating Current United State Environmental Protection Agency (USEPA) Criteria

Potential amendments to the Tulare Lake Basin Plan:

9. Electrical Conductivity (EC) Effluent Limit
10. Wetlands
11. Groundwater Assessment and Control Programs

These issues selected for the 2014 Triennial Review represent major water quality concerns based on what is currently known about them. Knowledge about pollution problems may change significantly from one year to the next.

The basin plan amendment process begins after sufficient studies and technical information has been gathered to develop the scope of the amendment. Resources are estimated based on conducting the information gathering phase and the basin plan amendment process as efficiently and quickly as possible. For many of the issues, staff has access to very limited technical information. Therefore the resource estimates are generic and may significantly underestimate the resources needed to gather the necessary information or to complete the actual basin plan amendment. For many of the issues, stakeholders have expectations of specific outcomes. Due to the lack of technical information readily available to staff, the outcome of these issues is uncertain and cannot be determined at this time.

The following issue descriptions are mainly based on stakeholder comments and may include stakeholder expectations. As explained above, outcomes are uncertain until further information has been gathered. Available technical information and statutory and regulatory requirements were used to provide context to the issues.

A table is included at the end of the work plan (Table 2) to summarize the priority projects with the anticipated current resource allocations and the needed resource allocations over the next triennial review period (fiscal year (FY) 2014-15 through FY 2016-17).

Issue 1:

Salt and Nitrate Management for Surface and Ground Waters

Discussion:

Elevated salinity and nitrates in surface and ground water is an increasing problem in California's Central Valley. Managed hydrology systems import more salt into the San Joaquin River and Tulare Lake Basins than is being exported. In addition, as surface and ground water supplies become scarcer, recycling and water conservation practices are becoming more widespread and as a result wastewater streams are becoming more concentrated, with salinity impairments occurring with greater frequency and magnitude.

Salinity: A 2006 Central Valley Water Board report provides an overview of salinity in the Central Valley.¹ The report identifies consumptive water users as contributors to the Central Valley's increasingly saline water supply. Consumptive water users include all users of water. In the case of irrigated agriculture, consuming water leaves behind dissolved salts in both the soil and water drainage runoff. Urban water users may add salt (operating water softeners, fertilizing lawns, using soaps and detergents, etc.) and simply utilizing/consuming water reduces the amount available for downstream dilution and transport of salt. The act of using water concentrates salts and as consumptive water users we all have a part in salt management which depends upon the development and implementation of effective land use, water supply, and water quality policies.

Salinity impacts are not uniform across the Central Valley. In general, the Sacramento River Basin has sufficient dilution flows and is not suffering direct salinity impacts except in distinct areas. However, the Sacramento River Basin exports salt to the Delta, where it is picked up by the water distribution systems for much of the state. The San Joaquin River Basin relies on water distributed from the Delta, resulting in a net import of salt to the basin. To address the salinity impacts to the San Joaquin River Basin, the Central Valley Water Board

¹ Central Valley Regional Water Quality Control Board. (2006). Salinity in the Central Valley. An Overview. This report is available at: http://www.waterboards.ca.gov/centralvalley/water_issues/salinity/centralvalley_salinity_alternatives_archives/initial_development/swrcb_02may06_ovrww_rpt.pdf

allows the San Joaquin River to be used to export salts from the San Joaquin River Basin as long as beneficial uses are protected in the Lower San Joaquin River and downstream water bodies. This creates additional problems since salt that is being exported through the San Joaquin River is being recirculated into the federal and state water project pumps and returned to the water users in the San Joaquin River Basin as well as to water users in the Tulare Lake Basin. The Tulare Lake Basin, which also relies on water from the Delta, is essentially a closed basin and does not have a reliable means of discharging salt.

In addition to the regional issues, there are local areas of potential problems due to disposal of wastewater from food processing, septic tanks, municipal wastewater, confined animal facilities, and numerous other types of industrial dischargers. With no basin wide infrastructure to isolate and export salt, there are only two alternatives for these dischargers: individually isolate the salt and store it in the basin or dilute it for reuse. Both have long-term consequences.

Nitrates: Nitrates in ground water have been associated with agricultural use and are higher in shallow ground water than deeper ground water. Several studies have documented elevated levels of nitrate in groundwater used as a drinking water supply.^{2,3,4}

Other Salinity Concerns: Comments received during the last triennial review indicated that wineries might be an area of local concern. Wineries can produce substantial quantities of stillage waste which is high in concentrations of biochemical oxygen demand (BOD),

² Pacific Institute. 2011. The Human Costs of Nitrate-contaminated Drinking Water in the San Joaquin Valley. March. This report is available at: <http://pacinst.org/publication/human-costs-of-nitrate-contaminated-drinking-water-in-the-san-joaquin-valley/>

³ State Water Resources Control Board. 2013. Recommendations Addressing Nitrate in Groundwater Report to the Legislature. February This report is available at: http://www.waterboards.ca.gov/water_issues/programs/nitrate_project/docs/nitrate_rpt.pdf

⁴ Dubrovsky, N.M., Burow, K.R., Clark, G.M., Gronberg, J.M., Hamilton P.A., Hitt, K.J., Mueller, D.K., Munn, M.D., Nolan, B.T., Puckett, L.J., Rupert, M.G., Short, T.M., Spahr, N.E., Sprague, L.A., and Wilber, W.G. (2010). The Quality of Our Nation's Waters—Nutrients in the Nation's Streams and Groundwater, 1992–2004. United States Geological Survey Circular 1350. This report is available at: <http://pubs.usgs.gov/circ/1350/pdf/circ1350.pdf>

electrical conductivity (EC), total dissolved solids (TDS), and nitrogen. The Basin Plans include guidelines for the disposal of stillage waste and notes that the guidelines represent minimum requirements and do not preclude the establishment of more stringent requirements to comply with water quality objectives and protect beneficial uses of surface and ground waters.

In addition, commenters requested that the Central Valley Water Board develop an implementation program to achieve water quality objectives in the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan) for dischargers of salt.

Priority: High

Current Action(s): Salt and Nitrate Management Plan (SNMP): In recognition of these salt and nitrate issues, the Central Valley Water Board, the State Water Board, and stakeholders initiated the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative. The CV-SALTS initiative is developing a comprehensive SNMP for the Central Valley that will be implemented through amendments to the Basin Plans. This effort is expected to include evaluation of beneficial uses and water quality objectives for salt and nitrate constituents as well as development of a comprehensive implementation program. The SNMP for the Central Valley is intended to satisfy the requirements of the State's Recycled Water Policy but the CV-SALTS initiative is broader and is evaluating implementation strategies to provide Central Valley-wide environmental and economic sustainability as well as address legacy issues currently impacting safe drinking water supplies.

Several high priority Basin Planning issues are being addressed with active stakeholder participation under the umbrella of CV-SALTS. These issues include:

- Salt and Boron in the Lower San Joaquin River (described below);
- Review of MUN designation in receiving waters of four POTWs (described in Issue 2);
- Developing a framework to evaluate MUN designation in agriculturally dominated water bodies (described in Issue 2);

- MUN evaluation in a portion of the Tulare Lake Bed groundwater basin (described in Issue 2);
- Evaluation of the application of secondary MCLs for salinity to protect MUN (portion of issue 6)

Salt and Boron in the Lower San Joaquin River:

Development of numeric water quality objectives for salinity in the Lower San Joaquin River is necessary since the Central Valley Water Board allows the San Joaquin River to be used to export salt from the San Joaquin River Basin as long as water quality objectives are met in the Lower San Joaquin River and at the boundary of the Sacramento-San Joaquin Delta. The Lower San Joaquin River Committee (LSJRC), established under CV-SALTS, is evaluating the beneficial uses of this river reach to recommend water quality objectives for salinity and an implementation strategy. The LSJRC recommendations will be proposed as a separate basin plan amendment and incorporated into the SNMP.

Salinity Variance Program and Salinity Exception

Program: Since the long-term plan developed under CV-SALTS could include revision of certain beneficial use designations and/or current salinity water quality objectives and the State Water Board is also considering revision of the southern Delta salinity objectives, the basis for water quality based effluent limits and receiving water limits may change in the future. However, current National Pollutant Discharge Elimination System (NPDES) permits, WDRs and conditional waivers are being adopted with water quality based effluent limits and receiving water limits for salts. For some dischargers, the effluent limits are not attainable through any means short of reverse osmosis treatment. The work of CV-SALTS and the development of southern Delta salinity objectives are comprehensive efforts that may take a number of years to complete. While these efforts are underway, it is important for all stakeholders to be involved in developing solutions through CV-SALTS. To maintain the momentum of the CV-SALTS work, it is important for the Water Boards to provide an atmosphere conducive for stakeholders to maintain their focus. Therefore, the Central Valley Water Board adopted amendments to the Basin Plans to provide procedures to issue a variance from meeting water quality based

effluent limits to NPDES dischargers in accordance with 40 Code of Federal Regulations section 131.13. A temporary salinity variance for discharges that meet specific criteria including active participation in the CV-SALTS initiative was also adopted. Since a variance only applies for dischargers subject to NPDES permits, an exception has been adopted into the Basin Plans for dischargers subject to waste discharge requirements (WDRs) and conditional waivers. While the bulk of the effort for this project is complete, the amendments must be approved by the State Water Board, the Office of Administrative Law and the US Environmental Protection Agency (USEPA) before going into effect.

Other Activities: The State Water Board is proposing changes to the San Joaquin River flow and southern Delta water quality objectives in the Bay-Delta Plan. The proposal includes potential changes to the program of implementation. Central Valley Water Board staff works with State Water Board staff to coordinate planning efforts and reduce duplication.

Current Resource(s):

In July 2008 stakeholders formed the Central Valley Salinity Coalition (CVSC) to facilitate and fund CV-SALTS efforts. In 2009 and 2010 a total of \$5 million in Clean-up and Abatement Account (CAA) resources was provided as seed money for the CV-SALTS initiative with stakeholders providing additional match. The CAA funding has been providing resources for facilitation and administration of CV-SALTS as well as supporting the technical studies required to develop the SNMP for the Central Valley Region. Remaining funds of \$3 million continue to support facilitation and technical studies, including necessary environmental documentation and drafting of Basin Plan Amendment language. Annual progress reports are presented to the State Water Board and Central Valley Water Board and can be found at: http://www.waterboards.ca.gov/centralvalley/water_issues/salinity/progress_reports/index.shtml.

SNMP: Staff providing technical support, basin planning direction, and contract management to CV-SALTS is funded from basin planning resources (2 PYs per year). The \$3 million remaining CAA funds, and approximately \$1.3 million of CVSC resources and in-kind services for early implementation activities and pilot projects, is

projected to support development of the SNMP including umbrella projects.

Salt and Boron in the Lower San Joaquin River: Staff uses basin planning resources to work with the stakeholders to develop water quality objectives for salt and boron in the Lower San Joaquin River (0.5 PYs per year). CV-SALTS has provided \$319,421 from the CAA resources to manage the effort. An additional \$765,000 from separate CAA resources focused on Delta water quality improvements was provided in 2009 to the Central Valley Water Board to develop the salt and boron water quality objectives. Approximately \$300,000 of the separate CAA resources remains to complete this project by December 2015.

Salinity Variance Program and Salinity Exception Program: Complete basin plan amendment approval process through State Water Resources Control Board, Office of Administrative Law and US EPA. (0.2 PYs per year for FY2014-15)

Needed Action(s):

Current actions are expected to cover staff assistance on the comprehensive CV-SALTS effort, including adoption of appropriate elements of the SNMP through a basin plan amendment.

After the SNMP is completed, it is anticipated that staff will be needed to provide assistance in the development of local management plans. The development of local management plans are most likely to be needed in the next triennial review cycle. In addition, stakeholders are expected to develop a funding mechanism to obtain resources needed for CV-SALTS activities.

Needed Resource Requirement(s):

Staff – Existing staff resources are adequate to complete the basin planning actions associated with the SNMP. However, CV-SALTS may identify new projects that would require an additional 0.5 PYs per year per project for staff in the next triennial review cycle to provide assistance in the development of local management plans.

Contract(s) – To be determined after completion of the SNMP.

Issue 2:

Beneficial Use Designations for Surface and Ground Waters

Discussion:

The Basin Plans designate beneficial uses to surface waters in three different ways: (1) Table II-1 lists existing, potential and probable future beneficial uses that apply to surface waters of the basins; (2) the beneficial uses of any specifically listed water body generally apply to its tributary streams; and (3) the Basin Plans implement State Water Board Resolution 88-63 (Sources of Drinking Water Policy) by assigning municipal and domestic supply uses (MUN) to all water bodies that are not listed in Table II-1.

The Sacramento/San Joaquin Rivers Basin Plan states that all ground waters in the Basins are considered as suitable or potentially suitable, at a minimum, for municipal and domestic water supply (MUN), agricultural supply (AGR), industrial service supply (IND), and industrial process supply (PRO).

The Tulare Lake Basin Plan states that the following beneficial uses have been identified and occur throughout the ground water in the Basin: municipal and domestic water supply (MUN), agricultural supply (AGR), industrial service supply (IND), industrial process supply (PRO), water contact recreation (REC-1) non-contact water recreation (REC-2), and wildlife habitat (WILD).

Dischargers to both effluent dominated surface water bodies and water bodies modified or constructed for agricultural uses oppose the designated beneficial uses. In addition, commenters would like an evaluation of the way the Sources of Drinking Water Policy is implemented with a blanket MUN designation of all water bodies that are not listed in Table II-1 of the Basin Plans. There have also been questions on how to protect water bodies designated with both WARM and COLD beneficial uses since these uses seem to conflict. Adjustments to designated beneficial uses for surface and ground waters can only be made through the basin plan amendment process. Changes to surface water beneficial uses that result in less stringent criteria must be supported by scientific analysis as specified in 40 Code of Federal Regulations section 131.10(g).

The State Water Board determined in Order WQO 2002-0015 (*Vacaville's Easterly WWTP*), pp. 15-16, "... where a Regional Board has evidence that a use neither exists nor likely can be feasibly attained, the Regional Board must expeditiously initiate appropriate basin plan amendments to consider dedesignating the use. Moreover, the Regional Board can require dischargers to the affected water body to provide assistance, through data collection, water quality-related investigations, or other appropriate means, to support and expedite the basin plan amendment process."

Individual Water Bodies: Stakeholders have indicated that there is information that supports reviewing specific beneficial uses of the water bodies listed in Table 1.

Table 1

Water Bodies	Basin
West Squaw Creek*	Sacramento River and San Joaquin River Basins
Grassland wetland water supply channels	
Upper North Fork Feather River from Lake Almanor to Lake Oroville	
Pit River	
Yuba River, above Englebright Dam	
North and Middle Forks, American River	
Willow Creek in Madera County	
Pleasant Grove Creek	
Kellogg Creek	
Fresno River above Hensley Reservoir	
Calaveras River from the San Joaquin River to the Stockton Diverting Canal and from the Stockton Diverting Canal to below the weir	
Receiving water systems for the discharges from the cities of Colusa, Live Oak, Willows and Biggs publicly owned treatment works (POTWs)*	
Ground water beneath the Royal Mountain King Mine site in Calaveras County*	
Hume Lake	
Lake Isabella	
Kern River	
Ground water in various Kern County Westside oilfields.	
Historical Tulare Lakebed*	
Ground water in Western Kern and Kings Counties	

*Current Projects

Water Body Groupings: Stakeholders have identified the following categories of water bodies as deserving review for specific beneficial uses: (1) Long water body reaches (i.e. water body reaches that are so long that the characteristics of the water body changes within the reach), especially water bodies that have large changes in elevation, species assemblages and climate; (2) Water

bodies with both COLD and WARM beneficial use designations (i.e. Yuba, American, Pit, and Kern Rivers); (3) agricultural water bodies that are designated MUN through the Central Valley Water Board's application of the Sources of Drinking Water Policy.

Priority: High

Current Action(s): Staff is evaluating beneficial uses for West Squaw Creek, tributary to Shasta Lake. The Central Valley Water Board recently adopted a basin plan amendment for ground water beneath the Royal Mountain King Mine site in Calaveras County. The amendment must be approved by the State Water Board and the Office of Administrative Law before it can go into effect. Because the de-designation area is partially inconsistent with the *Sources of Drinking Water Policy*, the State Water Board will need to consider a site-specific modification to the *Sources of Drinking Water Policy* to resolve this inconsistency. In addition, the Central Valley Water Board through the CV-SALTS initiative is evaluating the MUN beneficial uses in the receiving water systems considered to be agriculturally dominated water bodies for four publicly owned treatment works (POTWs) (Issue No. 3). This project is being used as an archetype for developing a framework for determining the appropriate level of protection of municipal and domestic use in agricultural surface water bodies in the Central Valley. Water bodies within the San Joaquin River Basin have been identified to test the framework that has been developed. The framework could then be used in the future as a template for similar basin plan amendments.

Also, the Central Valley Water Board, in conjunction with the CV-SALTS initiative, is re-evaluating the MUN designation for a portion of the ground water in the historic Tulare Lakebed. The project includes development of a framework for evaluating the applicability of the MUN beneficial use in ground water basins.

The frameworks for evaluating the MUN beneficial use in agricultural surface water bodies and in ground water basins is proposed to be included in both basin plans.

Current Resource(s):

- 1) West Squaw Creek: Staff – Stakeholders have funded staff.
- 2) Royal Mountain King Mine Site: Staff – 0.3 PYs for FY 2014-15 to complete the amendment.
- 3) Receiving Waters that are Designated MUN for the four POTWs:
 - Staff – 1 PYs per year.
 - Contract - \$145,000 of Clean-up and Abatement Account resources (CV-SALTS) was spent to support the monitoring and environmental evaluation for this project.
 - Stakeholders provided \$50,000 to support this amendment in addition to in-kind services for monitoring and data review.
- 4) Beneficial Use Framework for Agricultural Surface Water Bodies (Phase I—MUN Evaluation):
 - Staff – 1 PYs per year.
 - Contract - \$100,000 of Clean-up and Abatement Account resources (CV-SALTS) was spent to support this project.
 - Stakeholders provided \$50,000 match and in-kind services for a San Joaquin Basin case study.
- 5) Tulare Lakebed Evaluation of MUN in Ground Water:
 - Staff – 0.2 PYs per year to provide technical oversight. In addition, other programs are contributing staff resources to help in this effort.
 - Contract - \$100,000 of Clean-up and Abatement resources (CV-SALTS) was spent to support this project.
 - Stakeholders are developing the technical information for this project and have contributed \$229,000 to date to support this project.

Needed Action(s):

A method is needed to efficiently use resources to work on assigning beneficial uses. Two potential methods are proposed. One method would be to develop a logical system of grouping and assigning beneficial uses to the large number of unlisted water bodies in the Central Valley Region. It would be useful to assemble and work with a stakeholder group to define the issues associated with any general classification system and to determine the best and most efficient approach to the assignment of beneficial uses. The starting point for grouping water bodies could be identifying water bodies that fit the exception criteria 2a and 2b in the *Sources of Drinking Water Policy*. The current efforts to address the MUN beneficial use in agricultural surface water bodies (No. 4 above) is an example of this approach of conducting beneficial use assessments for select categories of water bodies to develop templates or frameworks for grouping beneficial use designations.

The second method would be to select individual water bodies with notable characteristics for individual basin plan amendments with the goal of developing templates for similar water bodies. An example of this approach is the Basin Plan amendment addressing pH and turbidity in Deer Creek, tributary to the Cosumnes River. This amendment was then used as the model for a pH and turbidity Basin Plan amendment for the entire Sacramento River and San Joaquin River Basins.

Needed Resource Requirement(s):

Staff – For evaluating grouping of water bodies, 1.0 PYs per year for the first two years is needed to further define this issue for groupings that do not include agriculturally dominated systems (e.g. effluent dominated, ephemeral, etc.). Future needs would depend on the number and types of water body categories that are identified. For work on individual water bodies, 0.5 PYs is needed per year for three years for each water body.

Contract(s) – Approximately \$500,000 is needed to help identify the scope of the grouped water body issue and group water bodies into logical categories. Future needs would depend on the types of water body categories that are identified. For individual water bodies, up to \$200,000 is needed per water body.

Issue 3:

Appropriate Beneficial Use Designation in Agricultural Dominated Water Bodies and Agricultural Conveyance Facilities

Discussion:

In agricultural environments, a complex network of modified natural and constructed channels convey irrigation supplies to farms and export agricultural drainage water to natural streams. Many of these waterways lack habitat and physical flow characteristics to sustain the full range of aquatic life and other beneficial uses. In 1992, Central Valley Water Board staff collected information from local water agencies identifying natural water bodies that were dominated by agricultural drainage, water bodies constructed to carry agricultural drainage and/or supply water, and water bodies that were natural dry washes that were altered to carry agricultural supply and/or drainage. The local water agencies also provided information on the lengths of these water bodies.

Some of these water bodies were deliberately modified for the purpose of providing support to the agricultural industry. During previous triennial reviews, stakeholders commented that fully protecting the assigned beneficial uses would result in loss of the agricultural functionality of the water body. Therefore, stakeholders requested that the Central Valley Water Board develop plans and policies that recognize that the functionality of the modified water body should take precedence over any perceived beneficial uses. The State Water Board developed recommendations for providing reasonable protection for beneficial uses of agricultural waters in a 1995 Agricultural Waters Task Force report and some of these recommendations may provide an approach to addressing stakeholder concerns.⁵

The recommended approaches require amending the Basin Plan. Basin Plan amendments would need to comply with the California Water Code and the Clean Water Act, if applicable.

Priority:

High

⁵ State Water Resources Control Board. (1995). Report of the Agricultural Waters Task Force for Consideration of Issues Related to the Inland Surface Waters Plan. This report is available at: http://www.waterboards.ca.gov/publications_forms/publications/general/docs/inland_surface_plan_b.pdf

Current Action(s): The Central Valley Water Board staff in partnership with the CV-SALTS initiative, and a diverse stakeholder group is developing a framework to categorize agricultural surface water body types such as constructed conveyances and agricultural dominated natural water bodies (Issue 2, No. 4). The framework will include a process to determine the appropriate designation and level of protection for the Municipal and Domestic Supply (MUN) beneficial use in agricultural water bodies. This process is the first phase of a two phase process. Phase 2 is projected to be a larger effort to evaluate the appropriate designation and level of protection for beneficial uses other than MUN in agricultural water bodies.

Current Resource(s): Staff – 1.0 PYs per year to develop a framework to categorize agricultural surface water body types and conduct the public outreach to amend the Basin Plans. (Counted as part of Issue 2, No. 4)

Contract - \$100,000 of Cleanup and Abatement Account resources (CV-SALTS) are allocated to support Phase I of this project. (Issue 2, No. 4). No additional contract resources have been allocated specific to this project.

Needed Action(s): Phase 1 of the two phase process is the current action. Phase 2 is projected to be a larger effort to evaluate the appropriate designation and level of protection for beneficial uses other than MUN in agricultural water bodies. Because of the similarities in approach between Phase 1 and Phase 2, it would be useful and reduce duplication to finish Phase 1 before starting Phase 2. Phase 2 will not begin until Phase 1 is completed, no additional action is needed during this triennial review period.

Needed Resource Requirement(s): None

Issue 4:

Regulatory Guidance to Address Water Bodies Dominated by NPDES Discharges

Discussion:

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 in order to protect aquatic life beneficial uses.

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

In 1995 an Effluent-Dependent Water Bodies Task Force established by the State Water Board developed recommendations for providing reasonable protection for effluent-dependent water bodies.⁶ Some of these recommendations might be appropriate for these types of water bodies in the Central Valley.

Stakeholders have suggested that the assigned beneficial uses of these water bodies are inappropriate and have requested that various alternatives be explored for assigning beneficial uses to EDWs. The alternatives suggested in the past were to a) designate site specific beneficial uses, b) use “warm” and “cold” designations on a case by case basis rather than applying the “tributary rule,” c) develop an EDW beneficial use which would consist of a limited warm water habitat, recreation and/or municipal use, d) adopt site specific objectives, or e) develop provisions for granting variances from

⁶ State Water Resources Control Board. (1995). Report of the Effluent-Dependent Waters Task Force for Consideration of Issues Related to the Inland Surface Waters Plan. October. The report is available at: http://www.waterboards.ca.gov/publications_forms/publications/general/docs/effluent-dependent-waters-1995.pdf

compliance with water quality objectives. Further discussion regarding the designation of beneficial uses is in Issue No. 2.

All of the above alternatives can only be accomplished through the Basin Plan amendment process. They cannot be performed during the permit adoption process. Studies necessary to comply with Clean Water Act and Water Code requirements for amending the basin plan have not been completed for most EDWs.

The Central Valley Water Board has adopted several basin plan amendments that address EDW concerns. In 2003, the Central Valley Water Board adopted site specific water quality objectives for pH, turbidity and temperature for Deer Creek in El Dorado County. This provided the approach used for a region wide amendment to revise the pH and turbidity water quality objectives in 2007. In 2005, the Central Valley Water Board de-designated several beneficial uses of Old Alamo Creek in Solano County. In 2010, the Central Valley Water Board adopted site specific water quality objectives for several trihalomethanes for New Alamo and Ulatis creeks in Solano County and implementation provisions for NPDES dischargers to Old Alamo Creek. In 2014, the Central Valley Water Board adopted a variance policy for non-priority pollutants.

Priority: High

Current Action(s): The Central Valley Water Board recently adopted amendments to the Basin Plans to allow the Central Valley Water Board the authority to grant variances within the meaning of 40 Code of Federal Regulations section 131.13 (See Issue No. 1). Variances could be used to address regulatory issues associated with discharges to receiving waters with little or no dilution. Before these amendments can go into effect, they must be approved by the State Water Board, the Office of Administrative Law and the USEPA.

Current Resources(s): Resources for the current actions to evaluate beneficial uses are included in Issue No. 2 (Beneficial Use Issue). Resources for the development of a variance policy are included in Issue No. 1 (Salt and Nitrate Management for

Surface and Ground Waters). No resources are currently allocated to specifically evaluate EDWs.

Needed Action(s):

Develop a logical system for grouping water bodies, assigning beneficial uses, water quality objectives, and/or specific implementation provisions. Following the example of pH and turbidity, it would be efficient to explore whether the approaches used for site-specific basin plan amendments can be expanded to region wide basin plan amendments. Otherwise, it is still important to conduct individual amendments that deal with different aspects of the EDW issue to address regulatory issues as well as provide information that would be useful for geographically larger basin plan amendments.

Needed Resources Requirement(s):

Staff – Site-specific amendments require roughly 0.5 PYs per year for three years. It is estimated that an amendment for a grouping of like water bodies would require 1.0 PYs per year for two years to develop an approach. Resource needs and time frames after the first two years will depend on the approach.

Contract(s) – Approximately \$200,000 to conduct studies per site-specific basin plan amendment. These studies include the scientific justification, environmental assessment and economic analysis. An amendment looking at a grouping of multiple water bodies could require \$500,000 or more to conduct studies.

Issue 5:

Participation in State Water Board Plans and Policies and Other Statewide Issues

Discussion:

The State Water Board may develop plans and policies which, when adopted, supersede any regional water quality control plans for the same waters to the extent of any conflict (Wat. Code, §13170). The Central Valley Water Board participates and collaborates in the development of plans, policies, and other issues with the State Water Board to make sure the Central Valley regional priorities are considered. Coordinating with the State Water Board on development of statewide policies is an efficient use of limited basin planning resources. The most relevant program generally provides staff to participate in policy development. For example, the Water Quality Certification Program takes the lead in communicating with State Water Board staff developing the Wetlands and Riparian Areas Policy. However, for many of the policies, the most closely related program is basin planning. Therefore, some of the Region's basin planning resources have been allocated to participate in the development of the State Water Board's plans and policies.

The State Water Board provides a current status of Statewide Policies and Significant General Permits along with other items in an Executive Director's Report that can be found on the State Water Board's website.⁷ Below is a list of State Water Board plans and policies that are relevant to the Central Valley region basin planning. The list is in alphabetical order.

- Antidegradation Policy
- Bacterial Standards for Ocean and Inland Surface Waters
- Draft Water Quality Control Plan Update for San Joaquin River Flows and Southern Delta Salinity Objectives (Bay-Delta Plan)
- Biological Integrity Plan Development
- Cadmium Objective and Hardness Implementation Policy
- Chlorine Residual Objectives and Implementation
- Listing Policy Update

⁷ http://www.waterboards.ca.gov/board_info/exec_dir_rpts/index.shtml

- Mercury Offset Policy
- Mercury TMDL (Reservoirs)
- Methylmercury Objectives
- Natural Sources
- Nonpoint Source (NPS) Implementation and Enforcement Policy Amendments
- Nutrient Numeric Endpoints Tools
- Sediment Quality Objectives (SQOs) for Enclosed Bays and Estuaries: Phase II
- Toxicity Water Quality Control Plan Amendments
- Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP) Revisions to Appendix 4 – Minimum Reporting Level Tables
- Trash Water Quality Control Plan Amendments
- Water Effects Ratios
- Wetlands and Riparian Areas Policy

Once the State Water Board’s plans and policies become effective, the Central Valley’s Basin Plans should be amended to provide the most updated information to stakeholders.

Priority: High

Current Action(s): Staff in the various programs are participating and collaborating in the development of plans, policies, and other issues with the State Water Board. The following shows which programs are coordinating on which actions:

- Basin planning resources are used to track development of the anti-degradation policy, bacterial standards, natural sources, nutrient numeric endpoints tools, toxicity amendments, the amendments to the SIP and the water effects ratios. The Central Valley Water Board is on the work group to evaluate how the antidegradation policy applies to protecting ground water quality.
- The Total Maximum Daily Loads (TMDLs) program is tracking work on the Bay-Delta Plan, the listing policy, the mercury offset policy, methylmercury objectives, sediment quality objectives and the trash policy. Staff working on CV-SALTS is also coordinating with State Water Board staff on the Bay-Delta Plan.

- TMDLs program staff from around the state are working together to develop a control program to address mercury contamination in California reservoirs. Central Valley Water Board staff is leading this effort. More information on mercury contamination is described in Issue No. 11 (Mercury Load Reduction Program) of the Triennial Review Work Plan for the Sacramento River and San Joaquin River Basins.
- The core regulatory programs (NPDES and timber activities programs) track development of the biological integrity plan, cadmium objectives and chlorine residual objectives.
- The Nonpoint Source Program tracks amendments to the NPS Implementation and Enforcement Policy.
- The Water Quality Certification program is tracking development of the wetlands and riparian areas policy.

Current Resource(s):

Basin planning provides 0.2 PYs per year to track the development of the policies that are most closely related to the basin planning program and to provide assistance as appropriate.

Needed Action(s):

None

Needed Resource Requirement(s):

None

Issue 6:**Secondary Maximum Contaminant Levels (MCLs) as Water Quality Objectives for Surface and Ground Waters**

Discussion:

Secondary MCLs are established by the USEPA and the California Department of Public Health as guidance for public water systems to manage their drinking water for consumer acceptance. These contaminants are not considered to present a risk to human health at these levels but may cause consumers to stop using the water from the public water system due to aesthetic considerations, such as taste, color and odor. Secondary MCLs are used as water quality objectives to protect the municipal and domestic supply (MUN) beneficial use from impairment. The Central Valley Water Board determines compliance with these water quality objectives using total recoverable analysis of unfiltered water samples, not as dissolved. One rationale for the use of total recoverable analysis rather than dissolved is that MUN beneficial use includes protection of small domestic water supply systems that may not be required to filter and may not be filtering ambient water prior to delivery to consumers.

Commenters in recent triennial reviews have recommended that the Central Valley Water Board re-evaluate the use of secondary MCLs as water quality objectives. Commenters were particularly concerned with iron, manganese and total dissolved solids (TDS). Commenters believe that the use of secondary MCLs should be re-evaluated because secondary MCLs are based on consumer acceptance levels and are therefore unrelated to human health and welfare or the protection of aquatic life. Also, secondary MCLs were developed to be applied at the tap, not to the drinking water source (or in this case ambient water). Commenters recommend the removal of the incorporation by reference for secondary MCLs, or, at the very least, secondary MCLs should be applied as a dissolved objective instead of a total objective.

While secondary MCLs are objectives that apply to contaminants that may adversely affect the odor or appearance of water, these constituents may have other effects at higher concentrations including to beneficial uses other than MUN. As long as the Central Valley

Water Board protects at the MCL level, these other beneficial uses are protected. Therefore, a proposal to change the application of the secondary MCLs as water quality objectives should include an evaluation of the potential effect of the proposal on human health as well as on other beneficial uses. Any proposed revisions to the water quality objectives would need to be conducted in accordance with federal and state laws and regulations.

Priority:	High
Current Action(s):	The Salt and Nitrate Management Plan for the Central Valley that is under development through CV-SALTS and described in Issue No. 1, will include basin plan amendments that establish regulatory structure, and policies to support basin-wide salt and nitrate management. CV-SALTS is evaluating the use of secondary MCLs for salinity as part of the overall project which may include a framework that would be applicable to other secondary MCLs. No current action is proposed to address this issue separately from CV-SALTS efforts.
Current Resource(s):	None
Needed Action(s):	After basin plan amendments that are part of the CV-SALTS efforts are completed, the basin plans should be evaluated to identify additional basin planning issues related to the secondary MCLs.
Needed Resource Requirement(s):	None during this Triennial Review period.

Issue 7:

Protection of Central Valley Fisheries and Other Aquatic Life

Discussion:

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.

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

A site-specific concern is that 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.

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.

Temperature: 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. These objectives have existed in the Basin Plan since its original adoption in 1975,

In August 2005, NOAA Fisheries designated critical habitat for 19 Evolutionarily Significant Units (ESUs) of salmon and steelhead in the Northwest and California. The ESUs within the Central Valley are the Central Valley Spring Run Chinook Salmon and the Central Valley Steelhead. The ESU range for the Chinook salmon is the Sacramento River and the ESU range for the steelhead is the Sacramento River and the San Joaquin River and their tributaries. Essential features of critical habitat include adequate: (1) substrate, (2) water quality, (3) water quantity, (4) water temperature, (5) water velocity, (6) cover/shelter, (7) food, (8) riparian vegetation, (9) space, and (10) safe passage conditions.

In previous Triennial Reviews, the 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. There are also comments that the USEPA Region 10 guidance is inappropriate for use in the Central Valley and support the development of temperature objectives that are specific to the various Central Valley water ways.

Long Water Body Reaches: 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 of the reach 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 believed to be more stringent. However, this may not be adequately protective of either the warm or cold water ecosystems that are present. 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.

Beneficial Uses: Commenters have stated that there is technical information that indicates that WARM and/or COLD might be inappropriately designated for specific water bodies. These water bodies have been included under Issue No. 2 (Beneficial Use Designations) and are not included in the below work plan estimates.

Priority: High

Current Action(s): None

Current Resource(s): None

Needed Action(s): There are a number of actions that staff may take to address this issue. One possible action would be to re-evaluate the general and site-specific water quality objectives for dissolved oxygen.

Another action would be to work with the fishery agencies and other stakeholders to develop water quality objectives, which may be narrative or numeric, for dissolved oxygen and temperature to specifically protect Central Valley salmonid beneficial uses.

Yet another action could be to work with stakeholders on appropriately subdividing long water body reaches and developing water quality objectives that provide optimum protection of the aquatic life that is present in each reach. In these cases, it may be useful to design and conduct a site-specific evaluation that would then serve as a template for other evaluations.

Needed Resource
Requirement(s):

Staff – 0.5 PYs per year per amendment.

Contract(s) – \$250,000 for work on DO; \$500,000 for work on temperature objectives; \$200,000 for work on reaches.

Issue 8:**Evaluating Current United States Environmental Protection Agency (USEPA) Criteria**

Discussion:

The Central Valley Water Board is implementing criteria promulgated by USEPA as of 2000. These criteria are known as the California Toxics Rule (CTR) and include the toxic pollutants which are also called priority pollutants. USEPA also publishes guidance for non-priority pollutants. These non-priority pollutants were not included in the USEPA promulgation of the CTR. USEPA publishes updates of criteria pursuant to Section 304(a) of the Clean Water Act. The updated criteria and guidance represent the most current science and may include criteria that provide better protection of beneficial uses than the currently applicable criteria and water quality objectives.

The Basin Plan includes narrative objectives and a *Policy for Application of Water Quality Objectives* that indicates that the Central Valley Water Board can use available information, numerical criteria, and guidelines from other authoritative bodies to assist in determining compliance with narrative objectives. Therefore, staff can use the USEPA National Recommended Water Quality Criteria to derive permit limits. However, non-uniform translation of narrative water quality objectives could be impairing the Central Valley Water Board's ability to properly protect the beneficial uses of its waters.

The USEPA updated the recommended freshwater criteria for ammonia in 2013 to incorporate the results of new scientific studies to protect freshwater mollusks which are more sensitive to ammonia than the organisms represented in the dataset for the previous criteria. USEPA also published a recalculation procedure to derive site-specific criteria if more sensitive aquatic life species are not found. Potential application of these updated criteria in the Central Valley discharges needs to be evaluated.

Commenters from this Triennial Review have also requested the Central Valley Water Board update its water quality objectives for copper using the Biotic Ligand Model (BLM), as recommended by USEPA in the *2007 Updated Aquatic Life Copper Criteria*.

Priority:	High
Current Action(s):	<p>Central Valley Water Board staff coordinates with State Water Board staff in the development of statewide water quality objectives (See Issue No. 5).</p> <p>Stakeholders are conducting studies to determine the presence and type of mollusks found in Central Valley waterways. Results of these studies may be used to amend the water quality objectives for ammonia.</p>
Current Resource(s):	Staff – 0.2 PYs are used to coordinate with State Water Board staff. See Issue No. 5. NPDES program staff is working with stakeholders that are conducting studies on mollusks.
Needed Action(s):	<p>Once stakeholders complete the studies on mollusks, resources may be needed to move forward with a basin plan amendment for water quality objectives for ammonia.</p> <p>The Central Valley Water Board should review the current criteria developed pursuant to the Clean Water Act section 304(a) and USEPA published methodologies to determine whether basin plan amendments are needed to update the water quality objectives to ensure that beneficial uses are protected.</p> <p>In addition, while amendments to the basin plans have been completed for certain areas of the region to revise water quality objectives for pH and turbidity and to establish water quality objectives in select water bodies for mercury and certain pesticides to protect aquatic life uses, most of the water bodies in the region have not been evaluated to determine the need for establishing these water quality objectives in those water bodies. While interpretation of the narrative toxicity objective allows the Central Valley Water Board to consider these water quality objectives elsewhere in the region, environmental conditions throughout the region should be evaluated to establish appropriate numeric water quality objectives for these constituents and parameters elsewhere in the region.</p>
Needed Resource	

Requirement(s):

Staff – Once initiated, 0.5 PYs per year for three years are needed to conduct a basin plan amendment for water quality objectives for ammonia. In addition, about 0.5 PYs per year for two years to conduct a review of the other current USEPA numeric criteria in the basin plans and the CTR. Additional resources would be needed to conduct basin plan amendments if determined to be necessary. For water quality objectives that have already been established for certain parts of the region, 0.5 to 1 PYs for one year per objective is needed to conduct an evaluation of other parts of the region to determine if the basin plan(s) should be amended. An additional 0.5 PYs per year for three years, at a minimum, would be needed to conduct any basin plan amendments.

Contract – No contract resources needed.

Issue 9:**Electrical Conductivity (EC) Effluent Limit**

Discussion:

The Tulare Lake Basin Plan contains EC effluent limits for wastewater discharges. Municipal and domestic discharges are limited to the EC of the source water plus 500 micromhos per centimeter ($\mu\text{mhos/cm}$). Industrial dischargers are required to meet an EC limit of the source water plus 500 $\mu\text{mhos/cm}$ unless it can be demonstrated that allowing a greater net incremental increase in EC will result in lower mass emissions of salt and in conservation of water. Food processing industries that discharge to land are also allowed an exception if the increased EC is due to an unavoidable concentration of organic dissolved solids from the raw food product. In both these exceptions, beneficial uses must still be protected.

In addition to the EC limit of the source water plus 500 $\mu\text{mhos/cm}$, dischargers are generally required to meet a limit of 1,000 $\mu\text{mhos/cm}$ whichever is more stringent unless the discharger can successfully demonstrate to the Central Valley Water Board in a public hearing that the proposed discharge will not substantially affect water quality nor cause a violation of water quality standards.

During the last Triennial Review municipal dischargers requested the Central Valley Water Board revise the EC effluent limit in order to take into consideration water conservation measures. Suggestions from commenter's were to develop an EC credit for calcium, potassium, and magnesium, allow the exception of increased EC due to unavoidable concentrations of organic dissolved solids from raw food products extend to dischargers other than food processors, and apply the 500 $\mu\text{mhos/cm}$ increase to receiving rather than source water.

In addition, the 2014 Triennial Review commenters are requesting the Central Valley Water Board re-evaluate the EC effluent limitations and its appropriateness in the Basin Plan. Recommendations included having a geographic reference attribute for the EC effluent limits to encourage movement of industrial waste discharges to the west side of the Tulare Lake Basin consistent with the policy in the Basin Plan to move waste streams west towards the drainage trough of the valley.

Priority:	High
Current Action(s):	<p>Currently, CV-SALTS is addressing salinity and nitrate problems in the Central Valley through the development of a SNMP (Issue No. 1). Salt and nitrate are major ionic substances in water and make up EC levels. The development and implementation of CV-SALTS salt and nitrate management plan along with collaborative CV-SALTS projects with Central Valley Water Board staff and stakeholders may include re-evaluating current EC effluent limits. Since it is not appropriate to have a separate process that may duplicate, overlap or conflict with the eventual CV-SALTS management plan, no current action is proposed to address this issue separately from CV-SALTS efforts.</p> <p>The Central Valley Water Board recently adopted amendments to the Basin Plans to allow the Central Valley Water Board the authority to grant variances within the meaning of title 40 Code of Federal Regulations section 131.13 (See Issue No. 1). The amendments include provisions for granting exceptions from salinity limits. These exceptions could be used to address regulatory issues associated with meeting the EC limits in the Basin Plan.</p>
Current Resource(s):	Resources for evaluations under CV-SALTS and development of the variance policy, including exception provisions, are included in Issue No. 1 (Salt and Nitrate Management for Surface and Ground Waters).
Additional Action(s):	After basin plan amendments that are part of the CV-SALTS efforts are completed, the Basin Plan should be evaluated to identify whether there are additional issues related to the EC effluent limits.
Additional Resource Requirement(s):	None during this triennial review period.

Issue 10:

Wetlands

Discussion:

During previous triennial reviews, commenters have expressed concerns with the loss of wetlands through dredge and fill activities or the degradation of wetland habitat from discharges of constituents of concern (pesticides, salts, nutrients, etc.) to surface and/or ground waters.

The State Water Board adopted Resolution No. 2008-0026 to begin work on a statewide Wetland and Riparian Area Protection Policy. The State Water Board released a Preliminary Draft Wetland Area Protection Policy to solicit the general public, stakeholder groups, state and federal agencies, tribal government representatives, and technical experts for informational input to keep the development of the policy process moving. These efforts in addressing the wetlands issue are being led by the State Water Board. Regional Water Board staff is working with State Water Board staff to make sure Central Valley priorities are considered. Participation in statewide plans and policies is discussed further in Issue No. 5 of the Triennial Review work plan.

Priority: None

Current Action(s): None

Current Resource(s): None

Additional Action(s): None

Additional Resource Requirement(s): None

Issue 11:

Groundwater Assessment and Control Programs

Discussion:

Degradation of groundwater in the Tulare Lake Basin by salts is unavoidable without a plan for removing salts from the Basin. Some of the salt load to the groundwater resource is primarily the result of natural processes within the Basin, but some also occur due to water imported from other basins to supply agricultural irrigation water.

In 2013, the State Water Board provided a report to the Legislature on the quality of groundwater sources for community public water systems. Public supply wells with levels of arsenic in the raw and untreated water that exceed the MCL were found in the south and western part of the Tulare Lake. Gross alpha particle activity and uranium were found in raw and untreated water for many of the public water systems in the Tulare Lake Basin. Benzene was found in public supply wells in Arvin and Kettleman City. Perchlorate was found in wells in Tehachapi, Stallion Springs, East Tulare and Exeter. Tetrachloroethylene (PCE) was found in public supply wells in the Fresno metropolitan area, Sanger, Arvin, Golden Hills, Oildale, Bakersfield and Goshen areas. Trichloroethylene (TCE) was found in the Fresno and Bakersfield metropolitan areas. Fluoride was found at levels exceeding MCLs in raw and untreated water in the Sierra and San Emigdio Mountains areas of Kern County.⁸

The Supplemental Report of the 1999 Budget act and later the Groundwater Monitoring Act of 2001 required the State Water Board to develop a comprehensive ambient groundwater monitoring plan. To meet this mandate, the State Water Board created the Groundwater Ambient Monitoring and Assessment (GAMA) Program. The primary objective of the GAMA Program is to comprehensively assess statewide groundwater quality and gain an understanding about contamination risk to specific groundwater resources. The GAMA Program initiated a number of groundwater assessment projects. One of the projects, the Voluntary Domestic Well Assessment Project, samples domestic wells County by County.

⁸ SWRCB. 2013. Communities that Rely on Contaminated Waters. Report to the Legislature. January. Available at: http://www.waterboards.ca.gov/water_issues/programs/gama/ab2222/docs/ab2222.pdf

In 2008, the Central Valley Water adopted Resolution No. R5-2008-0181 supporting the development of a groundwater strategy for the Central Valley Region. In September 2010, the Central Valley Water Board approved the Groundwater Quality Protection Strategy or “Roadmap” with Resolution No. R5-2010-0095. The roadmap identifies current and future actions to protect groundwater quality, abate degradation, and improve and restore water quality in Central Valley groundwater. Almost all identified current and future actions can be implemented through the existing programmatic structure of the Central Valley Water Board and through improved partnerships with other agencies or organizations. The only basin planning actions identified in the Roadmap are the CV-SALTS efforts and the policy for onsite waste water treatment facilities as basin planning priorities. Since CV-SALTS efforts are included in Issue No. 1 (Salt and Nitrate Management) and the Central Valley Water Board recently amended the Basin Plan to incorporate the State Water Board’s Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy), no basin planning actions are identified as part of this issue. A ground water issue can be added to the triennial review work plan if future updates of the Roadmap identify the need for basin planning actions.

Priority:	None
Current Action(s):	None
Current Resource(s):	None
Additional Action(s):	None
Additional Resource Requirement(s):	None

Table 2
 Summary of 2014 Triennial Review Issues, Current Actions and Resources, and Needed Actions and Resources from FY 14-15 through FY 16-17

Issue No.	Issue Title	Priority	Current Actions and Resources (Continuing and Proposed)		Needed Actions and Resources (Currently Unfunded with Estimated Funding Needs)	
			Staff	Contract	Staff	Contract
1	Salt and Nitrate Management Plan	High	Salt and Nitrate Management Plan - Application/implementation Secondary MCLs - Implicitly includes TLB EC Effluent Limits Lower SJR Salt/Boron Variance Policy, Salinity Variance Program and Exception Program	2 PYs/yr \$1.3 M	0.5 PYs/yr project TBD	TBD ~\$22 to \$42 million from stakeholders
2	Beneficial Use Designations	High	West Squaw Creek RMK Mine Framework for agricultural surface waters - Archetype: MUN in POTW receiving waters MUN in Tulare Lakebed	Reimb. 0.3 PYs 1 PYs/yr - 1 PYs/yr 0.2 PYs	\$0 \$0 \$0 \$0	1 PYs/yr for 2 yrs to group waterbodies 0.5 PYs/yr for 3 yrs to do site-specific amendments \$500,000 to group water bodies \$200,000 per water body for site specific amendments
3	Agricultural Dominated Waters	High	Phase 1: Framework for MUN Phase 2: Framework for remaining Beneficial Uses	See Issue 2	\$0	None - continue staffing identified in Issue 2 Phase 2: Complete development of framework for BUs other than MUN. Phase 2 projected to begin in next triennial review period.
4	Water Bodies Dominated by NPDES Discharges	High	Variance Policy	See Issue 1	Issue 1	1 PYs/yr for 2 yrs to group waterbodies 0.5 PYs/yr for 3 yrs to do site-specific amendments \$500,000 to group water bodies \$200,000 per water body for site specific amendments
5	Participation in State Water Board Plans and Policies	High	Anti-degradation Policy, bacterial standards, natural sources, nutrient numeric endpoints tools, toxicity amendments, and the amendments to the SIP Bay-Delta Plan, the listing policy, the mercury offset policy, methylmercury objectives, sediment quality objectives and the trash policy Mercury contamination in California reservoirs biological integrity plan, cadmium objectives and chlorine residual objectives NPS Implementation and Enforcement Policy wetlands and riparian areas policy	0.2 PYs (Basin Planning) TMDL TMDL NPDES/ Timber NPS WQC	None None None	None None None
6	Secondary MCLs	High	Re-evaluate use of secondary MCLs as WQOs. Defer to the SNMP for possible development of a regulatory process	See Issue 1	None	Revisit after completion of SNMP

Summary of 2014 Triennial Review Issues, Current Actions and Resources, and Needed Actions and Resources from FY 14-15 through FY 16-17

Issue No.	Issue Title	Priority	Current Actions and Resources (Continuing and Proposed)		Needed Actions and Resources (Currently Unfunded with Estimated Funding Needs)			
			Actions	Staff	Contract	Actions	Staff	Contract
7	Protection of Fisheries and Aquatic Life	High	None	None	None	WQOs for DO, Temperature BU re-evaluation (inc. subdividing long reaches, evaluation of appropriate WARM/COLD designations)	0.5 PYs/yr/amendment 0.5 PYs/yr/amendment	\$250,000 for DO \$500,000 for Temp. \$200,000 for each BU/waterbody
8	Current USEPA Criteria	High	Coordination with State Board Evaluate water quality objectives for ammonia	See Issue 5 NPDES	None Stakeholder funding	Develop basin plan amendment if necessary Current 304a criteria and methodology including use of the biotic ligand model for copper pH/turbidity, mercury, and pesticides	0.5 PYs/yr 0.5 PYs/yr for 2 yrs to review current criteria (inc. Cu) 0.5 to 1 PYs for one year/WQO to evaluate need for WQOs and 0.5 PYs/yr/WQO for 3 yrs to conduct amendments	None None None
Tulare Lake Basin Specific								
9 - TLB	EC Effluent Limit	High	CV-SALTS may evaluate as part of the SNMP Variance Policy, including exception provisions	See Issue 1	None	Evaluate need to revise EC limits after SNMP are completed	None	None
10 - TLB	Wetlands	None	None - Staff will work with SB on Wetlands Policy	See Issue 5	None	None	None	None
11 - TLB	Groundwater Assessment and Control	None	Complete through the Groundwater Quality Protection Strategy	See Issue 1	None	Evaluate based on results from workplan (e.g. potential for issues related to arsenic, petroleum, oils, etc.)	None	None