Regional Water Quality Control Board, Central Valley Region
2011 Triennial Review
Response to Comments
Water Quality Control Plan for the
Sacramento River and San Joaquin River Basins

The Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) has provided opportunities for the public to submit written comments on the 2009-2010 Triennial Review. This document contains written responses to comments received pertaining to the Triennial Review of the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins.

Written comments were received prior to the 13 August 2009 workshop from:

1. Ms. Kari E. Fisher, Associate Counsel, and Justin E. Fredrickson, Environmental Policy Analyst, California Farm Bureau Federation (1-3)
2. Ms. Debbie Webster, Executive Officer, Central Valley Clean Water Association (4-6)
3. Mr. Jeffrey R. Single, Ph.D., Regional Manager, Department of Fish and Game, Central Region (7)
4. Ms. Melissa A. Thorme, Downey Brand, on behalf of the City of Tracy (8-10)
5. Mr. Matthew Mitchell, United States Environmental Protection Agency, Region IX, (11-19)
6. Ms. Jo Anne Kipps, Fresno, CA (20)
7. Mr. Gordon Plantenga and Mr. Mark Miller, Nevada County Sanitation District No. 1 (21)
8. Mr. Rich Gigliotti, Director, PG&E Land Services, Pacific Gas and Electric Company (22-24)
9. Mr. Stan R. Dean, Director of Policy and Planning, Sacramento Regional County Sanitation District (25-26)
10. Mr. Kenneth Petruzzelli, O'Laughlin & Parris LLP (27-32)
11. Mr. John Herrick, South Delta Water Agency (33-36)
12. Ms. Elaine Archibald, Executive Director, California Urban Water Agencies (37)

The following entities submitted basin planning comments as part of the 2008 Clean Water Act Section 303(d)/305(b) Integrated Report process:

13. Mr. Art O'Brien, City of Roseville (38)
14. Mr. Donald P. Freitas, Contra Costa Clean Water Program (39)
15. Mr. Parry Klassen, East San Joaquin Water Quality Coalition (40)
16. Mr. Jerald James, Madera County (41)
17. Mr. Mike Wackman, San Joaquin County Delta & Water Quality Coalition (42)

18. Ms. Karna E. Harrigfeld, Stockton East Water District (43)

Verbal comments were received during the 13 August 2009 workshop from:

19. Ms. Valerie Kincaid, San Luis & Delta Mendota Water Authority (44-45)
20. Ms. Karna Harrigfeld, Stockton East Water District (46-47)
21. Mr. Ed Cheslak, Pacific Gas & Electric Co. (48)
22. Mr. Steve Bailey, City of Tracy (49)
23. Mr. Ken Petruzzelli, San Joaquin River Group (50-53)

The following entity submitted basin planning comments as part of the public review of the draft Basin Plan Amendments to Address Selenium Control in the San Joaquin River Basin:

24. Ms. Susan K. Moore, United State Department of the Interior, Fish and Wildlife Service (54)

Written comments were received by 29 August 2011 for the October 2011 hearing from:

25. Mr. Ken Petruzzelli, San Joaquin River Group (55-58)
26. Mr. William P. Lewis, City of Live Oak (59)
27. Ms. Betsy Cawn, Essential Public Information Center (60-62)
28. Ms. Debbie Webster, Central Valley Clean Water Association (63-69)
29. Mr. Jason Lofton, Sacramento Regional Wastewater Treatment Plant (70-74)
30. Dr. Jeffrey R. Single, Ph. D., Department of Fish and Game, Central Region (75-76)
31. Ms. Chris Malan, Living Rivers Council (77-86)

Following are the responses to the comments.

<u>Ms. Kari E. Fisher, Associate Counsel, and Justin E. Fredrickson, Environmental Policy Analyst, California Farm Bureau Federation)</u>

1. *Beneficial Use Dedesignations should continue to occur, especially in water ways that are inappropriately designated as MUN. Proper application of appropriate beneficial use designations to water bodies, which may result in numerous dedesignations, must occur.*

   The Regional Board should look to its past policy documents and publications to initiate dialog with stakeholders and other agencies with the goal of developing a planning process to appropriately apply proper beneficial uses to all water bodies. Farm Bureau appreciates the magnitude of this endeavor; however, we believe a well-prioritized process

that is enlightened by public input is superior to ad-hoc adjustments driven by State Board Order or judicial mandate.

In previous Triennial Review Work Plans, the Central Valley Water Board has prioritized issues addressing appropriate beneficial use designations and water bodies dominated by NPDES discharges and agriculture discharges. Staff is proposing that these issues remain a high priority. Issues 2, 3 and 4 (EDWs, ADWs, and Beneficial Use Designations) describe possible approaches to address these concerns. The Central Valley Water Board is interested in exploring approaches that will address more than one water body at a time. Staff is available to meet with interested stakeholders over basin planning concerns.

2. *The Farm Bureau believes that it is essential for the Regional Board to develop a sound policy for effluent dominated water bodies that includes, but is not limited to, agricultural dominated water bodies and agricultural conveyance facilities. The importance of this issue cannot be overstated as, nearly thirty years after first acknowledging that the Basin Plan's beneficial use designations remain uncompleted, there is still no plan or priority process to address this fundamental requirement. The importance and need for an effluent dominated water bodies policy requires development of a self-standing, near-term activity and not as a subset of a potential future irrigated lands program.*

   The 'tributary rule' that currently extends designated beneficial uses in one water body to any water bodies tributary to that water body that lack their own formally designated beneficial uses is overly coarse and unworkable, as a practical matter, simply because it would tend to make upstream dischargers in agricultural dominated water bodies, for example, theoretically liable for one or more unachievable standards that do not, in fact, reflect any actual use that is locally supported by said agricultural dominated water way. Also, because of the practical and logistical difficulty of enforcing or applying the tributary rule to each individual water body, the tributary rule does not in fact accomplish its alleged regulatory purpose of protecting or improving water quality, but does unreasonably and unpredictably expose individual dischargers to undue risks or potential enforcement and excessive compliance costs and even prosecution.

   As an alternative to the tributary rule, the Board can follow established processes to formally designate beneficial uses in an upstream water body or, subtractively, 'dedesignate' specific beneficial uses that would otherwise extend to that water body by virtue of tributary. Such processes, however, have likewise shown themselves to be extremely cumbersome and are, consequently, very nearly unworkable as the tributary rule itself.

As opposed to rote application of the tributary rule, therefore, or a case-by-case, location-specific designation, dedesignation, or enforcement, a more workable potential approach for the Regional Board's consideration in this Triennial Review might involve a new policy that seeks to reasonably protect broad downstream beneficial uses without impairing more narrowly defined uses above, by more holistically and realistically approaching water quality on a broad watershed basis.

Staff is proposing that issues addressing water bodies dominated by NPDES discharges and agricultural dominated water bodies remain a high priority. See Issues 2 and 3 for more information. Beneficial use designations and dedesignations must follow federal and state laws and regulations and are not conducted as part of the Board's permitting activities. The Central Valley Water Board is interested in addressing beneficial use issues in a holistic manner in compliance with federal and state laws and regulations and within financial constraints. Staff is available to meet with stakeholders to explore any feasible options. See Issue No. 4 (Beneficial Use Designations) for more details.

3. *A policy to address and manage salt in the Sacramento River and San Joaquin River Basins is needed. As the Regional Board observes, certain regulatory tools or controls on salinity lie within the Board's jurisdiction, while other aspects which might be required for such a comprehensive management approach, lie outside of the Board's jurisdictional reach. Without a doubt, however, excessive accumulation of salts in Central Valley solids and waters is a serious problem and a long-term, regional threat to the viability of agricultural activities in certain areas of the Central Valley. Accordingly, a concerted long-term effort to address this problem is, in our view, not only desirable, but absolutely necessary. While Farm Bureau readily acknowledges as much, however, we would also draw the Board's attention to its own observation that regulatory Basin Plan elements of comprehensive salinity management plan could potentially "result in more restrictive discharge limits, requirements to conduct costly studies, implementation of treatment measures or projects to manage salt, and potentially prohibition of certain discharges." To integrate parallel efforts and minimize such detrimental impacts of a purely regulatory approach on existing economic uses, therefore, it will be critically important to include proper coordination and integration with all interested and applicable entities and stakeholders, and also to coordinate closely with on-going efforts occurring independently of the Board's jurisdiction, including both salinity management efforts and the potential of new infrastructure to more fundamentally address root causes of the current salt imbalance, particularly on the westside San Joaquin Valley.*

Staff recommends that holistic salt issues be addressed through the CV-SALTS effort. The Central Valley Water Board welcomes and encourages the participation of all stakeholders in the CV-SALTS effort. See Issue No. 1 (Salt and Nitrate Management) for more details.

Ms. Debbie Webster, Executive Officer, Central Valley Clean Water Association (CVCWA)

4. *In general, CVCWA would support an effort by the Regional Water Board to undertake a comprehensive review of the Basin Plan as a whole. The Basin Plan has not changed significantly since its original inception in 1975. As a result, the Basin Plan is out of date and in many instances no longer relevant. However, CVCWA also understands that the lack of financial resources prevents the Regional Water Board from reviewing the Basin Plan in its entirety. In light of the Regional Water Board's limited resources, CVCWA has identified several Tier One priority issues that CVCWA urges the Regional Water Board to address during this triennial review period. We have also identified several Tier Two issues that should be considered should resources allow.*

   The Central Valley Water Board thanks CVCWA for providing recommendations for Triennial Review Work Plan issues.

5. *Tier One Issues:*

   a. *Salt Management Policy: CVCWA commends the Regional Water Board for the progress made in the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) basin planning effort. CVCWA is a founding member of the non-profit Central Valley Salinity Coalition, which is working hand in hand with the Regional Water Board and other stakeholders to develop a comprehensive salt management strategy for the Central Valley. This collaborative effort to develop and implement a comprehensive salinity and nitrate management program must remain a top priority during this triennial review period. Although some of the solutions to the salinity issues in the Central Valley are outside of the Regional Water Board's jurisdiction, the success of the CV-SALTS program hinges on the Regional Water Board's support during this triennial review process to evaluate beneficial uses and water quality objectives in the Basin Plan.*

   The Central Valley Water Board thanks CVCWA for participating in the CV-SALTS effort. See Issue No. 1 (Salt and Nitrate Management) for more details.

b. *The water quality objective for chemical constituents incorporates by reference primary and secondary maximum contaminant levels (MCLs), which are drinking water standards adopted by the Department of Health Services. Both apply to drinking water at the tap as it is delivered by drinking water agencies to consumers. Drinking water providers are required to meet primary MCLs; however, the secondary MCLs are recommendations based on consumer acceptance levels and are therefore unrelated to human health and welfare or the protection of aquatic life. For example, the secondary MCL for iron is set at a level to protect laundry from staining. As set forth in the Basin Plan, the secondary MCLs apply directly to the receiving water without considering that filtration (or satisfaction of specific turbidity requirements) is required prior to use by consumers for drinking water. In other words, rivers and streams that are sources of drinking water must meet the same levels for some constituents as tap water even though such levels are not related to human or aquatic health. In addition, the same drinking water will be filtered, which will remove the constituent of concern to an acceptable level, prior to being used by consumers. The application of such secondary MCLs to natural waterways is inappropriate when one considers the aesthetic basis for secondary MCLs and the treatment that will occur prior to use by consumers.*

In the State Board's recent action on the City of Lodi permit, the adverse unintended consequences of the prospective incorporation by reference of secondary MCLs were evident. Despite the reasonable position taken by the Regional Water Board—that the salinity objectives may be interpreted flexibly for water quality purposes just as the MCLs are applied on a case-by-case basis—the State Water Board found that the low end of the numeric ranges must be applied to discharges. Therefore, the Basin Plan must be amended to delete the secondary MCLs. If there are specific secondary MCLs that the Regional Water Board deems necessary to protect uses of the Region's waterways, the Regional Water Board should adopt water quality objectives for those constituents pursuant to Porter-Cologne. At a minimum, the Regional Water Board should amend the Basin Plan to clarify how secondary MCLs should be applied to receiving waters (i.e. dissolved standards and subject to ranges).

The Central Valley Water Board is also interested in evaluating the use of secondary MCLs as water quality objectives and will include this issue in the Triennial Review Work Plan as Issue No. 11 (Secondary MCLs as Water Quality Objectives).

c. *CVCWA consists of 60 local public agencies located within the Central Valley region that provide wastewater collection, treatment, and water recycling services to millions of Central Valley residents and businesses. Many of our member agencies operate wastewater treatment plants that discharge to effluent and agricultural dominated water bodies with inappropriately designated uses. In most instances, inappropriate uses are attributed to these water bodies through the Regional Water Board's broad application of the tributary statement rather than site-specific analyses of appropriate beneficial uses.*

The de-designation of beneficial uses, like designation of beneficial uses, requires a lengthy and resource-intensive use attainability analysis (UAA). De-designations and designations cannot occur effectively in the absence of a clear and efficient process for conducting UAAs. CVCWA commends the Regional Water Board for de-designating the MUN, COLD, SPWN and MIGR beneficial uses on Old Alamo Creek during the last triennial review period. However, the difficulty and expense of de-designating this effluent dominated water body, despite the State Water Board's acknowledgment in a 2002 Order that beneficial uses were improperly designated, highlights the need for the Regional Water Board to re-examine its policy and practice for addressing de-designations, especially on effluent and agricultural dominated waterbodies.

Further, the Regional Water Board should prioritize reconsideration of the broad application of the tributary rule and the development of a policy for conducting UAAs. The Regional Water Board should work collaboratively with interested parties to develop a process for conducting UAAs. By having a set process in place, UAAs can be more efficient and cost effective for both designating and de-designating beneficial uses.

Beneficial use designations and dedesignations must follow federal and state laws and regulations. However, within the constraints of federal and state laws and regulations, the Central Valley Water Board is interested in developing an efficient process for evaluating beneficial uses and is pleased that CVCWA wishes to help in this effort. Issue No. 4 (Beneficial Use Designations) in the Triennial Review Work Plan includes an initial discussion of this issue and some approaches that might address this issue.

d. *Remove Non-Detect Standard for Organochlorine Pesticides: The pesticide objective for the Sacramento and San Joaquin River Basins includes an objective for chlorinated hydrocarbon pesticides*

that states that they "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." (Basin Plan, III.6.00.) This provision was adopted into the Basin Plan in 1975 and was classified as an interim objective by the Regional Water Board due to a lack of information regarding tolerance levels. (A Review of the Administrative Record for the Central Valley's Water Quality Control Plan 1975-1994, September 2003 (Review), at p. 32.) By classifying the pesticide objective as an interim objective, the Regional Water Board intended to develop specific numeric objectives as part of the triennial review process. (Review at p. 32.) However, such follow-up actions have never occurred. As a result, the objective fluctuates with the accuracy of analytical methods rather than being based on the appropriate level to protect the uses of the waterways of the Sacramento and San Joaquin River Basins. Consequently, the non-detect standard should be removed from the Basin Plan.

The Basin Plan does not indicate that this is an interim provision. Regardless of whether the Basin Plan specifies water quality objectives as interim or final, the Central Valley Water Board may revise water quality objectives when it has information that indicates the need to do so. Re-evaluating this water quality objective has been included in Issue No. 7 (Pesticide Control Efforts).

e. *Three Species Chronic Tests: As part of the triennial review, the Regional Water Board should identify the need for a policy that explains how the Regional Water Board intends to interpret three species chronic toxicity tests to determine if the narrative "no toxics in toxic amounts" water quality objective has been violated. Currently, different standards in different permits create confusion and uncertainty amongst the various wastewater agencies throughout the Central Valley.*

The State Water Board is currently evaluating the toxicity control provisions in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP). State Water Board adopted water quality control plans supersede Regional Water Board basin plans for the same geographic area (CWC §13170). The Central Valley Water Board will participate in the State Water Board's process. See Issue No. 12 for State Water Board Plans and Policies and Other Statewide Issues that are under development.

6. Tier Two Issues

a. *CVCWA continues to support and commend the Regional Water Board for its stakeholder-based process to develop a Drinking Water Policy for the Central Valley. It is unfortunate that current funding issues will cause unknown delay in the development of a comprehensive, scientifically supportable policy for drinking water. In light of this delay, CVCWA urges the Regional Water Board to re-prioritize the stakeholder-based development of an equitable Drinking Water Policy when funding permits. The Regional Water Board should be certain that any Drinking Water Policy developed now or in the future provides reasonable protection for drinking water while ensuring that out-of-Valley interests that benefit from the policy share in the costs of implementing and complying with the final policy.*

The Central Valley Water Board is committed to developing a comprehensive drinking water policy (Central Valley Water Board Resolution No. R5-2004-0091 and R5-2010-0079). Certainly, the funding affects the schedule for completing the policy. However, re-prioritizing this issue will not create a better policy. At this time, there is still momentum and institutional knowledge from the stakeholders that continues to support a high priority for this issue. See Issue No. 9 (Policies for Maintaining Water Quality for Drinking Water) for more details on the status of this policy.

b. *CVCWA commends the Regional Water Board for its commitment to stakeholder outreach in devising a groundwater strategy pursuant to Resolution No. R5-2008-0181. The development of a long-term groundwater strategy should remain a high priority in the triennial review process.*

CVCWA encourages the Regional Water Board to work with the State Water Board to develop a comprehensive groundwater strategy. Due to the many stakeholders who use and/or have the potential to impact groundwater, the Regional Water Board and State Water Board need a collaborative process for developing a scientifically sound policy for the Central Valley and the State. CVCWA prefers a sound groundwater policy to the Regional Water Board's current practice of establishing ad hoc policy on a permit-by-permit basis. In the absence of a sound policy, the Regional Water Board could potentially interpret and re-interpret narrative groundwater objectives much in the same way as done for surface water objectives. This process results in the use of de facto numeric water quality objectives that have not been evaluated under Water Code section 13241.

The Central Valley Water Board agrees that a regionwide, if not a statewide policy, on groundwater protection is important. The Central Valley Water Board works closely with the State Water Board on development and implementation of groundwater programs and policies. The Central Valley Water Board also recognizes the importance of groundwater to the stakeholders of the Central Valley and adopted the Groundwater Quality Protection Strategy or "Roadmap" with Resolution No. R5-2010-0095. See Issue No. 14 (Groundwater Survey and Control Policies for Discharges to Groundwater) and the Central Valley Water Board's webpage for Groundwater Quality[1] for more information.

c. *Pesticide Control Program: CVCWA commends the Regional Water Board for considering the adoption of numeric water quality objectives for pesticides instead of continuing to rely solely on the narrative objectives currently contained in the Basin Plan. Since wastewater agencies may be directly impacted by the adoption of water quality objectives for pesticides, wastewater agencies must be involved as stakeholders in any pesticide basin planning efforts. CVCWA urges the Regional Water Board to prioritize the adoption of numeric water quality objectives for pesticides—established in compliance with the intent and specific requirements of the California Water Code section 13241—in any pesticide basin planning efforts conducted during this triennial review period.*

The Central Valley Water Board has a goal of establishing numeric water quality objectives for pesticides that pose a high risk to surface waters in the Sacramento and San Joaquin River Basins. The public process for amendments to the basin plan has begun. The Central Valley Water Board encourages all stakeholders to participate. Interested persons may subscribe to electronic mailing lists for any of the basin plan amendments through our website at:

http://www.waterboards.ca.gov/resources/email_subscriptions/reg5_subscribe.shtml

Postal mail notifications are also available by contacting the staff person for each amendment. See Issue No. 7 for more information on the Central Valley Water Board pesticide control efforts.

<u>Mr. Jeffrey R. Single, Ph.D., Regional Manager, Department of Fish and Game, Central Region</u>

7. *The Department of Fish and Game stresses the importance for COLD beneficial use to remain in the Basin Plan for many Central Valley streams*

[1] Webpage located at:
http://www.waterboards.ca.gov/centralvalley/water_issues/groundwater_quality/index.shtml

and also recommends a priority be given to establish a numeric water quality objective for temperature to protect COLD in the upper and lower San Joaquin River.

Of particular concern in this case is protecting habitat for migrating, spawning, juvenile rearing and outmigrating Chinook salmon and steelhead in the San Joaquin River.

It is imperative the COLD beneficial use designation remains for the San Joaquin River, especially the mainstem above the mouth of the Merced River to Friant Dam. At present, migrating salmonids are excluded from entering the San Joaquin River upstream of the mouth of the Merced River by an artificial barrier. The intentional exclusion is necessary due to the lack of suitable habitat and elevated temperatures in reaches of the upper San Joaquin River. However, that may change in the near future as the Friant Restoration Settlement Parties begin implementing the proposed San Joaquin River Restoration Program. The Program has the primary goal of restoring naturally reproducing, self-sustaining spring-run and fall-run salmon populations and other native fish (including steelhead) on the river mainstem, upstream of the mouth of the Merced River to Friant Dam. The Program's guidance document is the Draft Fisheries Management Plan: A Framework for Adaptive Management in the San Joaquin River Restoration Program. The Management Plan identifies temperature among the most important manageable factors for salmonid survival.

In order to protect the COLD designation for beneficial uses in the San Joaquin River, a Basin Plan amendment is needed to establish a numeric water quality objective for temperature.

Numeric objectives for temperature should be at least as stringent to protect the most sensitive fish and wildlife resource protected under the COLD designated beneficial use. In this case, the most sensitive to elevated temperatures would be the basin's salmonid fishery. The EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards are expected to be applied to specified reaches of the San Joaquin River and its major tributaries based on salmonid habitat and temperature requirements for each life stage.

We cannot stress enough the importance of establishing protective temperature requirements in advance of the planned restoration of spring-run and fall-run salmon on the upper San Joaquin River; and also improving the existing populations of fall-run Chinook salmon and steelhead in the river's major tributaries. The Department looks forward to partnering with the Regional Board in this endeavor of maintaining water quality standards for salmonids by establishing and applying effective

numeric objectives for temperature, implementing a plan to achieve those objectives, and helping to restore this region's valued public trust resources.

The Central Valley Water Board strives to protect the beneficial uses of all the waters in its jurisdiction. Certainly, any amendments to modify the aquatic life or habitat beneficial uses will only occur after consultation with the Department of Fish and Game.

Temperature objectives have been identified in the past as a need for spring-run Chinook salmon and steelhead in the Sacramento River watershed. The Central Valley Water Board is also interested in evaluating temperature objectives to protect salmonid habitat in the San Joaquin River. See Issue No. 10 (Protection of Central Valley Fisheries and other Aquatic Life) in the Triennial Review Work plan for more details.

<u>Ms. Melissa A. Thorme, Downey Brand, on behalf of the City of Tracy</u>

8. *The Regional Water Board should expand its analysis of the best method to measure and assess salinity for protection of beneficial uses in the southern Delta beyond Electrical Conductivity (EC) to include analysis of TDS, "effective" EC (only measuring the relevant EC that may impact agricultural beneficial uses), and/or individual salinity-related constituents, and then determine the most accurate and cost-effective manner to regulate salinity for the benefits of all interested in the southern Delta.*

Water quality objectives for the EC for the southern Delta need not be overly conservative so as to be unreasonable or unnecessary for adequate protection of the Agricultural Supply beneficial use. Use of EC as the simple measure of salinity should be re-evaluated by the Regional Water Board, and alternative measures, such as TDS, "effective" EC, or more specific salinity compounds (e.g. if individual constituents that comprise EC are more directly relevant to reasonable protection of beneficial uses and allow compliance flexibility), should be investigated and used if more accurate and reasonable regulation will result. If EC is retained as the measure for salinity, new numeric water quality objectives for EC should be adopted based on recent information and studies, to provide for the reasonable protection of the Agricultural Supply beneficial use. The Regional Water Board must comply with Water Code section 13241 and 13242, if incorporating water quality objectives from updates to the State Water Board's Bay-Delta Plan, or adopting new water quality objectives for the southern Delta.

The south Delta salinity objectives were established by the State Water Board in its Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan). The State

Water Board is in the process of evaluating southern Delta salinity. The Central Valley Water Board coordinates with the State Water Board on the Bay Delta Plan. Currently, the Central Valley Water Board is working on a regionwide policy called the CVSALTS initiative which will address salts and salt compounds. CVSALTS will also include management plans and may be the appropriate venue to evaluate use of EC as the measure of salinity. See Issue No. 1 (Salt and Nitrate Management) for more details.

In addition, staff is working on strategies that would provide interim regulatory solutions for dischargers adversely affected by salinity regulation while the CV-SALTS initiative is under development.

9. *The Basin Plan incorporates by reference the numeric water quality objectives for EC for the protection of agricultural beneficial uses from the 1991 Bay-Delta Plan. The Regional Water Board did not include a prospective incorporation by reference of any future modifications to water quality objectives from the Bay-Delta Plan. The 1991 (and 1995) Bay-Delta Plan applied numeric EC objectives at four locations in the Delta and implementation of those objectives was to occur via regulation of water flow by federal and state agencies controlling Delta water flows and best management practices and waste discharge requirements for non-point source dischargers. See 1991 Bay-Delta Plan at Table 1-1, pgs. 2-2 and 7-5. Without appropriate analysis, the 2006 Bay-Delta Plan suddenly applied the numeric objectives to all waterways within the southern Delta, and implementation was expanded to include restrictions on municipal discharges to the southern Delta. These changes have not been incorporated into the Regional Water Board's Basin Plan.*

As such, only the four compliance points currently referenced in the Basin Plan can be used for impairment determinations for the southern Delta and for reasonable potential determination prior to NPDES permitting decisions. It is the City's understanding from staff at the State Water Board that purported "non-substantive" modifications to the 2006 Bay-Delta Plan's water quality objectives for EC have not yet been approved by the U.S. EPA, and therefore, cannot be used as "applicable water quality standards" for Clean Water Act/NPDES permitting purposes. Under federal case law and federal regulations, state water quality standards adopted after May 30, 2000 are not valid under federal law until explicitly approved by U.S. EPA. See 40 C.F.R. §131.2(c)(2).

If the Regional Water Board wants to incorporate into its Basin Plan the not-yet effective and inadequate 2006 modifications to the Bay-Delta Plan, the Regional Water Board must first undertake analysis in compliance with Water Code section 13241 (analyzing whether expansion of the objectives, both geographically and to the specified types of discharges, is appropriate), and amend the Basin Plan's implementation plan for EC to

incorporate a plan for relevant and affected municipal dischargers, including the City. Prior to implementation, the revised water quality objectives for EC would need to be approved by the U.S. EPA. None of these activities has yet occurred; therefore, the Regional Water Board cannot yet impose the EC objectives from the 2006 Bay-Delta Plan. The same analysis and compliance with Water Code sections 13240-13247 is required for any new water quality objective(s) for EC that the Regional Water Board may adopt in lieu of applying the 2006 Bay-Delta Plan water quality objectives for EC.

In accordance with California Water Code section 13170, water quality control plans adopted by the State Water Board supersede Regional Water Board basin plans for the same geographic area. No formal action is required on the part of the Central Valley Water Board to amend its Basin Plan in order for the most current Bay-Delta Plan to take effect. Nevertheless, the Central Valley Water Board adopted non-regulatory amendments in 2009 to update various parts of the Basin Plan including the reference to the State Water Board 2006 Bay-Delta Plan.

The USEPA formally approved the Bay-Delta Plan standards on 26 September 1995. The 2006 Bay-Delta Plan was adopted by the State Water Board in Resolution No. 2006-0098, in which the State Water Board found that there were no substantive amendments to any water quality standards. Therefore, USEPA approval of the 2006 Bay-Delta Plan was not required. The 2006 Bay-Delta Plan went into effect upon approval by the Office of Administrative Law which occurred on 27 June 2007.

10. *The Regional Water Board's Basin Plan does not contain an implementation plan describing how water quality objectives for EC incorporated by reference from the Bay-Delta Plan are to be implemented in relation to municipal wastewater discharges. This lack of a comprehensive implementation plan violates Water Code section 13242 and should be identified as a priority project as a result of this Triennial Review process. It is imperative that the Regional Water Board provide a comprehensive implementation plan for salinity that specifically addresses feasible steps for municipal wastewater dischargers to take to achieve compliance.*

The Bay-Delta Plan includes any necessary implementation programs. The Central Valley Water Board's Basin Plan is not required to include an implementation program for the Bay-Delta Plan. However, the Central Valley Water Board is free to develop implementation programs for waste discharges in the Delta, subject to State Water Board approval. This concern is discussed further in Issue No. 1 (Salt and Nitrate Management).

Mr. Matthew Mitchell, United States Environmental Protection Agency, Region IX

11. *The issue to "Develop Temperature Criteria to Protect Chinook Salmon and Central Valley Steelhead" should continue to be identified as a high priority in the upcoming Work Plan. The Bay-Delta Water Quality Control Plan (State Water Resources Control Board, 1995) sets a narrative objective of doubling of natural production of Chinook salmon and endorses a basin-wide approach to achieving this objective. Any work undertaken by the Regional Board on temperature criteria should be conducted in the context of the Bay-Delta Plan narrative objective and plans and activities to support this objective.*

    In 2003, EPA Region 10 issued regional guidance for developing numeric temperature standards for the Pacific Northwest to protect cold water (salmonid) beneficial uses. This guidance was endorsed by both NOAA Fisheries and the U.S. Fish and Wildlife Service (FWS). While EPA Region 9 has not adopted similar guidance, we generally support the scientific approach proposed in this guidance, which recognizes factors of biology, life stage/timing, and the natural thermal patterns. We are interested in discussing the merits of this approach with the Central Valley Regional Board technical staff and the appropriate offices of NOAA and FWS during this triennial review.

    The Central Valley Water Board also believes temperature objectives protective of salmonids are important. Staff will consult with EPA, NOAA Fisheries and US Fish and Wildlife Service on any amendments to the Basin Plan affecting salmonids. See Response to Comment No. 7 and Triennial Review Work Plan Issue No. 10 (Protection of Central Valley Fisheries and other Aquatic Life).

12. *EPA would like to see the two outstanding disapprovals from the May 26, 2000 action resolved. The tributary rule and Delta DO disapprovals remain outstanding.*

    a. *On September 6, 2002, the Regional board adopted an amendment that would have resolved the tributary rule disapproval by clarifying the Regional Board's use designation process; however, that amendment was withdrawn from State Board consideration in 2003 and, therefore, has never been submitted to EPA for approval. We strongly encourage the Regional Board to complete the process of resolving this disapproval.*

    The Executive Officer withdrew the amendment addressing the tributary rule pending the resolution of ongoing litigation. The Central Valley Water Board will consider this amendment when the litigation is settled.

b. EPA and Regional Board staff have discussed options for resolving the Delta DO disapproval. That disapproval could be resolved by deleting the exemption from DO objectives that is currently in the Basin Plan for Delta water bodies "which are constructed for special purposes and from which fish have been excluded or where the fishery is not important as a beneficial use." To our knowledge, no such waters have been identified.

The Central Valley Water Board staff agrees that no water bodies have been identified which are constructed for special purposes and from which fish have been excluded or where the fishery is not important as a beneficial use. Re-evaluation of the dissolved oxygen objectives has been included in Triennial Review Work Plan Issue No. 10 (Protection of Central Valley Fisheries and Other Aquatic Life).

13. *In EPA's May 24, 2000 action on the 1996 "Grassland amendments" to the Basin Plan, we reserved action on the omission of REC-1 and REC-2 uses for the Grassland wetland water supply channels, pending the Regional Board's submission of additional information from the administrative record to justify this omission, consistent with the requirements of 40 CFR 131.10(j). Since then, Regional Board staff have informed us that a search of the administrative record did not yield the necessary information. "Recreation in and on the water" are goal uses identified in section 101(a)(2) of the Clean Water Act (CWA). Federal regulations at 40 CFR 131.20(a) require States to reexamine, every three years, any water bodies for which goal uses of the CWA have not been designated to determine if any new information has become available. If such new information indicates that the uses specified in section 101(a)(2) of the Act are attainable, the State must revise its standards accordingly. During the upcoming triennial review, the Regional board should either submit the necessary information to EPA to justify omission of the REC-1 and REC-2 uses or amend the Basin Plan to designate these uses for the Grassland wetland water supply channels.*

The Central Valley Water Board considers beneficial use designations as a high priority. The evaluation of REC-1 and REC-2 beneficial uses in the Grassland wetland water supply channels has been included in Triennial Review Work Plan Issue No. 4 (Beneficial Use Designations).

14. *We support the current stakeholder group which is currently working with the Regional Board to establish a Delta methylmercury TMDL and supporting Basin Plan amendment which would include methylmercury fish tissue objectives. However, if the TMDL and water quality objectives are not adopted by the time the triennial review Workplan is scheduled to be adopted, we recommend that the Regional Board adopt the draft methylmercury fish tissue objectives as soon as possible.*

On 22 April 2010, the Central Valley Water Board adopted methylmercury fish tissue objectives for the Delta as part of the Delta Mercury Control Program in Resolution No. R5-2010-0043. In addition, the State Water Board is working on statewide fish tissue objectives for methylmercury.

15. *On August 24, 2007, EPA completed a Reasonable and Prudent Measures (RPM) required by the California Toxics Rule (CTR) Biological Opinion after consultation with the FWS and NOAA Fisheries. The RPM required us to determine appropriate pentachlorophenol (PCP) water quality criteria for waters in which early life stages of salmonids were present, and further, under conditions of low DO and high temperatures. As a result of the RPM, EPA determined that Site Specific Criteria (SSC) should be adopted for waters in CA where early life stages (ELSs) of salmonids are present, and a lower SSC where they may be under conditions of low DO and high temperatures. EPA promulgated freshwater chronic criteria for PCP of 15 ug/l in the CTR for all inland surface waters. EPA is now in agreement with FWS and NOAA Fisheries that more stringent SSC should be adopted in waters containing ELSs of salmonids: 10 ug/l where ELSs of salmonids are present and 5 ug/l in those waters that also have low DO and high temperatures. We recommend that the Regional Board identifies freshwaters in which ELSs of salmonids may be present and includes the updated freshwater PCP criteria for those waters.*

    The Central Valley Water Board considers peer reviewed science and criteria for the protection of all life stages of all aquatic life and thanks the USEPA for providing the most recent criteria for pentachlorophenol. Review of pentachlorophenol has been included in Triennial Review Work Plan Issue No. 13 (Current USEPA Criteria). However, it should be noted that most water bodies with ELS salmonids are also protected by the municipal and domestic supply (MUN) beneficial use. The CTR criterion for human health consumption of water and organisms is 0.28 ug/l.

16. *The Regional Board should accelerate its efforts to identify and implement controls necessary to reduce selenium loading to Mendota Pool. In listing Mendota Pool as impaired by selenium, the Regional and State Boards noted that the Delta-Mendota Canal is likely a primary contributor of selenium to the Pool. While the Pool is subject to the Basin Plan's site specific selenium objective of 2 ppb monthly mean, the Canal was evaluated for impairment against the CTR criterion of 5 ppb as a 4-day average. We also recommend the Regional Board consider whether a more protective objective should be applied to the Canal in order to protect the downstream uses in Mendota Pool.*

Water quality objectives for selenium have not been established for the Mendota Pool or the Delta Mendota Canal. Therefore, the CTR criterion of 5 ppb as a 4-day average applies to the Pool as well as the Delta Mendota Canal. Any evaluation of selenium impairments for the Mendota Pool using a selenium criterion of 2 ppb as a monthly mean would be incorrect. Any previous listing errors will be corrected in future listing cycles.

17. *Development of policies for maintaining water quality for drinking water was identified as a high priority in the Regional Board's 2005 Workplan, and in the interim a number of excellent reports have advanced this important subject. The Regional Board should continue its work on development of a Central Valley drinking water policy as a high priority.*

    The Central Valley Water Board appreciates your comments. See response to Comment No. 6.a. and Triennial Review Work Plan Issue No. 9 (Policies for Maintaining Water Quality for Drinking Water) for more details.

18. *The Regional Board has several TMDLs under development, and many more awaiting initiation. TMDLs may require revision to beneficial uses, water quality objectives, or policies on implementation, but resources are not currently available to complete this work. We recognize that resources are limited, and encourage the Regional Board to consider options for re-allocating resources, as needed, to ensure appropriate basin planning follow-through on TMDLs.*

    The Central Valley Water Board agrees that completing TMDLs and the basin plan amendments necessary to implement the TMDLs is important. Dedicated funding for TMDL development and implementation is available. However, the resources needed to address all the water bodies listed as impaired far exceed the available funding. The lack of resources affects all Water Board programs making it difficult to redirect more resources to this particular program. Consistent with the Water Board Strategic Plan (State Water Board Resolution No. 2008-0063), staff continues to explore procedures to more efficiently complete and process TMDLs. For example, staff from multiple water boards are working together to address methylmercury impairments from a statewide perspective. See Issue No. 12 (State Water Board Plans and Policies and Other Statewide Issues) for more information.

19. *We also recommend that you use this time to coordinate with Regional Board NPDES staff to ensure that the Workplan continues to include as high priority any Basin Plan activity necessary to support issuance or reissuance of NPDES permit. For example, the 2005 Workplan did a good job summarizing high priority beneficial use designations, many of*

which would have an impact on NPDES permit issuance. We recommend that you continue to work with Regional Board NPDES staff to see if any new Basin Plan activities may be needed and to ensure that existing high priority Basin Plan activities are carried out.

The planning staff regularly coordinates with the permitting staff as well as staff from other Water Board programs to identify and address planning issues. The Triennial Review Work Plan Issue Nos. 2, 4 and 11 (EDWs, Beneficial Use Designations and Secondary MCLs) provide work plans to address concerns expressed by NPDES permit stakeholders.

Ms. Jo Anne Kipps, Fresno, CA

20. *The Basin Plan should be amended to delete the Guidelines for the Land Disposal of Stillage Waste from Wineries due to their ineffectiveness in protecting the beneficial uses of groundwater underlying stillage disposal operations.*

If the guidelines are revised, then the revised guidelines should be based on studies to determine the appropriate application rates to prevent water quality degradation. These studies should evaluate loading rates based on soil type or quality of winery wastewater.

The Board is involved in a comprehensive effort called the CVSALTS initiative to address salinity and nitrate problems in the Central Valley and adopt long-term solutions that will lead to enhanced water quality and economic stability. Food processing wastes are one of the categories that will be evaluated in the CVSALTS initiative. Specific evaluation of winery waste guidelines will be included in Triennial Review Work Plan Issue No. 1 (Salt and Nitrate Management).

Mr. Gordon Plantenga and Mr. Mark Miller, Nevada County Sanitation District No. 1

21. *Addressing beneficial use issues and development of regulatory guidance to address water bodies dominated by NPDES discharges should be high priorities.*

The Central Valley Water Board agrees that these issues should be high priorities. See Triennial Review Work Plan Issue Nos. 2 and 4 (EDWs and Beneficial Use Designations) for more details.

Mr. Rich Gigliotti, Director, PG&E Land Services, Pacific Gas and Electric Company

22. *The Basin Plan would be more effective if it identified beneficial use designations for separate water body segments or individual reaches within longer rivers, and particularly for water bodies with large changes in elevation, species assemblages, and other characteristics.*

The Central Valley Water Board agrees that long water body reaches often do not have the same characteristics from its head waters to its outflow due to changes in elevation, riparian vegetation cover, climate, etc. The Board is committed to addressing beneficial use issues. See Triennial Review Work Plan Issues No. 4 (Beneficial Use Designations) and No. 10 (Protection of Central Valley Fisheries and other Aquatic Life) for more details. The Board looks forward to working with PG&E to address these concerns.

23. *The Basin Plan manages any water bodies with both COLD and WARM beneficial use designations as COLD water bodies for the application of water quality objectives. The most current data associated with both COLD and WARM designations suggest that a new designation for a transitional zone may be most appropriate in this situation. This new designation would be applied to a designated segment or reach. Application of COLD water objectives can have unintended consequences if special status warm water species occur within a water body that has both designations. Such an approach would ensure proper protection for all reaches of a watershed.*

The Central Valley Water Board agrees that water bodies with both COLD and WARM beneficial use designations often have a transitional zone where optimum habitat conditions are not represented by water quality objectives for either the COLD or WARM beneficial uses. See Triennial Review Work Plan Issues No. 4 (Beneficial Use Designations) and No. 10 (Protection of Central Valley Fisheries and other Aquatic Life) for more details. The Board looks forward to working with PG&E to address these concerns.

24. *PG&E is particularly interested in the beneficial uses of the following water bodies:*

(1) Upper North Fork Feather River from Lake Almanor to Lake Oroville
(2) Pit River
(3) South Yuba River between Lake Spaulding and Englebright Reservoir
(4) Willow Creek in Madera County

These water body segments have been included for evaluation in Triennial Review Work Plan Issue Nos. 4 (Beneficial use Designations).

Mr. Stan R. Dean, Director of Policy and Planning, Sacramento Regional County Sanitation District

25. *The following priority issues should be addressed before the next triennial review:*

    a. Salt Management Policy
    b. Drinking Water Policy
    c. Ammonia & Chlorine Objectives
    d. Pesticide Control Program
    e. Remove Incorporation by Reference of Secondary Maximum Contaminant Levels
    f. Remove Non-Detect Standard for Organochlorine Pesticides
    g. Three Species Chronic Test

    The Central Valley Water Board appreciates the assistance from the Sacramento Regional County Sanitation District in prioritizing the basin planning issues. See Triennial Review Work Plan Issue Nos. 1, 9, 12, 13, 7, and 11 (Salt and Nitrate Management, Policies for Maintaining Water Quality for Drinking Water, Participation in State Water Board Plans and Policies, Current USEPA Criteria, Pesticide Control Efforts, and Secondary MCLs as Water Quality Objectives) for more details regarding salt management, drinking water, ammonia and chlorine objectives, toxicity control provisions for the SIP, pesticide control programs and the secondary maximum contaminant levels. Also, please see responses to Comment Nos. 5 and 6.

26. *The Regional Water Board should adopt bacteria objectives that are based on appropriate indicators such as fecal coliform, enterococcus or e. coli. The Regional Water Board should also adopt a plan for the implementation of the bacteria objectives that properly guides staff on the linkage between adopted water quality objectives and water quality based effluent limitations.*

    The State Water Board has initiated a process to revise bacterial standards for water contact recreation in fresh waters in California. State Water Board adopted water quality control plans supersede Regional Water Board basin plans for the same geographic area (CWC §13170). The Central Valley Water Board will participate in the State Water Board's process. See Triennial Review Work Plan Issue No. 12 for more information on the State Water Board's plans and policies and other statewide issues.

Mr. Kenneth Petruzzelli, O'Laughlin & Parris LLP

27. *The most important issues for the Board to address are Beneficial Use Designations and Effluent and Agriculture Dominated Water Bodies.*

    The Central Valley Water Board should solicit information to compile a list of water bodies falling under exceptions 2a and 2b in the Sources of Drinking Water Policy.

    The Central Valley Water Board agrees that addressing beneficial use designations and developing policies to address concerns with effluent and agriculture dominated water bodies are a priority. Suggested procedures for moving forward on these issues will be included in the Work Plan. See Triennial Review Work Plan Issue Nos. 2, 3 and 4 (EDWs, ADWs and Beneficial Use Designations) for more details.

28. *The Central Valley Water Board must impose discharge controls on in-Delta discharges of salts by agricultural, domestic, and municipal dischargers as required by the 2006 Bay-Delta Plan.*

    The Central Valley Water Board includes basin plan objectives from both the Basin Plan and the Bay-Delta Plan in waste discharge requirements, including NPDES permits, for dischargers in the Delta.

29. *The Chemical Constituents objective contained in the Basin Plan currently incorporates primary and secondary maximum contaminant levels (MCLs) by reference for application to MUN-designated surface waters. However, Secondary MCLs apply to water provided to the public by community water systems where a community water system is a public water system serving at least 15 service connections of 25 individuals daily at least 60 days out of the year. Also, since Secondary MCLs apply to water provided to the public, they apply at the tap and not the source.*

    The prospective incorporation by reference and includes future changes to be added to the Basin Plan without consideration of the required factors in Water Code section 13241. The Central Valley Regional Board may consider amending the Basin Plan language to incorporate only MCLs adopted as of a date specified and then update the language in future Basin Plan amendments.

    See response to Comment No. 5.b.

30. *The reference to the Bay-Delta Plan should remove the year and reference the Bay-Delta Plan as the "current" edition.*

    This recommendation will be considered in a future basin plan amendment to update the language of the Basin Plan. In addition, Water Board staff

are discussing the most efficient procedure for consistent referencing of State Water Board plans and policies in regional water board basin plans.

31. *The Basin plan designates water bodies with potential beneficial uses. "Potential" uses are not defined in federal or state regulations, the Basin Plan or any state plan or policy. For clarification, the Central Valley Water Board should define what a "potential beneficial use" is.*

The Clean Water Act requires states to adopt water quality standards and water quality standards are made up of the designated uses and the criteria to protect the uses. "Potential" and "Existing" uses identified in the Basin Plan are designated uses as defined in 40 CFR §131.3(f). Designated uses may be dedesignated after undergoing the processes specified in federal and state laws and regulations. Other regional water board basin plans also use the terms "Potential" and "Existing." Water Board staff are discussing these terms and their definitions. Addressing the term "potential beneficial uses" can be considered in a future basin plan amendment.

32. *The Basin Plan uses the term "natural receiving water temperature" without defining it. The term is defined in the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California (Thermal Plan). While the Thermal Plan applies to coastal and interstate waters and to enclosed bays and estuaries, the State Water Board has used the Thermal Plan definition for intrastate waters in water quality orders. When an agency uses an identical term that has a specific definition in similar regulations, the use of the term is presumed to have the same meaning. Consequently, the definition of natural receiving water temperature for the Temperature Objective for intrastate waters is the same as that in the Thermal Plan. For clarification, the CVRWQCB should therefore either include the definitions of natural receiving water temperature, elevated temperature waste, and thermal waste in the Basin Plan or adopt the definitions by referencing the Thermal Plan.*

In State Water Board Order No. WQ2002-0015, the State Water Board states that "Natural receiving water temperature" is defined in the State Water Board's Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (1975) (Thermal Plan). It means "[t]he temperature of the receiving water at locations, depths, and times which represent conditions unaffected by any elevated temperature waste discharge or irrigation return waters."

The recommendation to define "natural receiving water temperature" in the Basin Plan will be considered in a future basin plan amendment to update the language of the Basin Plan.

Mr. John Herrick, South Delta Water Agency

33. *The Central Valley Water Board should promptly adopt and implement salinity standards for the San Joaquin River above Vernalis as instructed by the State Water Board. Although various upstream efforts by water districts have apparently decreased the load of salt in the river during some times, the concentration problems remain. Regional Board efforts to date have placed no time line on actually addressing the salinity problem, only deter action or enforcement. It is clear that the salt problem derives from the surface and subsurface drainage from CVP service area on the west side of the valley. The only possible solutions to the salinity problem are (i) removal of salts from discharges, (ii) cessation of discharges, or (iii) dilution of the concentrations. The Basin Plan should recognize these limited options and move forward to require action on the appropriate one or ones.*

    The Central Valley Water Board continues to work on salinity objectives for the San Joaquin River above Vernalis. Recently, in order to provide more coordination, this work has been incorporated into the CV-SALTS effort. Salinity issues in the Central Valley are expected to be addressed by the CV-SALTS effort. See Triennial Review Work Plan Issue No. 1 (Salt and Nitrate Management) for more details.

34. *The Basin plan must address the issue of minimum flows on the San Joaquin. Current DFG modeling, as well as current NMFS and USFWS Biological Opinions indicate that additional flows are needed in order to preserve endangered and threatened species.*

    Flow objectives are part of water rights. Therefore, the State Water Board is responsible for determining minimum flows if appropriate.

35. *The Basin Plan should reaffirm both federal and state anti-degradation laws. There are ongoing efforts to relax such protections to the detriment of beneficial uses. The Regional Board should take note of recent reports which indicate that salinity may likely affect fish, by creating false gradients which impair the normal migrations.*

    The Central Valley Water Board implements anti-degradation consistent with state and federal regulations found in State Water Board Resolution No. 68-16 and 40 CFR 131.12, respectively. The Basin Plan recognizes both sets of regulations on Page IV-8.00.

36. *"Finally, our comments to the various TMDL processes are herein incorporated."*

This response to comments includes basin planning comments submitted as part of the 2008 Clean Water Act Section 303(d)/305(b) Integrated Report process. None of the comments submitted by the South Delta Water Agency were identified as basin planning comments.

Ms. Elaine Archibald, Executive Director, California Urban Water Agencies

37. *The Central Valley Drinking Water Policy should continue to be listed as a high priority item in the Triennial Review Work Plan.*

The Central Valley Water Board appreciates the assistance from the California Urban Water Agencies in prioritizing the basin planning issues. See Triennial Review Work Plan Issue No. 9 (Policies for Maintaining Water Quality for Drinking Water) for more details drinking water policy development.

Mr. Art O'Brien, City of Roseville

38. *Pleasant Grove Creek should be designated WARM rather than COLD. The Regional Water Board staff should reconsider the appropriateness of listing the upper Pleasant Grove Creek for dissolved oxygen. The current dissolved oxygen standard applicable to Pleasant Grove Creek was assigned, in part, based on the Basin Plan's "tributary statement," which designated the COLD beneficial use year-round. Based on the fact that upper Pleasant Grove Creek is a valley floor water body that is seasonally low-flow and ephemeral in nature, and supports abundant plant and animal communities, it is highly unlikely that a substantial change in the frequency with which this reach experiences dissolved oxygen levels below 7 mg/l could be affected by reasonable, implementable load restrictions placed on nutrients or other constituents/parameters affecting reach dissolved oxygen levels. If natural factors are the primary reason why the dissolved oxygen levels in the upper reach of Pleasant Grove Creek fall below 7 mg/l for a portion of the day during the late spring through fall period, annually, then 303(d) listing the water body reach and conducting a TMDL will not meaningfully change the situation.*

Pleasant Grove Creek will be included in Triennial Review Work Plan Issue No. 4 (Beneficial Use Designations) as a water body that should have its beneficial uses reviewed.

Mr. Donald P. Freitas, Contra Costa Clean Water Program

39. *The Kellogg Creek (tributary to Clifton Court Forebay, Contra Costa County; partly in Delta Waterways, central and western portion) listing for unknown toxicity and sediment toxicity appears to be based on the beneficial use designation of Cold Freshwater Habitat. The Cold Freshwater Habitat beneficial use is not appropriate and the Warm Freshwater Habitat is more appropriate for the downstream portions of the creek where the samples were taken (Kellogg Creek at Highway 4 and along Hoffman Lane).*

    Kellogg Creek will be included in Triennial Review Work Plan Issue No. 4 (Beneficial Use Designations) as a water body that should have its beneficial uses reviewed.

Mr. Parry Klassen, East San Joaquin Water Quality Coalition

40. *Based on the [Sacramento River/San Joaquin River Basin Plan], the tributary rule applies beneficial uses of the San Joaquin River to upstream water bodies that do not have listed beneficial uses. This has resulted in many water bodies within the ESJWQC region being listed on the 303(d) list. If these water bodies are listed based on beneficial uses applied due to the tributary rule, the result will be the implementation of a costly TMDL aimed to protect unattainable and sometimes conflicting beneficial uses. Resolution 2005-0050, Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options, states that a water body may be de-listed if "incompatible uses exist" which is clearly the case for many of the agricultural drains which have been assigned municipal drinking water beneficial uses. It is the opinion of the ESJWQC that the State and Regional Boards should prioritize the evaluation of beneficial uses during the next tri-annual San Joaquin Basin Plan amendment (2009) review.*

    The ESJWQC is aware of similar situations where beneficial uses have been contested by entities within the Tulare [Lake] Basin Plan area during the associated Basin Plan amendment process. The entities that supplied documentation regarding inappropriate beneficial use designations were told that there are insufficient funds to review those documents. The ESJWQC would like to take this opportunity to remind the State and Regional Boards of the importance of reviewing and updating beneficial uses. Due to the influx of obtainable water quality information through programs such as the ILRP, data are now available for water bodies that previously had little or no water quality information. As such, many of the water bodies within agricultural areas have not been assigned appropriate beneficial uses and it is apparent that the current listings of recreation and drinking water are unrealistic and incompatible with the current hydrology and land use of those areas. This problem is more widespread than the ESJWQC region and the Coalition hopes that the State and Regional Boards realize the importance of committing resources to thoroughly review and update currently assigned beneficial uses.

    The Central Valley Water Board agrees that addressing beneficial uses should be high priorities. See Triennial Review Work Plan Issue Nos. 3 and 4 (ADWs and Beneficial Use Designations) for more details.

Mr. Jerald James, Madera County

41. *The Fresno River above Hensley Reservoir should be designated WARM rather than COLD.*

The Fresno River above Hensley Reservoir will be included in Triennial Review Work Plan Issue No. 4 (Beneficial Use Designations) as a water body that should have its beneficial uses reviewed.

Mr. Mike Wackman, San Joaquin County Delta & Water Quality Coalition

42. *Beneficial uses have been inappropriately applied to water bodies upstream of the San Joaquin River using the tributary rule, which resulted in may of the proposed listings. The State and Regional Boards should prioritize the evaluation of beneficial uses during the next tri-annual San Joaquin Basin Plan amendment (2009) review.*

The Central Valley Water Board agrees that addressing beneficial uses should be high priorities. See Triennial Review Work Plan Issue Nos. 4 (Beneficial Use Designations) for more details.

Ms. Karna E. Harrigfeld, Stockton East Water District

43. *The Calaveras River is a highly managed basin. During the 1950s, the City of Stockton was flooded and many lives were lost and millions of dollars of damage was suffered. As a result of the floods, the Army Corps of Engineers constructed levees that could hold 12,500 cfs of flood water, re-routed Mormon Slough around the City with the construction of the Stockton Diverting Canal, and all winter time flows in the Old Calaveras River Channel were eliminated. The only time the Old Calaveras River Channel has water in it is during the irrigation season, when the District opens the Old Calaveras Headworks Facility. There are no fish present in the Old Calaveras River channel, and therefore, the designation of it as a "cold water" fishery is inappropriate.*

The Calaveras River will be included in Triennial Review Work Plan Issue No. 4 (Beneficial Use Designations) as a water body that should have its beneficial uses reviewed.

Ms. Valerie Kincaid, San Luis & Delta Mendota Water Authority

44. *The triennial review should be coordinated with the State Water Board periodic review of the Bay-Delta Plan. Recently the State Board adopted a staff report and it deferred the issues of ammonia and toxics to the Regional Board. And the Authority would like to ensure that the process, the triennial review process, takes that into consideration, and the process coordinates and complements the State Board process.*

Staff consults with State Board staff on triennial review issues that overlap statewide planning activities including the Bay-Delta Plan. Regional Board planning activities described in the Triennial Review work plan are

generally coordinated with statewide planning priorities at the time the work plan is considered. The State Water Board staff with the San Francisco and Central Valley Water Board staff have formed a team to improve coordination of Water Boards' activities in the San Francisco Bay and Sacramento-San Joaquin Delta. More information is included in Triennial Review Work Plan Issue No. 5 (Delta Issues).

45. *The Authority would like to note that there are ongoing Basin Plan amendments and we hope that the current triennial review does not slow down or otherwise impact the moving forward of those Basin Plan amendments. So I guess the idea is to adopt comprehensive, coordinated, feasible objectives.*

The Triennial Review is a prioritization activity conducted with resources that are different than most of the resources used to conduct basin plan amendments and Triennial Review staff is generally different than the staff assigned to basin plan amendments. Therefore, ongoing basin plan amendments are not affected by the Triennial Review.

<u>Ms. Karna Herrigfeld, Stockton East Water District</u>

46. *The reach of the Calaveras River from below the weir up to New Hogan Dam is an 18 mile reach where there is water flowing, rainbow trout, beautiful habitat. From below the weir down to what is referenced as the Stockton Diverting Canal; that is reach two. That is a dry area. Water only flows in it when we are irrigating. There is an additional reach from the Stockton Diverting Canal to the San Joaquin River. The way that it is listed in the Basin Plan it says that cold water and spawning apply to the entire Calaveras River. So what we are requesting as a high priority issue is the redesignation of the beneficial use for the lower portions from the San Joaquin River to the Stockton Diverting Canal and from the Stockton Diverting Canal to below the weir, to have the beneficial uses for cold water and spawning removed. We recognize that that could potentially be a migration route, so we are not requesting that migration be eliminated.*

See response to Comment No. 43.

47. *Stockton East believes that there is sufficient evidence to add to the DO water quality objectives a specific objective for the Stanislaus River. Currently we have specific DO objectives for the Sacramento, Feather, Tuolumne and the Merced. And, as you know, the three main tributaries on the San Joaquin River are the Merced, the Tuolumne and the Stanislaus. Over the course of the past 15 years or more, stakeholders on the river have done an incredible amount of work on monitoring. And we have developed a whole host of information, and so it is our opinion that we would like to see a dissolved oxygen objectives specifically set forth for*

the Stanislaus River and that it apply from Orange Blossom Bridge up to Goodwin, which is right below New Hogan and Tulloch Dam. So it is the major stretch where fishery resides during the time in which DO is an issue on the Stanislaus River.

Dissolved oxygen water quality objectives will be included in the Triennial Review Work Plan Issue No. 10 (Protection of Central Valley Fisheries and Other Aquatic Life).

Mr. Ed Cheslak, Pacific Gas & Electric Co.

48. *Many of the beneficial use designations that are utilized in the Basin Plan were developed based upon then current information. More recent data indicates that historic designations in some of the surface water bodies in the Basin Plan may not be appropriate for all of the reaches within those water bodies. You heard similar testimony just a little bit ago. Because much better information about these water bodies is now available, as well as much better understanding through the three decades of experience and definitions and applications of some of these beneficial uses should be reevaluated and updated. It would be more effective to identify beneficial use designations for separate water body segments or individual reaches. Especially within long rivers that are 10 to 15 miles in total length. In particular for water bodies with large changes in elevation or species assemblages or other characteristics which would yield nice discrete segments.*

The current Basin Plan manages all water bodies with cold and warm beneficial use designations as cold water bodies for the application of water quality objectives. This approach can result in some unintended consequences, such as protection of protected species. The most current data associated with cold and water designation suggests that a new designation for a transitional zone may be appropriate for these kinds of mixed classifications. This new designation can be applied to specific segments of reaches and such an approach would ensure protection for all beneficial uses of that water body, such as cold, warm and transitional zones.

So we at PG&E recommend a collaborative review of the surface water body definitions and beneficial use designations for each of the water bodies of concern, and we have identified some of those water bodies in our letter to you to determine whether the current designations are appropriate. Where appropriate we ask that you redefine those water body definitions through segmentation and take into account the assemblages and elevations we mentioned. This analysis will ensure that water bodies are managed the best possible water to protection of the beneficial uses.

See response to Comment Nos. 22 and 23.

Mr. Steve Bailey, City of Tracy

49. *The Regional Water Quality Control Board should comply with Water Codes sections 13241 and 13242 when incorporating water quality objectives from updates to the State Water Board's Bay-Delta Plan when adopting new water quality objectives for the southern Delta.*

In 2006, the State Water Board, without supporting environmental analysis or analysis under Water Code section 13241 and in the guise of non-substantive modifications, extended the applicability of the previously adopted water quality objectives for EC at Vernalis throughout the entire southern Delta. The Bay-Delta Plan's implementation was not modified to include municipal dischargers as an entity required to take actions necessary to achieve the objectives, it did not describe appropriate action, and it did not include a time schedule for such actions. All of these are required by Water Code section 13242.

And the USEPA has not yet approved the 2006 modification for the Bay-Delta Plan. Until the 2006 modification is approved by the USEPA, it cannot be properly used for 303(d) listing decisions of NPDES permitting decisions. Water quality objectives for the EC in the southern Delta need not be so overly conservative so as to be unreasonable to unnecessary for adequate protection of agricultural beneficial uses. Time of year salinity objectives should be examined as well as alternative measurements, such as TDS, effective EC or more specific salinity compound such as the specific ions.

It is imperative that the Regional Water Quality Control Board provide a comprehensive implementation plan for salinity that specifically addresses feasible steps for municipal dischargers to take to achieve compliance.

See response to Comments No. 9 and 10.

Mr. Ken Petruzzelli, San Joaquin River Group

50. *The number one issue is the beneficial uses issue because that starts everything. There really isn't a mechanism or process to address what I don't want to call necessarily de-designation, but site-specific uses or site-specific objectives. Something more precise that what is already in the Basin Plan. That would be more appropriate to the specific water body, given its hydrograph and its natural characteristics.*

Issue No. 4 (Beneficial Use Designations) in the Triennial Review Work Plan includes an initial discussion of this issue and some approaches that might address this concern.

51. *Stakeholders may be willing to fund Basin Plan amendments if they think that there is a possibility that the Basin Plan amendment might go forward. There is a kind of chicken or egg problem. Stakeholders might fund the process but they want to see that the process might go somewhere.*

Staff is available to discuss ideas for basin plan amendments and funding. The Central Valley Water Board has previously adopted Basin Plan Amendments brought up and funded by stakeholders. These amendments include site-specific water quality objectives pH, turbidiy and temperature for Deer Creek in El Dorado County; regionwide water quality objectives for pH and turbidity; de-designation of four beneficial uses of Old Alamo Creek in Solano County; and site-specific water quality objectives for chloroform, chlorodibromomethane, and dichlorobromomethane for New Alamo and Ulatis Creeks in Solano County and permit implementation provisions.

52. *With respect to salinity, Dr. Hoffman has drafted a report on crop salt tolerance in the South Delta that would be very good for salinity basin planning work.*

The Central Valley Water Board is very interested in the salt report prepared by Dr. Hoffman for the State Water Board. Staff has used Dr. Hoffman's approach to develop a similar report on salt tolerance of crops in the Lower San Joaquin River. Development of salt and boron objectives for the San Joaquin River upstream of Vernalis is being undertaken by the CV-SALTS effort. See Issue No. 1 (Salt and Nitrate Management) for more information.

53. *I concur with comments about re-evaluating the secondary MCLs. The three numbers that they usually have are really confusing in their application. As the DHS regulations are written, they apply to tap water which is treated while the Basin Plan applies them to surface water. And any one of those three numbers may or may not be appropriate for the specific surface water at issue.*

The Central Valley Water Board is also interested in evaluating the use of secondary MCLs as water quality objectives and will include this issue in the Triennial Review Work Plan as Issue No. 11 (Secondary MCLs as Water Quality Objectives).

Ms. Susan K. Moore, United State Department of the Interior, Fish and Wildlife Service

54. *The Commenter requested the following action to protect the quality of water delivered to wetland areas within the Grassland watershed, to protect federally listed species in the Grassland wetlands, and to protect existing and future runs of anadromous fish in the San Joaquin River: Addition of RARE beneficial use designation for protection of the giant garter snake in the public and private wetlands of the Grasslands and consideration and protection of this beneficial use.*

The Grasslands waterways will be included in Triennial Review Work Plan Issue No. 4 (Beneficial Use Designations) as water bodies that should have its beneficial uses reviewed.

Mr. Ken Petruzzelli, San Joaquin River Group

55. Beneficial Use Designations

Many of the issues listed in the Issue List, such as water bodies dominated by NPDES discharges; agricultural dominated water bodies and agricultural conveyance facilities; beneficial use designations; dividing long streams into smaller segments, each with different beneficial uses; and temperature transition zones all tie into beneficial use designations. Since beneficial use designations are the starting point for the regulation of water quality, a better, more efficient way must be developed to more precisely designate beneficial uses for streams, apply the tributary rule, and, if necessary, develop site specific objectives. The current method of amending the Basin Plan for every objective and every stream, such as that used for Deer Creek temperature objectives and MUN designations for Old Alamo Creek, are too time-consuming and expensive to make any meaningful progress. Developing a process and amending the Basin Plan to incorporate such a process would require time and money, but it would save time and money in the long run.

Staff agrees that it would be more efficient to address beneficial uses and water quality objectives using an approach that groups water bodies. The Triennial Review Work Plan includes approaches that group water bodies. However, in recognition that we may lack information on key characteristics to use for grouping water bodies, staff believe that planning for individual water bodies is still useful. Both approaches are included as activities that would be conducted by staff for a number of the issues. See Issues No. 2, 3 and 4 for more information.

56. Salt and Nitrate Management

The Issue List appears to contradict the current Basin Plan. According to the current Basin Plan:

"Of the two major options for disposal of salts produced by agricultural irrigation, export out of the basin has less potential for environmental impacts and, therefore, is the favored option. The San Joaquin River may continue to be used to remove salts from the basin so long as water quality objectives are met."

(Water Quality Control Plan for the Sacramento River and San Joaquin River Basin, p. IV-15.00.)

The Issue List, however, is less favorable towards using the San Joaquin River to export salt from the Basin, on the basis that salts are "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 where there is no outlet for salt at the present time." (Issue List, p. 6.) Absent a valley-wide drain to remove salt from the Basin, the San Joaquin River remains the only method available for the removal of salt. Unless salt can be removed from the Basin, salt balance cannot occur and salt will built up in the soil and/or groundwater, potentially harming agricultural beneficial uses, depending on where and how these harmful salts accumulate.

As the Issue List recognizes, CV-SALTS is currently working to develop long-term solutions for managing salt in the Basin. (Issue List, p. 9.) Recirculation of salts is one of the many challenges to address in developing a long-term, comprehensive strategy for managing salt in the Basin.

Staff did not intend for the Triennial Review Work Plan to appear to take a position on how an issue should be addressed. The goal of the Work Plan is to describe the issue with the concerns that have been identified by stakeholders and staff and that should be investigated when the issue moves forward. Since the Work Plan describes concerns with the Basin Plan, there are many discussions in the Work Plan that might appear to contradict the Basin Plan. The Work Plan describes the activities that are necessary to confirm that the identified areas of the Basin Plan need revision and, if the Basin Plan does need to be amended, the initial steps for determining how to revise the Basin Plan. At this time there have been no conclusions on the outcomes for the issues in the Work Plan.

57. Use of EPA Region Temperature Criteria

According to the Issues List, the Department of Fish and Game ("DFG"), Region 4, requested the establishment of temperature objectives to

protect fall-run Chinook salmon in the San Joaquin River Basin. (Issue List, p. 37.) EPA Region 9 and the DFG support using "the scientific approach used in the EPA Region 10 guidance for development of numeric temperature standards to protect salmonid beneficial uses in the Central Valley." (Id.)

If the CVRWQCB chooses to develop numeric temperature standards to protect salmonid beneficial uses in the Central Valley and, in doing so, considers the EPA Region 10 guidance, it must not repeat a common error with the EPA Region 10 guidance of directly applying its criteria.

In 2003, EPA Region 10, which encompasses Oregon, Washington, Alaska, Idaho, and 267 Native American tribes, determined that there were a variety of chronic and sub-lethal effects likely to occur to Pacific Salmonids, that the guidance in Quality Criteria for Water 1986 would not necessarily protect Pacific Northwest salmonids, and that guidance more specific to Pacific Northwest salmonids was necessary. (EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards (2003).) As a result, EPA Region 10 chose to adopt additional guidance for designating uses, developing temperature water quality objectives, managing stream temperatures, issuing National Pollutant Discharge and Elimination System permits for heat discharges, and identifying water quality limited segments under Clean Water Act Section 303(d) within its region. It did not adopt new water quality objectives or any new regulations, but simply additional guidance. The guidelines may offer states outside the Pacific Northwest assistance in developing their own temperature objectives. The Region 10 application of its guidelines and the criteria developed were specific to Pacific Northwest salmonids. As a result, the numeric criteria developed applies in the Pacific Northwest generally and may apply in the Pacific Southwest, but only to the degree that the salmonids and hydrologic and other conditions are sufficiently similar.

Region 10 obtained preference and avoidance figures for various Pacific Northwest salmonids by conducting a literature review (Sally Sauter, John McMillan, Jason Dunham, Salmonid Behavior and Water Temperature (Issue Paper 1), Prepared as Part of EPA Region 10 Temperature Water Quality Criteria Guidance Development Project (EPA-910-D-01-001, May 2001)[2], p. 3-10.) Only one of the studies in the literature reviewed, a study of juvenile wild steelhead, was conducted in California. The other studies used salmonids from British Columbia, Virginia, Oregon, Washington, and Ontario, not California. The lone California study was conducted in an

[2] Available at http://www.deq.idaho.gov/water/data_reports/surface_water/monitoring/epa_reg10_paper%201_behavioral.pdf

unspecified stream in "northern California," not in the San Joaquin River Basin. Furthermore, only two of the studies observed fall-run Chinook salmon, the only run existing in the San Joaquin River Basin today, but both were conducted in Washington, not in the San Joaquin River Basin. Even then, the Region 10 Temperature Criteria was also only one part of Region 10's guidance. It was not intended to operate alone and be applied directly, but as only one of multiple considerations, such as unusually warm seasonal conditions, natural background temperatures exceeding temperature criteria, and diurnal variations, in developing temperature objectives for the waters of the Pacific Northwest. (Id. at 20, 35.) The general methodology used by EPA Region 10 would be useful and informative, but in developing temperature objectives or in seeking guidance in applying current temperature objectives, the CVRWQCB must avoid directly applying temperature criteria that were never intended for the San Joaquin River Basin.

Staff agrees that salmonids may have site-specific temperature requirements depending on which major water systems are used. If we initiate actions to develop water quality objectives for temperature, we will consider all available information, including the information in EPA Region 10 guidance. Issue No. 10 has been revised to clarify that the additional action regarding temperature should be specifically for the Central Valley.

58. San Joaquin River Dissolved Oxygen

Dissolved oxygen conditions in the Stockton Deep Water Ship Channel ("Ship Channel") have significantly improved since 2006. Much of the improvement has been attributable to the City of Stockton's treatment plan upgrades, which have significantly reduced ammonia discharges since 2008. Upstream discharges of oxygen demanding substances are also lower and have further contributed to improved dissolved oxygen conditions in the Ship Channel. Finally, the Department of Water Resources ("DWR") completed testing its aerator and showed that aeration is an effective method of improving dissolved oxygen conditions in the Ship Channel. A stakeholder group has agreed, in principle, to fund and operate the aerator for an initial five years and is currently negotiating an agreement providing for such funding and operation.

Basin Plan amendments to further refine the dissolved oxygen objective would greatly aid managing dissolved oxygen conditions in the Ship Channel. Potential refinements include, but are not limited to, the development of averaging periods and consideration of changing San Joaquin River flows. Most important, is a review of the scientific basis of the 6.0 mg/l September-November objective. The 6.0 mg/l objective was based on a 1969 agreement between the DFG and DWR to act as a trigger for DWR to install the barrier at the Head of Old River in order to

maintain dissolved oxygen conditions of 5.0 mg/l or better. As a result, the 6.0 mg/l objective was not based on science, it lacks a scientific basis, and it was never intended to be an objective, but rather a trigger for an implementation action. Although five years are contemplated for the aerator funding and operating agreement, the initial term will be three years. Two one-year extensions may occur thereafter, but extending the agreement may depend on what progress has been made in reviewing and refining the dissolved oxygen objective.

The dissolved oxygen objective of 6.0 mg/l from September to November was established by the State Water Board in the Bay-Delta Plan. State Water Board adopted water quality control plans supersede Regional Water Board basin plans for the same geographic area (CWC §13170). In order to change this water quality objective, the State Water Board must change it in the Bay-Delta Plan. Your comments have been forwarded to the State Water Board for its consideration during its next Triennial Review of the Bay-Delta Plan. Staff will recommend that the State Water Board consider the appropriateness of re-evaluating the water quality objectives for dissolved oxygen. You should submit your comments to the State Water Board when it solicits comments on its next Triennial Review of the Bay-Delta Plan. The Central Valley Water Board staff coordinates with the State Water Board staff when addressing provisions in the Bay-Delta Plan.

Mr. William P. Lewis, City of Live Oak

59. *The City of Live Oak is pleased that the Central Valley Regional Water Quality Control Board has identified the issue of inappropriate beneficial use designations in its Triennial Review Work Plan. The City of Live Oak recommends that the list of water bodies on page 18 of the Triennial Review Work Plan be expanded to also include the agricultural drains that the City of Live Oak discharges its effluent into. The City of Live Oak recommends this expansion because it is particularly concerned about the MUN beneficial use designation that has been assigned to the agricultural drains into which it discharges its treated wastewater effluent. The agricultural drains fit within the agricultural conveyance exception to the MUN designation contained in the State Water Resources Control Board's Sources of Drinking Water Policy (Resolution 88-63), and the nearest downstream designated water body does not have the MUN beneficial use designation. The City has submitted information to the CVRWQCB documenting that these drains were constructed in the early 1900's and were never a natural waterbody. Thus, the City of Live Oak believes that de-designation through a Basin Plan Amendment is fully warranted.*

The immediate need for the de-designation becomes evident when the potential costs of compliance are considered. On June 10, 2011, the

Regional Water Board adopted an NPDES permit for the City of Live Oak's Wastewater Treatment Plant discharge that includes the MUN beneficial use designation for Lateral Drain No.1 and Lateral Drain No.2. For the City of Live Oak's 8500 citizens to comply with its previous NPDES permit a completely new $20 million WWTP plant is nearing completion. With the approval of the City's NPDES permit that applies the MUN beneficial use to Lateral Drain Nos. 1 and 2, the City of Live Oak faces an additional $4 million in costs, plus on-going operational expense, above those for the current upgrades to comply with the water quality-based effluent limitations designed to satisfy the MUN beneficial use designation. The City of Live Oak's single- family residential customers could ultimately see a 33% increase in their sewer bills above the 2011 sewer fee, which means bills could be as high as $80/month. These costs would place a significant burden on Live Oak residents and businesses because Live Oak is disadvantaged community with a median household income of approximately $32,000/year - to institute water quality objectives the CVRWQCB Board members acknowledged made no logical sense.

Also, the City of Live Oak is concerned that the Triennial Review Work Plan indicates that stakeholders will be the primary source of funding for beneficial use de-designations. The studies are costly, and it is inappropriate to place this burden on the Live Oak and its ratepayers. As such, the City of Live Oak should not be responsible for funding the dedesignation effort. At the June 10, 2011 Regional Water Board meeting, Chairperson Hart acknowledged the inequity of imposing the costs associated with a Basin Plan amendment process on dischargers to rectify this problem. Specifically, Chairperson Hart indicated that" in adopting the Resolution 88-63 without excepting out these ag drains, we should accept responsibility for that. It's our fault that we didn't catch that, that we didn't except these drains out, and we should fix it." The City of Live Oak requests that the Work Plan be revised to identify state funding options that may be available to fund these efforts versus identifying "stakeholders" as the funding mechanism.

In summary, the City of Live Oak requests that the list of water bodies on page 18 of the Work Plan be expanded to include the agricultural drains into which Live Oak discharges its treated wastewater effluent. The City of Live Oak looks forward to working with the Regional Water Board to ensure that a Basin Plan amendment removing the MUN designation from its agricultural drains is processed as quickly as possible.

The City of Live Oak's receiving waters were included within the category of "agricultural water bodies that are designated MUN through the Central Valley Water Board's application of the State Water Board's Sources of Drinking Water Policy, such as the unnamed tributary to Powell Slough and Powell Slough, tributary to Colusa Basin Drain." The discussion of

categories of water bodies is found in the paragraph that follows the paragraph listing specific water bodies. Regardless, Reclamation District 777 Lateral Drain No. 1 and No. 2 have been added to the list of water bodies that stakeholders have requested review of the beneficial uses.

The Triennial Review Work Plan does not include potential funding sources; although, it does identify funds that are currently allocated to specific issues. The Work Plan includes a direct quote from the State Water Board's Order which specifies that regional boards must initiate appropriate basin plan amendments when the regional board has evidence that a use neither exists nor likely can be feasibly attained. The quote goes on to state that the Regional Water Board can require that dischargers to the affected water body provide assistance. The State Water Board's Order did not specifically state that assistance must be monetary. At this time, ~~no funding has been identified for evaluating Reclamation District 777 Lateral Drain No. 1 and No. 2. The~~ the Work Plan states that the ~~current~~the Board has allocated some staff resources to work on ~~this issue is funded by stakeholders and the NPDES program~~agricultural water bodies that are designated MUN through application of the State Water Board's Drinking Water Policy but the Work Plan does not identify dischargers as a source of funding for this work or any additional actions. The Work Plan identifies this concern as a high priority so that it can proceed if appropriate funding is allocated for the identified basin planning activities.

Ms. Betsy Cawn, Essential Public Information Center

60. *In 2006, the Central Valley Regional Water Quality Control Board adopted Resolution No. 2006-0060, amending the Sacramento River Basin Plan for the "control of nutrients" in Clear Lake, establishing a TMDL of 73 micrograms per liter of Chlorophyll a, based on a technical study performed in 2002 by Tetra Tech.*

The County of Lake (Department of Public Works) disputed the validity of that TMDL, on the basis that the lake had been getting "clearer" (according to Secchi disc depth measurements, and because of the lack of "reported" blue green algal blooms) since 1992.

In 2009, 2010, and 2011, however, the lake has produced prodigious amounts of blue green algal/cyanobacterial blooms, resulting in tremendous loss of "clarity," and causing some local concerns about the health and safety of the lake for swimming and for raw water supplies to drinking water purveyors.

There are 17 domestic water suppliers in communities around Clear Lake (including the County of Lake's "Special Districts" which provides 7 of 10

Community Service Areas with treated lake water) who participate in daily monitoring of water quality for compliance with the Safe Drinking Water Act requirements mandated by the California Department of Public Health. These water suppliers measure "turbidity" on a nearly constant basis. Would it be possible to use their monitoring data as a reasonable measurement of lake water quality for purposes of the TMDL metric?

The Basin Plan includes an implementation program to control nutrients in Clear Lake on Page IV-37.04. The implementation program directs Central Valley Water Board staff to work with the responsible parties to develop and implement a plan to identify appropriate measures necessary for Clear Lake to meet the Basin Plan objectives, conduct appropriate monitoring for evaluating Lake conditions, develop criteria to determine when Clear Lake is no longer impaired, as well as address other topics relevant to nutrients in Clear Lake. These topics seem similar to the topics that were raised in these comments. The Basin Plan requires the Central Valley Water Board to consider the information collected to determine whether the implementation program should be modified. The Board must consider this information by 19 September 2012. The public will have an opportunity to comment on the information and make suggestions for Board consideration. Central Valley Water Board staff will contact Lake County officials to discuss the monitoring data collected by domestic water suppliers.

61. *In his peer review comments on the Tetra Tech report of 2002, Dr. Vladimir Novotny noted (in 2004) the absence of a Use Attainability Analysis prior to the determination of the original TMDL, and the lack of baseline data to establish the relevance of the accepted TMDL. Is it too late to seek such an analysis, and consider revision of the nutrient TMDL for Clear Lake if that analysis recommends it?*

A Use Attainability Analysis is used to evaluate beneficial uses. The beneficial uses of Clear Lake are municipal and domestic supply (MUN); agricultural supply (AGR) as irrigation and stock watering; water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); spawning, reproduction and/or early development (SPWN) for warm water species; wildlife habitat (WILD); and commercial and sport fishing (COMM). The Central Valley Water Board has received no information that these uses are not the appropriate beneficial uses for Clear Lake. These uses are currently impaired which is why the Central Valley Water Board adopted the TMDL and Basin Plan Implementation Program to attain these uses.

62. *Finally, there is some indication that our last three years' manifestation of blue green algal blooms may be contributing cyanobacterial toxins to our recreational and drinking water supply. The known hazards of*

cyanobacterial toxins found in the Klamath River reservoirs generated a TMDL for Microcystis formulated by a cooperative effort between the US EPA Region 9 and the North Coast Regional Water Quality Control Board, along with local agencies and tribes. Is there any way your board can assist the County of Lake and members of the public who are concerned about the health of Clear Lake to develop appropriate testing and health information in this regard?

The water boards are responsible for coordinating and controlling water quality. Under this authority, the State Water Board and some of the regional water boards, including the Central Valley Water Board, are conducting investigations of blue-green algae. Findings are compiled in reports which are released to the public when the investigations are completed. A current Water Board funded study on cyanobacteria in Clear Lake is expected to be completed by March 2012. While the regional boards protect water quality for a variety of human health related beneficial uses, the regional boards are not responsible for human health. The Department of Public Health coordinates with local health programs to protect the health of the people of California.

<u>Ms. Debbie Webster, Central Valley Clean Water Association</u>

63. Issue 1: Salt and Nitrate Management for Surface and Ground Waters

In 2009, CVCWA requested that the Central Valley Water Board keep the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) a top priority during the 2011 Triennial Review. CVCWA appreciates the Central Valley Water Board's recognition of the importance of stakeholders being involved in developing solutions, and the need for the Central Valley Water Board to ensure stakeholders can focus on the CV-SALTS program, even while focusing on local issues. Also, CVCWA appreciates the Central Valley Water Board highlighting the concerns that POTWs have regarding the southern Delta salinity objectives, and the need to carefully coordinate the CV-SALTS with the State Water Resources Control Board (State Water Board) review of the salinity objectives. CVCWA was party to litigation against the State Water Board challenging the adoption of the southern Delta salinity objectives. The Sacramento Superior Court ordered the State Water Board to reconsider the southern Delta salinity objectives consistent with Water Code section 13241, and to develop a program of implementation that complied with Water Code section 13242. The outcome of the State Water Board's review of these objectives should inform the CV-SALTS program.

Accordingly, CVCWA supports the continued allocation of Central Valley Water Board staff resources for the CV-SALTS effort. CVCWA will continue to participate in CV-SALTS and will work with its members and

other stakeholders to identify the financial resources necessary to complete CV-SALTS activities.

The Central Valley Water Board thanks CVCWA for its continued participation in the CV-SALTS effort.

64. Issues 2, 3, and 4: Regulatory Guidance to address Water Bodies Dominated by NPDES Discharges; Regulatory Actions in Agricultural Dominated Water Bodies and Agricultural Conveyance Facilities; Beneficial Use Designations for Surface and Ground Waters

Issues 2, 3 and 4 are all similar in nature in that they are intended to address inappropriate beneficial use designations, which result in the inappropriate application of water quality objectives to effluent and agriculturally dominated water bodies. Because of the similar nature of these actions, we recommend that all three issues be combined into one. Or, in the alternative, we recommend that Issue 4, Beneficial Use Designations for Surface and Ground Waters, be identified as Issue 2 on the Central Valley Water Board's Triennial Review Work Plan list.

Issues 1 through 12 are identified as high priority issues; the numbering is for ease of discussing specific issues. Issues are addressed when funding is allocated. Funding is generally allocated for specific topics. Changing the issue number will not change the order of addressing the issue or the availability of funding.

While Issues 2 through 4 have some overlapping concerns, they also have specific differences. Issues 2 and 3 (Water Bodies Dominated by NPDES Discharges and Agricultural Dominated Water Bodes & Conveyances, respectively) are similar surface water issues that have differences due to the type of wastewater that they receive which have different constituents of concern. This can result in significantly different Implementation Programs. Issue 4 (Beneficial Use Designations) is both a surface and ground water issue and may not have anything to do with wastewater discharges.

65. As you know, many of CVCWA'S member agencies operate wastewater treatment plants that discharge to effluent and agricultural dominated water bodies with inappropriately designated uses. In many instances, inappropriate uses are attributed to these water bodies through the Central Valley Water Board's broad application of the tributary statement rather than site-specific analyses of appropriate beneficial uses. There are also cases where the municipal and industrial (MUN) beneficial use has been assigned to an agricultural drain or effluent dominated water body through the Central Valley Water Board's application of the State Water Board's Sources of Drinking Water Policy (Resolution 88-63). In both

cases, CVCWA members are particularly concerned about the inappropriate beneficial use designations in effluent and agricultural dominated water bodies. Specifically, inappropriate beneficial use designations can result in the adoption of water quality based effluent limitations that may ultimately require POTWs to expend unnecessary resources to install treatment facilities to protect non-existent beneficial uses. Further, to remove inappropriate beneficial use designations, POTWs and others must spend considerable resources on developing the information necessary for the Central Valley Water Board to de-designate a beneficial use by means of an amendment to the Basin Plan.

With respect to the list of specific examples for review of beneficial uses identified on page 18, CVCWA recommends that the list be expanded to also include the agricultural drains into which the Cities of Biggs, Davis, Live Oak and Willows discharge their effluent. All of these agricultural drains fit within the agricultural conveyance exception contained in Resolution 88-63, and all of these drains are upstream of waterbodies which do not have the MUN beneficial use designated in the current Basin Plan.

These water bodies were included within the category of "agricultural water bodies that are designated MUN through the Central Valley Water Board's application of the State Water Board's Sources of Drinking Water Policy, such as the unnamed tributary to Powell Slough and Powell Slough, tributary to Colusa Basin Drain." The discussion of categories of water bodies is found in the paragraph that follows the paragraph listing specific water bodies. The category includes the receiving waters and may include downstream water bodies. At this time, staff has not identified all the affected water bodies so it is more expedient to include these water bodies by category rather than by name.

66. *Next, CVCWA appreciates the fact that the Work Plan is attempting to put forward creative solutions to resolve the inappropriate application of beneficial uses by suggesting that it may be appropriate to try and group water bodies, starting with those that fit within the exceptions identified in Resolution 88-63. CVCWA would support this effort. CVCWA also understands that it may be necessary for site-specific amendments to uses to also be pursued in parallel.*

However, CVCWA is concerned that funding for these efforts are primarily identified in the Work Plan as being stakeholder funded. The difficulty and expense of de-designating a beneficial use highlights the need for the Central Valley Water Board to re-examine its policy and practice for addressing de-designations, which is to require stakeholders to fund the de-designation process. The de-designation of beneficial uses often requires lengthy and resource-intensive Use Attainability Analyses (UAA).

(See 40 C.F.R. § 131.10(j) [requiring a UAA for de-designation of wildlife and recreation designations].) Even when the federal regulations do not specifically require a UAA, adequate data must be compiled to demonstrate that attaining a designated use is not feasible. (See 40 C.F.R. § 131.10(g).) The studies necessary under Section 131.10(g) can be extensive and costly.

Stakeholders, and in particular small municipalities like the Cities of Live Oak and Willows, are not financially able to fund the costly and expensive studies associated with use de-designation and the associated Basin Plan amendment process. Further, these cities are being asked to fund a de-designation that is now required because of a change in interpretation of policies by the Central Valley Water Board and the State Water Board. Considering that the inappropriate designation of beneficial use for some of these cities resulted from Central Valley Water Board actions twenty-years ago, it is improper to now ask these small, economically disadvantaged communities to pay for the costly studies and the Basin Plan amendments. Accordingly, CVCWA requests that the Work Plan be revised to identify state funding options, including the option of CV-SALTS, which may be available to fund these efforts versus identifying "stakeholders" as the funding mechanism. While we appreciate that the Central Valley Water Board has resource constraints, so do the POTWs in the Central Valley.

The Triennial Review Work Plan does not include potential funding sources; although, it does identify funds that are currently allocated to specific issues. The Work Plan includes a direct quote from the State Water Board's Order which specifies that regional boards must initiate appropriate basin plan amendments when the regional board has evidence that a use neither exists nor likely can be feasibly attained. The quote goes on to state that the Regional Water Board can require that dischargers to the affected water body provide assistance. The State Water Board's Order did not specifically state that assistance must be monetary. ~~The~~ At this time, the Work Plan states that the ~~current~~the Board has allocated some staff resources to work on ~~this issue is funded by stakeholders and the NPDES program~~agricultural water bodies that are designated MUN through application of the State Water Board's Drinking Water Policy but the Work Plan does not identify dischargers as a source of funding for this work or any additional actions. The Work Plan identifies this concern as a high priority so that it can proceed if appropriate funding is allocated for the identified basin planning activities.

67. Issue 9: Policies for Maintaining Water Quality for Drinking Water

CVCWA and other stakeholders have been actively participating in the Central Valley Drinking Water Policy Work Group (work group) for almost

ten years. In the past year, the work group has completed the work identified in the 2003 Technical Work Plan, and is currently working with Regional Water Board staff on the development of an outline and work plan for a Drinking Water Policy. Completion of the technical work, which has included control measure studies for POTWs, stormwater and agriculture and analytical water quality modeling of the Sacramento and San Joaquin Rivers and Delta has yielded some important results. First, the perception that loadings of pollutants of concern to drinking water agencies (organic carbon, pathogens, salt and nutrients) will be increasing in the future due to population growth in the Central Valley has been dispelled. Detailed technical evaluations of future loading scenarios show that loadings will trend down in the future due to current and planned improvements in source control by POTWs and urban runoff agencies, a reduction in agricultural land use, water conservation and water recycling. Second, the concern that water treatment costs will increase in the future due to degradation of water quality in the Delta has been largely resolved based on the results of a study performed for the work group that addressed this issue. As a result, the findings from the work group point to a Drinking Water Policy which will not include new numeric water quality objectives for organic carbon or pathogens. Ongoing concerns regarding the impact of salts and the role of nutrients in taste and odor episodes will be addressed through CV-SALTS and the SWRCB's Nutrient Numeric Endpoint work, with support from the work group.

As a result of these new findings by the work group, the Issue 9 description should be modified and updated to reflect the current status and direction of the effort. We suggest the discussion section of Issue 9 be revised as follows:

> *The Sacramento/San Joaquin Delta is a source of drinking water for two thirds of the state's population (over 25 million people). In addition, the Sacramento and San Joaquin Rivers, the two large rivers which flow into the Delta, and their tributaries, are sources of drinking water for many Central Valley communities. The water quality of the Sacramento and San Joaquin Rivers is affected by pollutants from various activities, including agriculture, mining, confined animal facilities, urban runoff, and municipal wastewater effluent. Pollutants include salts, organic carbon, nutrients, pathogens, pesticides and trace metals. Concerns have long existed that increased development and population growth in the Central valley will increase pollutant loads and deteriorate water quality in the Delta.*

The Basin Plan assigns the municipal and domestic water supply (MUN) beneficial use to all surface waters with a few limited exceptions. Maximum contaminant levels (MCLs) to protect drinking water supplies are contained in Title 22 of the California Code of Regulations and have been incorporated by reference into the Basin Plan for the protection of waters designated MUN. MCLs exist for arsenic, salinity, nitrates, some pesticides, volatile organics, disinfection byproducts (trihalomethanes) and radiological constituents, but do not exist for organic carbon, bromide or specific pathogens (Cryptosporidium and Giardia).

In response to directives in the 1996 Reauthorization of the federal Safe Drinking Water Act, the USEPA has developed more stringent regulations pertaining to disinfection by-products (DBPs) and pathogens. High levels of organic carbon in source waters may make control of trihalomethanes and haloacetic acid compounds difficult if chlorine is used as a drinking water disinfectant, while high levels of bromide can make control of bromate difficult if ozone is used as a drinking water disinfectant.

The Sacramento River generally has low concentrations of organic carbon (generally around 2 mg/l) and the San Joaquin River has higher organic carbon concentrations (generally around 4 mg/l). Drinking water purveyors must conduct additional actions when total organic carbon concentrations exceed 4 mg/l. Delta agricultural drainage, wetlands and the smaller rivers that flow into the Delta are sources of organic carbon. As urban areas develop within the watersheds tributary to the Delta, and as new wetlands are created in the Delta, there is concern that organic carbon levels will increase in the Delta. The tidal exchange between the Delta and San Francisco Bay brings elevated levels of bromide into the Delta.

Concerns also have been expressed regarding salinity and nutrients. Stakeholders have been coordinating with the CV-SALTS efforts to develop a regionwide salt management policy that will also address drinking water concerns. See Issue No. 1 for more details regarding development of a salt management policy. Drinking water purveyors are also concerned that taste and odor problems they experience are associated with high nutrient levels. There are also concerns regarding the presence of algal species that may produce algal toxins. Stakeholders are also coordinating with the

State Water Board's effort to develop nutrient numeric endpoints to ensure that drinking water concerns are addressed in that effort. See Issue No. 12 for a list of State Water Board planning efforts regarding nutrient management.

The CALFED Record of Decision (ROD) identified the need for a comprehensive source water protection program and a comprehensive drinking water policy for the Delta and upstream tributaries. The Central Valley Water Board signed a MOU committing to working with the Department of Public Health (DPH), the State Water Board, and USEPA to develop and adopt a policy to protect sources of drinking water for the Delta and its tributaries. The Central Valley Water Board committed to developing a comprehensive drinking water policy in Resolution No. R5-2004-0091 and reiterated its commitment for a policy in Resolution No. R5-2010-0079. In the 2010 resolution, the Central Valley Water Board directed staff to bring a final drinking water policy to the Board in three years.

Staff has modified the Work Plan to remove much of the description for this Issue. The contents of the policy are in development and will be finalized about the same time that the Triennial Review Work Plan will be adopted. The discussion in the triennial review work plan is not intended to influence or shape what should or should not be included in the policy. To avoid this possibility, staff has modified the Issue No. 9 to remove the details of this issue from the Work Plan.

68. Issue 11: Secondary MCLs as Water Quality Objectives for Surface and Ground Waters

In 2009, CVCWA recommended that the water quality objective for chemical constituents that incorporates by reference secondary maximum contaminant levels (MCLs) be deleted from the Basin Plan. CVCWA also recommended that, at a minimum, the Central Valley Water Board should amend the Basin Plan to clarify how secondary MCLs should be applied to receiving waters. CVCWA appreciates that the Central Valley Water Board proposes to identify the issue of secondary MCLs as water quality objectives in the Work Plan and looks forward to working with the Central Valley Water Board to resolve issues related to the use of secondary MCLs as water quality objectives for both surface and ground waters.

Ultimately, CVCWA still recommends that the Basin Plan be amended to delete secondary MCLs because secondary MCLs are recommendations to drinking water providers that are based on consumer acceptance levels

and are therefore unrelated to human health and welfare or the protection of aquatic life. The application of secondary MCLs to natural waterways is inappropriate when one considers the basis for secondary MCLs (aesthetics) and the fact that water treatment in accordance with the Safe Drinking Water Act will occur prior to use by consumers.

If the Central Valley Water Board chooses not to delete the secondary MCLs, CVCWA recommends that the Central Valley Water Board amend the Basin Plan to clarify that secondary MCLs should be analyzed using "dissolved" standards because, according to Safe Drinking Water Act regulations under the Surface Water Treatment Rule, drinking water purveyors are required to filter the water prior to treatment, which will remove particulates. The Work Plan notes that the rationale for using a total recoverable analysis rather than dissolved is that MUN includes small domestic water supply systems that may not be required to filter. In fact, such systems are required to meet the filtration requirements of the Safe Drinking Water Act, regardless of size. CVCWA also supports, as an alternative to deletion, use of secondary MCL ranges where applicable to provide additional flexibility.

The Work Plan has been clarified to include an evaluation of the need to develop water quality objectives for any of the constituents that make up the secondary drinking water standards and only move forward with developing water quality objectives if appropriate. Please see Issue No. 11 for more information.

69. Issue Identified by CVCWA Not Included in the Work Plan

In addition to the priority issues discussed above, CVCWA identifies one additional issue from its 2009 comments that should be included in the Work Plan.

Remove Non-Detect Standard for Organochlorine Pesticides.

CVCWA previously requested that the Basin Plan be amended to remove the provision that states organochlorine pesticides "shall not be present in the water column at concentrations detectable within the accuracy of analytical methods approved by the EPA or the Executive Officer." (Basin Plan at p. III.6.00.) This water quality objective results in a fluctuating standard based on the accuracy of the analytical method rather than being based on the appropriate level to protect the uses of waterways. Instead, CVCWA supports the use of the CTR criteria for organochlorine pesticides. Accordingly, CVCWA recommends that the Regional Water Board amend the Basin Plan by deleting the "non-detect" provision.

The evaluation of the water quality objective for total identifiable persistent chlorinated hydrocarbon pesticides was included in the draft Triennial Review Work Plan. Please see the Organochlorines section of Issue No. 7 for more information.

Mr. Jason Lofton, Sacramento Regional Wastewater Treatment Plant

70. Comment #1: Issue 5: Delta Issues

The second paragraph on page 22 states that "ammonia levels appear to be a factor in causing beneficial use impacts." It also says that "the USEPA Ambient Water Quality Criteria for Ammonia - 1999 and the draft USEPA criteria released in 2009 do not appear to adequately protect the beneficial uses of the Delta." These statements are misleading and should be changed to reflect the fact that more research is necessary to determine if ammonia is causing beneficial use impacts in the Delta. Additionally, Issue 5 of the Triennial Review should reflect the current regulatory efforts of the San Francisco Bay Regional Water Quality Control Board's San Francisco Bay Numeric Nutrient Endpoint (SF Bay NNE) process-a process currently showing no proof that USEPA water quality criteria for ammonia is insufficient to protect beneficial uses.

Ammonia's role in the Delta has been, and is being, debated in multiple venues, including the March 2009 CalFED Ammonia Workshop, the August 2009 CVRWQB Ammonia Summit, and the March 2010 State Water Resources Control Board Informational Proceeding for Flow Criteria. The conclusions from these workshops all stated that more research was necessary to determine whether beneficial uses were impacted by ambient ammonia concentrations. In June 2011, the SF Bay NNE published "Southern California Water Research Project Technical Report 644," a literature review and data gap analysis for the development of NNEs. The review recognizes the uncertainty of ammonia's role in SF Bay and recommends forming a workgroup that will synthesis existing data and recommend future data collection.

An April 20, 2010, University of California Davis contaminant synthesis report contracted by the Water Boards concluded the following:

" ... while contaminants are unlikely to be a major cause of the POD, they cannot be eliminated as a possible contributor to the decline. "

In addition to the above referenced reports, the National Research Council has been asked to review other stressors, with a report due in the fall of 2011. The USEPA is also analyzing ammonia's role in the Delta under an Advanced Notice of Proposed Rulemaking, which will publish a draft report in the fall of 2011. The Delta Stewardship Council (Council)

requested the Independent Science Board (ISB) to " ... conduct an assessment of stressors on populations of native fish species in the Delta, the Sacramento and San Joaquin rivers, and the tributaries of those rivers below the rim dams of the central valley." In a January 26, 2011, memo from the ISB to the Council, there is only one note on nutrients that lists nutrients as a current stressor. They list it as a stressor because of the following:

"We list 'current stressors' last because The Delta Plan needs to take the long temporal view. To the extent that current stressors are expected to carry on into the future, including how water is managed, the DSC should address them."

Even the Fifth draft of the Delta Plan states the following regarding food web effects of ammonia on the Delta:

"Food web effects of ammonium in the Delta remain an open question with much active research and a healthy scientific debate. "

Clearly there is no scientific consensus that ammonia is a key driver of ecological problems in the Delta and San Francisco estuary, including the pelagic organism decline. There is, and has been, the agreement that more research is needed to understand ammonias role and importance in the Delta. We request the Delta Issue discussion in the Triennial Review reflect this fact. Therefore, we recommend deleting the second paragraph on page 22 and replacing it with the following:

There are conflicting reports on the role that ammonia plays and its importance in the Delta ecosystem. However, most stakeholders and scientists agree that more research is needed to better understand ammonia's role in the Delta ecosystem and to determine if there is an impact to beneficial uses. Staff will work with stakeholders and other interested entities to conduct studies and assessments aimed at evaluating existing water quality criteria as they relate to ammonia.

The Delta Science Program has funded millions of dollars in research regarding nutrients over the last several years. The results of this research will be available in the next year, and this research should be considered before determining if ammonia is impacting beneficial uses. These studies, and other studies that will be recommended by the SF Bay NNE, should go through a rigorous scientific process that can lead to appropriate water quality objectives for nutrients. The water quality objectives would then be used to determine if beneficial uses are impacted by ammonia.

Staff agrees that more studies are needed to better understand ammonia's role in the Delta ecosystem. In addition, the current description of the issue is overly detailed and is not specific to basin planning. Therefore the issue has been re-organized to try to explain that ongoing work might lead to the need to amend the Basin Plan during the next three years, and if so, the basin planning activities to address Delta issues is a high priority.

71. Comment #2: Issue 5: Delta Issues

We believe that the importance of the Delta Regional Monitoring Program (Delta RMP) is understated in this section and that it deserves a more thorough explanation of its importance. Development and completion of the Delta RMP along with completion of Delta water quality modeling could provide critical information related to current and future Delta water conditions. This information is used by many programs that address other issues that are mentioned in the Triennial Review. As such, this item would be better served to receive its own issue number in this document. We recommend adding the Delta Regional Water Quality Monitoring and Modeling as an individual issue with the following description:

Issue X: Regional Water Quality Monitoring and Modeling

Discussion: *Many of the other issues presented in this triennial review would benefit from the development of a comprehensive Delta RMP and Delta water quality modeling program. The Delta Stewardship Council also recognizes the importance of a Delta RMP and recommends in the Fifth draft of the Delta Plan that regulatory agencies and stakeholders work together to create a Delta RMP.*

The following is taken from the CVRWQCB comprehensive monitoring program website.

"Many agencies and groups monitor water quality, water flows, and ecological conditions in the Bay-Delta, but there is no comprehensive contaminant monitoring and assessment program. The Interagency Ecological Program (IEP), CALFED, and other organizations, including the Water Boards, conduct some of these analyses, but due to their specific mandates, information gaps may exist. Emerging concerns with contaminants related to the decline of pelagic organisms in the Delta, wastewater treatment plant discharges, agricultural discharges,

pesticides, blue-green algae toxicity, and unknown toxicity events all highlight the need for well-coordinated contaminants monitoring. A system is needed for coordinating among monitoring programs and integrating contaminants monitoring into existing monitoring efforts whereby all data are synthesized and assessed on a regular basis. The Strategic Workplan for Activities in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, which was adopted by the State Water Board, Central Valley Regional Water Board, and San Francisco Bay Regional Water Board, identifies the development of a comprehensive monitoring program for the Delta as a priority action."

The Watershed Analysis Risk Management Framework (WARMF) model and the Delta DSM2 model have been successfully linked through the efforts of the Drinking Water Policy Workgroup. Efforts of this group also included gathering a significant amount of historical water quality data for the Sacramento River and San Joaquin River and tributaries. This linked model could be used to evaluate gaps in water quality data to make future effol1s of the Delta RMP program more effective.

Current Action: *The Delta RMP has created straw man proposals for governance, funding, water quality monitoring priorities, and data integration. The Delta RMP has also published the first edition of the Pulse of the Delta - the public outreach portion of the Delta RMP.*

For modeling efforts, the Central Valley Drinking Water Policy Workgroup has completed watershed models for the Sacramento-San Joaquin Watershed and Delta, using WARMF and DSM2 models, respectively. Currently, the Workgroup is determining what additional data is necessary to further refine the models.

Current Resources: *Various dischargers and entities contribute to sampling efforts and gathering water quality data that could be used to contribute to a future coordinated Delta Regional Monitoring Program.*

Additional Action: *For the Delta RMP, staff needs to continue working with stakeholders to finalize the straw man proposals. The modeling efforts could be used to help identify and prioritize water quality and water monitoring data gaps. For modeling efforts, the WARMF and DSM2 efforts that were initiated by the Central Valley Drinking Water Policy Workgroup need to be completed. Complete the source evaluation and model input for the agriculture source component for the Sacramento and San Joaquin Rivers and tributaries. The DICU and other Delta agriculture inputs and natural source inputs would need to be completed for a more accurate DSM2 model. Additional activities include expanding stakeholder outreach, gathering additional data and further developing the model to add constituents to build a more comprehensive Delta model to better understand and predict Delta water quality. Current model parameters include flow, pathogens, salts & nutrients (ammonia, nitrates, nitrites, phosphorus, etc), temperature, algae, and organic carbon.*

While the Central Valley Water Board agrees that the Delta Regional Monitoring Program is a high priority, it is not a basin planning issue. The purpose of the Triennial Review Work Plan is to prioritize basin planning activities so the Work Plan is not the appropriate venue for this discussion.

72. *Comment #3: Issue 9: Policies for Maintaining Water Quality for Drinking Water*

The first paragraph in the discussion for this issue lists nutrients as pollutants. We agree that nutrients, in certain concentrations, can be considered a pollutant, but we don't believe that nutrients in general should be considered a pollutant. We recommend changing this paragraph to more accurately describe how a nutrient becomes a pollutant (such as nutrients in excessive concentrations). Also, organic carbon and some trace elements occur in natural runoff in areas that have not been disturbed by human activity. In some locations, these natural sources contribute a significant load to waters. The text on page 32 should be changed to note the contribution of the natural sources in the Delta and the importance of these constituents to the Delta ecosystem.

Staff has modified the Work Plan to remove much of the description for this Issue. The contents of the policy are in development and will be finalized about the same time that the Triennial Review Work Plan will be adopted. The discussion in the Triennial Review Work Plan is not

intended to influence or shape what should or should not be included in the policy. Please see Issue No. 9 for more information.

73. *The "Current Resources" section on page 35 states that "CUWA received a grant on behalf of the Workgroup for almost a million dollars to fund technical studies that will help with development of the policy." The grant funding has been expended and significant work remains for completion of the Drinking Water Policy. SRCSD and the California Urban Water Agencies (CUWA) have provided significant funding for various activities including reimbursements for CVRWQCB staff time associated with completion of this workgroup's activities. We would appreciate the recognition of SRCSD in providing these resources.*

The Triennial Review Work Plan states that "[s]takeholders have funded staff to develop a drinking water policy." However, the Work Plan did not identify the stakeholders that funded staff. While the Work Plan can include this information, staff has generally credited the stakeholders by name in the eventual basin plan amendments that result from Work Plan issues. The citation to the California Urban Water Agencies was in reference to the grant that the Work Group received. However, this citation is now obsolete since the work has been completed and the grant has ended so the citation will be deleted from the draft Work Plan that will be included with the Central Valley Water Board's October 2011 agenda.

74. *Item 2 on page 35 states that "additional studies are estimated to require $1,000,000." Funding is required to support additional modeling, studies, water quality monitoring, and staffing. Models developed from this workgroup could be used in other groups such as the Central Valley Salinity Alternatives for Long-term Sustainability (CV-SALTS). Costs could exceed $2,000,000 to complete the water quality modeling effort. The cost for completing the CV-SALTS effort is estimated to be between $20 million and $40 million.*

The estimate for contract funds for additional actions has been changed to "To be determined." Staff is working on an outline of the contents of the Policy. As the Policy is finalized, additional basin planning actions may be identified with a need for contract resources. If this occurs, these actions will be a high priority and a better estimate of the resource needs can be provided..

<u>Dr. Jeffrey R. Single, Ph. D., Department of Fish and Game, Central Region</u>

75. *The Board presented twelve priority issues and work plan for the above Triennial Review. Our main comments concern Issue 10: Protection of Central Valley Fisheries and other Aquatic Life. Issue 10 is considered a High Priority, but no Current Action and Current Resources are proposed.*

Additional resources include a 0.5 PY per year per amendment and Contracts of $500,000 for temperature work. We concur that to address temperature protection will require funding and staff time; however, we believe minimal time and cost is needed because the United States (U.S.) Environmental Projection Agency's (EPA) Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards [EPA 910-B-03-002] (EPA 2003) has established scientifically based numerical water temperature standards for anadromous fish critical life stages. We strongly advocate that the Board adopt these numeric standards in the Basin Plan.

The Department continues to believe that the most significant critical factor limiting anadromous salmon and steelhead population abundance in the San Joaquin River Basin is the presence of high water temperatures during critical life-stages in the east-side tributaries (the Stanislaus, Tuolumne, and Merced Rivers) and the main-stem of the San Joaquin River. Increased water temperatures result largely from insufficient in-stream flow releases from the lower rim dams, which the Department believes is directly responsible for most chronic stressors affecting anadromous species of the San Joaquin River Basin.

The Department continues to contend that the EPA Region 10 criteria are consistent with the requirements of 18 CFR § 5.9(b)(6) and are appropriate for the San Joaquin River Basin. The Department accepts these criteria because the EPA completed a very thorough literature review for water temperatures to protect cold water fish species (trout and salmon), referencing 41 sources that included five issue papers. The issue papers, in turn, referenced approximately 700 citations. As a result, EPA's recommendations are grounded in a broad spectrum of the scientific literature across North America, including California, and parts of Europe and New Zealand for developing chronic protective temperature criteria for anadromous fish populations across multiple generations. This chronic exposure approach is consistent with the emphasis by the Department on reproduction and recruitment success of an entire population across each generation. Taking a chronic exposure approach recognizes the evolutionary importance of multi-year class life history strategies of salmon and steelhead. In contrast, standards based on only acute to sub-acute exposure to high temperatures emphasize "tolerance or acclimation" temperatures, which is the survival of individuals over a shorter time period.

In addition, with regard to the temperature threshold metric, EPA (2003) stated:

"This metric is recommended because it describes the maximum temperatures in a stream, but is not overly influenced by the maximum

temperature of a single day. Thus, it reflects an average of maximum temperatures that fish are exposed to over a weeklong period. Since this metric is oriented to daily maximum temperatures, it can be used to protect against acute effects, such as lethality and migration blockage conditions. This metric can also be used to protect against sub-lethal or chronic effects (e.g., temperature effects on growth, disease, smoltification, and competition)..."

EPA (2003) also stated:

"It is important to note that there are also studies that analyzed sub-lethal effects based on maximum or 7DADM temperature values which need not be translated for purposes of determining protective 7DADM temperatures. For example, there are field studies (emphasis added) that assess probability of occurrence or density of a specific species based on maximum temperatures [Issue Paper 1, Haas (2001), Welsh et al. (2001)]. These field studies (emphasis added) represent an independent line of evidence for defining upper optimal temperature thresholds, which complements laboratory studies."

These criteria (e.g., 7DADM) are chronic thresholds to protect anadromous fish populations across multiple generations. In addition, this is an average, meaning a range of values, not constant values, were used to calculate a criteria value. Elevated daily temperatures across seven days indicate the fish are not being briefly exposed across time. Daily water temperature range is very narrow at higher temperature values (as opposed to a wide range of values) in the San Joaquin River and tributaries, thus the fish are not briefly exposed to elevated temperatures. Also, based upon empirical data, San Joaquin River Basin fish do not have the health sustaining refugia of a brief exposure to optimal cool temperatures during a 24-hour period in the San Joaquin Valley Basin river systems.

To further illustrate how the EPA-Region 10 criteria apply to the San Joaquin River basin, we evaluated climatic ambient air temperatures across the historic range for Chinook salmon and steelhead in the lower continental U.S. (Figure 1.) Evaluating a comparison between the coastal region of Washington or Oregon and the southern San Joaquin Valley is inappropriate. As such, we evaluated the entire historic anadromous fish range, because these are the areas where these stocks of fish co-evolved. We compared average daily, mean minimum and mean maximum daily air temperatures for the month of September from 2007 to 2010 (Tables 1, 2 and 3). September was chosen because this is one of the hottest months of the year and this is the time period fall-run Chinook salmon major migration begins into the Delta San Joaquin Valley Corridor. Climatic conditions varied across locations in Idaho, Washington, Oregon, Nevada,

and California. However, there were similarities across these states. Three California locations, South Lake Tahoe, Alturas, and Eureka had the coolest average daily temperature and were not significantly different (ANOVA, P < 0.05) (Table 1). The second-coolest locations based on average daily temperatures were McArthur, California; Elko, Nevada; Santa Rosa, California; Winnemucca, Nevada; Spokane, Washington; and Seattle, Washington (P < 0.05; Table 1). This trend was similar for mean minimum and mean maximum air temperatures (Tables 2 and 3). The primary reason for these similarities is due to oceanic influence along the coastal locations and mountain elevations within the inland locations. Merced and Stockton, California did have the warmest air temperatures for the locations evaluated; however, anadromous fish did not spawn in these areas. Rather, they historically migrated further upstream to sites in higher, cooler elevations, which today either receive less cooling water due to diversion, or are blocked by dams. In summary, no evidence exists to demonstrate San Joaquin River Basin salmon have higher temperature resistance or adaptation, and the environmental conditions for fall-run salmon are consistent across the fall-run range in the lower continental U.S. Thus, EPA Region 10 criteria are valid for and should be applied to the San Joaquin River Basin.

The Central Valley Water Board appreciates the information submitted by the Department of Fish and Game supporting adoption of the USEPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards. The Board recognizes the status of the Department of Fish and Game as a trustee agency.

The Central Valley Water Board adopts water quality objectives consistent with federal and state laws and regulations. Following are some of requirements under the federal and state laws and regulations that the Board must comply with. Federal regulations (40 CFR §131) require states to adopt water quality criteria to protect the designated uses and the criteria must be based on sound scientific rationale and contain sufficient parameters or constituents to protect the designated use. The referenced federal regulations (18 CFR § 5.9(b)(6)) is not relevant since it relates to study requests for the Federal Energy Regulatory Commission and is not related to the development of water quality standards. The California Water Code §13141 requires regional boards to consider the following factors when establishing water quality objectives: (a) past, present, and probably future beneficial uses of water; (b) environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto; (c) water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area; (d) economic considerations; (e) the need for developing housing within the region; and (f) the need to develop and use recycled water. In addition, as part of complying with the

California Environmental Quality Act, the Central Valley Water Board must perform an environmental analysis of the reasonable foreseeable methods of compliance. (PRC §21159) While the USEPA Region 10 Guidance might be scientifically sound, it does not include an evaluation of the factors that the Central Valley Water Board must consider when establishing water quality objectives. The staff and contracts needs identified in the Work Plan are staff estimates of the resources necessary to complete the documentation requirements and to carry out the public participation to adopt scientifically sound water quality criteria.

76. We support the Board's efforts to address other high priority issues as listed and understand your limitations of funding and staff resources. The Department has similar limitations, but remains interested in assisting Board staff to address these issues where applicable and practical. The Board's efforts with CV-SALTS (per Priority Issue 1) are especially commendable. Regarding priority Issue 3: "Regulatory Actions in Agricultural Dominated Water Bodies and Agricultural Conveyance Facilities", the Department recognizes that these water bodies can have unique issues. We caution however, that the Department does not agree in general with the contention of some of the stakeholders that functionality should take precedence over other beneficial uses. It is possible in limited and unique situations that this could be the case, but each must be well documented and justified. Within the discussion of priority Issue 4, the topics of "long water body reaches" and the perceived conflict of a water body with both COLD and WARM beneficial designations is raised. The Department urges caution in splitting water bodies, because the ecosystem services and functions of a water body are inter-related. The Board may determine in the future that it is more practical to address beneficial uses for a smaller unit of the system, but that decision should be made with care and full knowledge of disadvantages a change could have. For instance, many of our native fish will move through a system as the seasons change. This behavior does lead to specific reaches that need to be maintained as COLD during part of the year and WARM during other times.

The Central Valley Water Board appreciates the offer of assistance from the Department of Fish and Game and welcomes any input the Department of Fish and Game has in basin planning activities that involve fisheries and other aquatic life. Federal regulations (40 CFR §131.10 (b)) require that states take into consider the attainment and maintenance of the water quality standards of downstream waters when designating beneficial uses and establishing water quality objectives so beneficial uses modifications to specific reaches must be supported by an evaluation that the downstream beneficial uses continue to be protected and maintained.

<u>Ms. Chris Malan, Living Rivers Council</u>

77. CLEAR LAKE WATERSHED

Clear Lake is located 80 miles north of San Francisco and is the oldest lake in California. Clear Lake is part of the Sacramento and San Joaquin River Basins. The Clear Lake watershed basin has been shaped by faulting, tilting, volcanism and erosion over a period as long as 2 million years. It is considered a shallow lake ranging from 27 to 60 feet and is feed by volcanic springs. It lies at the base of the 4,200 foot Mt. Konocti, a volcanic cone. The Lake is 68 square miles with 100 miles of shoreline including the Upper, Lower and Oaks Arms. Temperatures range from 61-40 degrees in the winter and 76 in the summer. The only outlet to this large lake is Cache Creek which is located in the Lower Arm of the Lake. A dam is located 5 miles below the Lake. The Clear Lake watershed is 441 square miles. The beneficial uses of this unique Lake are: municipal, agriculture, recreation, warm freshwater, warm spawning, wildlife and cold freshwater habitats. The two largest streams are Scotts Creek and Middle Creek, which join in the Middle Creek marsh area before draining into the Upper Arm through Rodman Slough. These two creeks drain 30% of the watershed. Vegetation ranges from grasslands, chaparral-type plants in the lowlands to coniferous forest to the upper elevations. The confluence of Cache Creek is the Sacramento River, hence the Delta, hence the San Francisco Bay estuary.

FOOD WEB

A total of 260 aquatic species have been found in Clear Lake. Most of these are 101 algae species and 94 invertebrates, macrophytes (aquatic plants near the water surface that provide habitat/food for fish plus and if in decline show water quality problems) (23 species), microheterotrophs (8 species) and 29 species of fish (13 native and 16 introduced). The major amphibious/terrestrial links to these aquatic species are frogs, mink, otter, birds and humans. (Thomas H. Suchanek)

Clear Lake is considered 'a naturally productive lake' due to its biomass abundance consisting of diatoms, green algae, water plants and macrophytes which where considered to be the first abundant life according to core samples. Macrophytes were dominant until 1920s when mining released sediments to the Lake changing the clarity of the Lake thus increasing the turbidity. Clear Lake supports abundant aquatic and terrestrial biological resources.

CLEAR LAKE HITCH

Clear Lake Hitch, is an ancient fish endemic to Clear Lake and it lives in deep water but spawns in the tributaries of Clear Lake. The Chi-Council

for the Clear Lake Hitch, a local group that tracks the status of Clear Lake Chi, document that Hitch is in 'precipitous decline'. This decline is in keeping with water quality decline. Clear Lake Splittail became extinct in 1970 along with Pacific Lamprey, Thicktail Chub and Hardhead in 2000. While little is known about their disappearance, fish need clean water, healthy habitats with adequate flows throughout their life cycle. Human impacts to Clear Lake fish habitats are certain to be causing fish declines.

Limnologist recommend that the native fish assemblage be restored to help correct the imbalance of algae blooms and improve the water quality of Clear Lake.

In 2009 during the three year drought in California Clear Lake suffered a devastating infestation of cyanbacteria/blue-green algae with mats forming around the entire Lake. These mats extended hundreds of feet from the shore line. The Lower Arms of the Lake were particularly impacted completely eliminating beneficial uses. The blue-green algae produced toxins which caused public health alarms to go off.

Additionally, there have been numerous fish kills as oxygen was sucked out of the water. People reported to LRC seeing fish near the shorelines jumping out of the water.

Cyanobacteria AKA blue-green algae

Cyanobacteria are true bacteria but differ from other bacteria by having photosynthetic ability. Blue-green algae can occur as single cells, strands of cells called trichomes, or accumulated cells called colonies. A 'bloom' or increase in cells to form colonies causes reduced water quality and can produce toxins.

Life cycle of cyanobacteria: they fix gaseous nitrogen and are efficient at storing phosphorous. Buoyancy of this species varies due to the changing size of their internal pockets of gas. They will migrate to calm water in response to nutrient or light gradients. They produce spores (akinetes) which will lie dormant for years and then when conditions are ripe they will seed a water body. Optimal conditions for this bacteria are: high temperatures, long sunny days, high levels of phosphorus and nitrogen and calm winds which allow the cells to migrate to the surface. Reproduction takes place through trichome fragmentation, the splitting of the chain of cells, and is promoted by photosynthesis. They can produce an oily looking film or blue-green scums many inches thick. (Resource #10)

CLEAR LAKE NUTRIENT TMDL

Clear Lake is on the 303(d) of the Clean Water Act since 1998 and 2002 due to impairments of water quality from excessive nutrients causing 'intense algae growth' that severely impacts the surrounding economy and stops all beneficial uses (2009, 2011) of the Lake during the algae blooms of cyanbacteria also known as blue-green algae. Cyanobacteria algae blooms are destructive to the lake's natural ecology and they destroy beneficial uses of the lake.

The purpose of developing the Nutrient TMDL for Clear Lake is to reduce the frequency and intensity of the algae blooms that are a result of nutrient cycling. (TR 4.2.1.3)

The primary goal of the Nutrient Total Maximum Daily Load, TMDL,is to reduce external phosphorous from the watershed in order to meet the Nutrient TMDL of chlorophyll-a which shall not exceed 73 ug/l.

In reports from the 19th and early 20th centuries, scum forming algae are hardly mentioned, but vegetation growth from the bottom of the lake was frequently observed. Bottom dwelling plants need relatively clear water to thrive. Increased turbidity and blue-green-algae scums were conspicuous by the late 1930's and bottom dwelling algae and waterweeds have been absent in most recent years since that time. The cause of this increased turbidity comes from sediment entering the lake from human activities in the watershed such as: mining, forestry, vineyards and other agricultural activities, construction, roads and grazing. Mobilized sediment carries pollution such as nutrients (phosphorus) and mercury directly into the Lake.

The delicate natural ecology of the lake consisting of an equilibrium of water plants, algae and diatoms, has been severely altered by humans causing a shift in the lake water quality. The blue-green algae or cyanobacteria becomes opportunistic given warm days and high nutrients and then it explodes and infests the lake. Some infestations are now toxic.

Nutrients (phosphorus) sources are mostly from fertilizers used by irrigated agriculture, residents and massive sewer spills over the years totaling 7,390,306 gallons or 140 spill events (attachment herein 1 Big Valley Rancheria map 2003-2010). Again, cyanobacteria have seeds that lie in the sediment for years.

Lakebed core samples from the last 15,000 years historically shows that Clear Lake has high total phosphorus coming from lakebed sediments. However, external phosphorus has been determined to be excessive coming from the tributaries draining the watershed. The external phosphorus loading of the Lake comes from water running overland either by sheet flow or stream flows where phosphorus mobilizes with sediment

and overloads the Lake. It then severely impairs water quality and ultimately, when the conditions are ripe can explode into a cyanobacteria infestations also known as an 'algae bloom'.

LRC prefers to call 'algae bloom' a 'cyanobacteria infestation'. While cyanobacteria is frequently described as 'ancient bacteria naturally occurring in the environment for millions of years' it turns opportunistic given the right conditions in the lake and can over populate quickly and dominate the fragile Lake ecosystem due to: 1)unnatural loading of nutrients and metals to the Lake causing an increase in food for the cyanobacteria that otherwise would be in equilibrium with other algae 2) lack of fresh water flows caused by diversion to the Central Valley for farm lands 3) failure of precipitation or drought 4) climate change/warming of the lake 4) increase in pollution like sediment loading to the Lake during storm events 5) severe damage to native fish assemblage where the native fish once fed on the 'eutrophic' elements of the Lake. These variables interact to cause significant cumulative impacts to Clear Lake water quality that results in total loss of beneficial uses of the Lake with devastating economic impacts.

Scum producing cyanobacteria engulfs the Lake with algae mats that can be as thick as three feet at the shoreline and extend 100s of feet into the lake (2009, 2010 and 2011). LRC has witnessed this personally by its members. The smell will drive you away from the Lake as it is a dead stench like rotting eggs.

Some cyanobacteria such as Microcystis, Aphanizomenon, Anabaena spiroides, Lyngbya cincinnati produce cyanotoxins such as: dedromoaphlysiatoxin (neurotoxins-paralytic) and lyngbyatoxin a dermotoxin causing 'swimmer's itch'. (resource #3) In 2009 Clear Lake was plagued with Lyngbya and public officials were forced to warn people not to enter the water that rashes might occur and pets could be at risk of death if they drank the water. Cyanobacteria can become toxic at anytime. The dominant Anabaena species growing in Clear Lake in 2010 was identified as Anabaena spiroides. This scum-forming filamentous cyanobactrium species can produce at least two types of toxins: anatozin-a and microcystins, a hepatoxin capable of causing liver failure and acting as tumor-promoters. (resource #4 see pictures of these bacteria).

In 2009-2011, Clear Lake had summers plagued with scum producing algae mats. While 2009 was a drought year, 2011 has not been a drought year. In fact 2011 has had high amounts of rainfall into June and the Lake has been plagued with scums regardless of high rainfall years. This suggests that the Nutrient TMDL is not effective and or the responsible parties are not compliant with the Nutrient TMDL limit. The 2004 Technical Report bases the Clear Lake Nutrient TMDL on the argument that drought

conditions exacerbate the natural chemical balance of the lake and can cause an infestation of toxin producing cyanobacteria/blue-green algae. Further the 2004 Technical Report makes the claim that normal to high rainfall shows that the Lake water quality improves.

Tetra Tech did extensive modeling for the 2004 Technical Report to determine the amount of chlorophyll-a the Lake can tolerate. However, this modeling could be inaccurate and the actual tipping point for which algae blooms occur is much below 73ug/l. Recent data results by UC Santa Cruz for the SWAMP 2011 Monitoring of Clear Lake shows that on June 16, 2011 the chlorophyll-a sample was highest at 27.89 ug/L and four days later the Lake exploded in an cyanobacteria infestation/bloom. (see resource #4)

LRC requests that the CVRWQCB re-evaluate the efficacy of the current Nutrient TMDL limit of 73 ug/L adopted by the SWRCB based on this new research that the Water Board funded.

Additionally, the interactions of metals with cyanobacteria could exacerbate onset of blooms. Little is known about this variable but all the literature done over the years by top experts on the recurrent algae blooms suggests that metals (phosphorous, mercury, iron) influence algae growth. (see all resources listed)

There is a tipping point with algae blooms such that so much nutrient/phosphorous (other metals) is entering the lake from external sources that dilution from rain events is not enough any longer to achieve the current Nutrient TMDL limit. Additonally, it is not clear that responsible parties who are suppose to reduce sediment to the lake are compliant.

Clear Lake has had cyanobacteria/blue-green scum mats depriving the people of public trust values even during high rainfall years.

2007	*2008*	*2009*	*2010*	*2011*
Drought Scum Toxins	*drought scums toxins*	*drought scums toxins*	*Normal rainfall Scums*	*Above normal rainfall Scums/toxins toxins*

The Basin Plan contains an implementation program for nutrients in Clear Lake that includes the total maximum daily load allocations. The implementation program requires responsible parties take certain actions. To allow adequate time to collect and evaluate information, the Basin Plan required that the Central Valley Water Board consider collected

information to determine whether the implementation program should be modified by 19 September 2012. The public will have an opportunity to comment on the information and make suggestions for Board consideration.

78. CYANOBACTERIA GLOBAL PROBLEM

More importantly, the Basin Plan should reflect that multiple contaminants to the State water bodies are collectively causing toxic stews that create toxic cyanobacteria infestations throughout fresh and salt water resources around the globe. Scientists are studying these mysterious cyanobacteria mats. The Basin Plan should discuss the significant cumulative impacts to watersheds where human impacts severely change the water quality such that multiple impacts are exacerbating fresh water resources in ways we have never seen before i.e., Japan's fishing industry is all put shut down due to invasions of jelly fish that feed off of nutrient loading to the oceans around this island nation. Floating algae mats miles long have been spotted off the Pacific coast and estuaries around the globe. National Marine Fisheries have found dead dolphins where their livers have been poisoned by cyanobacteria.

The Basin Plan contains the Central Valley Water Board's plans and policies for protecting the quality of waters in the Sacramento River and San Joaquin River Basins and is not the appropriate venue to discuss global investigations of potential water quality issues. Outside the Basin Plan, the Central Valley Water Board investigates water quality within the Central Valley. Findings are compiled in reports which are released to the public when the investigations are completed. A current Water Board funded study on cyanobacteria in Clear Lake and the Bay Delta is expected to be completed by March 2012.

79. MONITORING

Monitoring data from 2007-2011 that tracks chlorophyll-a throughout the drought and high rainfall years is NOT available to the public in analytic form so that the public can see that TMDL limits are NOT being met. Responsible parties lack the will to get aggressive in cleaning up the water quality and public officials lay claim that they do not know why the lake has blooms or that the lake naturally has algae blooms.

The Clear Lake Nutrient 2004 Technical Report, TR, which the TMDL is based on (and is on line for the public) is severely out of date with the actual conditions going on with the Lake for example:

1. Irrigated agriculture land uses such as vineyards has increased significantly since 2004 which produces a large amounts of the

erosion runoff to the lake. Fertilizers are a source pollution to the lake and contribute to the excessive phosphorous that is causing the blue-green algae blooms. The Basin Plan should be updated regarding these important pollution source.

2. *The State Department of Water Resources, DWR, has water quality data available on their website in their water quality library. DWR does not sample consistently during the warmest months when water quality plummets. (2011 sampling dates were more frequent during the summer but this data does not have easy access to the public). Chlorophyll-a is not posted by the DWR library but instead is sent to the CVRWQCB, Holly Grover. LRC had to personally request the data. It should be readily available to the public, since public funds paid for the study.*

3. *Lake County Water Resources Department with funds from the Water Board, is now working with a UC Santa Cruz, PhD, Cecile Mioni, who is documenting 2011 water quality data including Chlorophyll-a but this data has not gone public nor has it been anlyized for the public. Holly Grover, CVRWQCB, states that she is using this data to update the 2012-14 TMDL. This research project shows that chlorophyll-a quickly climbs to 27.89 ug/l in the Clear Lake Lower Arms on June 16th, 2011. Additionally phosphorous and temperatures were high and secchi depths dropped dramatically. Four days after these data were collected, Clear Lake suffered a devastating cyanobacteria bloom and it continues to date (August 24, 2011) LRC was notified by Lake County Department of Water Resources, that July 2011 data collection is more shocking than June's data. July 2011 data of chlorophyll-a more than tripled. (recent data from CVRWQCB, Holly Grover) These data have been collected during severe scum infestations of cyanobacteria and this shows the lake is not compliant with the Nutrient TMDL. (see chart inserted herein page 10)*

	1./25/2011	*6/12/2011*	*7/19/2011*
	mg/m3 (ppb)		
CL-01 0.5M	*8.07*	*3.07*	*60.6*
CL-01 0.5M dup	*6.33*	*4.78*	
CL-01 3M	*6.34*	*12.3*	*32.3*
CL-01 3M dup			
CL-01 6M	*5.13*	*9.9*	*21.6*
CL-01 6M dup			
CL-03 0.5M	*75.6*	*13.6*	*136*
CL-03 3M	*62.4*	*13.5*	*78.5*

CL-03 6M	*35.6*	*14*	*67*
CL-03 9M	*56.3*	*12.1*	*55.3*
CL-04 0.5M	*37.4*	*16.7*	
CL-04 3M	*37.3*	*14.6*	
CL-04 6M	*60.4*	*15.7*	
CL-04 9M	*54.2*	*18*	
CL-04 12M	*93.8*	*17.1*	
Secchi Depth CL-01	*4.6 m*		
Secchi Depth CL-03	*3.0 m*		
Secchi Depth CL-04	*3.9 m*		

4. *Page 26 of the TR states that Lake County Monitoring lacks monitoring data (1999) therefore eluding to the fact that the 2006 Nutrient TMDL modeling could have been ineffective and not valid for today's conditions.*

5. *Stream incision due to increased rate of runoff from wildland conversions to vineyards is a major cause of channel erosion but the Nutrient and the Mercury TMDL fails to discuss this major landuse source of nutrient and mercury loading to the Lake.*

The Basin Plan Implementation Program includes appropriate time for development and implementation of studies and for water quality improvement measures to be implemented. The Basin Plan requires that the Central Valley Water Board consider collected information to determine whether the implementation program should be modified by 19 September 2012. The public will have an opportunity to comment on the information and make suggestions for Board consideration at that time. The goal of the Water Boards is to make water quality data easily accessible. However, development of an appropriate database is still in progress. In the meantime, we will continue to provide water quality monitoring data to individuals upon request.

80. MERCURY (Hg)

Mercury is a heavy metal which is detrimental to life and it bio-accumulates in the environment. One thermometer of mercury entering the natural aquatic environment can pollute 9,000 cans of tuna.

Clear Lake was listed on the 303 (d) list of the Clean Water Act in 1988 due to high levels of mercury (Hg) in fish and the lakebed sediments. The Mercury TMDL for Clear Lake was approved by the State Water Resources Control Board in 2010.

<u>The primary goal of the Mercury TMDL is to reduce mercury in 'trophic levels 3 & 4 to .09 & .19 mg/kg Hg. This is a high priority of this Basin Plan Amendment.</u>

However, the current TMDL for mercury does not clean up mercury contamination to safe levels for native populations who historically ate 1½-3 pounds of fish daily. There are tribes identified in the Mercury TMDL: Big Valley Rancheria, Elem Pomo, Habematolel Pomo Upperlake, Lower Lake Rancheria Koi Nation, Middletown Rancheria, Robinson Rancheria, Scotts Valley Band of Pomo Indians.

The Mercury TMDL lacks environmental justice for Native Americans who depend on the native fish for their food.

The Sulphur Banks Mercury Mine/Herman Pit (1840-1960) is located in the Oaks Arm of the Lake. This site was abandoned by the Bradly Mining Company who did open pit mining. Expert research (resource #7) states that it is the main pollution source of mercury attaching to sediment during storm events and entering the Lake. This site contributes to significant pollution to Clear Lake, hence the Sacramento River, hence the San Francisco Bay Delta hence the Pacific Ocean. Clear Lake is considered one of the most polluted lakes for mercury in the world.

When the Herman Pit overflows into the natural environment of the Lake microbes convert mercury to methyl Hg which is more toxic.

According to the 1994 research document, The Causes and Control of Algal Blooms in Clear Lake, (page III-8) the Lake is now a USEPA SuperFund cleanup site (Chamberlin et.al., 1990; Suchanek et al., 1993). Larger individuals of largemouth bass and other sport fish often have body burdens in excess of .5 ppm mercury, which has lead to a health advisory on eating fish from Clear Lake. The problem stems from the large quantity of inorganic mercury stored in the sediments, mostly in the Oaks Arm. There may also be an interaction between excessive algal growth and the mercury problem. Some data indicates that heavy loads of organic matter to the sediment, as it might result from the collapse of blue-green blooms, may fuel microbial activities (microbes methylate mercury).

<u>The Mercury TMDL relies on the EPA's superfund designation to clean up Hg as a source pollutant.</u>

Resource (7) T. H. Suchanek, ' These data provide preliminary evidence of how a relatively extensive aquatic ecosystem has been contaminated with methyl Hg from a point source (Sulphur Banks mercury mine inorganic Hg) over several decades.

The research literature shows that cyanobacteria/blue-green algae thrive in the presence of metals such as iron, phosphorous and mercury.

The Regional Board adopted a Basin Plan Implementation Program to control mercury in Clear Lake in 2002. The Central Valley Water Board was provided with a progress report last year and the staff report may be found on the Board's website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/clear_lake_hg/cl_final_tmdl_5yr_update.pdf

The report describes actions undertaken by stakeholders to reduce the mercury in Clear Lake. Another progress report will be provided to the Central Valley Water Board in five years.

At the time that the Basin Plan was amended to include the implementation program to control mercury in Clear Lake, the Basin Plan was also amended to include fish tissue objectives to protect the commercial and sportfishing beneficial uses (COMM) in Clear Lake. The fish tissue objectives were adopted in compliance with state and federal laws and regulations that require a sound scientific rationale and that the objective be reasonable achievable. (40 CFR Part 131.11 and CWC §13241) While staff was aware that there were individuals that historically consumed large quantities of fish, the fish tissue objective was based on the information available at the time of what was reasonably achievable. Concentrations of mercury in fish vary by species and size. For example, the average mercury concentration in largemouth bass is five times the concentration in hitch. The Basin Plan contains objectives for mercury in Clear Lake that are the average concentrations in large predatory (such as bass and catfish) and non-predatory fish (such as bluegill, Sacramento blackfish, and carp). The objectives assume people eat a mix of large, predatory and non-predatory fish. If people eat small fish or species that that are relatively low in mercury, they can safely eat more than about one meal per week. The Basin Plan requires that the Central Valley Water Board review the progress towards meeting the fish tissue objectives every five years. Public comments may be made at that time. If appropriate, the Central Valley Water Board may direct staff to re-evaluate the fish tissue objectives or the implementation program.

81. CLEAR LAKE WATER DIVERSIONS

The State Water Resource Control Board, SWRCB, has on-going jurisdiction over water diversions in the State. Clear Lake supplies the Central Valley with water for farmers. During drought conditions Clear Lake's water quality plummets causing a total loss of public trust values such as fishing, swimming and recreation. The SWRCB should assert

their jurisdiction and protect the natural environment of Clear Lake by reducing the water allocations to farmers during droughts. This should be part of the Basin Plan update. Clear Lake has numerous water diversions that send water to farmers in the Central Valley. The SWRCB has documented, 1,777 illegal water diversions in Napa, Marin, Sonoma, Mendocino and Humboldt Counties.

How many illegal water diversions are contributing to the decline of fish and water quality in the Clear Lake Basin?

The State Water Resources Control Board, Division of Water Rights, is responsible for permitting, assessing compliance and carrying out enforcement in regards to water rights and diversions. If there are specific incidents that require investigations, please direct that information to the enforcement staff at the State Water Board's Division of Water Rights.

82. CLIMATE CHANGE

The Basin Plan should take into consideration the impacts to Clear Lake associated with climate change. The lake is shallow and warm naturally. Since 1920 human impacts have caused the Lake to increase in temperature and become contaminated by sediment loads. Diversions lower the Lake during the warm months. As temperatures increase and drought becomes more frequent, Clear Lake is vulnerable to increases in scum producing algae infestations.

The Central Valley Water Board is responsible for coordinating and controlling water quality in its Region. To carry out its duties, the Central Valley Water Board regulates controllable water quality factors. Climate change is not a controllable water quality factor. When the Central Valley Water Board adopts basin plan amendments, it assesses the greenhouse gas emissions of the proposed policy as part of its environmental analysis. As appropriate, the Board will include measures as part of the basin plan amendments to avoid or mitigate these impacts.

83. TMDL LIMITS FOR NUTRIENTS ARE NOT ADEQUATE

The 2004 Nutrient Technical Report repeatedly relies on data that says that Clear Lake experiences out breaks of blue-green algae during drought conditions. This is incorrect because in 2010 and 2011 when precipitation/water year rainfall was above normal, Clear Lake had repeated outbreaks of cyanbacteria mats plaguing the entire Lake especially in the Arm's shoreline where temperature and turbidity increase and secchi depth dramatically decreases. The TMDL relies on this information which is incorrect given the on-going nutrient loading, increased development in the watershed, lack of enforcement and utter

disregard for construction and road Best Management Practices (BMPs). Irrigated agriculture escapes the nutrient and mercury TMDLs by lack of BMPS and no regulations over increased rate of runoff due to deforestation of wildlands.

Modeling to establish the limits of pollution for nutrients loading to Clear Lake must be recalibrated because algae blooms have increased in frequency and intensity dramatically despite high rainfall in to June of 2011. The 73 ug/l chlorophyll-a limits were determined by modeling to be the target for reducing nutrient loading, however this is more the tipping point than a 'target'. This limit should be reduced because the lake is experiencing increase blue-green infestations during high precipitation years, which indicates that the target is not low enough.

Enforcement :

The responsible parties for preventing pollution to the Lake do not enforce the Clean Water Act such as:

- *Developers do not always install BMPs or if they install them, they often are not installed properly*
- *After storm events, BMPs are not properly maintained*
- *Yearly, sewer leaks pollute the Lake due to inadequate and old leaking infrastructure, (see Map attachment) by Big Valley Rancheria EPA. Current bond measures and infrastructure plans are moving forward. However, the Lake County Special District must prevent further spills*
- *CVRWQCB should issue fines for continued sewer pollution events to the Lake*
- *Illegal water diversion must be stopped*
- *LRC made a formal complaint to the SWRCB regarding water diversions in 2009 that were exacerbating the cyanobacteria infestation.*

The Basin Plan Implementation Program to control nutrients in Clear Lake does not specify when nuisance algae blooms occur. The Implementation Program requires control of phosphorus to address the impairment in Clear Lake by 19 June 2017. The Central Valley Water Board is required to consider any new information by 19 September 2012 to determine whether the Implementation Program should be modified.

The Basin Plan describes the Central Valley Water Board's plans and policies to achieve water quality objectives and protect beneficial uses. Implementation of the Basin Plan provisions is not a triennial review issue. The Central Valley Water Board has administrative tools and remedies to implement the Basin Plan. Specific incidents of violations of waste discharge requirements and Basin Plan provisions should be brought to

the attention of the Central Valley Water Board enforcement staff for waste discharges and to the attention of the State Water Board's Division of Water Rights enforcement staff for incidents of illegal water diversions.

84. MORITORIUM

There should be a moratorium on any new construction in the basin until sewer infrastructure has been updated to carry the current capacity and projected growth. The nutrient loading to the Lake as a result of the failing sewer systems throughout the Lake County Special District is causing tremendous damage to the Lake's ecosystem and water quality.

Laws should be put in place locally to protect the Lake from development that will cause sewer leaks in the future.

The Basin Plan Implementation Program to control nutrients in Clear Lake did not include sewage discharges as a significant contributing factor to the impairment in Clear Lake. The Central Valley Water Board would be interested if there is information that shows sewage to be a significant contributing factor. The Basin Plan requires that the Central Valley Water Board consider collected information to determine whether the implementation program should be modified by 19 September 2012. At that time, staff can assess any information that you have on sewage discharges that significantly contribute to the nutrient loadings to Clear Lake.

85. BASIN PLAN AMMENDMENT RECOMMENDATIONS FOR CLEAR LAKE:

1. *Lake County Public Works, the Department of Water Resources and the State Department of Water Resources, DWR, and any other public resource agencies should post all monitoring data on the internet for easy public access to this important information. This should include:*
2. *Responsible agencies should post to the internet all sewer discharges to the Lake.*
3. *Revise the months that data collection of chlorophyll-a is being done. The Department of Water Resources, DWR, collects/or posts (makes public) data for months of December and June. This is not the height of the cyanobacteria/blue-green algae blooms. Chlorophyll-a data collection must be collected during the warmest months i.e., July, August and possibly September.*
4. *The Mercury TMDL relies on the EPA Plan aka Record of Decision for Operable Unit 1 by 7/31/2011 and Operable Unit 2 by 3/31/2013. However, the Sulphur Banks Mercury Mine Herman Pit could spill into Clear Lake toxic water when at flood stage of the pit.*

Given climate change and possible intense storm events, the sooner the EPA's project plan is implemented the better.

5. *Secchi or clarity of the Lake: Now you can hardly see your hand in front of your face when your able to swim. While the DWR, collects Secchi data the current TMDL does not utilize this data and interpret it for the TMDL.*
6. *Fish kills-shoreline residents document to the local resource agencies fish kills. Some have actually witnessed fish leaping out of the water near the shoreline or they wash up on the shoreline. There is little information about this available to the public.*
7. *Limnologist recommend restoration efforts should take place to restore the natural fish assemblage of the Lake which will help deplete the algae blooms. Every effort should be made to diminish the introduction of non-native fish.*
8. *Responsible agencies should be accountable to the public for their non responsiveness to the TMDL implementation plans, lack of enforcement and irresponsible actions that lead to pollution events to the Lake.*
9. *The responsible agencies must enforce the Clean Water Act and issue fines to developers that do not install and utilize BMPs properly.*
10. *Water Diversions-the 2004 Technical Report fails to adequately discuss the impacts of water diversions on the health of the lake. During drought conditions the SWRCB could reduce water diversions/allocations due to harm to native fish.*
11. *Public figures, politicians and some environmental groups, announce and proclaim that the Lake is 'naturally eutrophic' or 'naturally productive' and they dismiss cries for help this way. Time and time again, Lake County leadership falls flat when teachable moments present themselves to educate the public about cyanobacteria and the causes of poor water quality. We the public can not count on the 'authorities' to speak the truth about Clear Lake's devastating water quality problems to urge the stakeholders to roll up their sleeves and get busy reducing sediment at every opportunity.*
12. *The Basin Plan must discuss the environmental impacts to Clear Lake as a result of climate change.*
13. *The Nutrient TR states that 'biostimulatory substances in Clear Lake shall not contain stimulate or promote aquatic growths in concentrations that cause aquatic growths that adversely affect beneficial uses. The 73 ug/l limit for nutrients allowed to the Lake is too high. The Bain Plan should reduce this limit to improve water quality conditions.*
14. *In 1990 the EPA required NPDES Phase I permits to discharge polluted storm water to water bodies. Phase one applies to municipalities of 100,000 populations and Phase II applies to*

certain municipalities of 10,000 population. The Mercury TMDL states that the County has a MS4 Phase II NPDES Permit CAS000004-2003b. The Basin Plan should require the County to post their permit and show monitoring results for transparency for the public to show compliance with the Clean Water Act.

15. *Mercury and other metal contamination to the Lake likely exacerbate blue-green algae growth. The Nutrient TMDL relies on the Mercury TMDL success and the restoration of the Sulphur Banks/Herman Pit superfund project!*
16. *Modeling for Clear Lake Nutrient TMDL has been ineffective and may be completely off target for improving water quality.*
17. *TMDLs require that the Water Boards (WB) consider all other impairments/limiting factors in the basin and find nexus where WBs can help improve water quality. Clear Lake is an important water body in rapid decline of the water quality and far from achieving or even moving towards the TMDL that was established in 2006. In fact, the Lake's water quality is getting precipitously worse. The WB should have an integrated approach to water quality improvement such as: 1) reduce water diversions both in the future and with current water rights 2) cancel any conditional waiver programs and step up the TMDL program to closer supervision by the WB.*

The Central Valley Water Board adopted Basin Plan Implementation Programs to control mercury in Clear Lake in 2002 and to control nutrients in Clear Lake in 2006. The Basin Plan includes time to conduct any necessary studies and monitoring and to implement any necessary control measures.

The Central Valley Water Board was provided with a progress report on the mercury control program last year and the staff report may be found on the Board's website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/clear_lake_hg/cl_final_tmdl_5yr_update.pdf

The report describes actions undertaken by stakeholders to reduce the mercury in Clear Lake. Another progress report on the mercury control program will be provided to the Central Valley Water board in five years.

The Basin Plan requires that the Central Valley Water Board consider collected information to determine whether the Implementation Program to control nutrients in Clear Lake should be modified by 19 September 2012.

During these review periods stakeholders are welcome to provide information for the Board's consideration.

The Basin Plan describes the Central Valley Water Board's plans and policies to achieve water quality objectives and protect beneficial uses. However, implementation of the Basin Plan is not a triennial review issue. The Central Valley Water Board has administrative tools and remedies to implement the Basin Plan. Specific incidents of violations of waste discharge requirements and Basin Plan provisions should be brought to the attention of the Central Valley Water Board enforcement staff for waste discharges and to the attention of the State Water Board's Division of Water Rights enforcement staff for incidents of illegal water diversions.

For Recommendations 1 – 5, the Water Boards have a goal of making water quality data readily accessible. However, an appropriate database is still under development. In the meantime, interested persons can contact staff for water quality data generated by or for the Central Valley Water Board. For Recommendation 6, the Department of Fish and Game is responsible for protecting the State's waters from invasive species. Please contact the Department of Fish and Game for more information. Recommendations 7 – 8 refer to enforcement of laws and regulations. As discussed above, the Central Valley Water Board has administrative tools and remedies to enforce the Basin Plan and other water quality laws and regulations. In regards to Recommendation 9, the Implementation Programs for controlling mercury and nutrients at Clear Lake do not identify water diversions as contributing to the water quality impairments. During the review of these Implementation Programs, interested parties may provide information for the Central Valley Water Board's consideration. Recommendations 10 – 11 are not basin planning issues. Information regarding Recommendation 12, 15 and 16 should be provided when the Central Valley Water Board considers collected information to determine whether the Implementation Program to control nutrients in Clear Lake should be modified. The Basin Plan specifies that the Board will consider this information by 19 September 2012. For Recommendation 13, the Phase II Small Municipal Separate Storm Sewer System (MS4) information may be found on the State Water Board's website at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

The webpage includes the permit and the storm water management plans submitted by the applicants. Annual reports may be reviewed by contacting the Central Valley Water Board Storm Water staff. Recommendation 14 is noted but it is unclear what is being requested. The Implementation Program to control nutrients in Clear Lake is not related to the Implementation Program to control mercury in Clear Lake. However, recognizing that there is potential for overlap with the two

control programs, staff have been assigned to work with responsible parties to coordinate activities.

86. SUMMARY:

Between drought conditions, increased land uses such as wildland conversion to vineyards, poor road conditions, lack of effective best management practices and numerous sewer leaks that discharge nutrients to the Lake and over allocations of water to down stream diverters combined with defunct and out of date nutrient TMDL modeling along with lack of current data all have put Clear Lake in jeopardy. Living River Council is concerned about the lack of improvement to the water quality of Clear Lake. During the summer and warm months Clear Lake's water quality plummeted causing fish kills and loss of public trust values such as fishing, swimming and recreation. Mercury impacts to the Lake are dependent on the Superfund Record of decision now on hold due to 'technical difficulties' for restoration efforts. Heavy metals are contributing to significant cumulative impacts to water quality and are dangerously not fully understood by the Water Boards. The Triennial update for Clear Lake must reevaluate modeling that sets TMDL limits to improve future water quality for this important watershed to the Delta.

The Central Valley Water Board adopted Basin Plan Implementation Programs to control mercury in Clear Lake in 2002 and to control nutrients in Clear Lake in 2006. The Basin Plan includes time to conduct any necessary studies and monitoring and to implement any necessary control measures.

The Central Valley Water Board was provided with a progress report on the mercury control program last year and the staff report may be found on the Board's website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/clear_lake_hg/cl_final_tmdl_5yr_update.pdf

The report describes actions undertaken by stakeholders to reduce the mercury in Clear Lake. Another progress report on the mercury control program will be provided to the Central Valley Water Board in five years.

The Basin Plan requires that the Central Valley Water Board consider collected information to determine whether the Implementation Program to control nutrients in Clear Lake should be modified by 19 September 2012.

During these review periods stakeholders are welcome to provide information for the Board's consideration.