APPENDIX A

DWS MATERIALS

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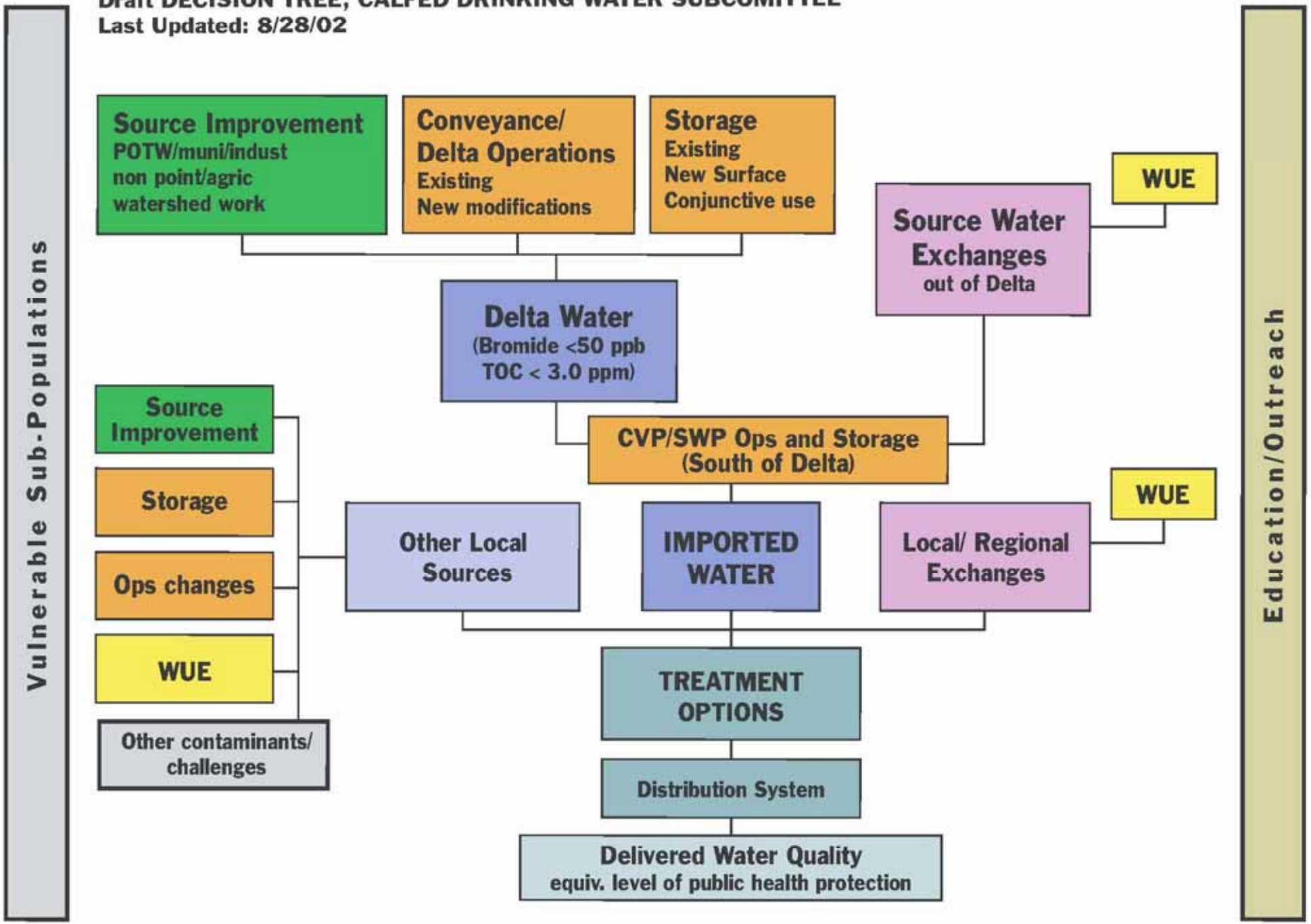
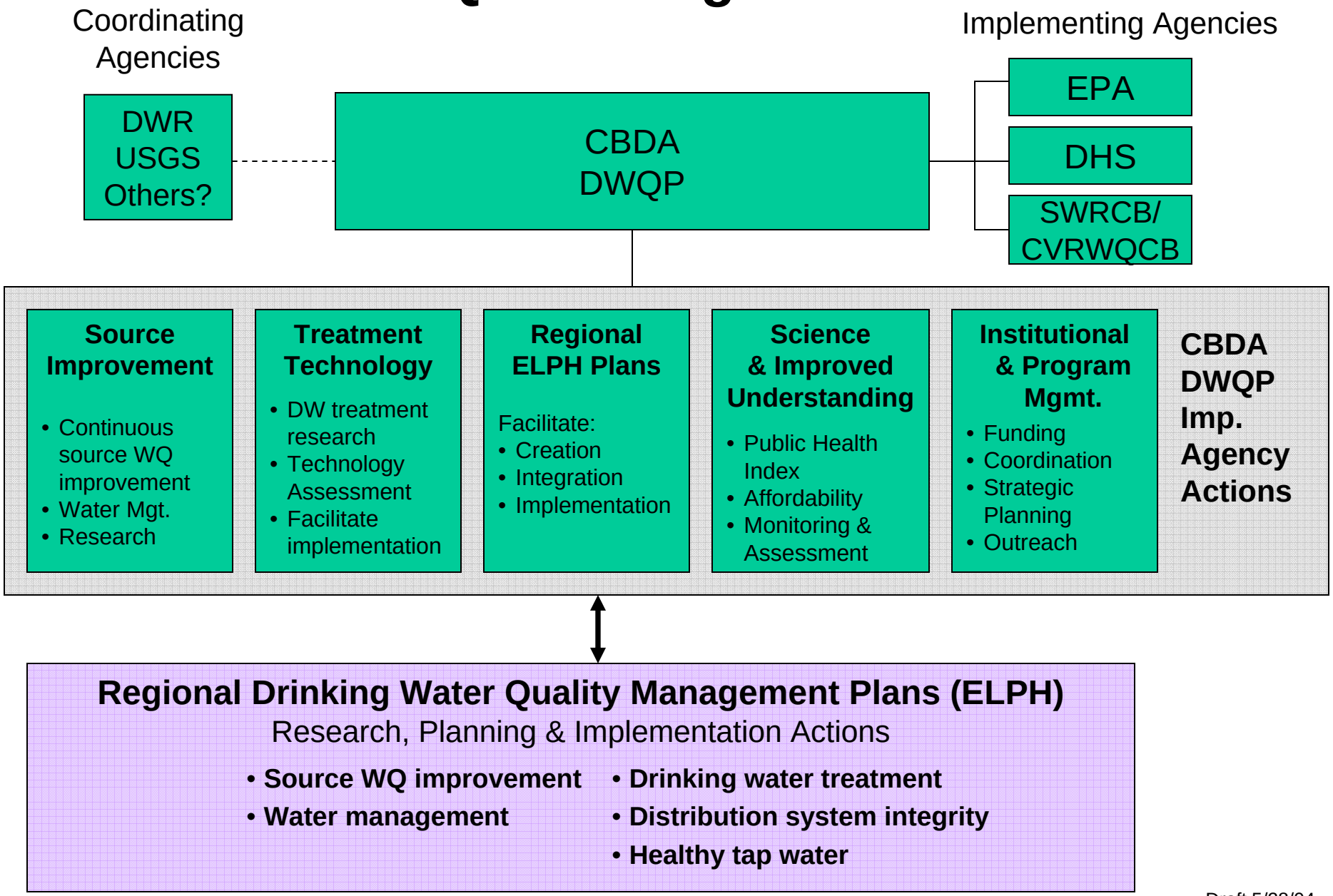
EQUIVALENT LEVEL OF PUBLIC HEALTH PROTECTION
Draft DECISION TREE, CALFED DRINKING WATER SUBCOMITTEE
Last Updated: 8/28/02



DWQP Strategic Plan



Draft 5/28/04

APPENDIX B

ADDITIONAL WATER QUALITY DATA

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APPENDIX B

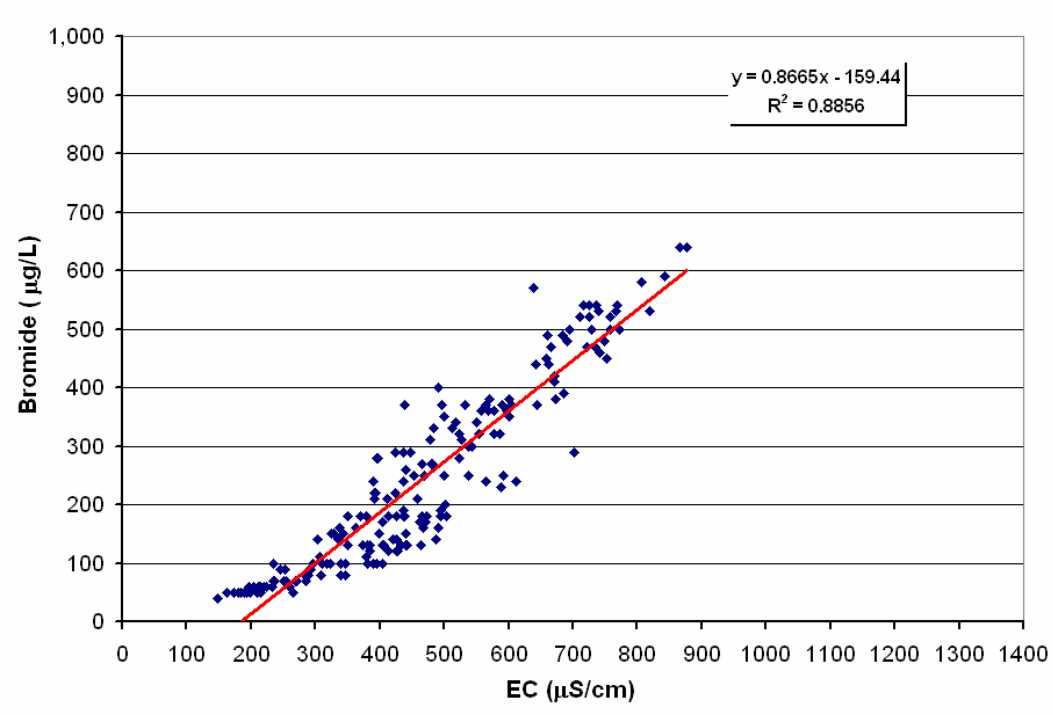

Figure B-1. Bromide versus electrical conductivity at Banks Intake (1990-2005)

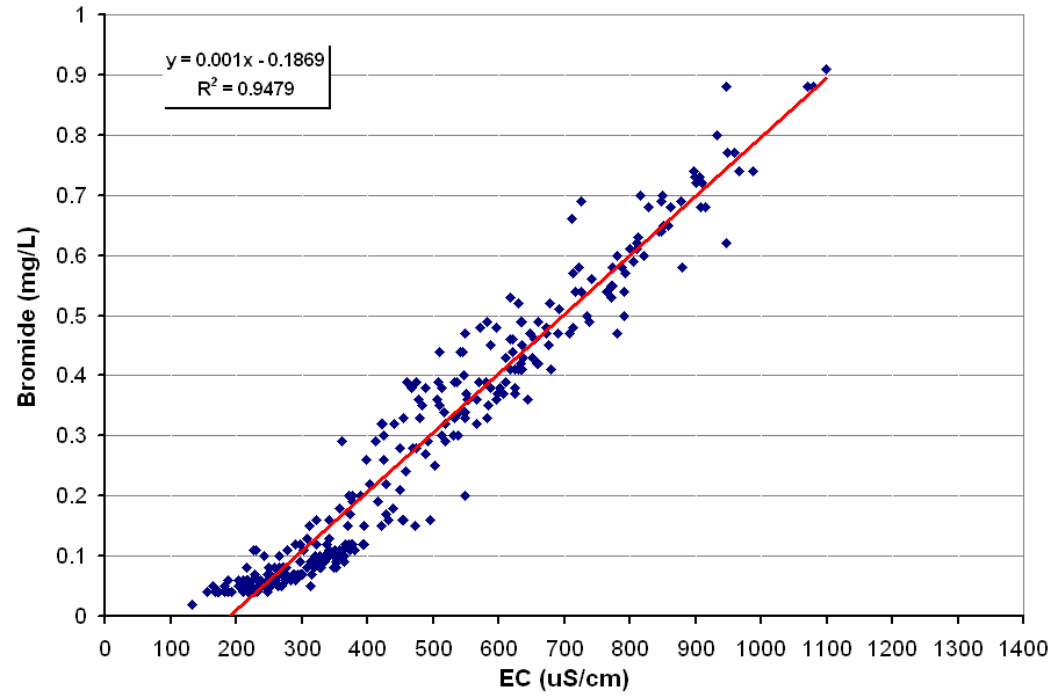

Figure B-2. Bromide versus electrical conductivity at Rock Slough Intake (1983-2004) [Graph provided by CCWD]

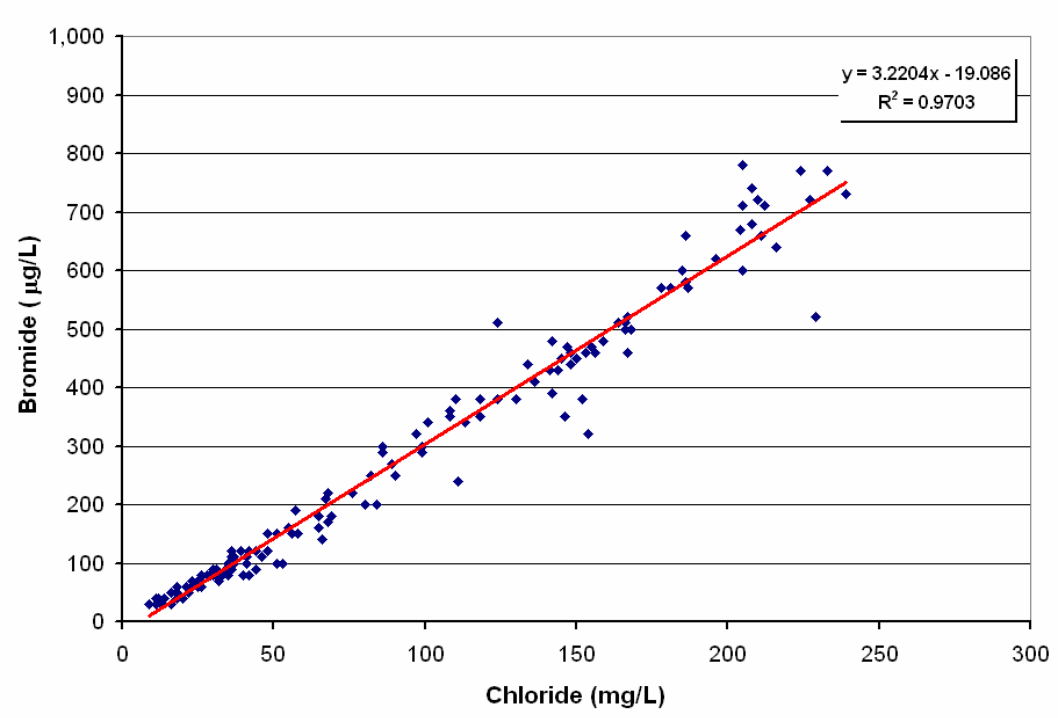

Figure B-3. Bromide versus chloride at Rock Slough Intake (1990-2005)

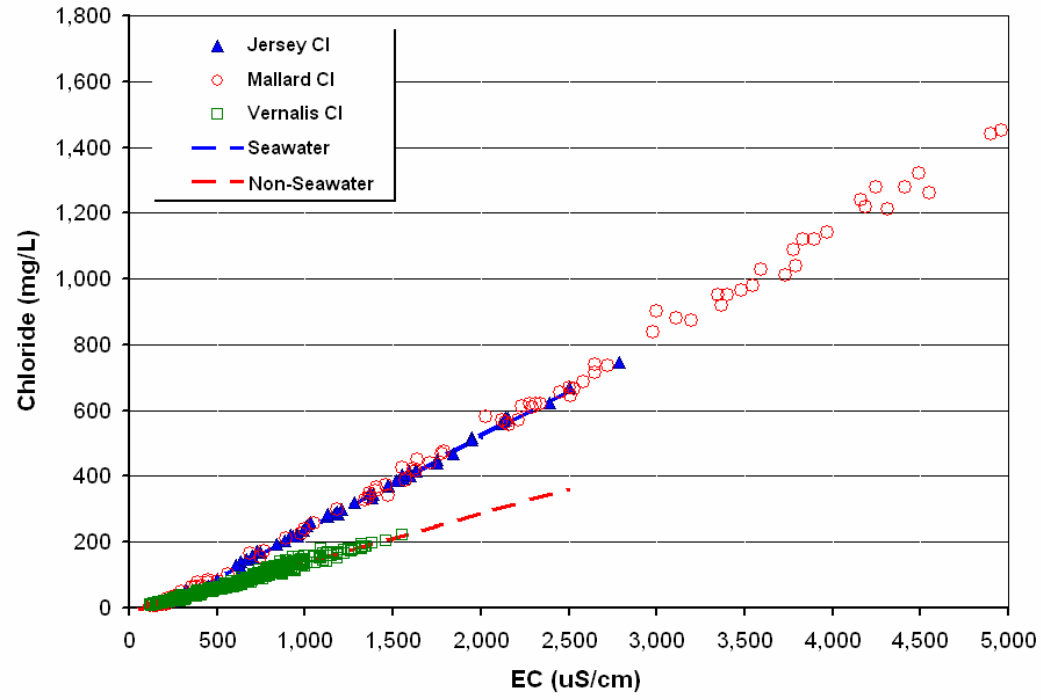

Figure B-4. Chloride versus electrical conductivity at Jersey Island, Mallard Island, and San Joaquin River (1983-2004) [Graph provided by CCWD]

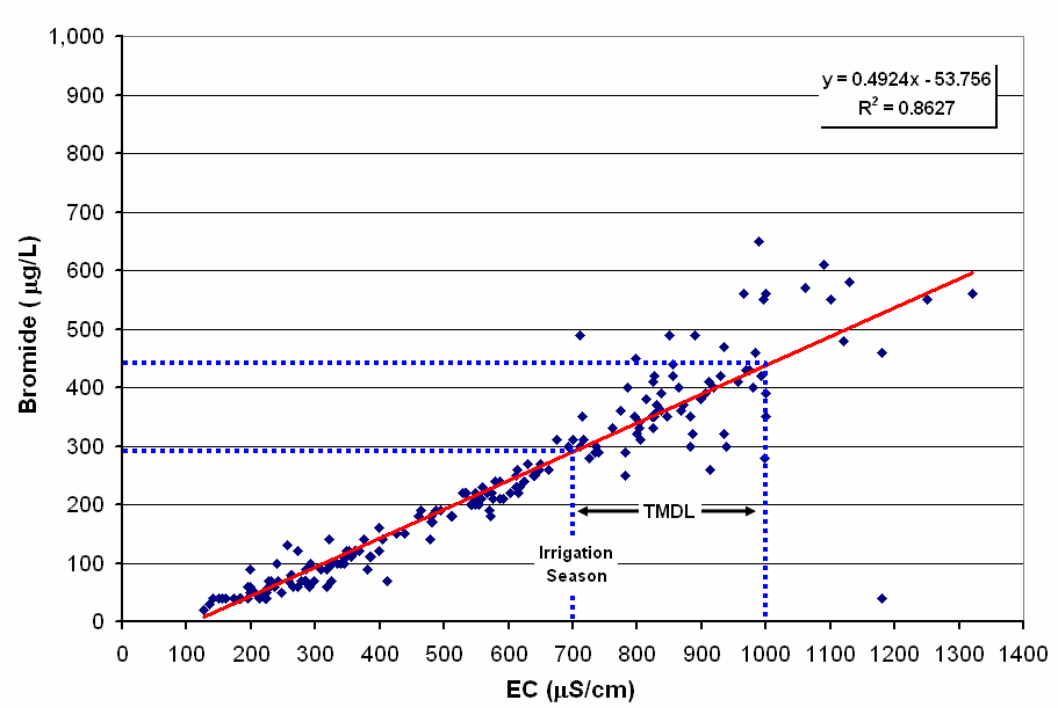

Figure B-5. San Joaquin River at Vernalis bromide versus electrical conductivity and TMDL targets (1990-2005)

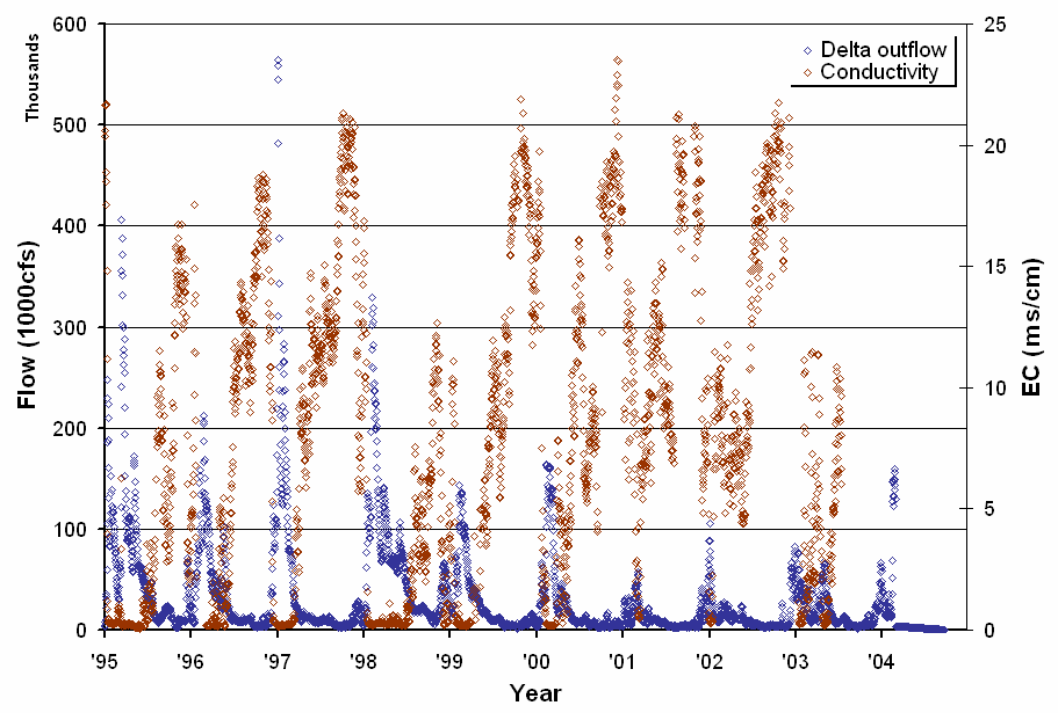

Figure B-6. Delta Outflow and Port Chicago electrical conductivity

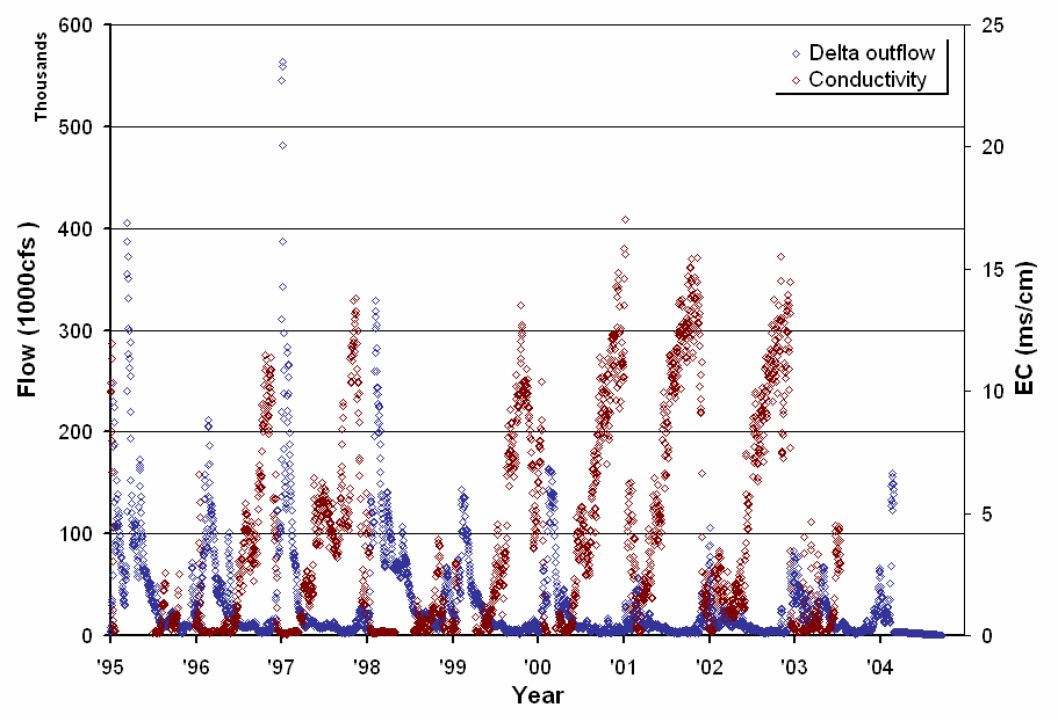

Figure B-7. Delta Outflow and Chipps Island electrical conductivity

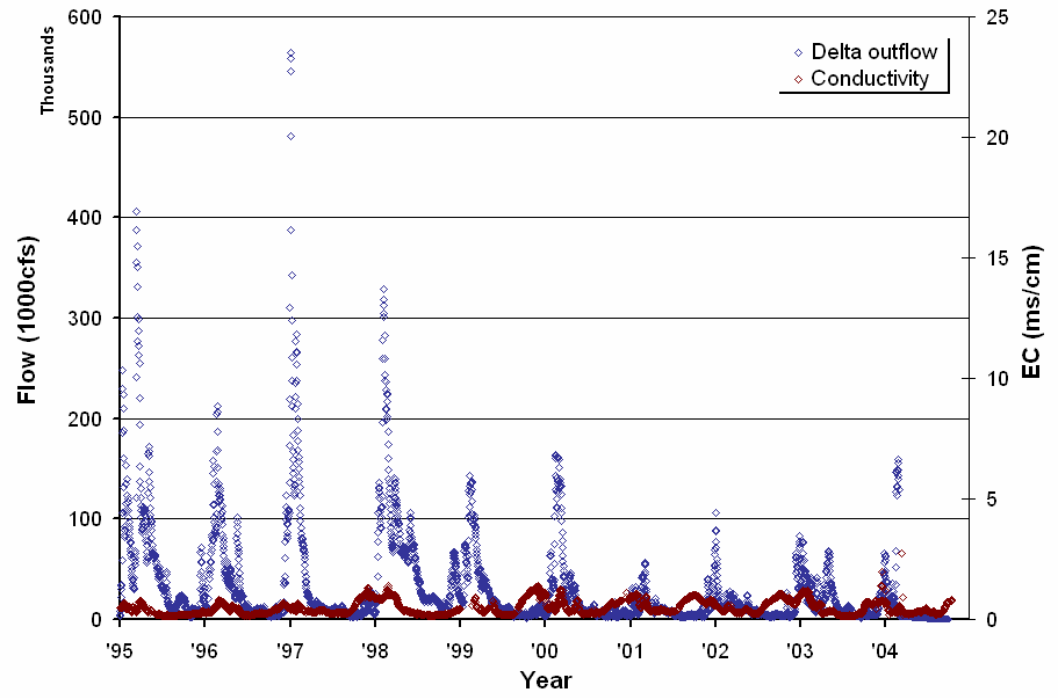

Figure B-8. Delta Outflow and Rock Slough Intake electrical conductivity

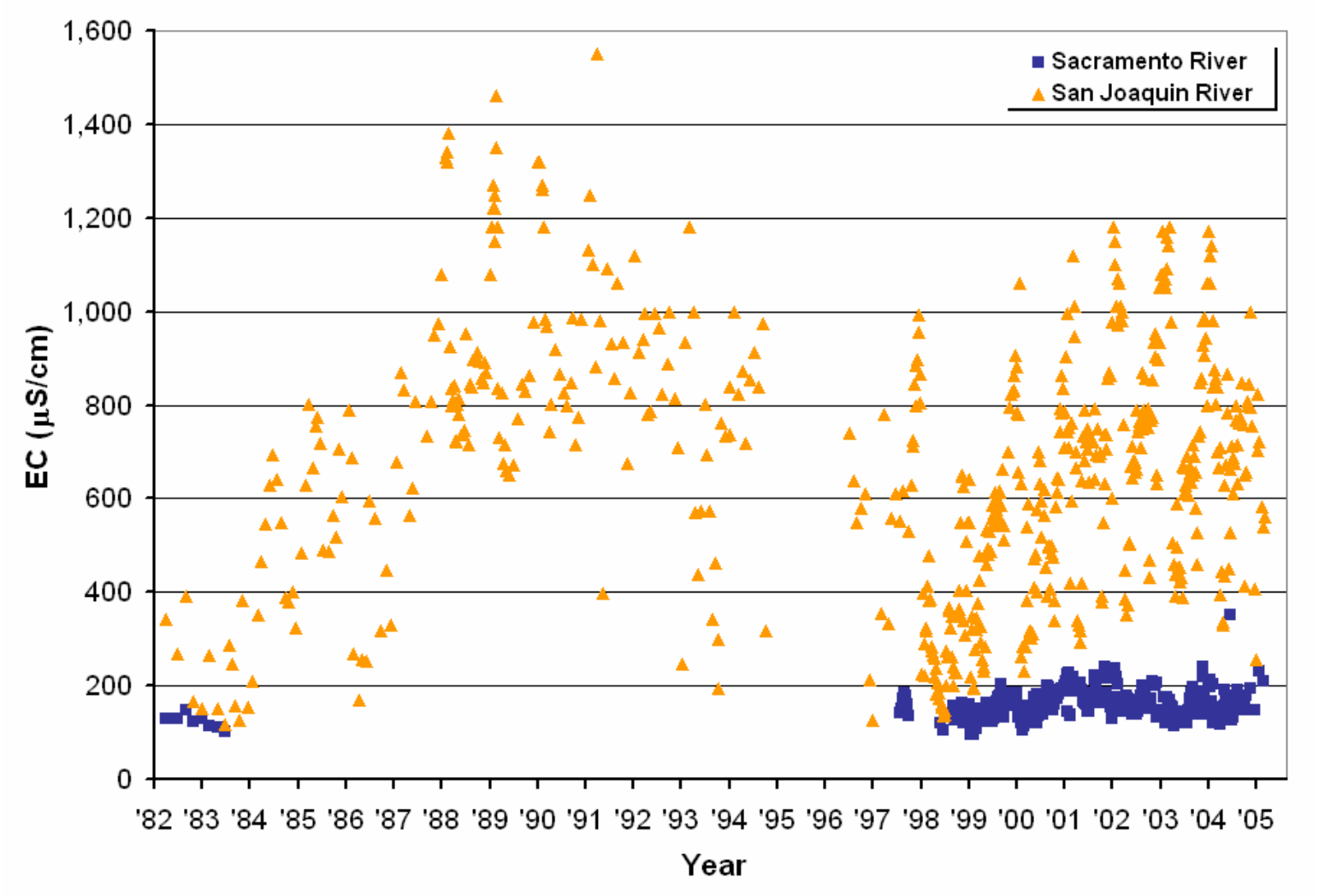

Figure B-9. Electrical conductivity versus time for Sacramento River at Hood and San Joaquin River at Vernalis

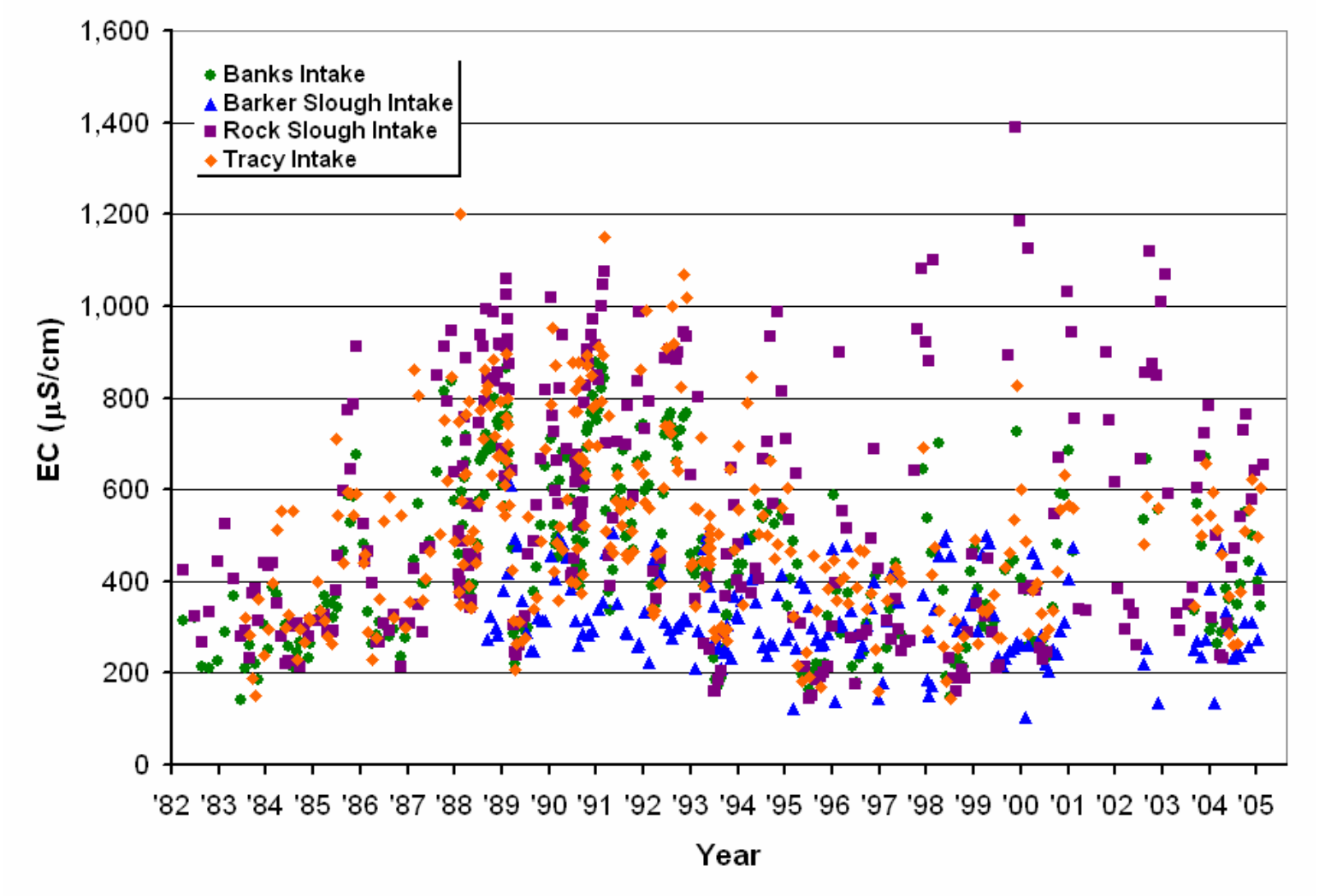

Figure B-10. Electrical conductivity versus time for Delta Intakes [1]

[1] For ease of comparison, daily data from Tracy (available June 1, 1993–present) and Rock Slough (1982-1991) was filtered to show only the samples that were collected on the same date as at nearby Banks Intake. EC data were not available for Old River Intake.

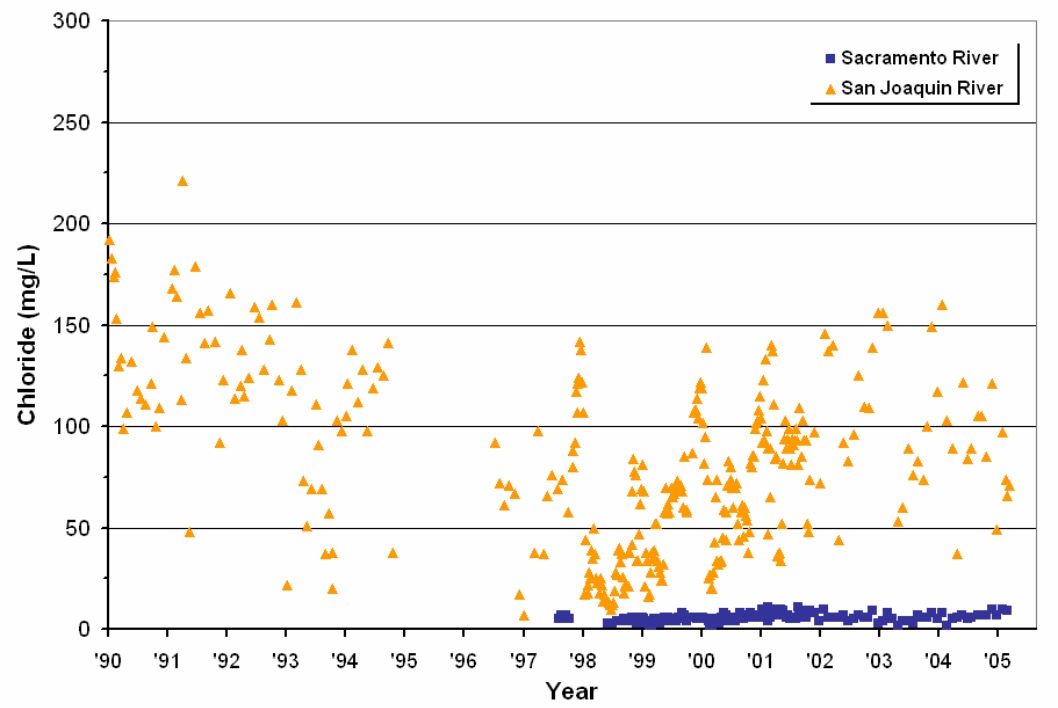

Figure B-11. Chloride versus time for Sacramento River at Hood and San Joaquin River at Vernalis

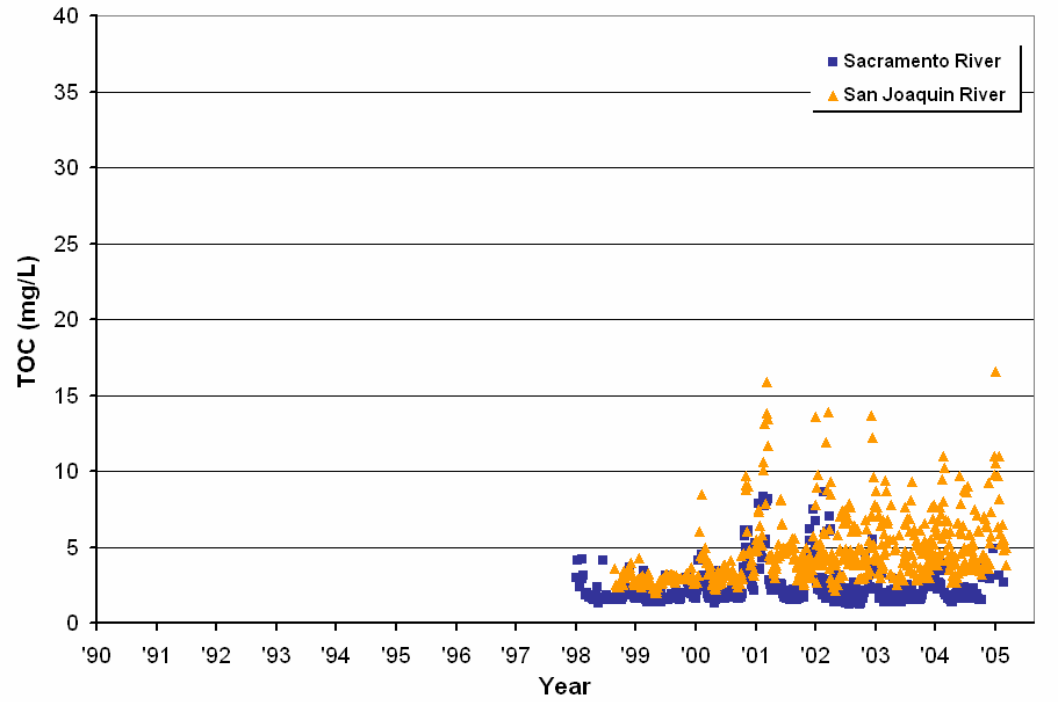

Figure B-12. TOC versus time for Sacramento River at Hood and San Joaquin River at Vernalis

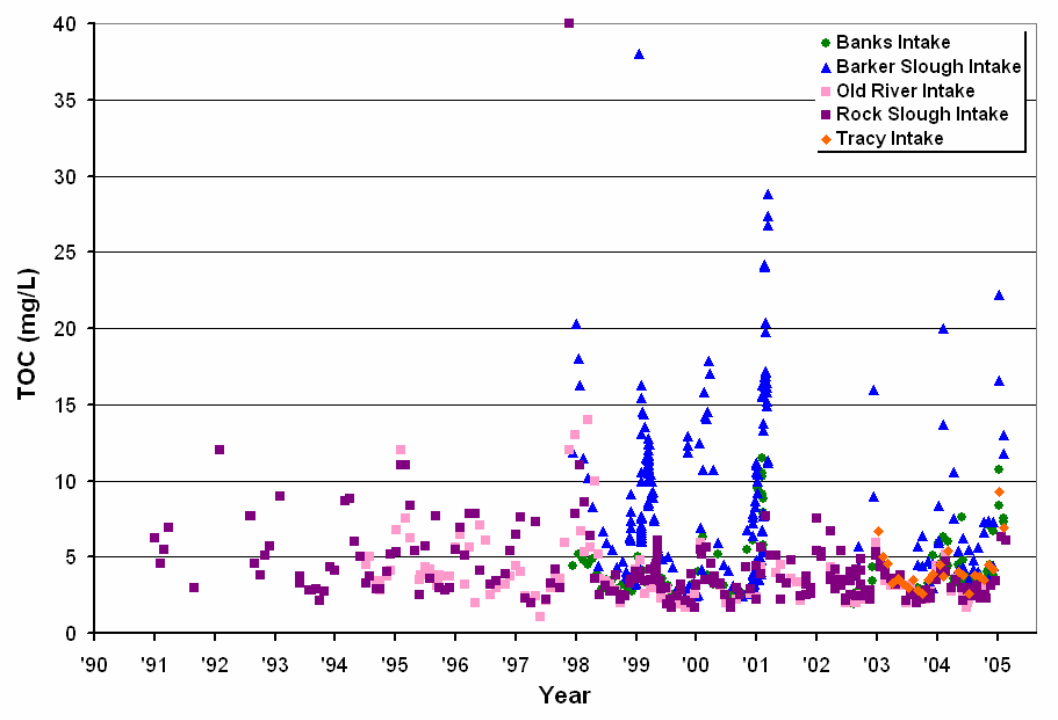

Figure B-13. TOC versus time for Delta Intakes

Fingerprinting Graphs:
With permission from DWR, Contra Costa Water District (CCWD) utilized model parameters from DWR's South Delta Improvement Plan (SDIP) 2001 base modeling scenario to run a DSM2 simulation of their own, to generate volume and EC fingerprints at Delta intakes from 1977 to 1991. The SDIP 2001 base runs assume historical hydrology, to calculate estimated freshwater inflows to the Delta based on historical precipitation measurements, but does not account for historical Delta operations. Instead, the model assumes that Delta operations over this time period were exactly as they were in 2001. Agricultural contributions labeled in the legend of the graphs produced by CCWD, generally refer to Delta Island sources.

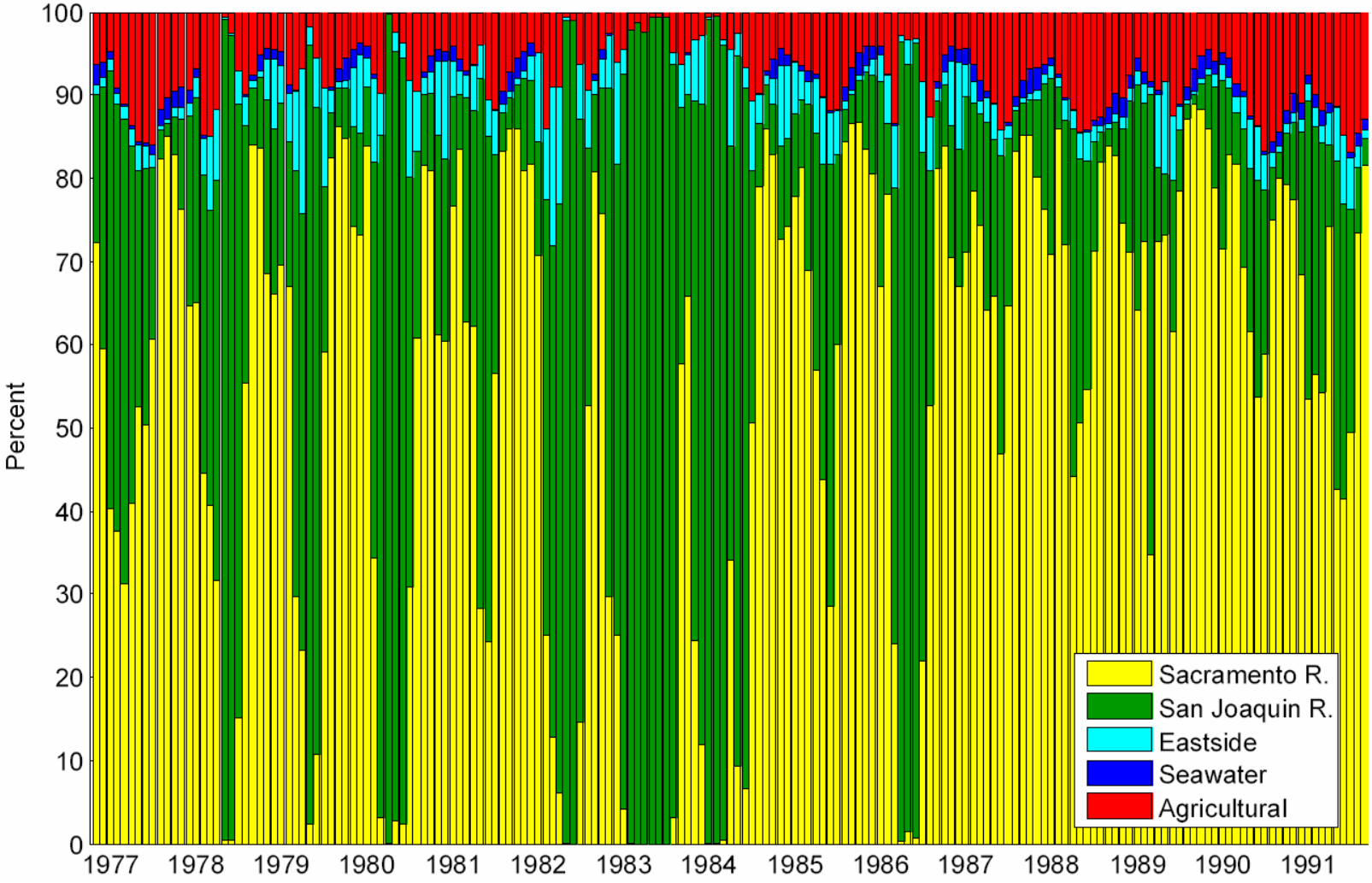

Figure B-14. Monthly Percent Volumetric Contributions at Clifton Court Forebay (near Banks Intake)
[Graph provided by CCWD]

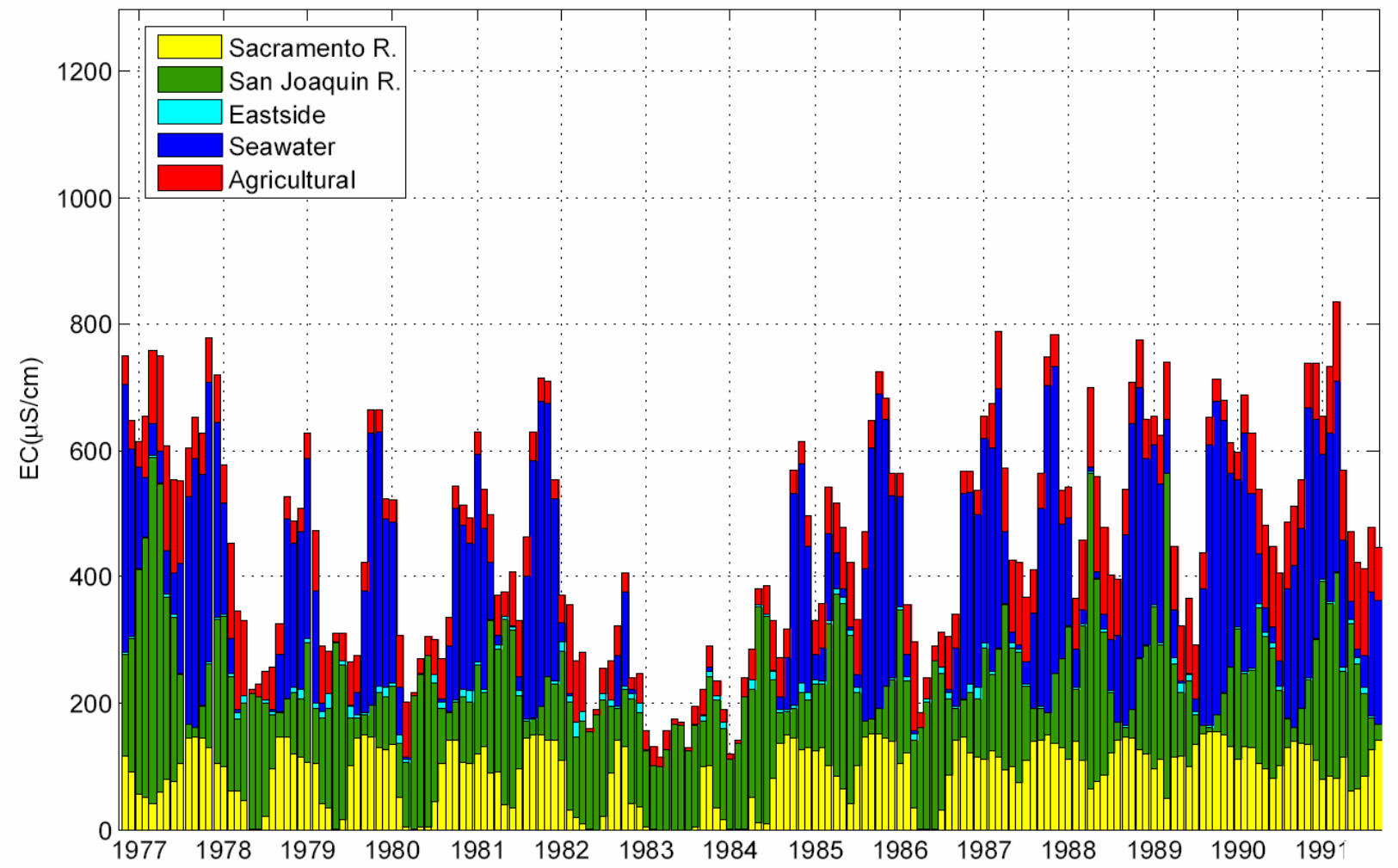

Figure B-15. Monthly Average EC at Clifton Court Forebay (near Banks Intake)
[Graph provided by CCWD]

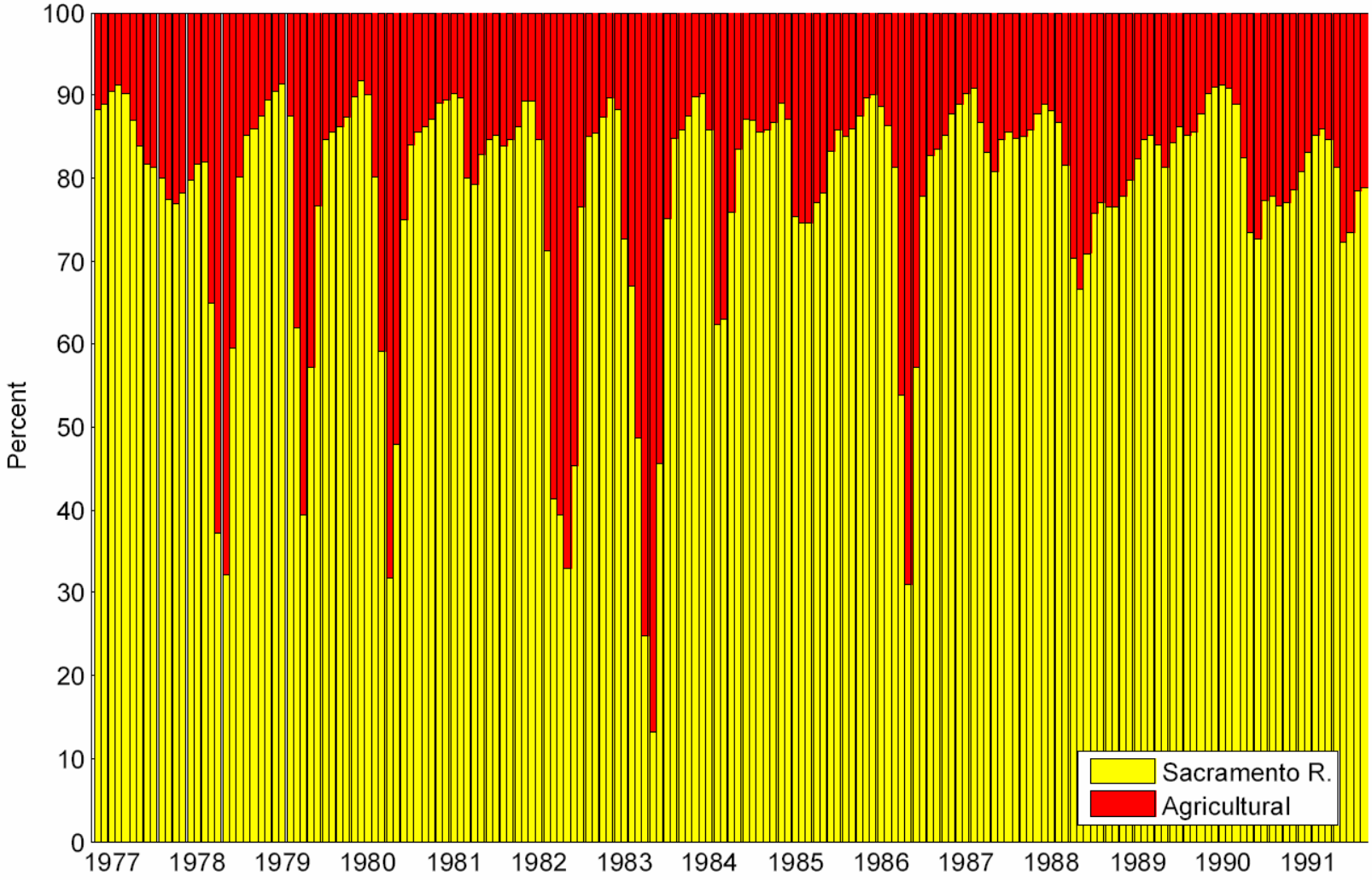

Figure B-16. Monthly Percent Volumetric Contributions at Barker Slough Intake
[Graph provided by CCWD]

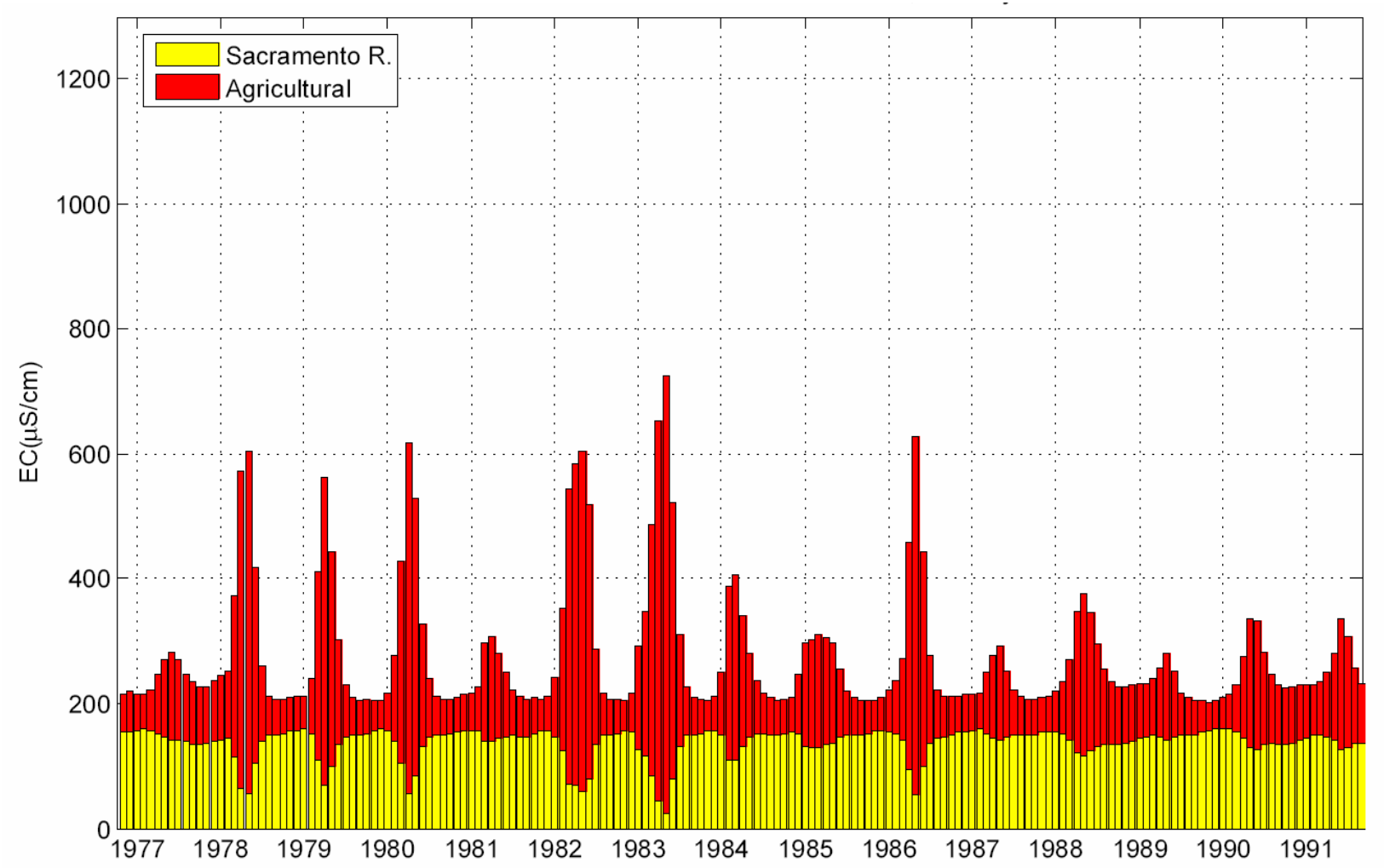

Figure B-17. Monthly Average EC at Barker Slough Intake
[Graph provided by CCWD]

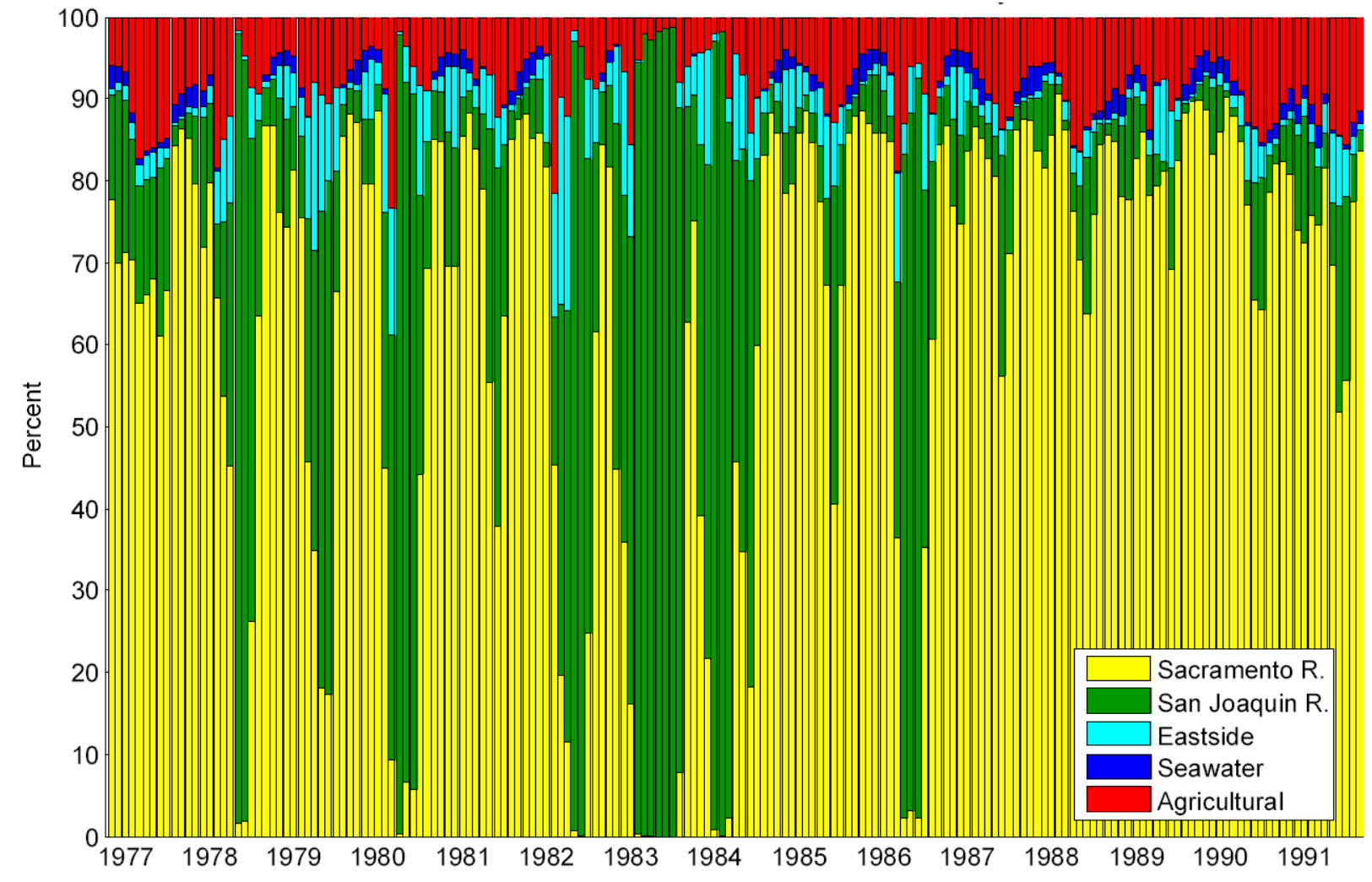

Figure B-18. Monthly Percent Volumetric Contributions at Old River near Highway 4 (near Old River Intake)
[Graph provided by CCWD]

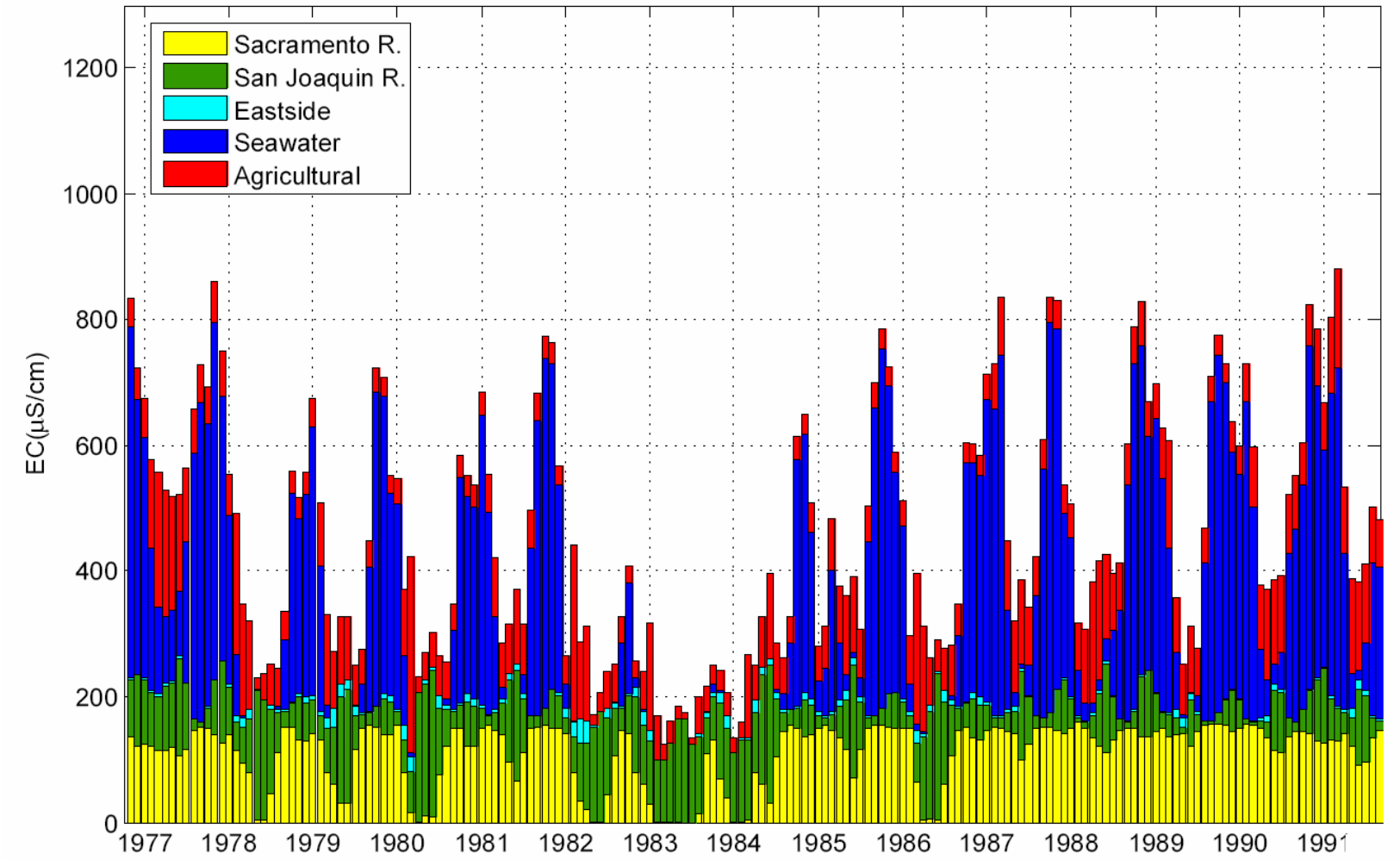

Figure B-19. Monthly Average EC at Old River near Highway 4 (near Old River Intake)
[Graph provided by CCWD]

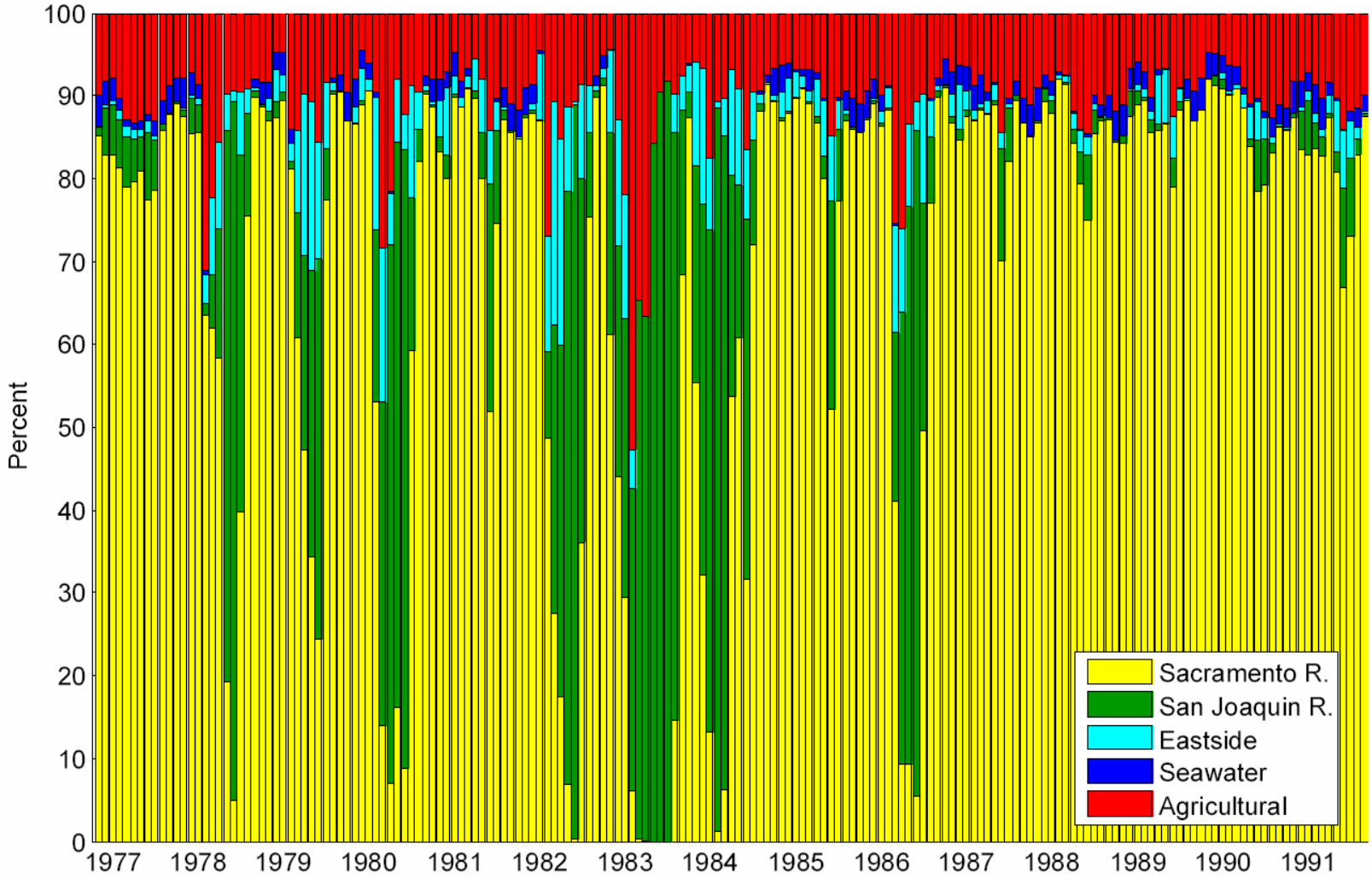

Figure B-20. Monthly Percent Volumetric Contributions at Rock Slough, Pumping Plant #1 (Rock Slough Intake)
[Graph provided by CCWD]

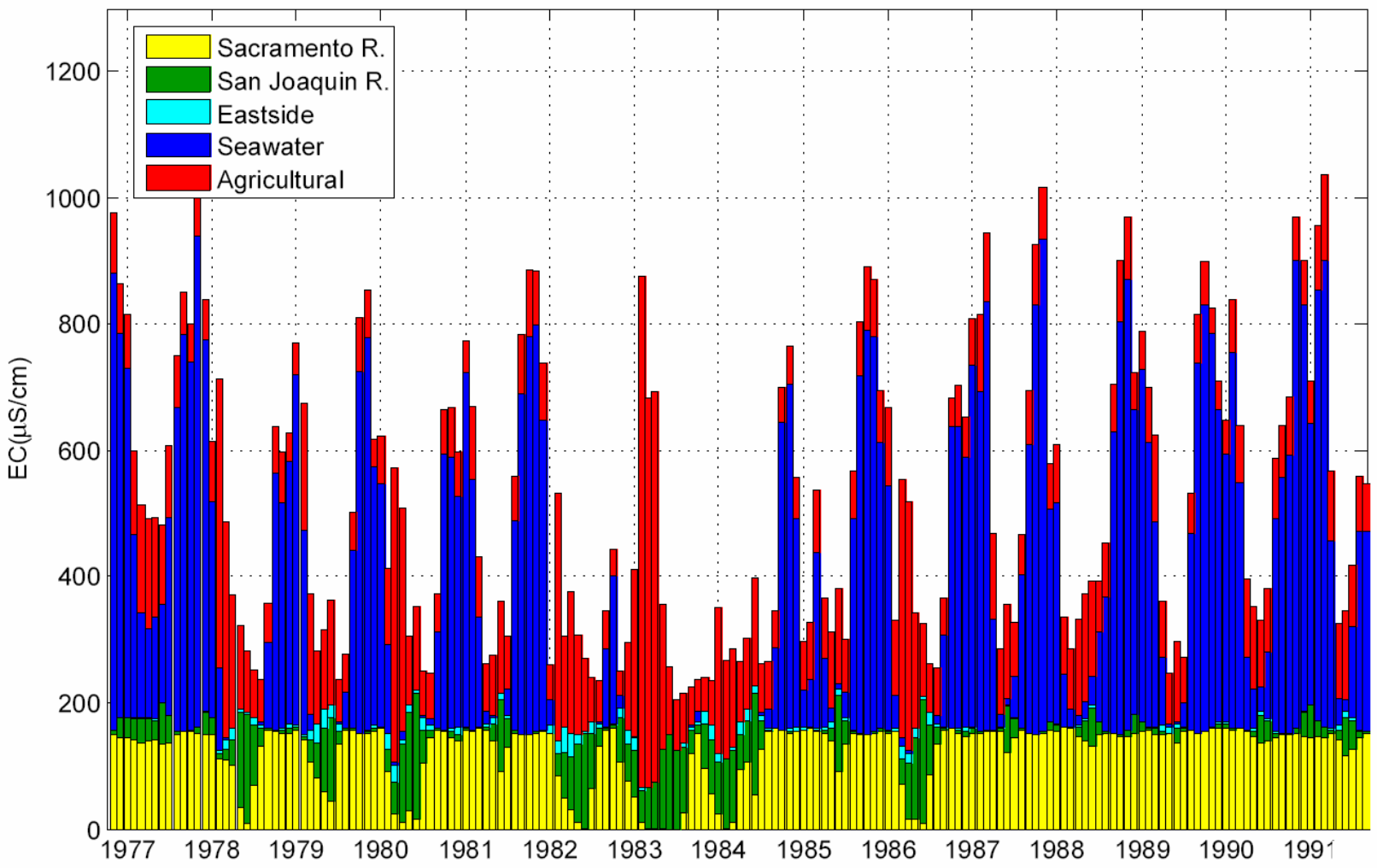

Figure B-21. Monthly Average EC at Rock Slough, Pumping Plant #1 (Rock Slough Intake)
[Graph provided by CCWD]

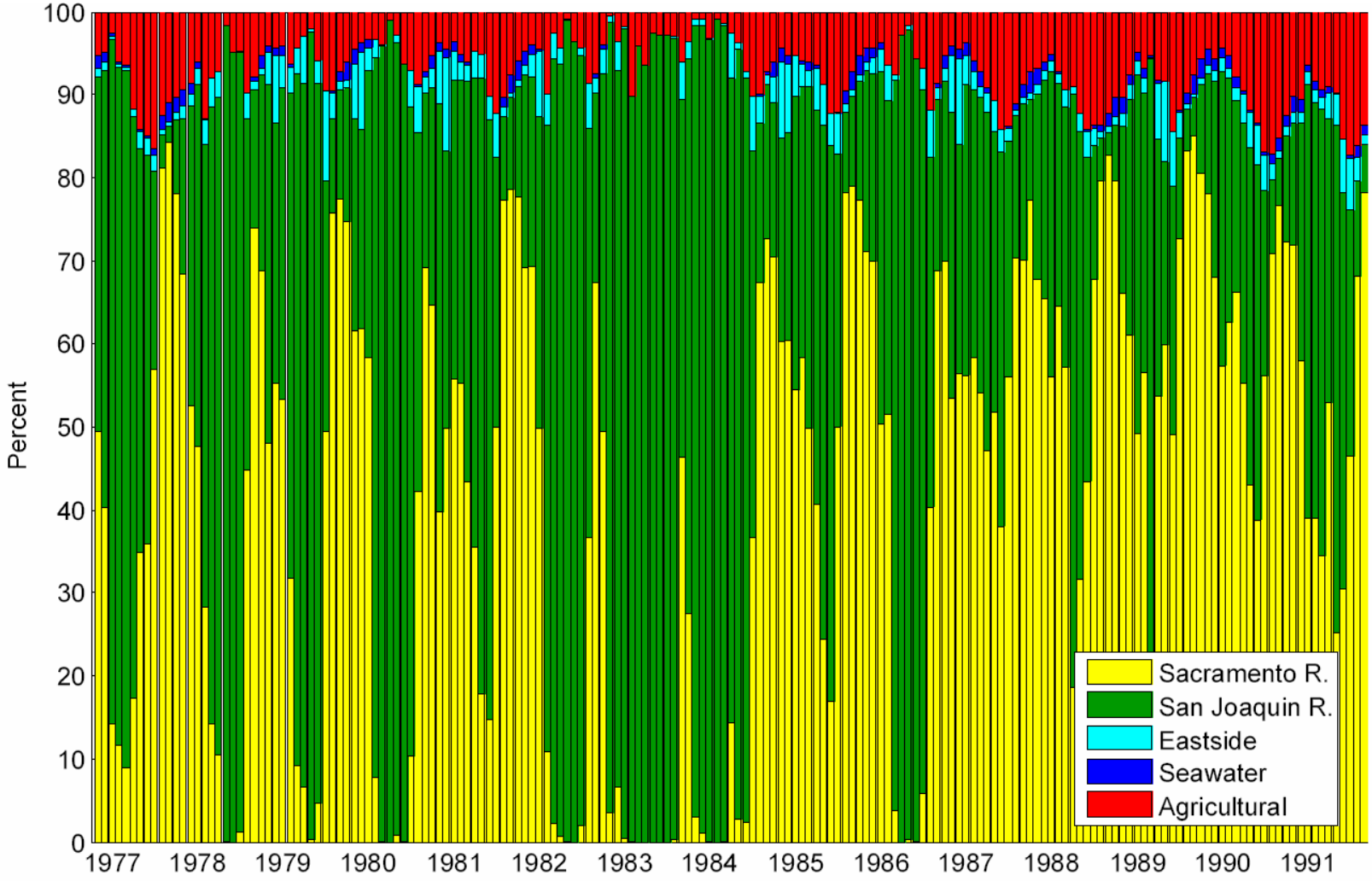

Figure B-22. Monthly Percent Volumetric Contributions at CVP Pumping Plant near Tracy (Tracy Intake) [Graph provided by CCWD]

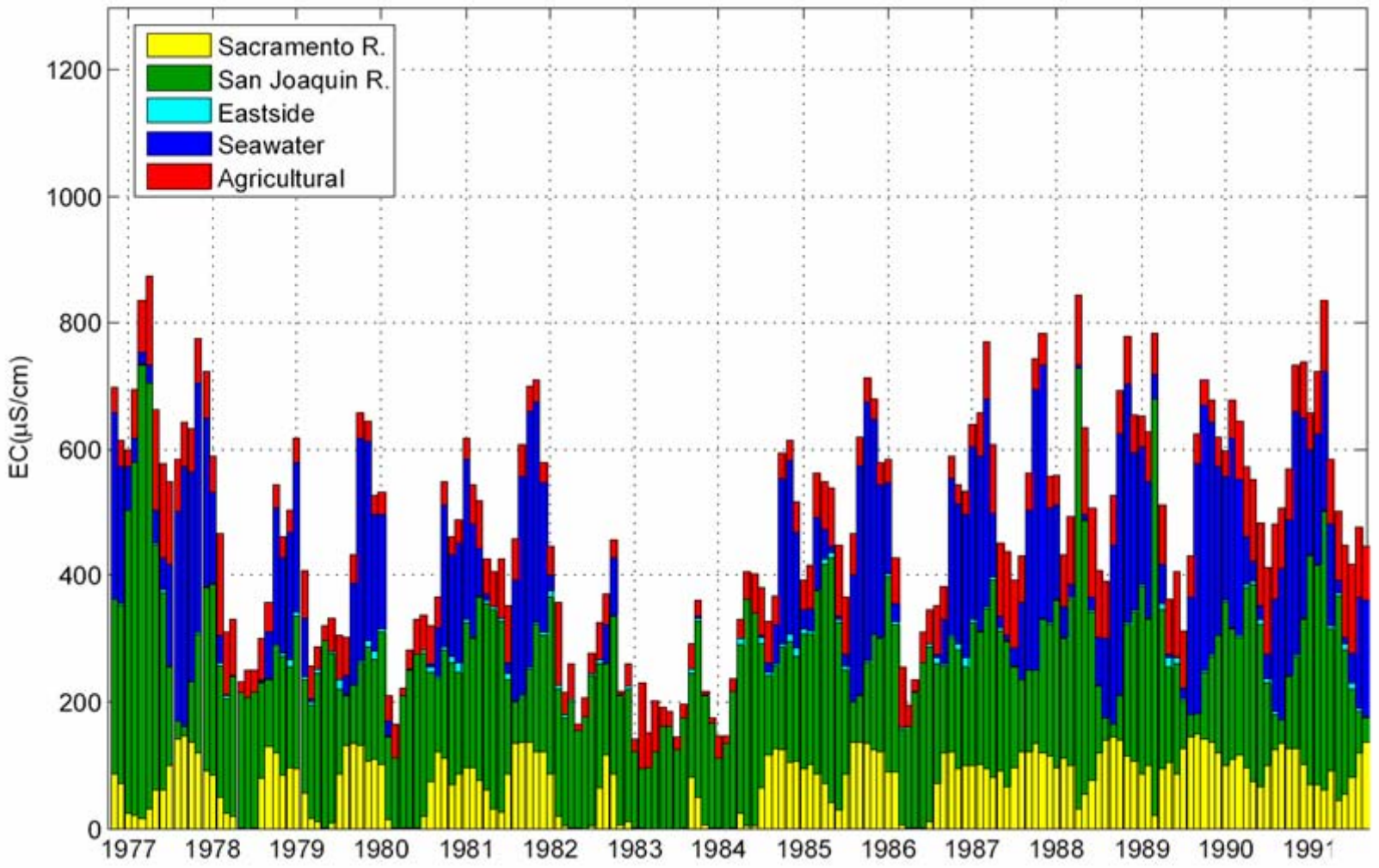

Figure B-23. Monthly Average EC at CVP Pumping Plant near Tracy (Tracy Intake)
[Graph provided by CCWD]

APPENDIX C

PROJECT MANAGER INTERVIEW SUMMARIES

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CALIFORNIA
BAY-DELTA
AUTHORITY

650 Capitol Mall, 5th Floor
Sacramento, CA 95814
916.445.5511 FAX 916.445.7297
http://calwater.ca.gov

November 1, 2004

Dear Project Managers/Leads,

In August you were sent an electronic survey from Brown and Caldwell regarding a project funded by the California Bay Delta Authority (CBDA). At this time, we have not received your response. The requested completion date was October 22, 2004.

The information requested in these surveys is an integral part of efforts to make an initial, comprehensive assessment of the Drinking Water Quality Program (DWQP). This assessment will aid in refining future project and program funding needs, as well as assist in better coordination, communication, and integration of the overall program, including the projects to which CBDA has provided funding and the science which informs the program. Part of this effort will include a website where information about current and future projects will be stored to inform the public and CBDA about funded projects. This effort will also be used to inform the future direction of the program.

I would like to offer you another opportunity to provide the necessary information, by Monday, November 8, 2004. I realize that the majority of the projects being surveyed have not begun; regardless, your input on many of the questions is important – especially with regard to the contracting process, changes or revisions to your project information, and the status of your project's progress. There is an additional copy of the survey attached to this letter, please take 15-30 minutes to address, in your opinion, the most important information to relay to the program, its implementing agencies, and/or other projects. Since, we are progressing towards completing this report we will not be able to accept surveys after November 8. If your response is not received by November 8, we will make simplified assumptions regarding your project status and accomplishments; based on your proposals and quarterly reports.

If you are not the project manager could you please forward this to the appropriate contact person and contact Robin Lee or myself to let us know.

Your efforts are greatly appreciated.

Sincerely,

Lisa M. Holm, P.E.
Program Manager
Drinking Water Quality Program

Assessment of the CBDA Drinking Water Quality Program
Questions for Project Managers of CALFED funded projects
Prepared by Brown and Caldwell
January 11, 2005

Project Specific

1. What is the future potential for your project regarding changes in Delta water quality?

2. What do you feel the most critical water quality issues are facing the Delta?

3. What types of interaction have you had with CALFED regarding your project (other than the project surveys), if none, what type of interaction would you like to have?

4. What types of interaction have you had with other CALFED funded projects?

5. Can you quantify the results and/or show the benefits that your project has on the drinking water quality in the Delta?

CALFED and Drinking Water Quality Program

6. How do you feel that your program/agency fits into the overall mission and goals of the CALFED Program?

7. How would you benefit from a communication forum about past and ongoing CALFED projects?
   Ex. Website, Workshops

8. What are some of your ideas about how this should be done?

9. How could CALFED integrate projects to demonstrate project specific impact on delta water quality improvement?

10. Where is CBDA (and the DWQP) meeting your expectations and in what areas are the programs underperforming?

11. Where would you like to see improvement?

12. How would you suggest CALFED market some of the water quality issues/problems to the general public?

13. What do you feel are the most significant barriers to improving water quality in the Delta?

Meeting Summary

Meeting Location: California Coastal Commission
Date: February 10, 2005

Attendees: Brown and Caldwell
Sarahann Dow

Water Agency/Facility	
Vivian Matuk	California Coastal Commission
Tonya Redfield	Contra Costa County

Projects: Keep the Delta Clean
You Play in It, You Drink It Too!

Background

People are not aware that the Delta is also used for drinking water.

- Informal assessment – approximately one in ten people aware that the Delta is also drinking water.
- Disconnect between recreation practices and drinking water.

Future Potential to Improve Delta Water Quality

1. Drive to change people's behavior – provides a good impact.
2. Minimum of five years to run an extensive outreach program to start change, and people need to be reminded after that.
   - This project only allows for one year of education outreach. Needs funding for a permanent program.
3. Under CALFED grant they work with all communities.
   - Contra Costa County dedicating 120,000/year to sustain this project, but this is only one county of the six surrounding the Delta.
   - San Joaquin County has a large amount of boating but beyond this project grant, they do not have resources to address improvement in the San Joaquin area. However, this is important for overall Delta water quality improvement.
   - Would like another grant to make it a true regional program and sustainable ongoing effort.
   - Concerned about future efforts. Very important: Boater education and convenient pollution prevention resources and disposal options are vital to improve and protect Delta water quality.
4. Marine Patrol has a new vessel ordinance, allowing them to board vessels and inspect if a boater is suspected of unlawfully disposing boat sewage overboard.
5. Now receive phone calls from other states because of their good efforts to clean the water.

Reason for Potential Success

1. Worked directly with Marina operators prior to producing anything, to form strong partnership and gain trust in the local marina industry. Brought about endorsement and cooperation for education and pollution prevention infrastructure.
2. Using research information and experience developed by the California Coastal Commission's Clean and Green Campaign.
3. The program is not only working directly with marinas but is also targeting the most common sources of information for boaters in California: word of mouth, boat supply stores and boat shows. The program has four main components: 1) research, 2) marina operator technical assistance, 3) education and outreach, and 4) installation of pollution prevention infrastructure.
4. 8,000 boater surveys will be distributed to learn more about boaters and to better target education efforts and water-front pollution prevention infrastructure.
   - Done to understand recreation community and current boater behavior.
   - As a result of an initial marina operator survey, decided to address boater safety because determined that was an important area and would ultimately assist in water quality.
5. Project could have a long term sustainable impact in improving water quality.
6. Have clear ideas about future next steps to make the program successful.

Other Areas That Can Be Addressed To Improve Delta Water Quality

1. Non-point source pollution within the Delta is potentially a large problem.
2. Hard to quantify how much impact recreation has on the Delta – approx. 170,400 registered boats in the six Delta Counties alone in addition to an unknown number of trailored boats from outside the area. Boater survey will help better understand boater behaviors, characteristics, and the need for education and infrastructure.
3. There is a lack of pollution prevention services in the Delta. More boater education is needed.

Interaction With CALFED

1. Unsure of their direct connection their project has with CALFED due to limited or nonexistent contact from CALFED representative. Primarily interact with state and regional water boards.
2. Interact with grant manager at regional board.
3. Only direct interaction with CALFED was that they sent some promotional material to CALFED for approval.
4. Would like more interaction to find other resources to sustain and expand the program and maintain progress in education outreach.
5. Very interested in more exposure of their project. Feel it has a lot of potential for water quality improvement.
   - Articles in Contra Costa Times this boating season.
   - Interested in bringing people from CALFED, state, and regional board out to project site for a boat tour so they can observe and understand first hand.
6. Potential CALFED Assistance.
   - Workshops to discuss permitting and initial requirements to get projects started – laborious process to those that have not done it before.
     - Group workshops by project types.
     - Could provide some educational background (on CALFED)
     - Administration on grant is very time consuming. Workshop may be helpful to limit that

time.

- Grant Manager was frequently extremely busy with other 20 projects to be able to get quick responses back to them on their project.
- Beneficial to have quarterly meetings with grant manager to address questions. Have grant managers or others from CALFED actually provide technical assistance and guidance.

Quantification of Results

1. Difficulties in developing baseline pathogen impact.
2. Part of project requirement to do monitoring, however, not enough money to develop a good monitoring program and the education outreach.
   - Was not part of proposal but were asked to do that in addition.
   - $200,000 spent on the monitoring program could have been spent more effectively on other areas.
3. How do you quantify education? Educational campaigns need to run for a minimum of three to five years to demonstrate a behavior change.
4. Difficult to show improvement in one year. This project is only a start to a much needed, regional education and pollution prevention program.

Suggestions for CALFED Improvements

1. Would like to see better integration of drinking and ecosystem water quality concerns.
   - Hydrocarbons were not considered a constituent of concern during contracting; however felt that it was a potential area of interest for ecosystem water quality.
2. Improving grant delays.
   - Wrote grant to address two boating seasons. However, grant was delayed and could not be extended so missed an entire boating season.
   - Education takes time.
3. Less focus should be on exact quantification of things.
   - Difficult to quantify education in such a short period of time.
4. Public Outreach.
   - Partner with more local agencies and watershed based non-profits.
   - Boater to Boater education.
   - Educate marina operators – representatives of the Delta recreation community.
   - Lack of education and pollution prevention, therefore, lack of understanding of impact.

Other Areas of Interest for Potential Grants Further Grants/Collaboration on this Project

1. Expand "Keep the Delta Clean. You Play In It. You Drink It Too!" campaign throughout entire Delta region for a minimum of 5 years.
2. Continue to support and expand volunteer Dockwalker fleet to assist with boater-to-boater education.
3. Improve access to Household Hazardous Waste Recycling Center in rural Delta regions that are currently underserved.
4. Expand, throughout the Delta, the availability of convenient and free absorbent pad exchange programs for recreational boaters.
5. Work with the California Integrated Waste Management Board to expand access to local certified used oil collection centers.
6. Set up illegal dumping abatement program in the channels, along levees and on beaches.
7. Develop an "old boat amnesty" program. Provide cash subsidies to boat owners looking to dispose of old boats to deter from illegally dumping or sinking in Delta.
8. Work with watershed stewardship groups to develop land-based restoration and education program to prevent trash and other toxins from entering the Delta from storm water runoff.
9. Pump out Grant Program. Keep working with the California Department of Boating and Waterways to identify the needs and improve access to sewage pumpouts, bathrooms, and port-a-potties. DBW's existing grant program has limited resources.
10. Improve access to restroom facilities with seasonal floating or beach based port-a-potty stations
11. Partner with boating and waterways on an integrated education campaign that will strongly focus on both environmental responsibility and boater safety.
12. Get Delta designated as official "No Discharge Zone" by the EPA.
13. Work with boat manufacturers to lobby for better fueling technology on boats to reduce fuel spilled into the Delta by recreational vessels at marina fuel docks. This would include continued education of boaters to use fuel absorbent bibs and other safe fueling practices.
14. Re-refined oil workshops. Interest in partnering with Save Our Shores.
15. Clean Fueling Practices workshops. Partner with BOAT US Foundation.
16. Research and understand possible boat bottom paints effects on the Delta. (Work with the California Professional Divers Association.)
17. Non-Native Species. Interest in partnering with te University of California Sea Grant Extension Program and California State Lands Commission.
18. Promote boat-to-boat mobile services for boat sewage, oil change, bilge cleaning, among others.
19. Fish Consumption:
    - Interest in Partnering with other Counties and Regional Agencies.
    - Great deal of sustenance fishing in the Delta.
        - Concerns with PCB's and mercury consumption.

    Issue that needs to be included as part of education outreach to recreators.

Meeting Summary

Meeting Location: Contra Costa County, Public Works Department
Date: February 3, 2005

Attendees: Brown and Caldwell
Sarahann Dow
Laura Marshall

R. Mitch Avalon	Listed as CBDA Contact
Gregory Connaugton	
Paul R. Detjens, P.E.	Current Project Manager
Kevin	

Projects:
- Contra Costa County Knightsen Water Quality/Drainage Improvement

Background Knightson/Veale Tract

1. Flooding is frequent in the Knightsen area.
2. Wetlands are a good bio-filter.
3. Flood control and water quality improvement.
4. Not just agricultural run-off, also septic tank overflow.
5. Flooding and overflow drains into Rock-Slough through infiltration.
6. Concerns with private property – pumping on their own, sometimes into the Slough itself.
7. Previously had put forward plans to address these issues, but they did not get funded.
8. Wanted to improve quality of storm water because of intake.
9. Contra Costa Public Works does not perform monitoring but partners with Water District for monitoring.

Project Description

Primary objectives for this project include establishing a Community Services District (CSD) in the Knightsen area of Contra Costa County to control storm water and flooding and study the potential for remediation of storm water contaminants using wetlands systems near the Veale Tract area.

1. Phase I - Feasibility study for wetlands bio-filter ($50,000).
   - CSD development – for maintenance of flood control facilities and improvement – to provide a guaranteed maintenance and revenue stream for the work.
2. Phase II - would complete feasibility study, but if and after the CSD is voted in (currently being voted on). CSD allows community to do own flood control (can often adhere to lesser standards so that they can afford to at least improve the situation). CSD is a necessity because for grant funding they had to show guaranteed maintenance, which the CSD would perform. Phase II currently not funded and would address more specific wetland biofilter sizing.

3. Mitch and Kevin agree that this project is a CALFED issue and that CALFED should be involved. They are interested in getting more funding for this project.

Experience with CALFED (based on project)

1. Overall their project has been successful.
2. The person they were communicating with was responsive and supportive (grant manager) (although hard to catch sometimes).
    - Direct communication with CALFED is a problem (general rather than project specific).

Grant Funding

1. Level of effort for many of the CALFED grants is too much.
    - They don't have the resources for a full time staff member to write and track all of the grants. With a smaller budget than some other organizations, it is more difficult for them to stay informed, making ease of access to information more critical for them. They feel ease of access could definitely be improved.
    - Difficulties in coming up with local match, even if project is great.
    - Annual budget factors into whether or not they can write a grant.
    - Have found they cannot apply for anything less than $100,000 because the associated paperwork is too great.

Interested in Understanding More about CALFED

1. What will CALFED fund?
    - Seem to feel pretty uninformed on the subject.
    - Receive flyers and RFPs but are not sufficient or effective.
    - It would be nice to have the information consolidated and summarized, because it changes and can be hard to sort through and keep track of.

Suggestions for Future Communication

1. Website and place for consolidated information.
    - Place they could obtain a schedule of all of the RFPs and Grants that CALFED puts out (a calendar of marking important dates). This would allow them to plan more in advance.
    - Were not aware of the CALFED Science Program or the recent Science PSP. They were aware of the CALFED Science Conference and know people that went.
    - Better understanding of CALFED strategic goal so can judge which projects are applicable.
    - Annual Reports – progress that has been done, what types of projects were funded in the past and what might be funded in the future. They feel they could benefit from this and that others would benefit from seeing their project.
    - Example: San Francisco Bay Area Joint Venture Group – map identifying projects is helpful.
    - Demonstration project for the Delta.
    - They don't have much communication with other projects or awareness of other projects going on.
        - Hope the organizations they work with do, but they often don't.
    - Have some communication with Contra Costa Water District which seems well informed.
        - However, they are completely separate entities, and they also compete for funding.
        - Therefore, communication and its possible benefits are limited.
    - Their major difficulty is connection with CALFED and the website might prove helpful to them.

Suggestions for Future CALFED work to Improve Delta Water Quality
1. Kellog Creek – transmission of sediment. ▪ Looking into a new project for a sedimentation basin. ▪ Communities on septic. ▪ Drains into Discovery Bay. ▪ Impacts SWP water and South Delta water quality. 2. Marsh Creek – watershed, planning, process, wetlands. ▪ Sizable amount of mercury, capture mercury in sediment. ▪ Grant funding to mitigate source. 3. Would be interested in future project funding from CALFED to address many of their local flooding/water quality concerns. 4. Majority of what they're seeing in Contra Costa County is transmission of sediments into Delta (not all agriculture). 5. This existing project affects Contra Costa and State Water Project – focus on local but keep big picture in mind (local flooding but regional quality).

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Meeting Summary

Meeting Location: Contra Costa Water District, Concord, California
Date: February 3, 2005

Attendees: Brown and Caldwell
Sarahann Dow
Laura Marshall

CCWD
David Briggs

Projects:

- Reducing Non-point DOC and Nitrogen Exports from Rice Fields: A Pilot Study and Quantitative Survey to Determine the Effects of Different Hydrologic and Straw Management BMPs
- CBDA Rock Slough and Old River Water Quality Actions Phase I
- CBDA Rock Slough and Old River Water Quality Improvement Projects Phase II (Feasibility Studies)
- CBDA Rock Slough and Old River Water Quality Improvement Projects Phase III (Implementation)
- Contra Costa Canal Encasement Project (Implementation)
- Advanced Treatment of Estuarine Water Supplies

Primary Concerns with CALFED Funding

1. Time to get awarded money through contracting is very lengthy.
2. Can take two years from proposal award to get contract.
3. Lots of red-tape and high administrative costs. Needs to be more streamlined.
4. Not enough staff or experience to get contracts through [grant managers].
5. Time delay in contracting makes project management difficult and requires significant time spent on budgeting.
6. Federal money is easier to process.
7. It is a common feeling among many grantees that difficulties with state funding significantly affect the desire to pursue such funding.
8. Also a concern that state bond funding is not strategically used to implement core projects of the CALFED Bay-Delta Program.

Project Specific

Rock Slough and Old River Water Quality Actions:

1. In many ways, the project has served to demonstrate how successful load reduction and water quality benefits can be achieved in the Delta in close collaboration with landowners.
2. Local leadership from Contra Costa Water District increases the credibility and potential for success.
3. Projects going very well – on time and within budget. Although was difficult to make this happen with piecemealed and intermittent funding.
4. Projects will be completed by June 2005 and operational by July 2005.
5. Monitoring will continue (before and after). Demonstrate results and benefits of projects and show load reduction.

Contra Costa Canal Encasement Project (Implementation):

1. Contract recently received; project now underway. Expect to have design complete in 2005 and begin construction in 2006 for first 2,000 feet of canal. Remainder of the four-mile facility is being funded by

local, state, and federal sources.

UV Project – Three Parts to Phase 1 involving disinfectants (including UV):

1. Bench scale experiments on combinations of disinfectants to reduce DBP formation has been completed at three source water sites including the Contra Costa Canal, the South Bay Aqueduct, and the North Bay Aqueduct.
2. 1 MGD UV unit demonstration facility is now operational at CCWD to explore scalability issues with UV disinfection. Tours are welcomed.
3. 10 gpm pilot plant at Santa Clara Valley Water District is planned to be operational in July 2005. Pilot experiments will further explore promising results demonstrated at bench scale. Additional funding for advanced filtration, membranes, and contaminant removal is being pursued from Proposition 50 (DHS) and federal sources.

Delta Water Quality

1. Baseline is very difficult to achieve and understand because of variable hydrology.
2. Difficult to answer, "Is quality in Delta improving?" You can't just look at drinking water quality programs to answer the question because other programs in CALFED can improve and/or degrade water quality – need more holistic view/thinking.
3. Addressing water supply is easier because technical tools are well established to quantify "acre-feet". Further, even biological indicators are "translated" into water supply terms to help manage water (i.e., temperature control in the Sacramento River has a management metric related to storage in Shasta, and X2 requirements are met with outflow or EC measurements for which models determine required flow to meet).

CALFED's/Water Quality improvements and efforts can be undercut:

4. Example: CALFED reduces "contaminant" levels, but someone is allowed to begin discharging to the original set contaminant level. Customers don't see this.
5. RWQCB rarely, if ever, regulates water quality if levels do not exceed standards. Can implement something that degrades water quality as long as it remains below standards.
6. State Board established objectives for Delta, but not meant for drinking water. Need to gear objectives to protect drinking water.
7. Urban growth is impacting water quality negatively, making it difficult to see the improvements that CALFED has achieved.
8. Can develop good BMP's, for example for Veale and Byron Tract, but then other programs such as ecosystem restoration can increase DOC.
9. Can get water quality improvements on a project by project basis but don't have a modeling, institutional, or legal framework to make sure it ends up at the tap. Need institutional framework for recovering gains. Don't have the agency coordination at this point to fix problem. The lack of framework is not a shortcoming of CALFED. The issues underscore importance of what CALFED is trying to achieve.

Suggestions for CALFED improvements:

10. Integration of Regional and State Board, EPA, and DHS is important – CALFED is doing that.
    - Existing drinking water quality forum is good.
    - Concept of CUWA moving toward integrating everyone, and regulating things that haven't been regulated before (looking beyond acute impacts). Could incorporate TMDLs where there currently are none (i.e., salinity) so they don't have to fight the fight every time.
    - Different agencies are doing different things, but there are drinking water concerns in both, and they are not well integrated.
11. More holistic thinking and additional agency involvement would be beneficial.
12. Some water quality projects can be seen as water supply projects in disguise.
    - By improving water quality, you are allowed to pump more and then water quality is not

improved.

Community Outreach

1. Credibility issues to overcome, mainly because people don't understand.
2. Need to convince public it's a very active industry. Water quality research is not apparent to public.
3. Public awareness helps get more funding – passing of propositions.
4. People often vote for it because they don't trust their water.
5. Best left to the local/retail level.
6. Feels the farming community is currently pretty aware.

CALFED Communication/Future Communication Forum

1. Communication with CALFED has not been an issue.
   - Aware of all the other researchers and their projects.
   - Project work academic setting anyway.
   - Proposals are already easy to access on the web.
1. People do need to be able to learn about and apply the results of these projects, and currently the conferences are the only venue.
2. One example of beneficial coordination between projects is that Contra Costa Water District is currently referencing and integrating previous research projects into the present Bay Area effort to study Delta water.

Future Communication Forum Suggestions

1. Future communication forum would be beneficial by showing what was funded and the results and benefits. It would provide two purposes: annual update of CALFED program and benefits, and some baseline for water quality improvements.
2. Annual CALFED Science Journal – compilation of completed or ongoing work (informal peer-review journal).
   - Desktop reference compared to a website is preferable.
   - E-Journal concept okay, as long as easily printable.
   - Extended abstract format (3-4 pages) since it is not as much effort for project managers as a full length paper.
   - Placing name of author on the extended abstract is important for motivation.
   - Discuss how things are being achieved and improved.
   - Pull in things that are not CALFED projects but are related (Regional Board, hydrology, land use). This may also be challenging to do.

<u>Examples:</u>
UC Berkeley Water Resources Center– sends books of abstracts.
State Board – Requires people to produce a streamlined report as part of the contract agreement.

<u>Template: Abstract</u>
Relation to Drinking Water Quality Program goals:
- Why it helps.
- Load reduction.
- Quantitative.

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Meeting Summary

Meeting Location:

Date: February 4, 2005

Attendees: Brown and Caldwell
Sarahann Dow

David Okita Solano County Water Agency

Projects:
- North Bay Aqueduct Watershed Management and Alternative Intake Study.
- NBA Ion Exchange for Organic Carbon Removal.
- North Bay Aqueduct Watershed Best Management Practices.

Background

Watershed

1. Isolated, distinct and separate
2. Minimal urbanization
   - Have super BMPs to address this. Therefore, watershed not impacted.

Solano County unsure of how much Delta water impacts their intake; if it is determined a great deal of impact, likely to have much more communication with CBDA.

Project Specific

NBA Ion Exchange Project:

1. MIEX.
2. City of Vallejo will be the first in California to use this treatment technology.
3. All cities in NBA will be considering it:
   - Expensive.
   - Likely to become cheaper over time and more affordable for treatment plants to consider.

Alternate Intake Project:

1. NBA users will choose between MIEX, or an alternate intake.
2. New pumping station and pipeline would be expensive ($150M).
   - Hoping for CALFED money (bond issue) for portion of costs.
     - Potentially a valid way of improving Delta water quality.
   - Improves Water Quality and an ecosystem (smelt) consideration by moving the pumping station away from Barker Slough.

Watershed BMP Project:

1. Continuing water quality monitoring. Fencing was completed prior to rainy season.
   - First fencing put up a few years ago.
2. May be difficult to demonstrate that the cattle fencing improved the water quality by reducing turbidity and fecal coliform. Monitoring will be done over next two years.
3. Not sure if improvements will be seen at treatment plants. Will be checking this year since this is first

year fencing is all in place. There are other turbidity sources that have not been addressed yet.

Future Efforts

1. To further project efforts, RFQ was put out March 2005.
    - Hydrodynamic study on Barker Slough – to better determine how much Delta water and Sacramento River water is coming into the slough.
    - Accumulating further information on efforts.
    - Cities treating the water and investing in treatment.

Specific barriers to improving Water Quality of the NBA

1. Lack of knowledge of sources of water.
    - Know a lot about upstream sources.
    - Know very little about the downstream sources.
2. TOC is a watershed wide issue.
    - No BMPs to fix that.
    - Treatment or an intake solution
3. Turbidity – need more information.
    - Channel fenced off, measurable impacts
    - Upstream and downstream issue
4. Need a true delineation of source water.

Drinking Water Quality Program - Future Communication Forum

1. Beneficial to go to a place to understand what has been done.
2. Results not available for projects.
3. Website beneficial as long as it is being maintained and is up-to-date.
4. Monthly updates for the MIEX project were too much.
5. Quarterly updates and yearly abstract reasonable.

Suggestions for the Water Quality Program

1. Would like to see more coordination w/ERP.
    - Example: Yolo by-pass.
2. Happy for the funding and interested in helping.
3. While Solano County does not attend DWS or other meetings, Dave Tomkins keeps them informed, communicates with Contra Costa Water District.
4. Not very active because aren't sure of actual impact of the Delta on their water.
5. Progress in the DWQP not everything want it to be.
    - Plodding and slow.
    - Don't have good direction.
6. EPA and DHS are not strong advocates of drinking water.
7. State and federal agencies not strong advocates for water quality.
    - But for Water Supply and Ecosystem – have advocates.
8. Maybe CALFED should be a stronger advocate.
    - More resources for the DWQP (staff and funding).

Meeting Summary

Meeting Location: Telephone Interview
Date: February 3, 2005

Attendees: Brown and Caldwell
Michael Parenti

Parry Klassen — Coalition for Urban and Rural Environmental Stewardship (CURES)

Projects:
- Orestimba Creek Watershed – Agricultural Water Quality Pilot Program

1.	**What is the future potential for your project regarding changes in Delta water quality?**
	Two other grants for implementation. This project is the first step towards implementation. The other is a PRISM funded grant in Sacramento River Watershed. Recently submitted a Prop 50 proposal to install sediment ponds.
2.	**What do you feel the most critical water quality issues are facing the Delta?**
	Salt impacts on drinking water quality and irrigation water quality. Does not believe we have a severe pesticide problem. What is critical is dollars spent by WWTP and pesticide loads.
3.	**What types of interaction have you had with CALFED regarding your project (other than the project surveys), if none, what type of interaction would you like to have?**
	Started late last fall. Interaction with contract manager at SWRCB. Production agriculture does not have a forum (not integrated into discussion). .
4.	**What types of interaction have you had with other CALFED funded projects?**
	Watershed Program Grants , Dried Plum Board project funded by CALFED.
5.	**Can you quantify the results and/or show the benefits that your project has on the drinking water quality in the Delta?**
	Not likely because the project is in the discovery phase.
6.	**How do you feel that your program/agency fits into the overall mission and goals of the CALFED Program?**
	Fit absolutely 100% with goals of CALFED. Goal is to keep legal constituents out of water Drinking Water, Ecosystem Restoration, and Watershed Programs goals.
7.	**How would you benefit from a communication forum about past and ongoing CALFED projects?**
	Website dedicated to Agriculture-related projects. Workshops have value but he agricultural interests have an ongoing and active dialogue.
8.	**What are some of your ideas about how this should be done?**
	More focused/targeted workshops. For instance, conditional Ag waiver. CALFED has been absent in discussions. Where is CALFED in helping to develop BMPs?
9.	**How could CALFED integrate projects to demonstrate project specific impact on delta water quality improvement?**
	By getting project folks together to demonstrate impacts. More of an integrated/standardized approach to assessing water quality impacts. CALFED could play a facilitation role in exchanging information, for example providing a data exchange forum so that projects with similar scopes and objectives can exchange information. Provide updates from other projects working on Ag BMPs.

10. Where is CBDA (and the DWQP) meeting your expectations and in what areas are the programs underperforming?	
CALFED to take more of a leadership role in better defining the program direction. No other leadership other than handing the check and disappearing. More leadership regarding technical direction, less on accounting/contract issues. More of a pragmatic approach. Too many modelers, not enough workers or people that understand what is happening at the field level.	
11. Where would you like to see improvement?	
See above.	
12. How would you suggest CALFED market some of the water quality issues/problems to the general public?	
Market CALFED success on individual projects. Someone with a PR background should make it interesting to the public. Look at venues on Discovery Channel (other sources; Country Outdoor Network). Do research on five story ideas. Significant story in California related to levees and water quality.	
13. What do you feel are the most significant barriers to improving water quality in the Delta?	
Understanding and general public awareness of how the Delta impacts so many aspects of California's economy. The impact of low flows on water quality.	

CBDA Treatment Meeting Summary

Meeting Location: Conference Call

Date: March 8, 2005

Attendees: Brown and Caldwell
Sarahann Dow

MWD
Kenneth Kules
Steve Hirsch
Leslie Palencia
Lynda Smith
Kevin Donhoff
Jim Martin

CALFED Projects:

- Integrating Ultraviolet Light to Achieve Multiple Treatment Objectives
- Assessing the Occurrence and Sources of *E.coli* and EC 0157 Contamination in Castaic Lake
- Lake Perris Pollution Prevention and Source Water Protection Program
- Lake Perris Dissolved Oxygen Enhancement
- Metropolitan Water District of Southern California Water Quality Exchange Partnership Program

Lake Perris Pollution Prevention and Source Water Protection Program and Dissolved Oxygen Enhancement	Finishing feasibility analysis to assess removing swimmers and risk reduction. - Low DO present 6 months of the year and prevents the usage of this water for drinking water during this time. • Determining the best mechanical device to use (grant ends March 2007). - Lake Perris is important to the Delta, because it allows MWD to manage water quality episodes originating in the Delta (e.g., peaks in organic carbon or bromide). - In 2003 MWD relied heavily on SWP, had to cut back from Colorado River water. During this time had a high organic carbon spike, therefore MWD used Lake Perris water and left water in San Luis Reservoir - Jones Tract failure again used Lake Perris water. - MWD is required to review recommendations with CALFED; this is scheduled in March for the pathogen project. CALFED review will also be required for the dissolved oxygen project.
MWD Water Quality Exchange Partnership Program	- Should inform how we piece together actions/projects to meet goals. Source water quality improvement, water management, treatment needed – linking these together - Regional Projects in May, move forward to discuss outcomes. - Prop 13 grant - $20 million – Develop water quality exchange partnerships with San Joaquin Valley water districts and implement pilot projects. In these partnerships MWD would exchange SWP water for high quality Sierra Nevada water and use the exchange water to blend with California Aqueduct

	water and improve water quality. MWD would pay for infrastructure improvements to facilitate the exchange of water; the infrastructure improvements would provide water supply reliability benefits to the exchange partner. - Water Quality Planning Studies – modeling staff (MWD) looking at combination of projects to address drinking water quality concerns to evaluate benefits o Want to identify cost effective strategies to meet water quality concerns
Contracting Concerns with CALFED funded projects.	**Contracting Concerns with CALFED funded projects**. - There was a 1-2 year delay in getting contracts so pathogen studies were delayed. - Practical Matter – Agency matching funds make up part of the budget, and agencies have to take the risk of spending the matching funds before grant agreement is executed to stay on schedule. Agencies need to try to guess on the timing of agreement execution to budget matching funds, which creates risk. - Inflexibility to extend contract date, even with the delays in contracting, therefore had to compress 3 years into a 2 year time period. - For one MWD project, contracting delays were so severe that the source of the grant funding disappeared. - In January 2002, MWD was awarded a CALFED DWQP grant for $973,311 for a project to assess the occurrence and sources of microbial contamination in the Sacramento-San Joaquin Delta Region. - The contracting process took more than one and a half years, and by the time the contracts were near completion the funding source for the grant, which was State general fund monies at DWR, had disappeared in the budget process. - MWD was advised in September 2004 of possible extension on the Lake Perris pathogen project but still have not heard; must move forward with an accelerated schedule or risk missing contract schedule.
Suggestions of Important Steps for the WQP	Current WQP Assessment of projects is important activity. Ideally, CALFED will continue this, but more staff resources would be required. - Public Forums, BDPAC, subcommittees, perception that progress has not been made – these comments are based on people not knowing where and what efforts have been made. - Many of the projects were just funded and it is important to get the information back to people once the projects are completed [to demonstrate progress]. - Program plans are being developed, which describes what has been funded and accomplished. - Adaptive Management - It will be important to review project information as it is reported back to the program, to determine the role of the project in achieving WQP ELPH goals.
Source Improvements vs. ELPH	MWD's focus is on developing an integrated strategy of cost-effective investments to achieve ELPH, rather than focusing on the 50/3 ROD targets for Delta water. - From MWD's perspective, an integrated strategy includes Delta water quality improvements that are consistent with the through-Delta strategy

	(i.e., Delta Improvements Package), water quality exchanges and other water management actions with partners in the San Joaquin Valley, and drinking water treatment improvements. - MWD is installing ozone treatment at all five treatment plants; to protect the ozone investment it is important to protect Delta water quality and ensure no degradation. - MWD is very focused on DIP
Suggestions for CALFED WQP	- CALFED Program could be doing a better job addressing the drinking water quality concerns associated with Delta water supplies, however, this is not a judgment on the DWQP. - DWQP has been very understaffed since the beginning. - DWQP has also been short changed on the budget each year. - There has been limited coordination with other CALFED program areas, and in the other program areas there is a lack of understanding of drinking water quality needs. Perhaps this is because the CALFED ROD target of 3/50 or ELPH is difficult to understand. - Recently there has been improved coordination with the CALFED Conveyance Program; this coordination should continue and be strengthened; important for DIP. - To protect Delta watershed water quality in the future, the efforts of the SWRCB/RWQCB will be important. Coordination with the SWRCB and Central Valley RWQCB should also continue and be strengthened.
Communication	- Some projects require review by CALFED, interacting with Science Program, other projects administered by Regional or State board only require quarterly reports and paperwork. - Science Conference -Topics not necessarily relevant to So. California. To facilitate communication it would be beneficial to include presentations about CALFED projects at other existing conferences. - Some project managers are less interested in the CALFED Science conference because few of the conference sessions are technically relevant to their work - Would be beneficial to coordinate with existing forums (e.g., AWWA CA-NV Section, MWQI Committee) for sharing information on CALFED projects. - Possible benefit to submitting abstracts for a yearly journal. - Not clear whether there is a connection between Regional Board, State Board, and CALFED, regarding projects. - Project administered through Santa Ana Regional Water Quality Control Board, and they have no background or connection with CALFED as part of their routine work.
Identifiable Water Quality Improvements	- Projects take time. CEQA requirements and construction require years to complete, so results shouldn't be anticipated for a few years. - In the case of the Lake Perris pathogen project grant funds are for feasibility only (not construction). - Challenges – water quality means things to different people water is used for so many purposes, disconnect between those purposes.

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Meeting Summary

Meeting Location: Panoche Drainage District, Firebaugh, CA
Date: February 8, 2005

Attendees: Brown and Caldwell
Michael Parenti

Chris Linneman Panoche Drainage District

Projects:
- Biological – Physical Selenium & Nitrate Removal Intermediate-Scale Experiments

1.	**What is the future potential for your project regarding changes in Delta water quality?**
	This project has the potential to help eliminate the selenium load discharged from the Grassland Drainage Area into the San Joaquin River.
2.	**What do you feel the most critical water quality issues are facing the Delta?**
	Salinty
3.	**What types of interaction have you had with CALFED regarding your project (other than the project surveys), if none, what type of interaction would you like to have?**
	All CALFED interaction for this project was through contract/project management. No addition interaction is required.
4.	**What types of interaction have you had with other CALFED funded projects?**
	Our other CALFED projects were administered through the Central Valley Regional Water Quality Control Board. Close contact through phone conversations, emails, and field visits were maintained throughout the life of the project.
5.	**Can you quantify the results and/or show the benefits that your project has on the drinking water quality in the Delta?**
	At this stage, this project is still in its developmental stage. It shows significant potential in making selenium in subsurface drain water biologically unavailable. This would be used as a component of a drainage treatment system.
6.	**How do you feel that your program/agency fits into the overall mission and goals of the CALFED Program?**
	The ultimate goal of the Grassland Area Farmers is to develop a complete in-valley drainage solution, whereby no drainage leaves the Grassland Drainage Area. Implementation of this goal will be a major contributing factor in achieving the Vernalis water quality standards in the San Joaquin River.
7.	**How would you benefit from a communication forum about past and ongoing CALFED projects?**
	The current CALFED forum of press-releases and web resources are adequate. No changes are necessary. ▪ Ex. Website, Workshops
8.	**What are some of your ideas about how this should be done?**
	The current system is adequate.
9.	**How could CALFED integrate projects to demonstrate project specific impact on delta water quality improvement?**

10. Where is CBDA (and the DWQP) meeting your expectations and in what areas are the programs underperforming?	
	The major problem with the CBDA (and other State programs) is the contracting process. The contracting process takes too long, the contracts themselves are extremely one-sided and inflexible, and make it difficult for grantees to subcontract with some other agencies (such as the Department of Energy). A more streamlined contracting process needs to be developed so that contracts may be executed more quickly. The grant requirements contain many unnecessary reporting requirements that increase the overall cost of the project.
11. Where would you like to see improvement?	
	See above.
12. How would you suggest CALFED market some of the water quality issues/problems to the general public?	
	The current system seems adequate. There does not seem to be insufficient concern over real water quality problems.
13. What do you feel are the most significant barriers to improving water quality in the Delta?	
	Under the current system, stakeholders are forced to put more effort into demonstrating the effectiveness of their solutions (through repetitive studies and reports) than actually implementing these solutions. In some of the recent grant awards (not just in the DWQP) significantly more "study" projects were funded than actual implementation projects. Projects that actually address a problem should always be given priority over studies.

Meeting Summary

Meeting Location: Telephone Interview
Date: February 1, 2005

Attendees: Brown and Caldwell
Michael Parenti

Nigel Quinn Berkeley National Laboratory

Projects:
- Adaptive real-time monitoring and management of seasonal wetlands in the San Luis National Wildlife Refuge to quantify contaminant sources and improve water quality in the San Joaquin River

1. What is the future potential for your project regarding changes in Delta water quality?
Very important project for the South Delta. Wetland discharges same time as pre-irrigation (mid-March; mid-April) and releases saline water.
2. What do you feel the most critical water quality issues are facing the Delta?
Salinity is the driver and most likely the most problematic. DO problem in the small part of shipping channel. Program solutions are in conflict. For example diminished agricultural return flows affect DO in the shipping channel.
3. What types of interaction have you had with CALFED regarding your project (other than the project surveys), if none, what type of interaction would you like to have?
Difficult to coordinate with Project Manager (will not return phone calls) which affects the ability to accomplish the project.
4. What types of interaction have you had with other CALFED funded projects?
Interaction with projects funded in first part of ERP.
5. Can you quantify the results and/or show the benefits that your project has on the drinking water quality in the Delta?
Done quite a bit of modeling. MWD modeling has shown that it is a positive impact.
6. How do you feel that your program/agency fits into the overall mission and goals of the CALFED Program?
7. How would you benefit from a communication forum about past and ongoing CALFED projects?
▪ Yes, because solutions are at cross-purposes if all are implemented. We will have real problems. ▪ CALFED could utilize California Water and Environmental Monitoring Forum (CWEMF) more effectively, offered but not taken up.
8. What are some of your ideas about how this should be done?
See above.
9. How could CALFED integrate projects to demonstrate project specific impact on delta water quality improvement?
▪ Science conference has been a real help. ▪ CWEMF can jointly sponsor workshops.

- Conflict resolution group.

10. Where is CBDA (and the DWQP) meeting your expectations and in what areas are the programs underperforming?

- CBDA not performing well with regard to project management.
- Do not know how to go to implementation (lack of leadership).
- CBDA needs to invest at start-up of project.
- In the past Drinking Water Quality Program has been responsive.

11. Where would you like to see improvement?

- Improve cooperation between researchers and CBDA.
- Go from research to implementation (workshops, working groups).
- Metropolitan Water District (MWD) becoming a CALFED in their own rights.
- MWD doing comprehensive analysis (very proactive)-like to see CBDA doing some of the same things.
- CBDA and the DWQP can learn from MWD.

12. How would you suggest CALFED market some of the water quality issues/problems to the general public?

- Work more closely with CWEMF.
- Educational workshops-not just the scientists.
- Workshops on a topical basis.
- CBDA could achieve goals by providing support to CWEMF.

13. What do you feel are the most significant barriers to improving water quality in the Delta?

- Cross purpose projects, salinity is a great example.
- Water management/water conservation.
- TMDLs are encouraging-removing water from the system.

Meeting Summary

Meeting Location: California-Bay Delta Authority Offices, Sacramento
Date: March 10, 2005

Attendees: Brown and Caldwell
Sarahann Dow

CALFED
Ken McGhee — Environmental Justice Coordinator
Irinia Quitiquit — Tribal Coordinator

Note:
- Met jointly because many EJ and Tribal issues are similar and they felt it would be effective to meet together.
- Some issues do need to be addressed separately, party because of Tribal Sovereignty.

Current Objectives	
Environmental Justice Coordinator	1. Identify in each CALFED program to see if they are addressing EJ, and help programs identify EJ. 2. Going through a process to define performance measures, "Are they addressing EJ concerns", within each program.
Tribal Coordinator	1. Trying to assist people in understanding tribal issues. 2. Recent USEPA Region 9 Project addressing CA water needs and Tribal Water Quality Regulations developed a list of top priorities for Tribal communities. ▪ Water quality monitoring standards and development ▪ Safe, clean and reliable drinking water ▪ Watersheds
Specific EJ and Tribal Concerns	
Environmental Justice Coordinator	1. Some (EJ Subcommittee) think that this has been well explained and identified. 2. However, currently working through members of the Drinking Water Subcommittee (DWS) to better identify specific concerns. 3. Could provide a list of concerns; however this would be developed from a limited number of people. Would like to hold a workshop, a process in which needs could be identified, with community members – to communicate with many.
Tribal Coordinator	1. Different because work directly with USEPA Environmental Department. 2. Have their own water quality standards, which are more stringent than

	state and federal requirements. 3. Tribal funding is public record. 4. Prop 50 – Chapter 8 – for long term projects, capitol improvement, open to non-profits and EJ, but was not made available to Tribal communities based on the public resource code and because there was no room for discussion and changes.
Both	1. "Why is the [WQP] so far behind the other programs when this is so important?" 2. Drinking water and water quality to Tribal and EJ communities is the most important issue. 3. Looking into percent of Tribal Delta water users.
CALFED Involvement	
Tribal	1. Interest in setting up Tribal Water Council – something like the EJ subcommittee. 2. Lack of tribal participation is because mistrust of state, however are interested in CALFED. 3. Conduct a workshop with Tribal communities to open up tribal communication (similar to what was also mentioned by EJ). ▪ Needs to be done within their element. ▪ Would like WQP to be first, because these issues are of most importance for tribal.
Both	1. Communication to EJ and Tribal Coordinators also needs to come from CALFED program managers so that they can more effectively reach out to the EJ and Tribal Communities.
Information / Knowledge Transfer	
Both	1. Need to find a way to communicate to the communities. 2. Not a simple, "let's conduct a meeting". 3. Issues need to be explained so they are understood, so everyone can be a part of the dialogue. 4. Can't provide reams of documents – need to explain what they mean 5. Implementing agencies (or CALFED in most situations) don't show up in many of these communities, but the communities don't show up in the cities. 6. Commended the Watershed Program and WQP Program Manager (Lisa Holm) on their efforts to reach out. 7. Outreach is the first step. 8. Tribal – setting up meetings with tribal communities takes time, Irinia interested in facilitating but it can't be done overnight. 9. Doesn't always work to address EJ and Tribal in the CALFED framework.

	▪ Community culture important, "Community Level vs. CALFED Community". ▪ Communities don't meet in the same way. ▪ Scientific/technical meeting format not comfortable for many of the groups. ▪ These are economical disadvantaged communities – they may not have the funds to come to Sacramento, CALFED, and programs need to go to them. ▪ Evenings are best, child care is needed during the meeting.
Working With Other CALFED Programs	
Both	1. No real Tribal or EJ money to conduct workshops. 2. Communities chip in to conduct meetings. 3. Need to work through other programs. 4. Would be like to be a program.
Connection With Larger Community	
Both	1. Communities don't trust tribes and tribes don't trust communities. 2. Not working together to meet needs; can use each others resources to mutually meet goals.
Program Plans	
Both	1. Funding set aside for more PSP workshops on writing successful grants would be helpful and people would come. 2. Best to actually go to the communities.

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APPENDIX D

PROJECT HIGHLIGHTS

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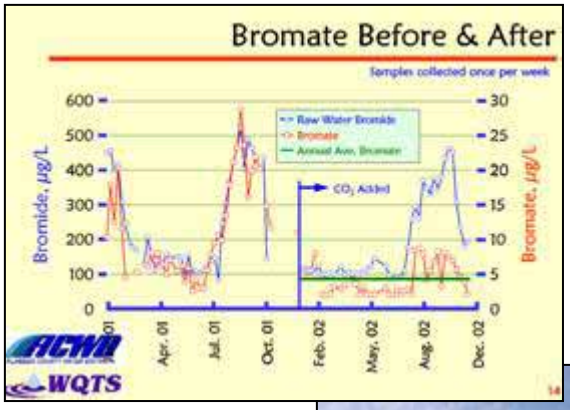
Bromate Control with Carbon Dioxide Addition
Alameda County Water District, *Laura Hidas*

Bay Area



CO_2 Tank and Storage Area

Grant Amount
$ 100,000

Start/End Dates
1/1/02 - 12/1/04

Percent Complete
100% (as of 11/04)

ROD Commitment
Invest in treatment technology demonstration

Action Area
Treatment Technology

Purpose

This project evaluated the design and economic feasibility of carbon dioxide addition to lower pH as a strategy for reducing bromate formation during ozonation of State Water Project water, and the use of air stripping to remove excess carbon dioxide from the ozone contactor.

Project Goals

- Evaluate the effects of the addition of carbon dioxide during ozonation of Delta water to minimize bromate formation
- Conduct side-by-side comparison of two CO_2 feed methods that can be used at full-scale ozone plants

Benefits to the CALFED Program

- Demonstrate a cost effective treatment technology potentially useful for multiple treatment facilities treating Delta water
- Enable ozonation of water with high bromide concentrations

CALFED BAY-DELTA PROGRAM

Vernalis Real-time Water Quality Monitoring Station
MWQI, California Department of Water Resources, *Rich Breuer*

San Joaquin Valley

Vernalis Monitoring Station

Grant Amount
$ 615,000

Start/End Dates
6/20/02 - 5/31/05

Percent Complete
25% (as of 8/04)

ROD Commitment
Implement source controls in the Delta and its tributaries

Action Area
Science and Improved Understanding

Purpose

This project will create a real-time water quality monitoring station on the San Joaquin River to provide continuous, real-time water quality data. This will be the third of three stations with real-time drinking water quality monitoring encompassing the Delta.

Project Goals

- Produce real-time data important for the operation of the State Water Project and protection of endangered species
- Help implement water transfers
- Assist in determining baseline water quality through hydrologic conditions
- Provide greater understanding of loads through flow modeling

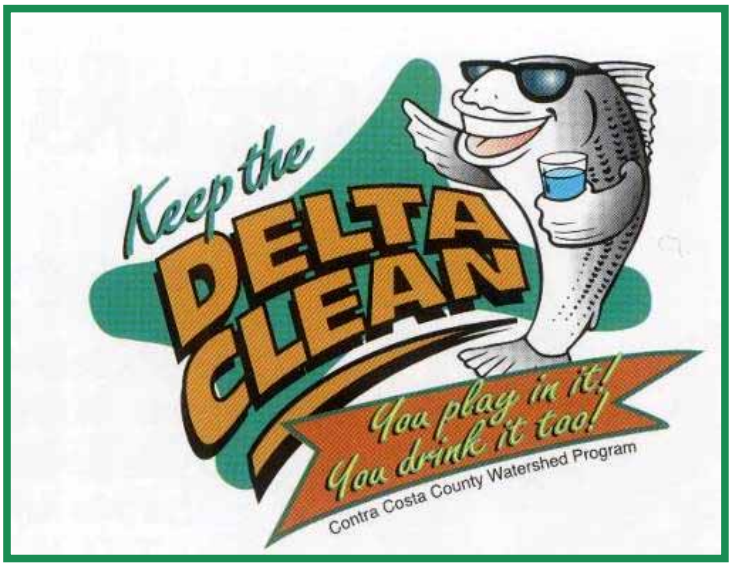
Benefits to the CALFED Program

- Provide high frequency water quality monitoring on the San Joaquin River
- Improve water quality modeling and forecasting for those receiving exported water

CALFED BAY-DELTA PROGRAM

The Water You Play In Is The Water You Drink
Contra Costa County Clean Watershed Program, Contra Costa County Public Works Department, *Tonya Redfield*

Delta



Program Logo from Contra Costa County Watershed Program

Grant Amount
$ 982,655

Start/End Dates
11/1/03 - 3/31/06

Percent Complete
50% (as of 9/04)

ROD Commitment
Implement source controls in the Delta and its tributaries

Action Area
Source Improvement

Purpose

This program targets recreational boater population as a means to preserve drinking water quality, beneficial uses, and the environmental health in the Delta.

Project Goals

- Reduce the discharge of pollutants to state water by implementing public outreach and pollution prevention equipment
- Collect baseline water quality data to better understand the effects of recreational boating on drinking water quality
- Educate recreational boaters on the connection between pollution from water recreation and public health

Benefits to the CALFED Program

- Promote safe and environmentally friendly boating practices that will ultimately help maintain cleaner water quality
- Increase public awareness and education
- Reduce pathogens in the Delta to improve drinking water quality
- Prevent recreation boating oil spills

CALFED BAY-DELTA PROGRAM

Rock Slough and Old River Water Quality Improvement Project and Contra Costa Canal Encasement

Contra Costa Water District, *David Briggs*

Delta

Old River Outfall Installation

Rock Slough and Old River Water Quality Actions Phase I
$450,000

Rock Slough and Old River Water Quality Improvement Project Phase II
$1,300,000

Rock Slough and Old River Water Quality Improvement Project Phase III
$2,825,000

Contra Costa Canal Encasement Project
$7,313,000

Start/End Dates
10/1/00 - 6/1/06

Percent Complete
50% (as of 9/04)

ROD Commitment
Control runoff into the California Aqueduct and other similar conveyances

Action Area
Source Improvement

Purpose

These projects began by identifying sources of water quality degradation at Rock Slough and Old River Intakes. This led to identification of solutions including agricultural drainage relocation, diffuser projects, and BMP development on Veale and Byron tracts. Ultimately, it was determined that encasing 1900 meters of the Contra Costa Canal was necessary to prevent seepage of lower quality groundwater into the canal.

Project Goals

- Identify ways to reduce water quality degradation to Delta urban water users by reducing impacts from local agricultural drainage
- Reduce constituents of concern for all water intakes
- Evaluate and implement appropriate BMPs for agricultural drainage on Veale and Byron Tracts

Benefits to the CALFED Program

- Improve ability of the State Water Project and Central Valley Project to meet established water quality standards
- Develop BMPs around conveyance channels to prevent water quality degradation during conveyance
- Improve drinking water quality to residents served by Contra Costa Water District

CALFED BAY-DELTA PROGRAM

Lake Perris Pollution Prevention and Source Water Protection Program
Metropolitan Water District of Southern California, *Kenneth Kules*

Southern California

Lake Perris serves thousands of recreational users each year

Grant Amount
$ 1,370,800

Start/End Dates
12/15/03 – 3/31/06

Percent Complete
<5% (as of 8/04)

ROD Commitment
Control runoff into the California Aqueduct and other similar conveyances

Action Area
Source Improvement

Purpose

This project is investigating drinking water pathogen indicators associated with recreational use of Lake Perris and will identify a preferred solution reduce pathogen risk. This project also includes the preparation of a design to construct the selected alternative.

Project Goals

- Calibrate a hydrodynamic dispersion model and assess the risk reduction that could be achieved
- Assess pathogen risk of body-contact recreation on drinking water quality
- Design a public outreach program to support California Environmental Quality Act (CEQA) requirements

Benefits to the CALFED Program

- Provide an additional higher water quality resource for Southern California residents
- Reduce the mismatch between Bay-Delta water supplies and beneficial uses dependent on the Bay-Delta system
- Better meet water demands of Southern California

CALFED BAY-DELTA PROGRAM

North Bay Aqueduct Alternate Intake Study and Watershed Best Management Practices, Solano County Water Agency, *David Okita*

Delta

Drain in the Barker Slough Watershed

Grant Amount
$ 188,500
$ 399,608

Start/End Dates
7/24/02- 5/30/04
6/4/04 – 7/1/05

Percent Complete
100 % (as of 7/05)

ROD Commitment
Address water quality problems at the North Bay Aqueduct

Action Area
Source Improvement

Purpose

The first study conducted engineering cost and environmental analysis to determine the feasibility of an alternate intake for the North Bay Aqueduct. The Watershed Best Management Practices project implemented one of the major recommendations from a prior study; to fence livestock out of drainage channels in the North Bay Aqueduct watershed.

Project Goals

- Investigate alternative intakes
- Negotiate landowner agreements for fencing and windmills
- Construct windmills to pump alternative water supply for livestock
- Install 13 miles of fencing
- Monitor water quality to quantify benefits of fencing

Benefits to the CALFED Program

- Improve water quality in the North Bay Aqueduct for drinking water quality
- Reduce turbidity and potential for pathogens entering the aqueduct

CALFED BAY-DELTA PROGRAM

Full Scale Demonstration of Agricultural Drainage-Water Recycling Process Membrane Technology
Water Tech Partners, *Ronald Enzweiler*

San Joaquin Valley

Component Installation

Grant Amount
$ 319,993

Start/End Dates
7/1/03- 7/1/04

Percent Complete
100 % (as of 8/04)

ROD Commitment
Implement source controls in the Delta and its tributaries

Action Area
Source Improvement

Purpose

This project demonstrated the technical, economic, and environmental feasibility of implementing a desalination/recycling/solar evaporator/salt repository solution to the agricultural drainage problem in the San Joaquin Valley.

Project Goals

- Design and construct the first full-scale facility (0.36 MGD) in the San Joaquin Valley
- Apply RO technology to treat agricultural runoff
- Demonstrate feasibility of on-farm desalination and recycling
- Provide evaporator/salt repository solution to agricultural drainage problem

Benefits to the CALFED Program

- Allow for beneficial reuse of agricultural drain water
- Reduce salinity and boron in the San Joaquin Valley and Bay-Delta

CALFED BAY-DELTA PROGRAM