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13 July 2012

Ms. Meghan Sullivan
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670

RE: Comments on the Draft Proposal for a Regional Monitoring and Assessment Framework and its Implementation

I appreciate the opportunity to review and comment on the Delta Regional Monitoring Program's Draft *Proposal for a Regional Monitoring and Assessment Framework and its Implementation*. It is clear that developing and implementing a regional monitoring program is a difficult task with many challenges. However, this program has great potential to enhance the efficiency and effectiveness of efforts to monitor contaminants and evaluate their effects in the Delta.

This represents an important effort and starting small as a means to get things moving and show proof of concept makes sense. However, the document would benefit from a description of the longer term vision. What are the Water Board's key information needs, as well as those of stakeholders, that the program should ultimately be able to address? How do you envision the program expanding beyond this initial construct (e.g., increased number of partners, increased spatial and temporal coverage, increased number of indicators, etc.)?

The commitment to implementing a question-driven monitoring approach, as described in the Surface Water Ambient Monitoring Program (SWAMP) Assessment Framework (Bernstein 2010), is appropriate. However, the management/assessment questions articulated in the current draft warrant further development and specificity in order to inform the monitoring design. A broad array of drivers, including contaminants, has been implicated in the decline of the Delta ecosystem (Baxter et al. 2010). Therefore, it seems that a key component of the RMP moving forward should be to address questions concerning the role of contaminants in that on-going decline.

Inclusion of toxicity testing as a core indicator for the RMP seems appropriate. When appropriately applied, toxicity tests can be particularly useful in water quality monitoring programs because of the ability to detect the effects of all chemicals (whether measured or not) as well as pollutant mixtures. The inclusion of additional relevant measures (e.g., chemical analysis, biomarkers, etc) should allow for a more robust assessment of ecosystem health. The inclusion of additional indicators should be based on the questions the program is intended to address.

Included below are specific comments that are organized by page number.

Page 2, bullet: "*Sampling 1 – 3 times/year, in winter (storm event), spring, and fall for the water column, and in the fall for sediments, with each time period treated as a separate temporal stratum.*" A single sampling event may be adequate to characterize sediment conditions. However, given the geographic, seasonal, and temporal variability of contaminant inputs into the Delta, and that exposure to contaminants is often highly episodic the potential for such events to go undetected is a concern with the proposed sampling frequency of a single sample per season (winter, spring, fall, 3/year). Is this sampling frequency reflective of cost constraints, the intent to start small, and/or a particular analysis? How were the results of previous toxicity studies in the Delta (e.g., IEP POD studies) used to inform this proposed frequency?

Page 2, bullet: *“Coordination across multiple dischargers of surveys needed to conduct reasonable potential analyses.”* Suggest adding a footnote to explain what “reasonable potential analysis” is, as it may not be clear to those outside the discharger community. Would the focus of these coordination activities be associated with the receiving water characterization studies?

Page 2: *“Thus, the major changes to current monitoring practice are the removal of routine receiving water monitoring...”* An explanation/evaluation regarding the cost/benefit of removing the routine receiving water monitoring requirements would be valuable to put things in context. What is gained/lost by such a decision? How will background ambient conditions be defined?

Page 2: *“Initial cost estimates range from \$180,000 for a very restricted minimal program, to about \$1.7 million for a mid-range program with a somewhat limited number of indicators at fewer sites, and about \$3.0 million for a program that includes a larger number of indicators and sites.”* How do these estimates compare to the estimated cost of implementing the currently required routine receiving water monitoring? Having an estimate of the funds that are anticipated to be available for implementation of the initial program would be very helpful for conversations regarding program design (e.g., what kind of program is feasible within existing financial constraints?).

Page 2: *“...\$3.0 million for a program that includes a larger number of indicators and sites.”* Based on Table 6, the “larger number of indicators” appears to be associated with the inclusion of additional species for toxicity testing and addition of ancillary parameters, nutrients, trace elements and trace organics for sediment chemistry. More clearly defined monitoring questions will provide context for evaluating the appropriateness of the selected indicators and the inclusion of additional indicators if the budget allows. Depending on the question(s), other options would be to incorporate indicators other than toxicity testing (e.g., biomarkers, additional chemical analyses, etc.) and/or increase sampling frequency. Additional indicators (beyond toxicity testing) would allow for a broader assessment of Delta conditions.

Page 3: *“The development of the Delta RMP was initially prompted by the collapse of the populations of several species of fish in the early 2000s, an event that triggered new inquiries into the potential role of contaminants in what is now termed the Pelagic Organism Decline (POD).”* Suggest adding discussion of the conceptual models developed through the POD investigations (e.g., Baxter et al. 2010) and where contaminants fit in. Provides link to how this program will generate information designed to help address components of these conceptual models.

Page 3: *“However, these inquiries highlighted shortcomings in the ability of existing monitoring efforts to address questions at the scale of the Delta.”* Suggest adding a reference to Johnson et al. 2010 as support for this statement. Johnson, Werner, Teh, and Loge. 2010. Evaluation of chemical, toxicological, and histopathologic data to determine their role in the pelagic organism decline

Page 3, last bullet: *“Data management and access, through ongoing efforts to implement and provide feedback on Regional and State Water Board data management initiatives.”* Suggest also including a reference to the California Water Quality Monitoring Council’s efforts on this front.

Page 4, second bullet: *“Coordination and standardization of field sampling, laboratory analysis, and data management methods.”* Is the intent for “standardization” to refer to use of identical methods or more broadly to allow use of methods that while technically different produce comparable results and facilitate data integration? Has there been any preliminary work to ascertain the level of effort that might be required to “standardize” across the programs that are likely to participate in the initial phase of the RMP? Johnson et al. (2010) highlighted a number of issues relevant to data comparability within the current monitoring infrastructure. The use of SWAMP’s Quality Assurance Program Plan (QAPrP)

and the California Environmental Data Exchange Network's (CEDEN) minimum data requirements could serve as a basis for ensuring data comparability.

Page 5: *"The secondary objective is cost efficiency, i.e. contain or possibly reduce monitoring costs through implementation of a regional receiving water monitoring program and improved coordination among NPDES dischargers and other monitoring entities at the local, state, and federal levels."* What would a "cost neutral" program look like? Do we have a sense for the amount of resources that could be redirected to support the program? Should this statement be tempered with something along the lines of "to the extent practicable, efforts will be made to contain or possibly reduce monitoring costs..."?

Page 10: *"Waters of the State are defined in the Porter-Cologne Water Quality Control Act and include all waters."* Suggest revising to read "Waters of the State are defined in the Porter-Cologne Water Quality Control Act as any surface water or groundwater, including saline waters, within the boundaries of the state."

Page 11: *"Nevertheless, spring is a critical period for the X2 salinity standard and for several pelagic species, and the spring runoff period is more likely to carry pesticides..."* Spring is also an important period for juvenile salmonids migrating through and/or rearing in the Delta.

Page 12: *"Where possible, the Delta RMP will coordinate with existing programs to capture their data, cooperate in sample collection, and/or add additional parameters to laboratory analyses."* Including an evaluation that starts with the question(s) of interest, identifies existing efforts that collect data relevant to that question or have an existing sampling station at a point of interest (where, when, why, etc. Jabusch and Gilbreath 2009 and Central Valley Monitoring Directory as a start for this type of information); identifies data gaps; and identifies issues related to data comparability, storage, access, etc. would provide the structure/background for enhancing coordination/collaboration in support of the RMP.

Page 13: *"There are several ongoing monitoring efforts that include sites of potential value to the Delta RMP and that therefore offer opportunities for collaborative monitoring and analysis."* Suggest adding a discussion and reference to Jabusch and Gilbreath 2009 and the Central Valley Monitoring Directory as initial efforts to gain a better understanding of current monitoring efforts in the Delta. These products were explicitly requested by the stakeholders as an important first step in the process of developing a RMP.

Page 13, first two bullets:

- Hood (Sacramento River basin, downstream of SRCSD) (DWR)
- Vernalis – McCune station (San Joaquin River basin terminus) (DWR)

I believe SWAMP's Stream Pollution Trends (SPoT) monitoring program is conducting sediment chemistry and toxicity at Hood and Vernalis. If so, SWAMP would represent another potential partner for these two sites.

Page 13: *"Certain locations in the Delta are considered to have unique ecological value, either because they are key migratory or spawning locations, are associated with increased productivity, or are important habitat for species of concern. Such locations where water quality would be a concern include:"* While it will be dependent upon the question(s) being addressed, other potential options are to align stations with ongoing fish surveys/studies implemented by IEP (e.g., summer townet), as was done during the POD toxicity testing study (Werner et al. 2005, 2008, 2010), USGS Delta Flows Network, or ecosystem restoration sites (BDCP, FRPA, ERP, etc.).

Page 13, bullet: *“Benthos sampling sites of the IEP EMP.”* Do these sites have “unique ecological value” or should these rather be included under the concept of sites that represent key opportunities for coordination of monitoring efforts? The USGS’s Delta Flows Network represents another monitoring network that should potentially be evaluated from a collaboration standpoint.

Page 13: *“3.2.1 Aquatic and sediment toxicity”* Suggest adding discussion about the approach that will be used for analyzing toxicity test data (e.g., Test of Significant Toxicity). In addition, many of the statements in this section and the next would benefit from the inclusion of appropriate citations.

Page 14: *“A possible explanation for the lack of a clear connection between contaminant concentrations and detected sediment toxicity includes interactions between different types of contaminants, such as synergistic effects or the presence of contaminants that are not analyzed or whose toxicity is not known.”* A similar situation can also occur with respect to water column toxicity and chemistry (e.g., Callinan et al.). In this example, if one had only looked at chemistry data they may have come to the conclusion that the observed concentrations were unlikely to negatively affect aquatic life. This highlights a particularly useful component of toxicity tests, that if applied appropriately they can detect the effects of all chemicals (whether measured or not) as well as pollutant mixtures.

Page 16: *“The SWAMP Statewide Stream Contaminant Trend Monitoring program takes sediment samples annually at Sacramento River at Hood...”* Suggest updating the program name to “SWAMP’s statewide Stream Pollution Trends (SPoT) monitoring program...”

Page 17: *“Opportunities for special studies”* Source identification is likely to be an important special studies component (p. 16).

Page 17: *“The Delta RMP could also play a role in science coordination with ongoing efforts in Region 2...”* Suggest replacing “Region 2” with “San Francisco Bay Regional Board”

Page 18, first bullet: *“Literature summary and conceptual model: by fall 2013...”* The suggestion to develop a conceptual model for nutrients would be a valuable initiative. Ultimately, conceptual models should be used to guide the long-term monitoring program, and can be used to assess effectiveness of the monitoring program and assist in evaluation of proposed mitigation measures (Johnson et al. 2010). Examples of existing conceptual models developed under the auspices of the Delta Regional Ecosystem Restoration Implementation Plan (DRERIP) that may have relevance to the RMP include chemical stressors, pyrethroids, selenium, mercury, sediment, and fish habitat linkage. Additional information about the DRERIP conceptual models is available online at http://www.dfg.ca.gov/ERP/conceptual_models.asp. The IEP also developed a suite of conceptual models over the course of the pelagic organism decline (POD) investigation that revolve around natural and anthropogenic drivers that affect ecological change (Baxter et al. 2010).

Page 18: *“An intensive monitoring program focused on the time period (fall and winter) when delta smelt and salmon are in the Yolo Bypass...”* Suggest adding spring to the time period covered.

Page 18: *“Bioanalytical tools”* This section would benefit from additional development. For example, the POD Biomarker Task Force’s 2007 report titled Biomarkers and the Pelagic Organism Decline (Anderson et al. 2007) provides recommendations regarding an integrative set of investigations designed to discern the potential role of contaminants in the POD. Those recommendations could be used as a starting point for the process of determining an initial focus for this effort.

Page 19, Table 3.1, third row: *“Aquatic toxicity/chemistry, sediment toxicity”* “chemistry” probably warrants a footnote, to be clear that chemistry will be focused on samples found to be toxic and a subset of non-toxic samples.

Page 19, Table 3.1, fifth row: *“Basic taxonomy (fall only)”* Suggest including a justification for limiting basic taxonomy of the phytoplankton community to the fall only.

Page 19, Table 3.1: Sorry if I missed it, but I don’t recall a discussion in the text above about routine inclusion of phytoplankton community or nutrients (nutrients were discussed under special studies, but the potential first year effort was more about summarizing and inventorying existing data) in the water and sediment quality component. How will these parameters be incorporated into the program?

Page 19, Table 3.1, ninth row: *“A good starting point would be the suite of pesticides analyzed by the USGS/SFCWA study led by Val Connor and Kathy Kuivila.”* Suggest replacing this with a citation to a particular document, or include the list.

Page 26, second bullet: *“Receiving water monitoring tied to specific discharge permits: ... Is best addressed through the regional monitoring program described above in Chapter 3”* Such a statement warrants a caveat, given that it may be more or less true based on the actual program design that is implemented, many of the details of which remain to be determined.

Page 26: *“Discussions to date with dischargers and Regional Water Board staff have identified a number of potential design criteria that would be helpful in any future evaluation of the efficiency and effectiveness of current compliance monitoring. [questions to be addressed listed in subsequent bullets]”* This level of evaluation would provide an improved basis for discussions about potential offsets, redirection of resources, cost/benefit of potential changes to monitoring requirements, etc. Such an evaluation would also be valuable with respect to the routine receiving water monitoring.

Page 27: *“In the past, this has been achieved by locating receiving water stations directly upstream of the discharge. However, such locations are not necessarily representative of background conditions and therefore not always the most appropriate basis of comparison for compliance determinations.”* Have efforts been made to evaluate the magnitude of this issue with respect to those facilities that are anticipated to participate in the Delta RMP?

Page 27: *“In other areas, regulatory agencies have used probabilistic data from a regional program (e.g., from an entire watershed or subpopulation of a watershed) to define representative background conditions.”* Suggest discussing feasibility of such an approach in the Delta, in the context of the current proposal to treat the Delta as a single stratum (what level of subsampling might be necessary, for how long, etc.).

Page 27, Section 4.1.3: Would the focus of coordination efforts related to the reasonable potential analyses be on the receiving water characterization studies? Including a summary of the general types of constituents monitored during this effort, frequency of monitoring, etc, would provide valuable context. What are the current timelines for the receiving water characterization studies and what would it take to synchronize them?

Page 28, Section 5.1, fifth bullet: *“A web portal, modeled on those developed by the California Water Quality Monitoring Council, that provides ready access to reports, other assessment products, and raw data, organized in terms of the program’s core management questions. The Estuary Portal currently under development would be the appropriate vehicle for hosting the Delta RMPs data and products.”* Recommend revising the second sentence to read *“The Estuary Portal currently being developed under the auspices of the California Water Quality Monitoring Council would be an appropriate vehicle for hosting the Delta RMPs data and products.”*

Page 29, Section 5.2: *“Data collected by the Delta RMP will be input into the California Environmental Data Exchange Network (CEDEN), which has been identified by the State Water Board as the primary repository for ambient water quality monitoring data.”* The commitment to input the Delta RMP’s

ambient water quality monitoring data into CEDEN is a good idea. Section 4 discusses toxicity testing and chemistry associated with effluent. Will the effluent data continue to be input and stored in CIWQS? Is current plan to create linkages between CEDEN and CIWQS so that dischargers input their data into CIWQS and then appropriate data types can be accessed through CEDEN? If so, suggest adding discussion along these lines. Are the routine receiving water data that are currently being collected by NPDES dischargers in the Delta being input into CIWQS in a readily accessible/manipulatable format?

Page 30, first bullet: *"The degree to which the program has fulfilled the sampling and analysis design."* The review might also address the appropriateness of the design given the program's objectives, identify parts of the program that should be retained or amplified to maintain a high degree of performance, and suggest changes or additions to meet present and future needs.

Page 30, fourth bullet: *"Whether data analyses, reports, and other assessment products have been produced on schedule."* This seems more like an administrative measure, not necessarily something that should be incorporated into an independent, external science review.

Page 30, fifth bullet: *"The perceived quality of the program's data and products."* Are the expectations and needs of the sponsors and participants being met?

Page 30, sixth bullet: *"Whether the program's core questions are being answered."* Evaluate the appropriateness of core questions given the program's objectives.

Page 31: *"The planned schedule is to negotiate the details of monitoring designs and finalize a detailed draft monitoring plan by August 2012."* Will there be an opportunity for stakeholder review/comment of the detailed draft monitoring plan?

Page 32: *"In addition to monitoring offsets and in-kind support, additional funding opportunities should be explored."* Opportunity to pursue grants, particularly to fund special studies components of the program should also be highlighted. While not a reliable funding source for long-term program viability, grants may provide an opportunity to augment the program.

Page 32: *"The review of D-1641 provides opportunities to implement Delta RMP as part of revised flow requirements."* Suggest that the statement be revised to read "The State Water Board's current review of the Bay-Delta Plan may provide an opportunity to incorporate implementation of the Delta RMP, or portions of it, into the revised monitoring and special studies program."

Pages 33-35, Table 6.1: As acknowledged in a comment bubble, the numbers included in this table are initial estimates, which err on the conservative side. It is clear much work remains to be done, in collaboration with stakeholders, to develop an estimate that more closely approximates actual costs. For example, is it reasonable to assume that the costs associated with logistics coordination and program management would essentially double going from a mid-range to high-end program? It seems like there would be some efficiencies achieved.

Page 37: *"The IEP Science Advisory Group (IEP SAG) could serve as an independent science review group for an ongoing technical review. Alternatively, ASC and/or the IEP POD contaminants work team (CT-WT) could convene a technical review panel (<\$40K)."* The Delta Science Program represents another option for convening technical review panels.

Page 37, Governance section and other sections: At various points, particular groups (e.g., SC/TRC, workgroups, technical workgroup, technical decision-making body, other decision-making body, etc.) are mentioned with limited/or no description of what they are, how they are constituted, etc. Suggest adding definitions and using consistent terminology.

Pages 43 and 45, Water/Sediment Toxicity Monitoring Sites: Suggest adding test species used, type of test, frequency of testing, and how long program has been conducting tests at this location as context for conversations about collaboration.

I look forward to continued participation in the process to develop and implement the Delta RMP. Please feel free to give me a call if you have any questions or need further clarification.

Best Regards,
Adam

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July 13, 2012



CALIFORNIA ESTUARY MONITORING WORKGROUP COMMENTS ON DRAFT DELTA REGIONAL MONITORING PROGRAM

BACKGROUND: In November 2007, a Memorandum of Understanding (MOU) was signed by the Secretaries of the California Environmental Protection Agency (Cal/EPA) and the California Natural Resources Agency to establish the California Water Quality Monitoring Council (Monitoring Council). The MOU was mandated by CA Senate Bill 1070 (Kehoe, 2006) and requires the boards, departments and offices within the California Environmental Protection Agency (Cal/EPA) and the California Natural Resources Agency to integrate and coordinate their water quality and related ecosystem monitoring, assessment, and reporting.

CA Senate Bill 1070 (Water Code Sections 13167 and 13181) and the MOU require that the Monitoring Council develop specific recommendations to improve the coordination and cost-effectiveness of water quality and ecosystem monitoring and assessment, enhance the integration of monitoring data across departments and agencies, and increase public accessibility to monitoring data and assessment information. While the Monitoring Council may recommend new monitoring or management initiatives, it will build on existing effort to the greatest extent possible. The Monitoring Council published its initial recommendations in December 2008, and its recommendations for A Comprehensive Monitoring Program Strategy for California in December 2010.

The Monitoring Council's approach to improving monitoring, assessment and reporting is to have specialized workgroups develop and maintain internet portals addressing different water quality themes. The Monitoring Council identified the need for a California Estuaries portal, and an underlying workgroup, devoted to the health of California estuarine ecosystems. The California Estuary Monitoring Workgroup (CEMW) was formed and is initially focusing its efforts on the San Francisco Bay-Delta. This workgroup is tasked with identifying key questions to assess the ecological health of the San Francisco Estuary, the data and methods available and needed to address the questions, and the methods to access, display, and work with the data and information.

MONITORING PROGRAM PERFORMANCE MEASURES: The Monitoring Council adopted a set of monitoring program performance measures and benchmarks based on the United States Environmental Protection Agency's (USEPA's) 2003 report *Elements of a State Water Monitoring and Assessment Program* (USEPA 2003), but condensed USEPA's list of ten elements to six. A description of these six performance measures can be found in the Monitoring Council's 2008 report *Maximizing the Efficiency and Effectiveness of Water Quality Data Collection and Dissemination*. Each workgroup uses these measures to evaluate existing water quality monitoring, assessment, and reporting efforts in order to develop specific actions necessary to coordinate and enhance those efforts. As a key part of such evaluations, workgroups must ensure that monitoring designs and assessment approaches target core

management questions. The performance measures provide the structure for a preliminary evaluation of a wide range of monitoring and assessment efforts.

CALIFORNIA ESTUARY MONITORING WORKGROUP EVALUATION OF DRAFT Delta RMP: The CEMW is a new workgroup; our Charter and Guidelines were adopted in June. The timeline for submittal of comments on the Draft Delta RMP did not afford the workgroup sufficient time to prepare a formal assessment. However, the workgroup felt there was value in having several members apply the Monitoring Council's performance measures and associated benchmarks to the Draft Delta RMP. The workgroup also felt there was value in informally forwarding the evaluation to Central Valley Regional Water Board staff. The main purpose in forwarding the evaluation is to ensure that as the Delta RMP progresses from the planning/design phase to implementation, the responsible entities and stakeholders will incorporate the Monitoring Council's recommendations. This should be easy, because representatives from the Central Valley Regional Water Board and the Aquatic Science Center are already participating in the CEMW, as are many of the stakeholders.

Attached to this letter is a summary of the evaluation scores. The environmental scientists that evaluated the Draft Delta RMP include staff from the State Water Board, the Department of Fish and Game, the Department of Water Resources, the US Geological Survey, The Bay Institute, and the State and Federal Contractors Water Agency. Everyone recognized that the Draft RMP is still in the early design phase, and much still needs to be developed. That makes application of the benchmarks difficult at this time, resulting in low to medium scores.

In spite of the scores, there is strong support for implementing the Delta RMP. The Central Valley Regional Water Board should look to the CEMW as a resource. For example, the current draft mentions using the California Estuaries portal to host Delta RMP data and products. In addition, the CEMW will also serve as a venue to enhance opportunities for integration of the Delta RMP with other estuarine monitoring efforts in the San Francisco Bay-Delta and across the state. This is consistent with the goals of the Monitoring Council and the CEMW. We look forward to moving that concept to reality.

Thank you for the opportunity to review the Draft Delta RMP. We look forward to assisting with further development and implementation.

Sincerely,



Valerie Connor, Co-facilitator,
California Estuary Monitoring Workgroup.

CA Water Quality Monitoring Council
 Evaluation Criteria and Benchmarks for Monitoring Programs

Scores

Evaluation Criteria/Benchmarks

Average
Score

Strategy, objectives, design

Low: No core questions; no, or many undifferentiated, target audiences; poorly articulated or conflicting objectives; uncoordinated monitoring efforts not focused on questions or objectives

Medium: Core questions and target audiences implicit in program design; objectives implicit but only partly coordinated and not directly used to structure design effort

High: Core questions coordinated, clearly stated, and focused on specific audience(s); clearly stated and common objectives address coordinated core questions and inform all aspects of design

Indicators and methods

Low: Indicators and methods uncoordinated, not validated; no QA procedures or plan

Medium: Indicators and methods validated but not coordinated statewide; QA procedures exist but are poorly matched to objectives and not coordinated statewide

High: Coordinated, scientifically validated, and clearly documented indicators, methods, and QA procedures that match monitoring objectives

2	3	1	3	2	2	2	2.1	Low = 1 Medium = 2 High = 3
1	1	1	1	3	1	1	1.3	

CA Water Quality Monitoring Council
 Evaluation Criteria and Benchmarks for Monitoring Programs

Data management

Low: No data management procedures or documentation

Medium: Data management procedures exist but are not coordinated statewide and only poorly support access to data

High: Coordinated and clearly documented data management procedures are coordinated statewide and fully support access to data at multiple levels

Consistency of assessment endpoints

Low: No data analysis or assessment procedures used or documented

Medium: Data analyzed but methods not coordinated; assessment tools exist but not fully validated or coordinated

High: Data analysis methods and assessment tools fully validated, clearly documented, and coordinated statewide, while providing a variety of valid perspectives on the data

Reporting

Low: No reporting process or products

Medium: Intermittent static reports, available with some effort

High: Readily available regular static and dynamic reports focused on core questions and objectives; ability to create user-defined reports at multiple scales and from multiple perspectives

2	2	1	3	2	2	2	2
1	2	1	3	0	1	2	1.8
3	3	1	3	2	3	3	2.6

CA Water Quality Monitoring Council
 Evaluation Criteria and Benchmarks for Monitoring Programs

Program sustainability

Low: No systematic program evaluation, planning, or long-term funding devoted to infrastructure needs related to coordination and data integration

Medium: Intermittent internal program review and planning that may or may not include infrastructure needs; limited funding for infrastructure

High: Regular external program evaluations and planning for all program needs and for statewide integration

Source: http://www.waterboards.ca.gov/mywaterquality/monitoring_council/docs/comp_strategy_all.pdf

3	2	1	3	2	1	2	2
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CVCWA Central Valley Clean Water Association

Representing Over Fifty Wastewater Agencies

MICHAEL RIDDELL – CHAIR, CITY OF RIVERBANK
JEFF WILLETT – SECRETARY, CITY OF STOCKTON

TERRIE MITCHELL – SACRAMENTO REGIONAL CSD
ED CROUSE – TREASURER, RANCHO MURIETA CSD

July 24, 2012

Sent via electronic mail to: MSullivan@waterboards.ca.gov

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RE: Comments on June 2012 Delta Regional Monitoring Program Draft Framework

Dear Ms. Sullivan:

The Central Valley Clean Water Association (CVCWA) offers these comments for consideration by the Central Valley Regional Water Quality Control Board (Regional Water Board) staff on the Delta Regional Monitoring Program (RMP) June 14, 2012 Draft Framework (Draft Framework). CVCWA represents more than 50 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. There are no fewer than fourteen publically owned treatment works (POTW) and combined sewer system (CSS) member agencies within the legally defined Delta.

The Draft Framework diverges significantly from the May 2010 Draft Delta Regional Monitoring Plan (see Attachment 1) and significantly from prior discussions CVCWA has had with the Regional Water Board's Executive Management on this subject.

We understand the challenges in managing stakeholder processes, and we request that Regional Water Board staff and stakeholders strive to collaboratively create an effective RMP

that engages all affected stakeholders to develop an effective and inclusive stakeholder governance structure to establish RMP priorities that meet stakeholder needs. The Draft Framework falls short of this goal by excluding stakeholder involvement in setting RMP priorities.

The June 2012 Draft Framework includes specific details of a proposed monitoring program, but also has significant gaps describing how monitoring priorities were developed and how the initial framework would be funded. CVCWA requests that the Regional Water Board delay implementation of the Draft Framework monitoring until the issues of governance and funding can be developed by the participating stakeholders and stakeholder priorities can be discussed. CVCWA is very concerned that, if implemented as proposed, the Draft Framework would cause significant costs to CVCWA members without providing substantial benefit.

Alternatively, we recommend following the approach presented in the Sacramento Regional County Sanitation District "*Delta Regional Monitoring Program – An Alternative Strategy*" plan (see Attachment 2). This plan has an aggressive timetable that will allow governance and priority setting to be better developed for the mutual benefit of all stakeholders and is consistent with the approach previously presented by Regional Board staff.

Central Valley and Delta communities have been impacted significantly by the economic downturn. However, many of these same communities are moving forward with water supply, collection system, and wastewater treatment capital improvement projects collectively costing billions of dollars. Cost neutrality for NPDES permittees should not only continue to be a primary stated goal of the RMP (see attached May 2010 Draft Delta Regional Monitoring Plan), but it needs to be a goal that must be realized and demonstrated.

CVCWA offers specific comments and suggestions below on some of the significant issues in the Draft Framework needing further resolution through a stakeholder process.

Regional Policy Effort Fragmentation

CVCWA is engaged in a number of regional regulatory and policy initiatives including the Central Valley Drinking Water Policy, CV-SALTS, Delta Mercury Control Program, and others. All these efforts would benefit from a trusted scientific entity to collect and analyze data of various types, such as a Regional Monitoring Program could provide. Funding for these ongoing stakeholder efforts has come from numerous sources, but is reliant, in part, on funding from stakeholder agencies including CVCWA member agencies. It is highly inefficient and expensive for these multiple individual efforts to develop data and analysis tools that are scientifically defensible and generally accepted by all Delta stakeholders. These fragmented and "competing" science approaches hamper progress in protecting the Delta. Opportunities for efficiencies through a regional monitoring program are available through coordination with these other efforts where existing stakeholder processes are underway.

CVCWA requests that representatives from these other ongoing stakeholder processes be included as “stakeholders” in the RMP process to identify potential pilot projects and collaboration.

Studies and Monitoring Supporting NPDES Permits

It has been stated in meetings and conversations that all current NPDES monitoring requirements will be reviewed and considered for identification of cost offsets can be identified. Many of the current monitoring requirements for POTWs are needed to meet information requirements prescribed in the State Implementation Plan to appropriately calculate effluent limitations. In most cases, reasonable potential analyses for dischargers are very specific to the discharge and discharge location, and unlike the San Francisco Bay RMP, multiple agencies cannot use the same sites for sampling. Furthermore, dischargers are subject to monitoring for TMDL purposes or compliance purposes, and it may not be in a discharger’s interest to replace a compliance monitoring point.

There are a number of technical studies and tools for which a Delta RMP could provide data including metals translators, mixing zone modeling, far field and near field modeling for Antidegradation Policy compliance, Delta Methylmercury TMDL studies and fish tissue investigations, pathogen fate and transport and risk assessment studies and modeling, dynamic modeling of receiving waters for calculating effluent limitations, modeling of the watershed and impact of POTW point sources on downstream locations, etc. These are all relevant and ongoing needs for POTWs and the Regional Water Board. Collaborative efforts also provide benefits to smaller POTWs who may not have the technical or financial resources to complete these studies.

CVCWA requests that the Regional Water Board specify how the RMP will provide benefits and potential cost offsets for POTWs.

Aquatic Toxicity Monitoring

The Draft Framework relies heavily on aquatic toxicity monitoring, including an emphasis on *Hyaella azteca* water column and sediment testing. While the proposed aquatic toxicity monitoring may provide an “integrated” indicator, the results are non-targeted, likely related to multiple toxicants and would be difficult to directly tie to specific point or non-point source management measures. While there may be specific targeted applications of aquatic toxicity testing that would be useful, CVCWA does not believe that the proposed toxicity monitoring is helpful for the following reasons:

- The proposed chronic exposure period would require “flow-through” or more real time renewal testing to be representative of actual receiving water conditions over the long test period in the Delta where conditions can change rapidly in a six hour period.

- Chronic toxicity tests are poor indicators of instream impacts. Although there is a common perception that the results of WET tests are relatively good predictors of instream biological impacts, scientific research has not shown this to be true. A noteworthy study conducted on the subject indicates that chronic WET tests are generally poor predictors in instream impacts even when using the more robust EC/IC25 statistical analyses.¹
- The Draft Framework does not include specific information on aquatic toxicity effect triggers and follow-up activities. It is well recognized that follow-up monitoring is expensive without guaranteed success of toxicity identification. A common problem is that the initially observed toxic effect is not persistent; in such cases, continued investigations will not provide definitive results.
- The proposed framework includes *Hyaella azteca* water column testing, but there is no EPA promulgated *water column* test method for this species. There are sediment toxicity methods and while water column testing is performed by some limited subset of laboratories, use of water column *Hyaella azteca* test should be limited to research endeavors, not permit compliance monitoring. *Hyaella azteca* is included as a supplemental species in the “Methods Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms” (EPA 2002, Fifth Edition). In this context it is intended to validate the test species and no *Hyaella azteca* specific test, test parameters, or method development data are included in the test method.

For these and other reasons, *Hyaella azteca* water column testing is not appropriate for this initial phase of the RMP.

CVCWA requests that the proposed aquatic toxicity sampling be omitted from the initial phase of RMP implementation.

Inaccurate Estimate of Available Funds

The Draft Framework includes cost estimates for a range of monitoring programs, spanning the low-end (\$180,918), mid-range (\$1,772,942) and high-end (\$3,066,075). Regional Board staff stated at the July 9, 2012 meeting with the NPDES discharger group and the June 20, 2012 webinar conference call that the mid-range to high-range program costs are “achievable”. However, the basis for this assessment was not provided, as Table 6.2 of the Draft Framework was omitted from the circulated document. While Regional Board staff has reviewed current monitoring costs submitted by NPDES dischargers, CVCWA’s understanding is that existing Delta

¹ Evaluating Whole Effluent Toxicity Testing as an Indicator of Instream Biological Condition. Water Environment Research Foundation (WERF) Project Report 95-HHE-1. 1999.

NPDES surface water monitoring costs are significantly less than the mid-range proposed program cost.

Based on the expected level of funding and offset costs from the NPDES dischargers, if the Regional Board proceeds with the framework instead of pursuing an alternative strategy,

CVCWA requests that only the low-end program be implemented, with a focus on providing monitoring efficiencies to NPDES dischargers and other participating stakeholders for their existing programs. These efficiencies could include logistical support of common Delta sampling events, reporting tools, and analysis of existing data and data needs.

CVCWA appreciates your consideration of these comments. Please contact me at (530) 268-1338 or eoofficer@cvcwa.org if I can be of further assistance.

Sincerely,

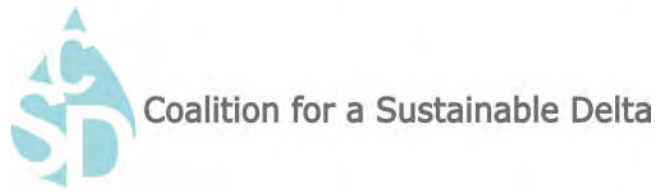


Debbie Webster,
Executive Officer

Attachment 1. May 2010 Draft Delta Regional Monitoring Program

Attachment 2: *"Delta Regional Monitoring Program – An Alternative Strategy"*

Please note that Attachments 1 and 2 have been removed to reduce file size. Attachment 1 is available on the Delta RMP web page. Attachment 2 is available within this document beginning on page 23.



July 13, 2012

Ms. Meghan Sullivan
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670
msullivan@waterboards.ca.gov

Re: *Proposal for a Regional Monitoring and Assessment Framework and its Implementation*

Dear Ms. Sullivan:

The Coalition for a Sustainable Delta is a California nonprofit corporation comprised of agricultural, municipal, and industrial water users, as well as individuals in the San Joaquin Valley. The Coalition and its members depend on water from the Sacramento-San Joaquin Delta (Delta) for their continued livelihood. Individual Coalition members frequently use the Delta for environmental, aesthetic and recreational purposes; thus, the economic and non-economic interests of the Coalition and its members are dependent on a healthy and sustainable Delta ecosystem. The Coalition takes great interest in efforts to manage Bay-Delta ecosystems and the desired and protected species that depend on those systems.

With growing evidence that contaminants -- both toxic compounds and nutrients -- that are discharged directly into the Delta may be major direct and indirect contributors to losses of at-risk, native fishes, efforts to monitor and assess the status and trends of contaminant inputs and their sources should be viewed as essential to the recovery of Delta ecosystems and their constituent ecological communities and species. The Delta Regional Monitoring Plan (RMP) apparently is intended to be the major estuary-wide source of information on contaminants and associated conditions that effect native fishes and attributes of the Sacramento-San Joaquin Delta, accordingly the Coalition takes great interest in the draft *Proposal for a Regional Monitoring and Assessment Framework and its Implementation* (prepared for Central Valley Regional and State Water Boards – June 2012).

It's hard to discern whether the draft "proposal" actually meets its intended purposes. But, it fails to describe a "monitoring and assessment framework" or to suggest a data collection scheme that would succeed, if implemented, in providing answers to the "overarching question" therein. The opening statement that the draft "report presents a design for core water quality components" of a regional monitoring program (page 1) does not seem well supported in the pages that follow – there is no description of an actual plan or program per se, nor articulation of a design for its constituent components, only some of which are described in the document.

The summary offers an “overarching motivating question” – *Is the Delta aquatic ecosystem healthy?* The proposal document never quite recovers from this glib, rhetorical question to then go on and describe how an implementable RMP can gather the data necessary to assess the contribution of contaminants to the well-documented on-going disruption of the Delta’s aquatic ecosystems. Those systems are highly degraded from a century and a half of physical changes to the Delta landscape, from the invasion of dozens of exotic species that combined have nearly completely replaced natural ecosystem structure and function, and from in-Delta assaults from a chemical mix of toxics and other contaminants from treatment facilities and other upland sources. The question of whether the Delta aquatic ecosystem is healthy is not the fundamental question challenging RMP planners.

More central to the RMP is how exactly can it identify and quantify signals of the effects of contaminants on desired ecosystem attributes in the Delta in the context of the many other environmental stressors old and new that compromise aquatic ecosystem structure and function. Can the RMP identify the contaminants that are contributing to the decline of native species in the Sacramento-San Joaquin Delta, and can the RMP direct planners to sources of deleterious inputs and inform best practices toward control of those inputs? There is a promise to address contaminants in the context on their impacts on fishes in the Delta in the draft proposal document, but there is no evidence of any link that might be made between the targeted ecosystem stressors in this prospective effort and those flagship species.

The water quality inventories and monitoring that are the focus of the proposal document will provide just a subset of the data necessary to falsify alternative explanations for aquatic ecosystem dysfunction in the Delta. The RMP will have to gather data, not only on contaminants and on predetermined response variables, but on other environmental stressors operating at diverse spatial scales. Or, the RMP will have to be integrated with other assessment programs in efforts to marry data collection efforts in an explicit experimental framework that can differentiate impacts from contaminants from those of other already-documented stressors. In that context, the RMP cannot effectively rely on survey data gleaned from ongoing programmatic fish monitoring schemes in the estuary, which are not designed to sample the habitats that support at-risk species, and would be wholly inadequate to serve RMP assessment purposes in spatial, temporal, and other monitoring-design contexts. The long-institutionalized, seasonal surveys for fishes in the Delta are gathered from a sampling template that is completely non-specific; they forego sampling against any demonstrated (or hypothesized) environmental gradients pertinent to management planning for desired Delta fishes. Accordingly, a monitoring scheme that intends to relate water quality variables to ecosystem responses (changes) in an effective spatiotemporal platform has an overwhelming design and implementation challenge before it. No contemporary monitoring efforts are sufficiently well designed -- they are neither adequately intensive or extensive in gathering stressor or response variables -- to serve as a template for the RMP’s ambitious effort to link contaminants and “impacts” (as they are referred to in questions on page 8) to the Delta ecosystem. The RMP will be

charting a new course should it intend to explore the “potential role of contaminants in what is now termed the Pelagic Organisms Decline” (page 3). The attached budget does not reflect this truth.

The proposal document states that “indicators” will be used from which inferences of the effects of contaminants on the Delta aquatic ecosystems and the species that they support will be drawn (page 13). The RMP will certainly have to employ indicator attributes, measures, and even species. The use of indicators or surrogate measures in monitoring must first be validated, not just asserted (see Caro, T., 2010, *Conservation by Proxy*, Island Press). Nearly all measures of environmental stressors and ecosystem responses and conditions are going to need to be made by inference from proxy targets, using surrogate measures or indicators. It is a process that is intense analytically (far more challenging than the analyses of data that emerge from subsequent monitoring efforts). The program document does not reflect sufficient appreciation of the challenge that lies ahead in this planning arena, the budget ignores it completely, the acknowledgement list offers little evidence that experienced support is at the ready to take on the task of responsible indicator selection and validation.

Beyond recognition of the need to use indicators in monitoring, the proposal document is uninformative as to how the RMP effort could possibly shed light on environmental phenomena of concern. But, worse, the absence of any reference to an actual framework – save the promise that samples will be drawn from the entire Delta and be geographically stratified using criteria not described in the document – leaves an interested stakeholder to assume that the requisite experimental design to the monitoring scheme will be lacking.

To remedy that critical shortcoming, the authors of the proposal document must demonstrate an appreciation of the requirement that monitoring and assessment take a structured approach in its design and implementation. Seven obligatory, sequential steps (adapted from Noon, B.R., 2003, *Conceptual Issues in Monitoring Ecological Resources in Monitoring Ecosystems*, D.E. Busch and J.C. Trexler, Island Press) are required in the design of prospective environmental monitoring programs, such as the Delta RMP, including –

- Identifying and characterizing the water-quality stressors that are believed to affect desired fishes and other environmental attributes of concern.
- Ordinarily ranking the water-quality stressors according to their degree of impact or irreversible consequences,
- Developing conceptual models of the ecological systems of concern, outlining pathways from water-quality stressors to ecological effects on fishes and other environmental attributes.
- Selecting an “optimal” set of environmental-condition indicators that are efficient at detecting effects on essential resources.
- Determining detection limits for the condition indicators.
- Establishing critical decision values (thresholds or trigger points) for the indicators.

- Establishing clear connections to prospective management decisions.

If these steps are followed, an assessment program can be considered responsive to the information needs of the agencies that are committed to the RMP. But, none of these obligatory support activities in the development of a monitoring framework are referenced in the draft document, and they do not appear in the extemporaneous budget spreadsheets, suggesting that the RMP may eschew these essential steps in monitoring plan formulation. Absent these supporting elements, the RMP is doomed to fail to provide reliable guidance to regulators or those charged to restore the Delta's beleaguered aquatic ecosystems.

If water-quality monitoring data generated in the RMP are intended to be related to the status and trends of key organisms, ecological communities, and ecosystem processes in the estuary, the RMP's sampling program must survey not just candidate contaminants, but the fullest possible breadth of candidate environmental stressors that are believed to be acting upon the targeted response variables. The standing proposal document offers an incorrect view of monitoring as an exercise in counting and measuring things, and the design of a monitoring program as an exercise in putting that counting and measuring in a spatial footprint. As described above, it is more than that. And, to that understanding of monitoring, the RMP might benefit from consideration of three National Research Committee reports that served as a strong rebuke of the EPA's then-in-development national "resource monitoring program." The NRC was forced to offer the agency a complete primer on the fundamentals of monitoring objectives, design, applications, and implementation (see three volumes on *Review of EPA's environmental monitoring and assessment program* published in 1994 and 1995). The small volumes provide a valuable reference for RMP planning.

This critical assessment of the proposal document is not meant to condemn the current effort, but to push it in an affirmative and meaningful direction. Growing evidence suggests that the so-called Pelagic Organism Decline may be largely the response of the Bay-Delta ecosystem to inputs of contaminants that are causing direct mortality of desired fishes, reduction in successful reproduction by them, and previously unimagined disruption to the food webs that support them – combining to render substantial areas of the estuary unsuitable for and unoccupied by listed species. The program area of the RMP and the aquatic ecosystems that are supported there need a competent monitoring scheme to guide the long overdue resources management agenda that awaits.

Thank you for considering the Coalition's comments.

Sincerely,



William D. Phillipmore
Board Member

Thank you for the opportunity to review the draft Delta RMP. I found that a lot of my comments really pertained to general ideas, rather than specific sentences in the RMP. In general, I think this will be a very valuable program and it seems to be based on solid principles. My general comments are as follows:

We may need to develop a better mechanism to summarize the overall condition of a specific site or the Delta as a whole, especially as it relates to toxicity test results. As far as I know, no one has defined a good way to include variables such as which species were tested, whether the endpoints are lethal or sublethal, the magnitude of toxicity, the frequency of sampling at specific sites, etc. As a contributor to the Statewide and Regional Reports that summarized 10 years of SWAMP and CEDEN data (in draft form), I feel that there is often not enough data for specific sites to make any conclusions. It might be beneficial to select a five to ten key integrator sites that will be sampled much more frequently than other sites. This is implied under section 3.3 where toxicity testing might be added to monthly IEP sampling.

I also wonder if the five to ten key sites could be sampled to specifically target runoff events, but also include randomly timed sampling events. In this case, you could analyze the data to represent more worst-case-scenario toxicity, but also a broader representation of the overall toxicity condition.

Having some experience conducting toxicity tests in samples collected from the Delta myself, I think it is really important to determine which geographical area is suitable for the freshwater species mentioned in this document. *Hyalella azteca* can tolerate a much broader range of conductivities than *Ceriodaphnia dubia*, Fathead minnows and *Selenastrum capricornutum*. Should some species that are more salinity or conductivity tolerant be included such as inland silverside? Or will this not be an issue because all sites will be under 1 ppt salinity?

Most of the Delta samples that our laboratory has tested were non-toxic, however, when a sample was toxic, it was generally toxic to *Hyalella azteca*. When we did conduct TIEs using temperature as one manipulation, the TIE signals were often too weak and thus difficult to interpret. In the interest of making this program as cost effective as possible, I believe the Don Weston's enzyme treatment will be the most beneficial TIE manipulation.

You may want to involve toxicity testing labs in discussions about when samples will be collected, what QA/QC practices are associated with the samples and the price to conduct the tests. The current price listing does not take into account the number of samples that will be submitted to a laboratory at one time. When only one or two ambient samples are submitted to a toxicity testing laboratory at a time, the laboratory has to set up a laboratory control, possibly a conductivity control and sometimes concurrent reference toxicant tests. In cases like this, the amount of resources utilized for the reference toxicant tests alone exceeds the amount of resources utilized in the ambient toxicity test by 50%. Ultimately, careful consideration of the timing of sampling could make this more cost effective for everyone.

Please let me know if you have any questions about my comments. Thank you for your consideration.

Linda Deanovic

Draft Delta RMP (comments due by July 13, 2012)
Comments – Steve Blecker (Delta Science Program)

General comments

- Overall this initial draft covers does a fine job introducing and outlining the structure of a Delta RMP, while acknowledging that the keys to pulling this off, 1) coordination with existing receiving and discharge monitoring programs, and 2) identifying in-kind support (which will be key in determining the implementation level identified in Section 6) are still in the early stages of development. It should be emphasized that whatever sampling plan is agreed upon, the low end scenario presented in Table 6.1 (i.e. 1 sampling/year) would not be sufficient to capture seasonal variability of many of the indicators.
- The driving questions relate to aquatic ecosystem health (i.e. biota) and receiving/discharge waters; does the latter imply a relation to human health or should this be more explicitly stated?
- Rather than waiting until the program is implemented, analysis of existing data could help answer some of the questions posed in this draft and help to refine the sample design in terms of indicators and number of events per year.
- There were a number of concerns/comments from NPDES dischargers during the June 21 Webex rollout. How have NPDES dischargers responded to the existing RMPs (e.g. SF Bay, SoCal programs)? Are they active participants? Have there been cost-savings?
- Statistical comparisons among Delta-subregions (e.g. North, Central, South, West) would be ideal, but likely cost prohibitive given the number of samples required, as was already addressed. Though lacking the statistical rigor, post-stratification would at least allow for generalized comparisons across Delta subregions.
- Good to see that data accessibility/availability is being addressed (i.e. via CEDEN), which will hopefully be used by more agencies.
- As a question for consideration either now or in the future, would the Delta RMP address water management and water quality components of the BDGP? One or two targeted monitoring sites in the south-central Delta (e.g. Turner Cut and the San Joaquin R) could provide valuable water quality information assuming a greater amount Sacramento R bypasses the central Delta.

Specific comments:

p. 6 Question 2 (top of page)

Wouldn't flow data be needed to calculate loads? Are flow measurements being considered in conjunction with the other indicators to account for differences in wet/dry years, which would help with cross-year comparisons?

p.6 last section, first bullet

Could the list of potential indicators be examined ahead of time for relevancy; i.e. are there any indicators not currently being monitored or aren't relevant with respect to regulatory, management or technical issues?

p.6, last section, second bullet

This is a good idea on paper, not sure how you would carry it out. It could be helpful to develop this point further, perhaps with some examples or a table listing the relative occurrence and extent/magnitude of the indicators. Perhaps the indicators could be broken out in terms of impacts on the different beneficial uses (e.g. ecosystem health, human health, irrigation).

p. 14 Section 3.2.2.

Running aquatic and sediment chemistry on those samples that show a toxic response along with a smaller subset of non-toxic samples seems like a reasonable cost-saving compromise, but is there any concern about having an insufficient sample number to run statistics?

p. 17 Section 3.4

Good to see that special studies are being included as part of the RMP in to augment our understanding of different research areas.

p.18, proposed initiative for year one

This is a good topic and approach for the early stages of the program.

p.25 As discharges are required to meet permit limits and not water quality objectives per se, you might consider re-wording Question 2.

p.28 Section 5.1

This section presents numerous good ideas on data reporting/conveyance. Hopefully the Delta RMP would be able to follow through on this, as smaller monitoring programs do not always carry this out.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street (Wtr-3)
San Francisco, CA 94105

Meghan Sullivan
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670

Thank you for the opportunity to provide feedback on the Draft Delta Regional Monitoring Program. EPA is a strong proponent of Regional Monitoring Programs (RMPs) as we believe coordinating monitoring leads to a more efficient use of monitoring resources while also providing a more robust monitoring design. This in turn provides more robust data and information which allows for a more thorough assessment of the condition of aquatic resources and more informed decision making. We commend the Regional Board on their progress in developing a Regional Monitoring Program in the Delta.

EPA supports comprehensively looking at toxicity in the Delta

EPA supports the use of the toxicity testing approach as a core monitoring indicator. The primary advantage of using the toxicity testing approach is that this tool can be used to assess toxic effects (acute and chronic) of all the chemicals in aqueous samples of effluent, receiving water, or stormwater. This allows the effect of the aqueous mixture to be evaluated, rather than the toxic responses to individual chemicals. Toxicity tests can be used to assess ambient waterbodies (i.e., receiving water) making these tools effective in the assessment of small and large watersheds (de Vlaming et al., 2000).

The EPA Test of Significant Toxicity (TST) approach should be conducted in concert with Toxicity Identification Evaluations (TIEs) (EPA 2010; Denton et al., 2011; Diamond et al., 2011). The goal of the TIE is to identify the chemical(s) causing toxicity in an aqueous sample and it may also be used to determine chemical interactions. These interactions can be additive, synergistic, or antagonistic. Toxicity tests using standard test organisms and performed on ambient water samples are considered surrogate exposures for environmental realism. Exposing these test species *in situ* can increase the environmental relevance. See Denton et al., (2010) for more regarding multiple species screening and discussion on ambient and storm water using the toxicity testing approach.

Clarify what will be defined as background ambient conditions in receiving water monitoring

EPA would like more clarification on the coordinated effort to conduct receiving water monitoring and what is being defined as background ambient conditions. Currently, the ambient upstream concentrations are used. Is the Delta RMP planning to determine that background is located elsewhere or is represented by a different, less degraded, time? Does the Delta RMP intend to monitor both upstream and downstream of all dischargers? If not, it should be noted that some receiving water monitoring may still be required by the permit even if a Regional Monitoring Program is established, and the responsibility for that monitoring would fall to the permittee.

Clarify what is meant by a coordinated Reasonable Potential Analysis

What is meant by a coordinated Reasonable Potential Analysis (RPA) is not clear. Dischargers are required to collect effluent data for the Regional Board to conduct an RPA. This assessment compares effluent concentrations and background ambient concentrations to water quality standards to determine whether effluent limits are necessary. Is the intent that the Regional Board will change the schedule for reissuance of these permits to coincide with each other so that RPAs for each discharger can be conducted at the same time? Or is the intent to coordinate monitoring frequency? RPAs will still need to be conducted by the Regional Board for each discharger separately. The draft RMP document makes it sound like the intent is to assess RPA regionally which may not be consistent with the State Implementation Policy. More specific information on the intent and benefit of this effort should be included in the document.

Develop more clear monitoring objectives and design prior to implementation of the RMP

The two overarching questions identified in the RMP are appropriate and touch upon the Regional Board's major programs. Prior to the implementation of the RMP the specific subquestions, parameters and monitoring station locations associated with these overarching questions need to be better defined. The key inflow sites identified on page 13 are a good start to the list of sampling locations. Which of the possible subquestions identified on pages 8 and 25 will be selected for the RMP should be defined and these should in turn inform the monitoring design. In order to assess toxicity, EPA suggests bearing in mind pesticide use patterns when constructing a monitoring design. For example, pesticide application practices and how they are distributed in space and time should help define monitoring times and locations. Ranking the relative risk of the potential impacts of pesticide applications on water quality based on the magnitude, duration and frequency of application can also be instructive.

A few suggestions for specific edits:

- On pp 27 in section 4.1.3 standards are inappropriately referred to as "violated". The proper usage is when a permit limit is violated it is termed, "exceedance", and it is termed "excursion" when a water quality standard is not met. This error appears throughout the document
- The costs of toxicity testing in Table 6-1 appear to be overestimates. Please see the costs estimates developed for the draft Toxicity Policy (June 2012). Specifically Exhibit 4-4 and 4-5, on page 4-8 and 4-9.
http://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/draft_tox_staff_report_0612.pdf. This draft policy also includes specific information on toxicity testing of effluents, storm water and applicability to the irrigated lands regulatory program.
- On page 22, *Ceriodaphnia dubia* short term chronic test is listed as a 7 day test, however it is a 6-8 day test.
- On page 15 the following sentence is misleading by implying that toxicity and chemistry testing cannot reliably identify stressors: "For toxicity, previous experience (e.g. San Francisco Bay Delta, Newport Bay) has shown that simple correlation between toxicity and chemistry are insufficient to reliably identify stressors...". After toxicity has been determined a Toxicity Identification Evaluation (TIE) can often clearly identify toxicant(s). One such example is that of diazinon and chlorpyrifos in the 1990s (Miller et al., 2005).

Sincerely,



Valentina Cabrera Stagno

References:

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Public Affairs Manager

July 18, 2012

Central Valley Regional Water Quality Control Board
Attention: Ms. Meghan Sullivan
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670

Submitted via email: MSullivan@waterboards.ca.gov

Subject: SRCSD Comments on the Delta Regional Monitoring Plan – Regional Monitoring and Assessment Framework and Its Implementation, June 2012

Dear Ms. Sullivan:

The Sacramento Regional County Sanitation District (SRCSD) appreciates the opportunity to comment on the draft framework for the Delta Regional Monitoring Program (RMP). SRCSD has been involved in regional monitoring programs (Coordinated Monitoring Program, Sacramento River Watershed Program) for many years, and we are happy to see progress on the development of the Delta RMP.

Previous Delta RMP documents have highlighted the large amount of monitoring – roughly \$8-\$12 million worth – in the Delta, yet there is no central monitoring plan for the Delta. Even with all of this sampling the role of contaminants in the Pelagic Organism Decline (POD) is undetermined. A well-planned and thorough Delta RMP can add efficiency to current monitoring in the Delta and possibly fill identified data gaps. However, it is important to create a Delta RMP that can address multiple stakeholder issues and answer the most basic questions regarding public health and the environment.

In 2008 and 2009, the Central Valley Regional Water Quality Control Board (Regional Board) released a series of straw-man proposals for the Delta RMP. These proposals were a great start to get stakeholders involved and to begin the necessary discussions on the details of the Delta RMP. However, those documents seem to have been abandoned during the writing of the latest draft framework released by the Regional Board. We believe that the necessary steps to create a viable and stakeholder-driven RMP were missed.

Ms. Meghan Sullivan

July 18, 2012

Page 2

We are providing the following comments highlighting our concerns with the proposed draft framework. Our comments within the attached Alternative Approach for a Delta RMP highlight the reasons why we think that the draft framework is an approach that will not answer basic environmental questions and benefit stakeholders and the Delta. We are also proposing an alternative draft approach and schedule. We anticipate working with the Regional Board and other stakeholders to develop an RMP framework that provides data to answer questions related to beneficial uses. We have shared our draft approach with the Central Valley Clean Water Agency and other stakeholders from whom we hope to garner support for the alternative draft approach for a Delta RMP.

Please let us know if you would like a version of our Delta RMP alternative approach that does not include our comments on the June 2012 Regional Board's framework for a RMP. We believe a meeting amongst stakeholders should be held soon to discuss the opportunities of this alternative approach and would be glad to work with you to make that happen. Thank you again for the opportunity to comment and provide an alternative approach for a RMP. If you have any questions, please contact me at (916) 876-6008 or loftonj@sacsewer.com.

Sincerely,



Jason Lofton, PE
Associate Civil Engineer

Attachment: Alternative Approach for a Delta Regional Monitoring Program, July 17, 2012

cc: Debbie Webster, Central Valley Clean Water Association
Stephanie Fong, Senior Environmental Scientist, CVRWQCB
Ken Landau, Assistant Executive Officer, CVRWQCB
Stan Dean, District Engineer
Prabhakar Somavarapu, Director of Policy and Planning
Terrie Mitchell, Legislative and Regulatory Affairs Manager

Alternative Approach for a Delta Regional Monitoring Program

Although this approach is SRCSD's recommendation, it is based on discussions with other stakeholders representing NPDES wastewater and stormwater utilities, and irrigated agriculture. This alternative approach consists of five steps:

1. Engage all Delta RMP stakeholders
2. Focus the RMP's goals and objectives
3. Develop the RMP governance structure
4. Build the RMP on current programs
5. Plan to start the RMP in 2013

Each section explains some of our concerns with the draft framework and includes recommendations for an alternative approach to developing the RMP. As underscored by the final step, our intent is to develop an RMP that involves a wide range of stakeholders (not just NPDES permittees) to be able to collect the data necessary to answer basic questions about the beneficial uses of Delta waterways.

This is consistent with the State Water Resources Control Board's (State Water Board) Strategic Workplan for Actions to Protect Beneficial Uses of the San-Francisco/Sacramento-San Joaquin Delta Estuary (Strategic Workplan)¹, which was approved by the Central Valley Regional Water Board and the San Francisco Bay Regional Water Board. The Strategic Workplan was based on the following themes:

- Build interest, involvement, and momentum by answering interesting and important questions that require a comprehensive, regional view;
- Develop capabilities for regularly compiling, synthesizing, and reporting data from existing, ongoing monitoring efforts; and
- Use this effort as a proof of concept that sets the stage and creates capabilities needed for longer-term regional monitoring.

Clearly, the concept in the State Water Board's plan for an RMP includes stepwise development of an RMP while engaging multiple stakeholders.

¹ State Water Resources Control Board Resolution 2008-0056, Central Valley Regional Water Control Board Resolution R5-2008-0134.
http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/strategic_plan/docs/baydelta_workplan_final.pdf

Step 1. Engage All Delta RMP Stakeholders

The draft framework focuses on a small subset of monitoring entities in the Delta (i.e., NPDES dischargers) and does not project how a fully-developed program would or should evolve to be more inclusive. While we appreciate how other RMPs in southern California and the San Francisco Bay Area were initiated by a few leaders, the Delta's waterways and water-related stakeholders are unique because the entire State has an interest.

The Delta's hundreds of miles of sloughs, canals, bypasses, wetlands and rivers are important to, and monitored by, a large and diverse group of stakeholders. NPDES dischargers, who are not distributed throughout the Delta's waterways and do not contribute significantly to water quality concerns in the Delta, are not an appropriate subset of stakeholders to determine exclusively where and how to monitor water quality Delta-wide. The Delta RMP's early effort to expand the Central Valley Monitoring Directory² was relevant to all stakeholders. The Delta RMP effort should re-engage all RMP stakeholders, as it originally set out to do in 2008. Without including multiple stakeholders, the RMP is missing an opportunity to maximize the existing \$8M-\$12M worth of annual monitoring in the Delta.

Engaging all stakeholders initially by addressing common interests would encourage the regional collaboration needed for a sustainable RMP. Earlier documents from (and comments by) the Regional Water Board were consistent with this message³ as is the Delta Stewardship Council's Draft Delta Plan water quality recommendation #9 "Implement Delta Regional Monitoring Program"⁴:

The State Water Resources Control Board and Regional Water Quality Control Boards should work collaboratively with the Department of Water Resources, Department of Fish and Game, and other agencies and entities that monitor water quality in the Delta to develop and implement a Delta Regional Monitoring Program that will be responsible for coordinating monitoring efforts so Delta conditions can be efficiently assessed and reported on a regular basis.

Participation in an RMP by the state's own Delta water quality monitoring programs, as intended by the above Resolution and recommendation, is imperative. The 2009 final draft "Summary of Current Water Quality Monitoring Programs in the Delta" (Summary of Current Programs) identifies at least 22 different entities spending an estimated \$8M-\$12M annually. The Central Valley Monitoring Directory identifies the monitoring stations, constituents and frequency of monitoring used by these existing water quality monitoring programs. Table 2 in the Summary of Current Programs should be updated and expanded to include contacts, useful and functional

² At <http://www.centralvalleymonitoring.org/>.

³ See, for example, Resolution R5-2007-0161 and the 2009 Fact Sheet: Stakeholder Process for Developing the Delta Regional Monitoring Program.

⁴ Available at http://deltacouncil.ca.gov/sites/default/files/documents/files/DeltaPlan_05-14-2012.pdf.

program components currently useful to an RMP, current barriers to RMP participation (if any), and next steps towards RMP participation.

Delta RMP stakeholders can be characterized into three categories:

1. **Participants** would constitute a reasonably cohesive, motivated group of entities who would provide baseline funding and oversight. Participating monitoring programs would strive to minimize redundancies, share resources, and share information. Each entity must sign a Memorandum of Understanding (MOU) agreeing to the goals and objectives and governance structure.
2. **Collaborators** would participate in coordination meetings to leverage resources, conduct special studies, and share local expertise. Some groups may participate on an *ad hoc* basis for special projects. Other monitoring programs may choose not to participate in or coordinate with an RMP, yet if their monitoring data are publicly available and of adequate quality, an RMP could potentially still use their data to evaluate regional conditions.
3. **Advisors** would provide helpful advice and guidance, and could provide a scientific review of the RMP and analysis generated by various stakeholders from data interpretation.

With this broader set of stakeholders participating in the development of an RMP, as originally envisioned, the next step should be to focus the RMP's goals and objectives.

Step 2. Focus the RMP's Goals and Objectives

The draft framework proposes a pilot project that focuses on Delta wide sediment and aquatic toxicity. Aquatic toxicity should not be the starting point for an RMP. The monitoring plan even goes a step further and proposes *Hyaella azteca* – a species with no EPA promulgated test method – as a species used for water column testing. We are unsure why toxicity was chosen for the pilot project and results from toxicity testing will likely not give Delta stakeholders a true assessment of the health of the Delta ecosystem. The focus on toxicity in the draft framework could be a special study that eventually could be conducted periodically (i.e., every 2-5 years), consistent with approaches elsewhere in the State. This section proposes an alternative set of goals and objectives for an RMP.

Goals articulate the major purposes of a program. An RMP ultimately could have several goals, including the following (approximately in order of highest priority first):

- Answer basic questions and communicate with the public and legislature about the beneficial uses of the water bodies, such as:
 - Is our water safe to drink?

Alternative Approach for a Delta Regional Monitoring Program

- Are our aquatic ecosystems healthy?
- Is it safe to eat fish and shellfish from our waters?
- Is it safe to swim?
- Establish baseline conditions and identify trends in:
 - Water quality,
 - Sediment quality,
 - Biological diversity and integrity, and
 - Flows.
- Support the efficient use of limited monitoring resources.
- Understand pollutant fate and transport, linking
 - Water quality to beneficial uses,
 - Pollution sources to impairment,
 - Impacts of watershed projects on receiving water quality,
 - Surface water and groundwater interactions, and
 - Effects of atmospheric deposition and groundwater flux to water quality.

Objectives articulate more specific efforts with measurable outcomes that help the program achieve its goals. The multi-faceted objectives of an RMP could include the following.

- Periodically monitor ambient water quality, sediments, biota, and habitats within the Delta in a comparable, high-quality, science-based approach, that will provide data to make adaptive management decisions.
- Ensure that data are compiled and stored in comparable formats and readily available.
- Determine the water quality effects of events in the watershed, including restoration projects, land development projects (especially urbanization), water quality improvement projects, and natural events (e.g., forest fires, extreme water years).
- Evaluate emerging contaminants.
- Develop, calibrate, and apply simulation models linking causes to effects to support management decisions.
- Aid in the development of TMDLs and track their attainment.
- Provide regular, transparent assessment reporting and program evaluation.
- Communicate and coordinate with stakeholders to prioritize and focus efforts.

These goals and objectives are not meant to imply that an RMP entity would necessarily lead all efforts to achieve these goals and objectives, but rather that it should serve as a forum and technical resource for stakeholders to achieve them by whatever means are most efficient. With these draft goals and objectives for an RMP in mind, the next step for stakeholders should be to develop an efficient governance structure.

Step 3. Develop the RMP Governance Structure

The draft framework includes a chapter on governance with no details. In particular, no operational lead is identified and no decision-making process is proposed. Consistent with suggestions in the Delta RMP’s 2008 strawman RMP governance document, this section suggests some key components for governance structure. RMP Participants should formalize their roles by signing an MOU, or other type of agreement, based on this type of information.

Organizational Structure

Two committees should be organized to provide primary oversight responsibilities for the RMP:

- **Steering Committee**—Voting members would include RMP Participants, the RMP Lead entity, and the TAC chair. Other stakeholders could participate in the meetings but would not have voting rights. Voting would be ruled by majority, not by consensus.
- **Technical Advisory Committee (TAC)**—Open to participation by all stakeholders, this committee would be responsible for reviewing key planning documents and assessment reports, and for soliciting external peer review of the program. Key participants would be the RMP Lead and managers of monitoring programs in the Delta.

The organizational structure in which these committees would operate is portrayed in **Figure 1**. The Steering Committee should be formed first. The Steering Committee should finalize the goals and objectives, select the RMP Lead and initiate the TAC. The RMP Lead would then engage all stakeholders.

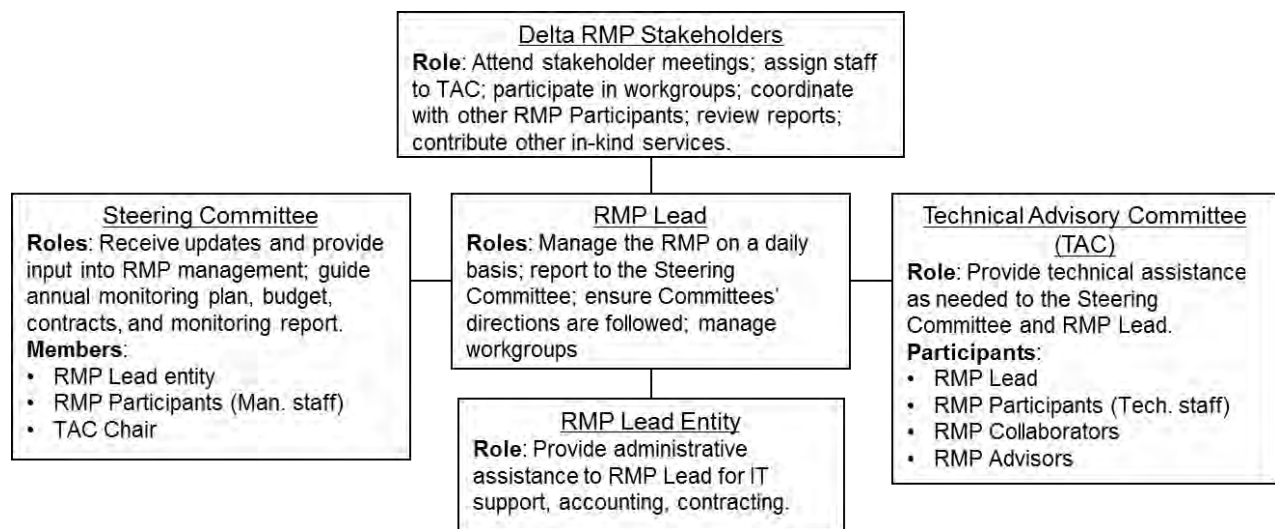


Figure 1. Proposed organizational structure for the Delta RMP.

An RMP Lead

An RMP would be managed most effectively by a single leader, responsible for contracting and coordinating activities. The value of an RMP Lead would be in facilitating communication,

coordination, and collaboration among stakeholders. The Sacramento River Watershed Program's RMP operated this way and the San Joaquin River RMP currently under development is anticipated to operate this way. Specific roles for an RMP Lead should include the following:

- **Communication**—Lead production of reports, manage a listserv, manage a website, track related websites, liaison between the TAC and the Steering Committee
- **Coordination**—Facilitate regular stakeholder meetings, maintain the Central Valley Monitoring Directory, lead the development of (and revisions to) a monitoring design
- **Collaboration**—Identify monitoring overlaps and gaps, participate in the CWQMC, coordinate with overlapping RMPs
- **Program Management**—Manage contracts, facilitate periodic external program review, track monitoring plan implementation

Options for the Delta RMP Lead entity (in which the RMP Lead would function) include the following:

- A Steering Committee member
- A Joint Powers Agency
- A contracted consultant
- A state agency
- A non-profit entity

Budget and Funding

The role of RMP Lead is the only significant funding need initially. The budget for 2013 will be developed and proposed by the RMP Lead. In-kind services from RMP Participants and Collaborators could offset many costs.

Stable, long-term funding will be needed to administer the RMP. Given the diversity of RMP Participants, funding could be allocated among stakeholders in many different ways. The exact funding scheme should be determined by the Steering Committee.

RMP Participants should demonstrate cost savings opportunities relative to their existing monitoring programs. Grants or other short-term funds could be used to supplement baseline activities with special studies.

With a simple governance structure in place and a means of funding the RMP Lead, the next step is to build the RMP on current programs.

Step 4. Build the RMP on Current Programs

The draft framework proposes a foundation of toxicity monitoring supported by water quality data to identify probable stressors. Stakeholders consider this focus to be unwarranted. The

Contaminants Synthesis Report⁵ amassed over one million data points from the Delta and its tributaries, yet the study found that there was still insufficient high quality data available to make definite conclusions about the potential role of specific contaminants in the Delta's pelagic organism decline. A sediment quality objective tool applicable to the Delta is under development.

The majority of Delta RMP stakeholders are interested in three major initiatives:

- Central Valley Drinking Water Policy—This multi-year effort will develop a drinking water policy for surface waters in the Central Valley.
- Integrated Report⁶ and TMDLs—Various Delta-wide and valley-wide TMDLs require many stakeholders to conduct studies and reduce pollutant loads (i.e., boron, organochlorine pesticides, dissolved oxygen, methylmercury).
- CV-SALTS—This multi-year effort will develop a comprehensive salinity management plan for the Central Valley.

The RMP should produce a monitoring plan that supports these interests. These three initiatives may have already identified data needs that could be filled by an RMP. This alternative approach is more consistent with the stated purpose of the Delta RMP's pilot phase, articulated since 2008, to establish a program by which available data are compiled, assessed and reported on a regular basis. During the initial phases of the RMP, the framework for obtaining stakeholder input and developing the long-term RMP (i.e., fully integrated, coordinated RMP) will be developed.

Websites are already available for viewing and downloading program-specific and aggregated Delta water quality monitoring data. The California Environmental Data Exchange Network (CEDEN) provides a central location to find and share information about the Delta's water quality. RMP Participants could be required to upload ambient monitoring data to the Central Valley Regional Data Center.

The Bay-Delta Live website⁷ allows users to visualize and access the Delta's real-time station data from CDEC, USGS NWIS and NOAA using easy data tools. Question-driven assessments available via the California Water Quality Monitoring Council's My Water Quality web portals⁸ are based on data available through CEDEN. The Delta RMP should refer to these existing tools and contribute to their relevant assessments.

⁵ The complete reference is: Johnson, M.L., I. Werner, S. The, and F. Loge (2010). "Evaluation of Chemical, Toxicological, and Histopathologic Data to Determine Their Role in the Pelagic Organism Decline." April 20. 296 pp. At www.waterboards.ca.gov/rwqcb5/water_issues/delta_water_quality/comprehensive_monitoring_program/

⁶ This name refers to the Clean Water Act's Section 303(d) List and Section 305(b) Report.

⁷ At www.baydeltalive.com/.

⁸ At www.cawaterquality.net.

With general agreement on this alternative strategy, RMP Participants will quickly need to develop and implement a near-term plan of action.

Step 5. Plan to Start the RMP in 2013

The Regional Board's proposed RMP development schedule is to negotiate the details of monitoring designs and finalize a detailed draft monitoring plan by August 2012, to complete cost-sharing agreements by October 2012, and to present the Delta RMP plan to the Regional Board in early December 2012. That schedule for developing those details is unrealistic and unnecessary.

Two plans are outlined in this section: (a) Year 2012 – RMP Development and (b) Year 2013 – RMP Implementation. The plan's elements are written as tasks. Specific actions are generally in chronological order.

a. Year 2012 – RMP Development

These tasks would be directed and self-funded by stakeholders. The goal remains to present the Delta RMP plan to the Regional Board in early December 2012.

Task a1. Communicate with All Delta RMP Stakeholders (Aug-Dec)

- Organize stakeholder workshops to complete this alternative strategy and development/implementation plan.
- Communicate to stakeholders via the “reg5_delta_water_quality” lyris listserv.
- Update the Regional Board's “Delta Water Quality - Comprehensive Monitoring Program” website⁹.

Task a2. Complete the RMP Goals and Objectives and Governance Structure (Aug-Sep)

- Identify all RMP stakeholders.
- Finalize the RMP Goals and Objectives.
- Finalize the Governance Structure.
- Solicit seed funding to support a new RMP Lead.

Task a3. Develop a 2013 Delta RMP Pilot Implementation Plan (Oct-Dec)

- Building off the material drafted in this memo, finalize the 2013 pilot implementation plan through stakeholder decisions.
- Present the pilot implementation plan to the Regional Board.

b. Year 2013 – RMP Pilot Implementation

These tasks are drafted as a starting point for discussion in 2012. They could also serve as a component of a grant proposal for external funding or as a scope of work for the RMP Lead.

Task b1. Communicate with and Coordinate Delta RMP Stakeholders (All Year)

- Maintain a basic website for posting documents and notices/agendas, linking to other relevant websites, and providing contact information.

⁹ At www.waterboards.ca.gov/rwqcb5/water_issues/delta_water_quality/comprehensive_monitoring_program/.

Alternative Approach for a Delta Regional Monitoring Program

- Maintain an open listserv for broad communications to all Delta RMP stakeholders. Provide monthly program updates.
- Facilitate regular stakeholder meetings.
- Staff the Steering Committee and TAC. Facilitate regular committee meetings.
- Report on progress to the Regional Board.

Task b2. Develop a Delta RMP Monitoring Plan (April-Dec)

- Update the Summary Report of Existing Delta Water Quality Monitoring Programs.
- Produce a Delta RMP monitoring plan organized by the Surface Water Ambient Monitoring Program's 10 program elements¹⁰.
- Link plan elements with existing monitoring activities.
- Tabulate cost savings to RMP Participants generated by the Delta RMP.
- Identify current data gaps and useful structural changes to address them.

Task b3. Report on Key Issues (Jul-Dec)

- Generate a scope of work to update and improve upon the Contaminants Synthesis Report.
- Review and contribute improvements to relevant "My Water Quality" portals.

¹⁰ At p.6 of www.waterboards.ca.gov/water_issues/programs/swamp/docs/cw102swampcmas.pdf.



July 20, 2012

Ms. Meghan Sullivan
Environmental Scientist
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

RE: Sacramento Stormwater Quality Partnership Regional Monitoring Program Framework Comments

Dear Ms. Sullivan:

The Sacramento Stormwater Quality Partnership (Partnership) appreciates the opportunity to provide comments and input on the Delta Regional Monitoring Program (RMP) Draft Framework (June 14, 2012). The Partnership is composed of the co-permittee group for the municipal separate storm sewer system (MS4) National Pollutant Discharge Elimination System (NPDES) permit (Order NO. R5-2008-0142 NPDES NO. CAS082597). The Partnership strongly supports an RMP and a framework that can be successfully implemented and maintained to the mutual benefit of the Delta stakeholders participating in the RMP. In this spirit we have provided both general and specific comments and suggestions for your consideration. Given the proposed short timeline for Regional Board adoption and the gaps in the proposed framework, our comments are limited to the most significant details. We understand that there will be future opportunities to participate in a stakeholder process and comment in more detail.

The Draft Framework diverges significantly from the May 2010 Draft Program Plan, and much of the intervening work was performed outside of the stakeholder group. After the initial discharger stakeholder meeting held at the Regional Board office in November of 2011, the next steps in the development of the RMP was another stakeholder meeting to be held at the Regional Board offices to further develop the RMP concept. The understanding at that time was that the concept would be developed using the materials prepared to date regarding development of the RMP including the January 2009 Stakeholder Fact Sheet and the May 2010 Draft Program Plan. However, the stakeholder group did not meet again to discuss the RMP until just recently (July 9, 2012) when NPDES dischargers requested a meeting in response to the June 14, 2012 draft framework. While we understand the challenges in managing stakeholder processes, we request that the stakeholders be engaged to develop a governance structure, RMP priorities and short term monitoring plans. We have reviewed the Sacramento Regional Sanitation District "Delta Regional Monitoring Program – An Alternative Strategy", and agree with the approach presented. That plan has an aggressive timetable that will allow governance and priority setting to be better developed for the mutual benefit of all stakeholders. *The Partnership requests that stakeholder workshops be held to modify the RMP framework to better reflect the goals of the participating agencies.*

The remaining comments in this letter could be addressed through the alternative strategy, but are provided for your consideration in the case that additional time is not provided to further engage all stakeholders in the RMP framework development.

The Sacramento Stormwater Quality Partnership is a joint program of the County of Sacramento and the Cities of Citrus Heights, Elk Grove, Folsom, Galt, Rancho Cordova, and Sacramento.

<http://www.beriverfriendly.net>

INITIAL RMP IMPLEMENTATION

The overarching immediate concern is that the proposed framework implies that the effort will be primarily funded by NPDES dischargers, but does not provide significant direct benefit to the Partnership's existing monitoring program and more generally a "modern" urban runoff program including permit requirements that require quantitative assessments of stormwater program effectiveness. *The Partnership requests that the RMP framework be modified to better reflect the goals of the participating agencies.*

While other non-NPDES partners are generally referred to and engaged (DWR and USBR are footnoted in the draft Framework), our understanding is that their proposed roles are limited to "in-kind" laboratory services and additional sample collection based on their existing protocols, schedules, and sites. *The Partnership requests that the RMP initially focus on standard sampling, analysis, and reporting standards and tools that may also include standard regional sampling dates rather than immediate rollout of a significant monitoring effort.* In this way governance and process can be developed through these initial activities and the RMP priorities can be developed through the stakeholders.

All the NPDES monitoring programs are well established and extensive. The Partnership has collaborated with Sacramento Regional County Sanitation District (SRCSD) on river sampling in the Sacramento and American River through the Coordinated Monitoring Program (CMP) for more than fifteen years. The CMP also coordinated sample collection with the Sacramento River Watershed Program (SRWP) during that group's active monitoring periods. While we understand that the RMP's focus is initially the Delta and not the upper watersheds, these existing programs have data and capacity to continue collaboration. This wider coordination in the initial phases would ease transitions, develop relationships, and identify efficiencies.

RMP GOVERNANCE

The Partnership understands that the RMP governance would develop over time based on a number of factors, including the overall success of the program. Appropriate governance of the RMP by the participating and contributing partners is critical in the early stages as priorities and practices are established. Although the Regional Board is the caretaker of the current initialization efforts, it is important at this time to discuss and establish a process for the medium term effort so that NPDES permittees can adequately plan resource allocations and monitoring strategies. *The Partnership requests that specific workshops be held to discuss short and medium term governance for the participating and contributing agencies*

SETTING RMP PRIORITIES

Section 6.3 of the draft framework describes the RMP priorities, but the document itself does not describe how they were set. There are a great number of data gaps and monitoring needs in the Delta and upstream watersheds. The draft framework only addresses aquatic life beneficial uses specifically omitting water supply (MUN), recreational (REC), and agricultural (AGR) beneficial uses. There are a number of Regional Board regulatory initiatives including stakeholder processes like the Central

Valley Drinking Water Policy, Delta Methylmercury TMDL, and CV-SALTS that have monitoring, modeling, and research needs that the RMP could address. The priorities of the RMP should be developed by stakeholders contributing funding with consideration to these efforts and the resources they could bring to the RMP.

The Partnership has participated in the Central Valley Drinking Policy Workgroup for many years. That Workgroup, through grant and in-kind stakeholder agency funding has accomplished much in assessing future impacts of urbanization on drinking water constituents of concern. The most critical piece of technical work was the development of an analytical watershed model of the entire Central Valley that was linked to a Delta water quality model. The model can accurately quantify the impact land use changes or control strategies in the Central Valley and Delta have on downstream concentrations. The Workgroup identified data needs within the upstream watersheds and the Delta. A model framework such as this could be used to identify regional monitoring needs and can be an invaluable stakeholder tool for the RMP and many other regional efforts. This model is immediately available for use by the RMP.

OVERRELIANCE ON AQUATIC TOXICITY MONITORING

The draft Framework relies heavily on aquatic toxicity monitoring using both standard “3-species” testing and *Hyaella azteca* water column and sediment testing. It is our understanding from the draft Framework that aquatic toxicity is intended to be an “integrated” indicator of overall aquatic life health in place of many chemical analyses. While the proposed aquatic toxicity monitoring would provide this integrated indicator, the overall benefit of the data would not be significant to the Partnership effectiveness assessments. Interpretation of aquatic toxicity results and relating effects to specific NPDES discharges can be difficult. As an intermittent wet weather discharger, the Partnership does not believe that the proposed toxicity monitoring is helpful for the following reasons:

- The proposed chronic exposure period is not representative of typical storm runoff duration. Acute exposure periods or “flow-through” renewal testing would be more representative of actual receiving water conditions during storm events.
- While the proposed aquatic toxicity species may be sensitive to certain known effects and constituents, they may not be important as overall indicator of receiving water health.
- The proposed framework did not include specific information on aquatic toxicity effect triggers and follow-up activities. In the Partnership’s experience follow-up monitoring is expensive without guaranteed success of toxicity identification. Follow-up events would likely include additional monitoring or test treatments to understand identified effects in a previous event thus adding up-front cost. The toxic effect may not be persistent at that site and even well designed approaches may not provide definitive results.
- The proposed framework includes *Hyaella azteca* water column testing, but there is no EPA promulgated *water column* test method for this species. There are sediment toxicity methods and while water column testing is performed by some limited subset of laboratories, use of water column *Hyaella azteca* test should be limited to research endeavors, not permit compliance monitoring. *Hyaella azteca* is included as a

supplemental species in the “Methods Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms” (EPA 2002, Fifth Edition). In this context it is intended to validate the test species and no *Hyaella azteca* specific test, test parameters, or method development data are included in the test method. While the *Hyaella azteca* water column testing is useful in research projects in its current development, it is not appropriate for this initial phase of the RMP, especially given the potential for future impairment listings based on the expected adoption of the State Toxicity Policy.

The Partnership requests that aquatic toxicity sampling be omitted from the initial phase of RMP implementation.

TIMELINE FOR IMPLEMENTATION

The Partnership values the potential benefit of the RMP, and is supportive of effective implementation. The draft Framework schedule (page 46) is already significantly behind schedule and should be adjusted to provide adequate time to develop the RMP governance and funding both in the initial phase and in the next few years, stakeholder development of priorities, initial sampling design, and implementation. *The Partnership requests that the timeline be extended well into 2013 to allow for adequate stakeholder input.* At the very least the schedule should be updated to reflect the current status.

The RMP has the potential to provide a regional science and monitoring resource that is reliable, responsible, and reasonable in evaluating the health of the Delta and critical Central Valley water resources on which the State of California depends. If you have further questions or need clarifications on our comments please contact the City of Sacramento monitoring contact (Delia McGrath, 916.808.5390) or the Sacramento County monitoring contact (Ken Ballard, 916.874.7173). Thank you for your consideration of these comments.

Sincerely,



Dana W. Booth, PG QSD
Program Manager - Stormwater Quality
County of Sacramento
Department of Water Resources



Sherill Huun, PE
Stormwater Program Manager
City of Sacramento
Department of Utilities

Copy: Cesar Montes de Oca, City of Citrus Heights (via email)
Fernando Duenas, City of Elk Grove (via email)
Sarah Staley, City of Folsom (via email)
Trung Trinh, City of Galt (via email)
Britton Snipes, City of Rancho Cordova (via email)

July 13, 2012

Meghan Sullivan
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive
Suite 200
Rancho Cordova, CA 95670

Dear Ms. Sullivan,

The San Joaquin County and Delta Water Quality Coalition (Coalition) is submitting the attached review of the draft Regional Monitoring Program Regional Monitoring and Assessment Framework and its Implementation. As an entity with a well developed monitoring program mandated by the Irrigated Lands Regulatory Program, the Coalition is intimately familiar with the development and implementation of a monitoring program. The Coalition also views itself as being asked to contribute to the funding of a RMP, a belief reinforced by the language in the draft document. Unfortunately, the Coalition believes that the program as currently outlined in the document suffers from numerous shortcomings and is not implementable at this time.

In brief, the main question posed in the framework is to evaluate Delta aquatic ecosystem health, a question too vague to properly address. Health is not defined except as the generic evaluation of discharger compliance with permit limits. However, even that evaluation suffers from a lack of specificity because it is unclear what frequency and magnitude of exceedances of permit limits constitutes "bad" health. If the concept of ecosystem health is to be used in a rhetorical sense rather than be based on clear measurement endpoints, the Coalition believes that the concept should be abandoned in favor of a focused approach. The Coalition does not believe that a toxicity-based program is the best approach in terms of cost effectiveness and information content, nor should the RMP focus on discharger's permit compliance issues.

The Coalition is also providing a brief explanation of what we believe is a viable start to the development of the RMP. While not fully explained in this review, the Coalition can elaborate on any aspect of its proposed program. The Coalition believes that this can serve as a starting point for further discussion among stakeholders and move the Delta RMP development process forward in a timely manner. The Coalition believes that the framework as currently proposed will not foster the collaboration between

the Regional Board and stakeholders. Collaboration is essential if a RMP is to be implemented as soon as 2013.

The review is organized with a small set of general comments, a longer list of specific comments, and finally the proposed RMP framework. The specific comments are linked to specific pages, sections and/or paragraphs. If you are confused about individual comments and the text to which they refer, please contact me and I will clarify.

Thank you for the opportunity to comment on this framework document. As the RMP moves forward, stakeholder input is essential to the acceptance of the program. The Coalition looks forward to participating in future discussions with the Regional Board and other stakeholders to develop a scientifically sound and cost effective monitoring program.

Respectfully,

Michael Johnson
SJCDWQC Technical Program Manager
President
Michael L. Johnson, LLC

E attachment: Framework document review

Cc: S. Fong

Review of Draft Delta Regional Monitoring Program Framework document

General Comments

This is a difficult document to review because many of the critical aspects of the plan are left to a future version while significant detail is provided for aspects that seem to be mostly ancillary to the development of a RMP. There are comments in the margin of the text indicating that further detail needs to be provided making a thorough evaluation difficult. It is not clear when details will be provided or how those details will be integrated into the report.

There are a multitude of undefined terms throughout the document, e.g. adaptive monitoring, assessment products, sufficient information content, decision-making value, and key management questions. For example, key management questions are defined as whether the Delta aquatic ecosystem is healthy which in turn appears to be based on whether receiving waters are meeting water quality objectives, and/or whether discharges are complying with permit limits. Later these are treated as assessment questions. In fact, these are assessment questions and not management questions. Examples of good management-based questions can be found in many documents dealing with different aspects of the Delta ecosystem. For example, a recent USGS report on methylmercury cycling in the Yolo Bypass provides 4 management-based questions: 1) Is there a difference among agricultural and managed wetland types in terms of MeHg dynamics (production, degradation, bioaccumulation, or export), 2) does water residence time influence MeHg dynamics, 3) does the application of sulfate-based fertilizer impact MeHg production rates, and 4) does the presence (or absence) of vegetation influence MeHg production rates? The key here is that the science performed to address these questions can be developed unambiguously, data can be collected to answer the questions, and depending on those answers, clear management actions (e.g. changing water residence time) can be taken to reduce MeHg production. While it can be argued that a RMP can't develop that level of focus except through special studies, The Coalition believes that there needs to be more focus throughout and if management questions are going to guide the program, they need to be articulated clearly and be associated with clear management actions. Leaving further development of key questions and processes of the RMP to some unspecified time in the future means the RMP moves forward with no firm foundation and is unlikely to gather support or produce useful information

Specific comments

Page 3, paragraph 3. The San Joaquin County and Delta Water Quality Coalition (Coalition) is unclear which water quality and resource managers across the state believe that the Delta RMP reflects a desire for more integrated information. Which managers and why?

Page 3, bullet point 1. The Coalition does not support toxicity testing with selected water chemistry analysis as the initial RMP monitoring elements. Toxicity testing is perhaps the most expensive testing that can be performed and could become even more expensive if the SWRCB adopts this method for permit compliance. Also, for numerous reasons concerning the probability of a toxic test occurring, this type of testing is unlikely to provide significant information to stakeholders for the amount of funds expended. At the end of this review, a different approach is proposed by the Coalition that it believes will be acceptable to other stakeholders and provide a cost-effective monitoring program.

Page 4, paragraph 2. There is the following statement in the text. “The proposed program clearly recognizes that any final decisions about modifications to existing monitoring efforts and/or about the initiation of new efforts will depend on detailed negotiations among dischargers, other agency monitoring programs, regulatory agencies, and other stakeholders.” Given that these detailed negotiations have yet to be initiated, it is unlikely that this program will be implemented by 2013. The Coalition has not engaged in any substantive discussions about participation in the RMP.

Page 4, paragraph 2. The final sentence indicates that this document is a starting point. If the Coalition is to be approached about participating in a RMP, the document outlining the RMP needs to be more than a starting point. The Coalition’s vision of a Delta RMP is presented after the specific comments.

Page 5. The key management question proposed is “Is the Delta aquatic ecosystem healthy?” While providing a conceptual framework, this question is too broad and the term “health” is not sufficiently operational to guide the development of a Delta RMP. No definition of health is provided, particularly within the context of the proposed monitoring program developed below. How is health defined? For example, what percentage of toxicity tests indicating chronic toxicity results in a judgment of healthy/unhealthy? What is the result of a decision of healthy/unhealthy?

Page 6, second set of bullet points. There is a statement “less monitoring to situations where such potential is lower or where monitoring is not likely to provide useful information.” This should read “no monitoring in situations where the potential is lower or...” This is an example of a statement that states the obvious. Very few would design a monitoring program that avoids locations/constituents with high impacts on critical biological resources, and focuses on locations/constituents that provide no useful information.

Page 6, next bullet point. There is a statement about the design supporting the key management question. However, no key management questions are provided in the document. Many key management questions are available from a whole series of documents surrounding the POD. It is suggested that if a function of the design is to support key management question(s), some of those questions should be stated.

Page 8, sentence directly above second set of bullet points. There is a reference to “such concerns” but no concerns are provided. The bullet points above refer to beneficial uses.

Page 8, second set of bullet points and supporting text. 1) While providing information about exceedances of water quality objectives may be a part of the program, making exceedance counting the main focus of the program is ill advised. 2) It is not clear how the assessment questions will be used specifically to provide an answer to the posed question. The first question (what is the quality of waters relative to beneficial uses) isn't clear but is assumed to be a question about the concentration of various constituents compared to the objectives associated with specific beneficial uses. The second question begs the definition of "impact". The third question is about comparing water quality in various parts of the Delta. While this can be done properly with the randomized station design proposed, the question becomes why is this an interesting question? If the Central Delta has more exceedances of some constituent compared to the South Delta (although the geographic regions are not specified), is this information useful? In the absence of any explicit management questions, it's just an interesting fact with no utility.

Page 9, first set of bullet points. Many of these actions sound good but how they are performed needs to be developed. That activity may be outside of the scope of this document, but some indication of later attention should be made. Also the link between these analyses and the question at the top of section 3 needs to be made. All of the bullet points are interesting analyses, but how do they specifically advance our understanding of whether waters are meeting water quality objectives? Are they necessary to determine if waters are meeting water quality objectives? Either the question needs to be refined, or the proposed analyses scaled back.

Page 10, first sentence. There is a statement about accepting a 15% confidence limit on this statistic. No statistic has been provided. A cumulative frequency distribution is not a statistic. Also it is not clear if the statement means a 15% confidence interval around the distribution or a 85% confidence interval.

Page 10, second sentence. It is not clear what is meant by "this component."

Page 10-11. Last sentence, first sentence. There is a statement about spring X2. Please provide a reference.

Page 11, first paragraph. There is a statement about spring flows in urban areas being likely to contain toxic contaminants. Please provide a reference. If this is the basis for establishing the timing of monitoring, it needs some attribution.

Page 11, second paragraph. There is a statement about sediment contaminants being more stable than water column contamination. While this is entirely reasonable, it is the basis for the later assumption that only a single sediment sampling period is needed. Consequently, the assumption needs to be addressed in some way.

Page 11, paragraph 5. In this paragraph, subpopulations are equated to strata but in the paragraph directly above, subpopulations are established as an alternative to strata. Strata are usually a number of portions or divisions based on some feature which provides a natural "boundary" while subpopulations (as defined above) are simply a geographic area. While they may be the same, the geographic area does not necessarily have to correspond to any natural boundary. Regardless, the inconsistency confuses the argument about how sampling should be conducted.

Page 11, last paragraph. There is a statement about the "confidence level attached to these estimates". It is not clear what a confidence level is. The next sentence indicates that larger error bars mean less

confidence in the estimate. This is an incorrect interpretation of a confidence interval. Although the term confidence is used, it actually refers to the probability of having a statistic (e.g. the mean) fit within a particular interval given a second estimate developed from another random sample from the population. For example a 95% confidence interval around a mean, means that if 100 additional estimates of the mean are made from 100 new samples from that population, 95 of those estimates would fit within the 95% interval.

Page 12, paragraph 2 under heading of Sampling frequency and intensity. Six sediment samples are unlikely to provide sufficient information about sediment conditions in the Delta. It is suggested that this element be eliminated at this time.

Page 13, second set of bullet points related to key in-Delta sources. Monitoring for a Delta RMP should focus on the Delta channels, not the drain channels in the interior of the Delta islands. There is no established link between the concentration of any constituent in any of the interior drain channels and Delta waterways. Operation of the pumps in each of the Delta islands is not monitored and it is not known how long water remains in the drain channels prior to discharge to the Delta. Consequently, reduction in the concentration of constituents from processes such as photodegradation or hydrolysis could occur after sampling but prior to discharge. Additionally, discharges occur below the water level in almost all instances meaning that the volume of water removed from the channels is mixed with the volume of water in the Delta channels resulting in significant dilution. Collecting samples from the Delta channels allows the connection between exposure to constituents and effects on biological resources to be made.

Page 13. Section 3.2.1. This is unlikely to be successful from the dual perspectives of stakeholder acquiescence or information content about the status of water quality in the Delta. The Coalition is not supportive of starting a RMP with a toxicity basis. Toxicity is more appropriate as a second phase if constituent monitoring indicates a specific issue at a specific location. The reasons that the Coalition does not support a toxicity-based RMP include information presented later suggesting that only a portion of toxicity tests are typically positive. The new TST process could change the proportion of toxic tests but will undoubtedly increase the cost of the tests considerably.

Page 14. Paragraph 1. There is a statement that *Selenastrum* growth is retarded by ammonium. *Selenastrum* typically does not experience ammonium inhibition until concentrations are substantially above what is typically encountered in the Delta and its tributaries. In fact, ammonium can act as a nutrient and stimulate growth similar to other nutrients such as nitrate.

Page 15, Section 3.2.3. It's not clear that stressor identification should be a focus of the RMP, particularly in the early phases. Stressor identification does not address the primary objective or the two secondary questions. TIEs are unlikely to be effective unless the toxicity is significant. For acute tests, TIEs are most effective if mortality is greater than 50% although some laboratories may have some success when mortality is only 30%. TIEs are also relatively expensive and can cost several thousand dollars if the analyses are carried through Phase III.

Page 16, Section 3.3. This section is difficult to evaluate given the comment that it will be revised substantially. The Coalition is interested in how coordination will occur but will not comment on this section at this time.

Page 17, Section 3.4. The Coalition believes that developing special studies prior to the implementation of the RMP is unreasonable. Special studies should be developed in response to results from monitoring activities. They should not be a general research program that is planned as a parallel process to the RMP. For example, many of the priority questions outlined in this section are major research projects that should not be part of the RMP. Nutrients however, should be a part of the RMP and not relegated to a special study. As the CV-SALTS process progresses, the monitoring priorities may change but basic information about nutrient loads in the Delta should be a critical part of the RMP. The projects outlined in sections 3.4.2, 3.4.3, and 3.4.4 (actually labeled section 3.4.3 Bioanalytical tools) are major research initiatives that should be outside the realm of the RMP. Funding for these studies should come from sources other than dischargers in the Delta.

Page 25, Section 4.0, Assessment questions. It's not clear why these questions are more appropriate for the RMP than for the NPDES program. These questions are already being addressed through the permitting and compliance monitoring process and there is no reason to relocate them to a new program particularly if effluent monitoring is not proposed as part of the RMP. Developing responses to these questions dilutes RMP effort that would be better spent monitoring Delta waterways. The Coalition believes that new information about the water quality of Delta channels is more important than spending funds on an exercise that is already a part of the NPDES reporting requirements. Finally, although the Coalition does not have an NPDES permit, it believes that focusing on discharger exceedances will not result in support from the community of dischargers that do have NPDES permits.

Page 26, paragraph 2. The proposed major changes to current monitoring by dischargers in the Delta are stated as removal of routine receiving water monitoring and coordination of RPA projects. The potential changes to receiving water monitoring articulated in the next section of the framework document are unlikely to generate much support. Additionally, RPA is commonly performed on effluent, and is not a particularly large aspect of compliance monitoring. For the small amount of monitoring during a RPA, coordination is not an issue. Understanding the concentration of various constituents in effluent discharged from NPDES facilities and the potential for those constituents to cause an exceedance of a water quality objective needs to be performed as mandated.

Page 26, Design approach. The rationale presented in this section in many ways challenges the rationale driving the NPDES permitting process that has been in place for decades.

Page 26, second set of bullet points. There is a question about the existing frequency of monitoring providing sufficient information content and decision-making value. There is no definition of what is considered sufficient information content or decision-making value. Without a set of key management questions and the potential responses to those questions, it is not possible to define sufficient decision-making value. In this context, these terms lack precision and are not useful. Also, there is a reference to "adaptive monitoring approaches". What are adaptive monitoring approaches and how are they used in the NPDES process?

Page 27, Section 4.1.1. There is a statement "assess effluent compliance against upstream receiving water conditions". It is not clear what this means. Generally, upstream and downstream ambient monitoring provide information about whether there are any constituents already in the receiving water so that any detections of constituents downstream of the effluent discharge point can be parsed between upstream sources and effluent. The section also states that upstream monitoring is not necessarily representative of background conditions. As stated above, the issue is not background conditions. If upstream water quality does not meet "background" water quality (if in fact that can be

defined for all constituents), that is not the problem of the discharger downstream. The only question is their contribution to the degradation of water quality downstream of their discharge. They are not responsible for the quality of the water flowing past their discharge location. Consequently, this statement is irrelevant to discharger compliance monitoring requirements.

Page 27, Section 4.1.3 (Section 4.1.2 is missing). Again, RPAs involve a very limited set of constituents, effluent, and are part of the permitting requirements. There is no reason to place RPAs into the RMP. In addition, there is a statement about coordinated data collection being beneficial. The section does not indicate how the benefit occurs. There is simply a statement that coordination is a benefit.

Page 28-29, last sentence of the Reporting section. The sentence reads: “They will occur only if they are motivated by a clear goal, such as production of Delta-scale reports and assessment products, and are led by a central entity with responsibility for managing and coordinating the effort involved (see Section 5.3 Program stewardship, below). The antecedent of the first “they” is not clear. Does this mean the bullet points or the input of scientists? It’s also not clear what assessment products are. Finally, the sentence appears to state that goal of the RMP is to generate a report. The Coalition believes that the goal of a RMP is not to generate a Delta-scale report but rather to use the data to address hypotheses about the impacts of water quality on the biological resources of the Delta. This is not articulated in any of the bullet points in this section.

Page 31, Section 6.0. The proposed funding mechanism is “a combination of in-kind sampling and laboratory analysis contributions from program partners such as DWR, [others such as ag coalitions, NPDES dischargers, etc.] and a set of approved permanent compliance monitoring reductions or offsets for dischargers in the Delta with NPDES permits (see Section 6.2, Funding mechanism). These potential funders should be identified and not referred to generically. Part of the development of this program should have involved identifying specific stakeholders that will participate. The issue involves the lack of any substantial involvement by the Regional Board in discussions with dischargers about participation and the anticipated benefits to the participants. The Coalition has not been involved in any substantive discussions about the RMP or its potential role as a funding entity. And, until the Coalition sees a workable program, it is averse to any agreement to fund a RMP.

Page 37, Section 7.0. The second bullet point refers to “independence” achieved through external review. Independence from what? The last bullet point calls for stakeholder involvement and the next section proposes that governance could be achieved through a steering committee consisting of stakeholders.

Page 42 and beyond. The monitoring locations for the Coalition are out of date.

Because criticism always begs the question of what is to be offered as an alternative, in the text below the Coalition offers a vision of a Delta RMP for consideration. This vision provides greater specificity than the draft RMP framework document reviewed above but not sufficient depth to use as is. However, the brief outline provided below can be easily developed further. The RMP vision involves the 6 steps outlined in Table 2 of “A Comprehensive Monitoring Program Strategy for California” developed by the California Water Quality Monitoring Council in 2010. Many of the elements of the RMP vision are similar to the draft RMP framework developed by the Aquatic Sciences Center. The Coalition believes that using this vision, a Delta RMP can be fully developed and ready for implementation by 2013 if the Regional Board is able to provide relief from current monitoring requirements (see Program Sustainability below). The greater specificity provided below offers a point of departure for real discussion by stakeholders about a viable Delta RMP.

Strategy, objectives and design

Development of the objectives and strategy should be done by the stakeholder groups. The strategy should allow the linkage of results back to the biological resources in the Delta. This approach incorporates the designated beneficial uses of Delta waterways and is consistent with the Basin Plan. Examples of questions that drive development of objectives include:

- Is the concentration of MeHg declining in Delta waters?
- Do Delta waters meet the load capacity for chlorpyrifos and diazinon as set forth in the Basin Plan? If not, where within the Delta is out of compliance?
- Does the concentration of pyrethroid pesticides in the water column appear to be sufficiently elevated to potentially cause impacts to biotic resources?
- Are persistent bioaccumulative chemicals such as organochlorines and PBDEs found in fish tissue at levels considered unsafe for human consumption?
- Is selenium being accumulated in the tissues of clams at a rate that after transfer to fish, could cause a risk of reproductive failure in sturgeon?
- Are the concentrations of pyrethroids (or organophosphates or other constituents) declining in Delta waters?

These types of questions allow the evaluation of management questions and drive the development of design elements including monitoring location and frequency. For example, various entities in the Delta will soon be required to implement management practices designed to reduce the production and release of MeHg to Delta waters. A key management question is whether those practices are effective. A few studies will be conducted to evaluate the efficacy of management practices, but those studies will be performed at only a few locations. Extrapolating results from those site-specific studies to all locations in the Delta may not be appropriate. On the other hand, monitoring all implemented practices is impractical. However, a comprehensive Delta RMP with MeHg monitoring provides answers to the question of MeHg concentrations in the Delta, the trend in concentration over time, and ultimately allows for an evaluation of the effectiveness of the management practices at the scale of the Delta.

The Delta RMP needs to begin with relevant, focused and answerable questions in order to design an effective monitoring strategy. The draft RMP framework asks as its primary question “Is the Delta aquatic ecosystem healthy?” This question is too unstructured and ambiguous to be useful. The Coalition believes that a stakeholder group can start with the questions above and provide focus in a short period of time.

Indicators and methods

Monitoring locations – A random placement of monitoring stations as proposed in the draft RMP framework, allows some statistical comparisons that are not possible with non-randomly selected monitoring sites. However, there are no key management questions involving these comparisons that are of sufficient importance to warrant this approach. Instead, the Coalition proposes using two criteria to establish monitoring locations; leverage other monitoring efforts that provide critical information for the interpretation of RMP monitoring data, and select hydro-dynamically critical sites within the Delta.

The Coalition proposes using the 33 stations in the USGS flow network in the Delta. As described in the June 2012 issue of Estuary, the network is comprehensive and Jon Burau from USGS characterizes the network as monitoring “every hydro-dynamically significant flow split or confluence” in the Delta. In addition, Anke Mueller-Solger (lead scientist at the Interagency Ecological Program) states that flow is the dynamic master variable in the system. Without providing a great deal of additional detail, the Coalition believes that without an understanding of the flows associated with each sample location, source identification is at best a guess. Co-locating monitoring stations at the flow network sites provides numerous benefits including better data for future modeling of contaminant fate and transport with long term accurate flow data. And, monitoring at these stations can provide data that more effectively evaluates the success of future restoration projects in the Delta such as the McCormack-Williamson Tract and Staten Island. The 33 stations correspond well to the 30 stations proposed in the draft RMP document.

Monitoring elements – The Coalition believes that the RMP should be developed in at least 3 stages. In Phase I, the Coalition believes that monitoring should include a combination of TMDL constituents and chemical constituents that are of current interest and for which information may be needed for future management decisions. The following list contains the proposed constituents for Phase I:

- Mercury
- Chlorpyrifos and Diazinon
- Nutrients
- Pyrethroids (water column)
- Organochlorine compounds
- PBDEs
- Se
- Necessary ancillary constituents/physical measurements

These constituents would be monitored as either water column constituents or in tissue from appropriate species at the appropriate trophic level(s). Many of these constituents have been the focus of extensive research by various state and federal agencies and University scientists. Consequently, for these constituents there is often a good understanding of processes such as the fate and transport as well as available data to establish baseline concentrations. The frequency of monitoring would vary across the constituents. For example, chlorpyrifos and diazinon would only need to be monitored during periods of use by agriculture. Mercury might be monitored during periods of discharge from flooded wetlands or agricultural irrigation tail water discharge. Persistent organochlorines and PBDEs may be monitored only once a year, and only at a frequency of every 3rd year. The remaining constituents may be monitored at a more frequent time scale. Statistical methods are available to determine monitoring frequency and to address questions such as “Can a decline in the concentration of selenium be detected in 5 years?”

The Coalition recommends that this list be used as a starting point for stakeholders to focus objectives of the Delta RMP. In the Phase I RMP, the Coalition proposes that the list be divided into two groups with each group monitored in alternate years with some monitored every 3rd year. A brief rationale for each constituent is provided below. In Phase II, additional constituents can be added as information from other monitoring programs (i.e. Coalition monitoring from the ILRP) becomes available. Use of toxicity testing should be based using a weight of evidence approach and performed consistently when it is biologically relevant. If some of the constituents are found at elevated concentrations at locations, toxicity testing at those locations could be initiated in Phase II. For example, if chlorpyrifos is detected in Old River consistently, toxicity testing of ambient water from Old River using *Ceriodaphnia* would be appropriate. Conversely, elevated organochlorine concentration in fish tissue would not trigger toxicity testing. As part of Phase II, a review of the spatial and temporal variability in the data will allow an evaluation of whether the core questions can be answered within a reasonable time frame using the monitoring program from Phase I. If it is determined that some constituents must be monitored more often, adjustments to the monitoring frequency of the initial constituent list can be made.

Phase III involves monitoring a complete list of constituents. The list will be developed through an external review process and available funding. Toxicity testing with appropriate test species would be conducted as necessary. In Phase III, special studies could be undertaken if it is determined that they are necessary.

Mercury – The current TMDL process involves developing study plans to evaluate the effectiveness of management practices designed to reduce the production of MeHg. The Delta RMP can be the process by which management practice effectiveness can be evaluated over the entire Delta. Having data on MeHg concentration/loads prior to implementation will allow the effectiveness of management practices to be determined once they are in place.

Chlorpyrifos and Diazinon – Currently the agricultural coalitions are implementing TMDL monitoring for these constituents as required by the Basin Plan, but their ability to monitor across the expanse of the Delta is limited. Placing organophosphate monitoring in the RMP would allow a broader evaluation of the load capacity of the Delta with respect to chlorpyrifos and diazinon.

Nutrients – As the Regional Board moves forward with developing nutrient criteria and working with dischargers as they implement management practices, data on nutrient concentrations/loads will be useful to inform the processes. In addition, CV-SALTS efforts will require substantial data as that process moves forward. Monitoring nutrients at critical locations in the Delta will go a long way toward providing the data essential to the development of both the nutrient work plan and the Basin Plan amendment for salt and nitrate.

Pyrethroids – Pyrethroid pesticide-driven toxicity has been studied throughout the Central Valley by Don Weston at UC Berkeley. Much of his work is in tributaries upstream of the Delta in both urban and agricultural areas. Recent work in the Delta indicated that urban storm water was the primary source of pyrethroids with lesser contributions from agriculture and POTWs. Given Weston's recent findings, monitoring in the water column across the Delta would provide an indication of the pervasiveness of the potential exposure of organisms to pyrethroids. It is not recommended that monitoring be done through toxicity testing as the methods developed by Weston are not EPA certified. Although Weston indicates that toxicity is possible at concentrations in water below method detection for many laboratories, method development is proceeding at a rate that some select laboratories can reach detection and reporting limits at or below the concentrations Weston has developed as LC50s for species like *Hyalella azteca*.

Organochlorines and PBDEs – These are bioaccumulative compounds that are important for evaluating potential human health risk from consumption of fish. It is envisioned that these compounds would be

monitored by evaluating fish tissue concentrations. These constituents would be monitored on an extended time scale, perhaps every 3rd year rather than every other year.

Selenium – Recent research on selenium suggests that it can be a potent reproductive toxin to endangered species such as green and white sturgeon. Previous research by USGS on selenium loads in the Bay-Delta ecosystem provides a baseline with which monitoring data can be compared. Monitoring would be a combination of tissue from clams, a primary food source for sturgeon and water column. Presser and Luoma developed a selenium bioaccumulation model (DYMBAM) that could be used to model bioaccumulation in bivalves and calibrate the model to predict future impacts.

Ancillary constituents/physical parameters – In order to interpret the monitoring data for some constituents, e.g. ammonium, it is necessary to measure pH and water temperature. If metals are monitored, hardness and dissolved organic carbon may be necessary additional monitoring parameters. These parameters will be identified as the list of constituents is fully developed by the stakeholder group.

Data Management

Data management will be handled by one of the CEDEN Regional Data Centers. Data generated by the Delta RMP will be consistent with other data handled by these RDCs. Other programmatic data available through CEDEN includes the SF Bay RMP, SWAMP, and the ILRP. The goal of the Delta RMP is for data to be available for public review within 3-4 months after receipt of laboratory results.

Consistency of assessment endpoints

Data evaluation will involve a combination of visualization tools designed to provide a dynamic view of results in a geographic framework (see Reporting below) as well as sophisticated statistical procedures. The visualization tools will allow any user to develop their own exploratory data analyses and determine if further statistical analyses will be useful. The specific statistical method is selected based on the core questions and underlying management options.

Reporting

Yearly reports for both scientific and public consumption should be produced. Data from the Delta RMP will be available in CEDEN for review and manipulation using CEDEN online data query tools and the California Water Quality Monitoring Council's web portals. In addition, the Coalition recommends developing a web interface on a separate website that allows users to view data as soon as it is available. Several data visualization tools could be used to view data placed into a geographic framework, as time series plots, or as the results of specific analyses used to address the core questions provided above. This web site could be developed at moderate cost and would be a central location for the transfer of information to any interested party.

Program sustainability

Sustainability requires both a technically sound scientific program and strong funding support. The Delta RMP vision outlined above is centered on scientifically sound questions that can be answered with a viable cost effective monitoring program that complements existing programs in the Delta. Therefore, funding support is the only critical issue. The Coalition recommends that each entity that is expected to participate in the RMP be given a funding "holiday" from the requirements of their particular regulatory program. For example, the Coalition monitors 12 months per year at a significant monthly cost. If they are allowed to eliminate one month's monitoring each year, and return a large portion (but not all) of the cost savings to funding the RMP, there would be sufficient incentive for the Coalition to participate in the RMP process. To prevent the potential for some discharge problem to go undiscovered if the holiday month is always the same, the holiday month can change from year to year. The Coalition has

not vetted this approach with other dischargers in the Delta, but the concept is relatively simple and very similar to the funding mechanism discussed in the draft Delta RMP framework document. However, the draft Delta RMP framework specifically addresses receiving water monitoring by NPDES dischargers. For these dischargers, there may be some constituents that because of human health issues must be monitored, but much of the routine monitoring could be eliminated for a month with little loss of information within the specific program. If the Delta RMP is based on the questions posed in this document, the amount of information gained to answer those questions would more than compensate for the single month's information lost by individual programs. The cost savings to the dischargers will be an incentive and possibly lead to additional in-kind support. The Coalition does not see another method of funding that is likely to gain stakeholder support.

A successful Delta RMP must be focused on key questions relevant to the condition of aquatic resources. It is important that these questions be scientifically justified, relevant to current public concerns, and answerable with an effective monitoring program. The Delta RMP vision outlined in this document proposes a phased monitoring approach that can effectively answer key questions about the condition of aquatic resources. By making the program economically viable, stakeholders are more likely to fund the program, contribute additional in-kind services, advocate for the program and continue to participate in a process with the ultimate goal of assessing and restoring the Delta ecosystem.

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July 13, 2012

Via E-Mail msullivan@waterboards.ca.gov

Ms. Meghan Sullivan
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Re: Delta RMP Draft Framework

Dear M. Sullivan:

The SDWA has been remiss in not participating and commenting on this process as it moves forward. However, we would like to submit the following comments to the Draft Delta Regional Monitoring Program.

1. SDWA questions the needs to add additional monitoring sites in the Delta at this time. Those parties with NPDES permits are already monitoring their specific discharges. The non-point dischargers are just no beginning to negotiate/develop the WDR under which the Coalition will operate. Until such time as the WDR is adopted, there does not seem to be any reason to assume that additional monitoring under this new program is needed.

2. The premise of the program appears to be that we are somehow unaware of some level of constituents in the system, which constituents are adversely affecting the Delta estuary (more specifically, the fisheries therein). This premise does not seem warranted. The current data before the SWRCB indicates that a lack of flow from the tributaries (except the Stanislaus) to the San Joaquin River is necessary to improve fisheries. In addition, exports have been found by the SWRCB to be a significant cause of the fishery crash (D-1485 concluded in 1978 that to fully mitigate the projects effects on fisheries would require a "virtual shutting down" of the export pumps. Exports have risen ever since).

We now know that actual project operations do not reflect modeling of operations because in 2009, after only two years of drought, the CVP and SWP had insufficient storage to meet fishery objectives for outflow and cold water (until it fortuitously rained) as well as having insufficient storage (or access to “natural flow”) to provide senior-most export contractors. Thus, the SWP and CVP projects were “bankrupt” after only two years of drought; something which did not appear in the modeling for D-1641. The water right process which resulted in D-1641 was for the purpose of examining the effects and assignment of water quality objectives to the projects. The modeling did not indicate that fishery objects could not be met after only two years of dry conditions. Hence it appears that actual operations of the projects must be worse for fish than anticipated.

For a short period of time in 2009, the projects actually illegally exported approximately 1/3 of the minimum fishery flow (outflow) rather than allow that water to go towards meeting the outflow objective.

Finally, the most recent BO’s issued by FWS and NMFS both indicate that the projects fundamentally alter the hydrodynamics of the Delta, which alteration is what causes other factors to be important, or significantly adverse to fisheries.

Hence our conclusion that further investigation of constituents in the system may be needed is false. If more water is needed to protect fish, the projects adversely affect fish, the projects are not operating to meet fishery objectives assigned to them, and the projects are exporting water needed to meet such objectives, there seems to be no real reason to assume additional monitoring is necessary. Once more flow is provided and once the projects mitigate their adverse impacts to fisheries and abide by their permit conditions, the fisheries will recover.

Any effort to adjust the practices of other beneficial users is shifting the obligations of the projects onto those other users. This should not be done.

3. It is certainly appropriate to assign discharge limits and to monitor to make sure that such limits are being met. However, such activities are ongoing pursuant to the existing programs of the SWRCB and the CVRWQCB. When the additional flow is in the rivers and less exports are being removed, additional dilution will be available and make increased monitoring unnecessary. In sum, if this program is constituted to discover why and to what extent “pollution” is a cause of the degradation of the estuary, we already know that is not the case. The cause is known and cannot be rationally disputed.

4. SDWA does not object to any sampling and monitoring proposed in the channels and waterways. However, such a program must include input from those familiar with the hydrodynamics of the system. Exports and low San Joaquin River flows cause significant null zones and reverse flows in certain channels. The addition of the temporary rock barriers each

year moves and exacerbates these artificial conditions. The barriers are mitigation of the export projects' adverse effects on water levels (not quality), and thus cannot simply be "done away with." Any monitoring of water quality in the reaches affected by these null or low flow zones will naturally have higher concentrations of constituents. However, if this information is used to limit discharges into the channels, thus limiting third party actions, then the program is in effect shifting the mitigation obligations of the projects onto those who use river water. Such an approach should not be taken.

5. SDWA objects to any additional monitoring on the landward side of the levees, such as in drains. This is because the entire area is forced to use water which has been artificially "salted up" due to the CVP (see D-1641). This artificial salt, along with the concentration of salt and other constituents due to the CVP and upstream diversions/storage means that the southern Delta beneficial users have no option but to use this degraded water. The result is that even if a diverter receives water which meets the salinity standard (which is not typical), his/her use of that water results in the consumption of water (and not salt) and his/her drainage will always be in excess of the standard. Because of this, a monitoring program can accomplish nothing except to confirm that a necessary mitigation of the projects' adverse impacts must include the establishment of net flows (of sufficient amount) in each channel. Without such net flows, there can be no improvement of water quality in the southern Delta.

6. The proposal to develop a nutrient management strategy does not seem appropriate for the southern Delta. First, any "excess" nutrients applied to southern Delta lands goes into the shallow ground water which is already virtually unuseable for other beneficial uses. That shallow ground water is now too salty for any real use after 50 years of accumulation of the CVP salts which constantly enter the area via the San Joaquin River. Second, I note that the nitrate study produced by Dr. Harter and others concludes that the amount of synthetic nitrates applied to the lands in the valley equals the amount of nitrates reaching the ground water. This conclusion of course must be incorrect. There is no way that the amount of applied fertilizer is the same as the amount "leaving" the system. The study must have missed significant "outputs" in nitrates that leave the fields and orchards. If the study were correct, then current crop production could be maintained without most or all of the fertilizer being used. What ever the impact of agriculture is on nitrate levels in ground water, further study is needed and it does not appear there is or can be anything to do in the southern Delta.

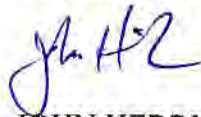
7. SDWA does not believe that the additional costs associated with the program can be reasonably expected to come from agriculture. Shifting funding from existing monitoring by excusing/trading some of that monitoring in order to accomplish this program's funding seems counter productive. The existing programs are supposed to be constituted to get an adequate "picture" of the water quality in the system. Decreasing some of the current programs work in order to do other similar work would seem questionable.

Ms. Meghan Sullivan
July 13, 2012
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8. Creation of a stakeholder group for governance adds significant time and costs to current Coalition activities. To be honest, there will be little interest, and thus inadequate participation if yet another process is begun and more meetings and technical review is mandated.

I appreciate the opportunity to submit comments.

Very truly yours,

A handwritten signature in blue ink, appearing to read "John H. Herrick".

JOHN HERRICK



**State & Federal Contractors
Water Agency**

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July 13, 2012

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Rancho Cordova, CA 95670

SUBJECT: Comments on Regional Board Draft Regional Monitoring Plan

Thank you for the opportunity to review and comment on the draft Delta Regional Monitoring Program (DRMP). The State and Federal Contractors Water Agency (SFCWA) strongly support the development and implementation of the Delta RMP. The Delta RMP has the potential to fill a critical void in our understanding of the role of contaminants and nutrients in Bay Delta ecosystem health.

Although the current proposal does not define a comprehensive monitoring and assessment framework to manage contaminants and improve ecosystem health, its initial implementation should not be delayed. **The Delta RMP needs to start now.** Implementation will spur the development of enhanced monitoring, assessment, reporting and information management systems. Implementation will move the Delta RMP from months of generic discussions (such as the recognition of the need to coordinate and collaborate) to specific decisions and actions that result in an increased understanding of Delta water quality, and collaboration with existing monitoring entities.

Although the first phase of the Delta RMP is focused on working with NPDES dischargers, as decisions are made regarding program management and governance, it will be important **to include input from all stakeholders. The SFCWA Coordinated Science Program is willing and able to provide technical and financial support.**

We have several major comments on the current plan. First, **toxicity testing is an appropriate first phase,** but it is essential that the level of effort be sufficient to generate useful information within the first two years. This will provide the program with an early success upon which to build additional components. **The current description of the most basic design is not sufficient to provide useful information to the Regional Board.**

Second, nutrient monitoring and the monitoring of nutrient impacts need to be part of the second phase of implementation. The Delta RMP team should **immediately begin designing the appropriate monitoring and special studies needed to meet the Delta Plan goals for development of nutrient objectives.**

Third, the plan should explicitly commit to **using the existing SWAMP strategy** to ensure data comparability and data quality assurance. The current plan does not even mention coordination with SWAMP, data quality assurance, or ensuring all data is entered into CEDEN in a timely fashion.

Fourth, the current draft proposes that sampling may be coordinated with existing IEP monitoring efforts. It is likely that the IEP monitoring framework will be modified when the State Board adopts new Delta flow objectives. Now is the perfect time to **begin working with IEP to ensure that contaminant monitoring becomes part of the new IEP scope and charge.**

Fifth, the plan appropriately uses the SWAMP Assessment Framework and uses a question driven approach. This approach should be continued, but **much more specificity is needed for effectively answer Regional Board management questions.** The least expensive design in the draft will not even provide sufficient information for categorizing water bodies in the CWA 305(b) 303(d) Integrated Report. The most expensive design will answer the question of "Is the Delta Ecosystem Healthy?", but we already know that the ecosystem is not healthy. To be successful, the Delta RMP must drill down, ask the questions, and employ the monitoring design that will answer the question, "What are the roles of nutrients and contaminants in the decline of the Delta ecosystem?"

As the planning and implementation is advanced, documents can be significantly strengthened and decision making be made more transparent by including the rationale for all decisions.

Again, thank you for the opportunity to review the draft document. We are committed to working with you to ensure a successful implementation.

Sincerely,


Valerie Connor, Ph.D.,
Science Manager



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July 20, 2012

Meghan Sullivan
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Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

Subject: Comments from the City of Stockton and the County of San Joaquin on the Delta RMP: A Proposal for a Regional Monitoring and Assessment Framework and its Implementation

Dear Ms. Sullivan,

The City of Stockton and the County of San Joaquin appreciate the opportunity to provide comments on the Delta RMP Proposed Framework, titled "*Delta RMP: A Proposal for a Regional Monitoring and Assessment Framework and its Implementation*" (Draft Framework) dated June 2012. The City and County are regulated under the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit (Order No. R5-2007-0173), and collaboratively develop and implement its corresponding Stormwater Management Plans (SWMPs) to meet the requirements of this permit.

The City and County have reviewed the Draft Framework, and have the following comments for your consideration¹. We fully support the intent of the RMP, but have some concerns over the structure of the RMP's management questions and program design. We present general comments up front, followed by policy-level comments related to the RMP's principles and framework and monitoring considerations.

General Considerations

1. The City and County suggest that the timeline for development and initiation of the Delta RMP be extended to allow adequate stakeholder engagement in the process. The City and County recommend that RMP development not be completed prematurely, but should be done thoughtfully and completely. The City and County would like to work with the Regional Board in order to ensure that the RMP is fully developed with stakeholder input. We are concerned that the draft Framework is designed to focus on NPDES

¹ Per the meeting between Regional Board staff and NPDES stakeholders on July 9, we are submitting comments by the extended deadline.

dischargers, and that other stakeholders at this point are only involved in sample collection and laboratory analyses. Similar to the development of the San Francisco Estuary RMP and the Bight RMP, we suggest that the Delta RMP be developed with involvement from all stakeholders (i.e. Department of Water Resources, Department of Fish and Game, and other agencies with involvement in Delta waterways -- not just NPDES dischargers) at the table rather than by bringing stakeholders into the process individually. We recognize that the RMP development process was initiated four years ago, but after initial meetings of stakeholder working groups in 2008, the effort has not progressed with regular stakeholder input. The Draft Framework diverges significantly from the May 2010 Draft Program Plan and straw-man proposals circulated earlier in 2008 and 2009. We consider the Delta RMP development that was re-initiated in 2011 to represent a new effort, which has not yet engaged all stakeholders. We understand the challenges in managing stakeholder processes, and request that the stakeholders be engaged to develop a governance structure and RMP priorities. Moving forward, the City and County recommend that the timeline for RMP development be extended in order to allow stakeholder involvement to ensure that a high quality program is established.

2. The City and County recommend that the Delta RMP initially focus on the low end Delta RMP program presented in the Draft Framework. We support the principles of RMP development on page 6 of the Draft Framework, to “start small and focus on clear questions of broad interest” and “strive for cost efficiency.” If the Regional Board does not allow for further stakeholder input on the RMP governance and priorities, the RMP would best support the stated principles by focusing on a limited program initially to get the RMP started. The City and County recommend that the RMP start by establishing governance, standardizing data reporting and sharing, and focusing on relatively simple monitoring objectives. This would best be accomplished if the RMP started with the low end program of water quality sampling only, focusing on a targeted list of constituents, and worked towards establishing standardized data reporting and collaboration.

RMP Principles and Framework

3. The City and County request that the Regional Board more clearly link the management question to the goals and objectives of the RMP. Within the Draft Framework, the linkage between the goals of the RMP and the management questions is unclear. The Draft Framework presents the driver for the RMP as the inadequacy of data from current monitoring programs to address the role of contaminants in the POD. The primary question of the RMP is presented as “Is the Delta aquatic ecosystem healthy?”. This primary question is far too broad to serve as an overarching question for the RMP – any number of factors aside from water quality can impact ecosystem health, and ecosystem health itself can be assessed through a number of metrics that are outside the scope of the RMP. The RMP is POD-focused, but the drivers of the POD are complex. Water quality, including toxicity, is only one of many potential contributors to the POD. We suggest that the Delta RMP select an overarching management question that can be addressed using the data collected by the RMP, and which has clearly defined sub questions.

One major concern with the overarching question is that the Draft Framework does not provide any linkage between the health of the Delta ecosystem – the overarching question -- and water quality within the Delta – the sub question. We suggest that the Regional Board refine its management questions to address the following concerns:

- a. The Draft Framework should explain its secondary management questions relate to the overall question of “Is the Delta ecosystem healthy.”
- b. The Draft Framework should explain how success is measured for each management question by stating the endpoints, metrics, and what data is needed to assess the metrics.

We suggest that the Regional Board reevaluate its sub questions in order to more cohesively link to the RMP’s overall goals. For example, management sub question 2 is not necessary, as it is already addressed by the Regional Board in its regular assessments of whether discharges comply with permit limits and relevant thresholds.

To address these concerns, the City and County suggest that the Regional Board model its management questions off of those of the San Francisco Estuary RMP and the Bight RMP. The San Francisco Estuary RMP has adopted management questions which are focused and can be assessed by the monitoring conducted within the RMP. For example, the first management question is: “(1) Are chemical concentrations in the Estuary at levels of potential concern and are associated impacts likely?” with the following sub questions:

- Which chemicals have the potential to impact humans and aquatic life and should be monitored?
- What potential for impacts on humans and aquatic life exists due to contaminants in the Estuary ecosystem?
- What are appropriate guidelines for protection of beneficial uses?
- What contaminants are responsible for observed toxic responses?

The Bight RMP assessed water quality through its 2003 Water Quality assessment, the goals of which were also highly specific and could be addressed through the Bight RMP monitoring effort. As an example, its first objective was (1) Describe the temporal evolution of stormwater plumes produced by the major southern California rivers by examining how far offshore the plumes extended, how rapidly they advected, how long before the plumes dispersed and how these properties differed among storms and river systems.

RMP Monitoring Structure

4. The City and County suggest that the Delta RMP start with the low end monitoring program rather than focus on toxicity testing. The Draft Framework focuses on toxicity testing as an integrated indicator of ecosystem health, with the rationale that it is more effective to test for toxicity rather than for individual constituents. However, we find that the focus on toxicity testing is potentially problematic for dischargers. Although toxicity testing would be an encompassing indicator of aquatic health, it would not provide meaningful data for dischargers that are required to evaluate program effectiveness and

link improvements in water quality to stormwater program actions. It would be more productive to focus on a range of constituents in order to assess water quality within the Delta over time. Table 3.1 lists aquatic chemistry indicators to be assessed, and includes constituents to be analyzed for toxic samples – we recommend that the Delta RMP focus on these chemical constituents rather than on toxicity. For example, pesticides are often the source of toxicity within the Delta, and it may be more cost-effective to focus on measuring pesticide concentrations rather than on toxicity testing. Additional constituents not included in table 3.1, but which are important in assessing Delta water quality, could be measured, including total mercury and methylmercury. While we recognize that toxicity can be additive and that sampling for chemical constituents may not encompass all contributors to toxicity, a toxicity-only approach would place a substantial cost burden upon dischargers that are required to monitor chemical constituents for permit compliance.

5. The City and County suggest that the Delta RMP pattern its sampling intensity from the San Francisco Estuary RMP and the Bight RMP. The proposed sampling frequency of three times per year annually is resource intensive and is not necessary in order to assess water quality in the Delta. It would be possible to conduct sampling less frequently to elucidate long term trends if it occurred less frequently. For example, the San Francisco Estuary RMP conducts biennial sampling of water and sediment chemistry and SCCWRP's Bight RMP conducts monitoring efforts every five years.
6. The City and County request that the Draft Framework more clearly demonstrate how the Delta RMP will be not be a cost burden for dischargers. It is not clear within the Draft Framework how the RMP will achieve its objective of cost efficiency. Without table 6.2, it is not clear how existing monitoring will be replaced by RMP monitoring stations for each discharger. Furthermore, dischargers are subject to monitoring for TMDL purposes, and it may not be in a discharger's best interest to replace a TMDL compliance monitoring point. The Delta RMP Proposal suggests that routine receiving water monitoring would be removed from current monitoring for dischargers, but also that no changes will be made at this time to permit mandated effluent or discharge monitoring. It is unclear how the RMP would address TMDL compliance monitoring, or monitoring specified in NPDES permits. Since 2008, Regional Board comments have indicated a goal of cost neutrality for NPDES dischargers. Please include specific language in the framework that maintains the goal that NPDES discharge costs for participation in an RMP be fully offset by reductions in cost in the required NPDES and TMDL monitoring programs.

In sum, the City and County support the Delta RMP effort, but have concerns with the Draft Framework. We suggest that the RMP development process be extended into 2013 to allow adequate stakeholder involvement. We have reviewed the Sacramento Regional Sanitation District "Delta Regional Monitoring Program – An Alternative Strategy", and agree with the approach presented. That plan has an aggressive timetable that will allow governance and priority setting to be better developed for the mutual benefit of all stakeholders. We appreciate your consideration of these comments and look forward to working with the Regional Board to provide additional input.

Sincerely,



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City of Stockton

Assistant Director of Municipal Utilities



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