



**Delta RMP Steering Committee Meeting
July 17, 2018 10:00 am – 4:00 pm**

Location

Regional San, South Assembly Room,
10060 Goethe Road, Sacramento, CA

Remote Access

Call-in: 415-594-5500, Access Code: 238-626-034#

Online: <https://join.me/sfei-conf-cw2>

#	Agenda item and desired outcomes	Attachments	Start & Lead
1	Introductions and Review Agenda Introduce TAC and SC members, establish quorum, and explain goals of the meeting.		10:00 Adam Laputz
2	Decision: Approve meeting summary from May 11, 2018 meeting and confirm/set upcoming meeting dates. Desired outcomes: <ul style="list-style-type: none"> • Approve meeting summary • Joint SC/TAC meeting on Oct 29, 2018 at Cal/EPA Building • Set meeting dates for November 2018 and Feb 2019 (Please bring your calendar to the meeting!)	Draft Summary of May 11, 2018 SC Meeting	10:05 Adam Laputz
3	Information: Technical Advisory Committee update Updates on TAC meetings held in June 2018. Desired outcome: <ul style="list-style-type: none"> • Inform committee on monitoring activities and proposals for the upcoming fiscal year. 	Draft Summary of June 12, 2018 TAC Regular Meeting Draft Summary of June 29, 2018 TAC Special Meeting	10:05 – 10:30 Stephen McCord

#	Agenda item and desired outcomes	Attachments	Start & Lead
4	<p>Information: Delta RMP finances The Finance Update memo summarizes Delta RMP revenues, expenses, and the status of the reserve fund.</p> <p>Desired outcomes:</p> <ul style="list-style-type: none"> Informed committee 	Finance Update Memo	10:30 – 11:00 Matthew Heberger
5	<p>Information: Monitoring for the Irrigated Lands Regulatory Program (ILRP) MLJ LLC manages the monitoring program for two water quality coalitions representing growers in the Delta and San Joaquin Valley. Melissa Turner from MLJ LLC will describe the sampling program—where they sample, what they sample for and why do they do it—and describe where data can be obtained and how they communicate with growers regarding water quality issues.</p> <p>Desired outcomes:</p> <ul style="list-style-type: none"> Informed committee 		11:00 – 11:45 Melissa Turner
6	<p>Information: pesticides/toxicity monitoring proposals ASC developed two study pesticide/toxicity proposals working in close collaboration with the technical subcommittees; Options A and B are described in a single proposal document. The TAC has reviewed the proposals, with the majority of TAC members expressing a preference for Option B, the “hybrid” design that includes both the rotating basin probabilistic sampling and monitoring at two fixed sites.</p> <p>Desired outcome:</p> <ul style="list-style-type: none"> Informed committee (vote on funding scheduled for after lunch) 	<p>a. Monitoring Proposal (separate attachment)</p> <p>b. Memo on proposal development, selection, and ranking process</p>	<p>11:45 – 12:30 Matthew Heberger</p> <p>Stephen McCord</p>
Lunch			12:30 – 1:30
7	<p>Decision: Approve funding for monitoring for pesticides and toxicity The SC is asked to vote on allocating funding for one of two options described in the monitoring proposal and discussed before lunch.</p> <p>Desired outcome:</p> <ul style="list-style-type: none"> SC approval of funding for one of the two options for pesticides/toxicity monitoring 		1:30 – 2:30 Adam Laputz

#	Agenda item and desired outcomes	Attachments	Start & Lead
8	<p>Decision: Approve plan for Contaminants of Emerging Concern (CEC) Pilot Study</p> <p>SC approval of the study plan will allow us to begin important planning work and begin seeking funding for example through Supplemental Environmental Project (SEPs). Partial funding is requested for ASC to amend the Quality Assurance Program Plan (QAPP) and engage in further planning so that monitoring can begin as early as 2019.</p> <p>Desired outcome:</p> <ul style="list-style-type: none"> • SC approval of study plan • Approve funding for ASC for planning and amendment of the QAPP 	<p>a. CEC budget request</p> <p>b. Final approved workplan (separate attachment)</p>	<p>2:30 – 3:00</p> <p>Brian Laurenson</p>
9	<p>Decision: Vote on fee increase</p> <p>At the May 2018, the SC agreed to vote on a one-time 3% fee increase for all participants for FY19/20.</p> <p>Desired outcome:</p> <ul style="list-style-type: none"> • SC agreement on a one-time 3% fee increase for FY19/20 		<p>3:00 – 3:30</p> <p>Adam Laputz</p>
10	<p>Decision: Approve Year 1 Mercury Monitoring Report</p> <p>Scientists from ASC and the Moss Landing Marine Laboratories prepared a report summarizing fish and water analyses for mercury. The TAC has reviewed the report and recommends publishing.</p> <p>Desired outcome:</p> <ul style="list-style-type: none"> • SC vote to approve and publish report 	<p>Draft Report: <i>Mercury and Methylmercury in Fish and Water from the Sacramento-San Joaquin Delta: August 2016 - April 2017</i></p>	<p>3:30 – 3:45</p> <p>Matthew Heberger</p>
11	<p>Information: Status of deliverables and action items</p> <p>Desired outcome:</p> <ul style="list-style-type: none"> • Informed committee regarding the status of Delta RMP deliverables. • Confirmation of action items from this meeting 	<p>Delta RMP Stoplight Reports</p>	<p>3:30 – 3:45</p> <p>Matthew Heberger</p>
12	<p>Suggest agenda items for next meeting</p>		<p>3:45</p> <p>Adam Laputz</p>
	<p>Adjourn</p>		<p>4:00</p>

Meeting Materials for Item 4



DATE: June 29, 2018 (revised July 3, 2018)

TO: Delta RMP Steering Committee

THROUGH: Delta RMP Finance Committee

FROM: Matthew Heberger, Program Manager, Aquatic Science Center

RE: Summary of Delta RMP Financials for the period ending May 31, 2018

This memorandum provides an update of budgets and expenses for the Delta RMP and the balance of the Undesignated Reserve Fund. The figures in this memo are current through May 31, 2018, and cover the first 11 months of Fiscal Year 2017/18. Next quarter's memo will close out of the fiscal year and give an update on the beginning of FY18/19.

Last quarter's finance memo described the period ending in March 2018. This memo adds new information on revenue and expenses for the 2 months of April and May 2018.

Delta RMP Budget

Revenue

Forecasted revenue for FY17/18 was **\$997,256**. To date, we have received **\$928,575**. Expected and received revenue is summarized below in Table 1.

Table 1 Delta RMP FY17/18 Revenue through 5/31/2018 by participant group

Category	Expected	Received	Total
<i>Interest Income</i>		\$11,319	\$11,319
Dredgers		\$60,000	\$60,000
ILRP		\$148,780	\$148,780
MS4 Phase 1		\$181,400	\$181,400
MS4 Phase 2		\$309,999	\$309,999
POTW		\$197,077	\$197,077
Water Supply	\$80,000	\$20,000	\$100,000
Total	\$80,000	\$928,575	\$1,008,575

SFCWA - We expect to receive \$80,000 from one Delta RMP participant, the State and Federal Contractors Water Agency (SFCWA)'s successor agency, the State Water Contractors (SWC), upon completion of 2 key deliverables, a Draft Pesticide Interpretive Report, and a Draft Pesticide Monitoring Design.

Interest Income - During this quarter, our finance director informed me that the Delta RMP is entitled to \$11,319 in interest income from our share of funds invested in the Local Agency Investment Fund ([LAIF](#)), managed by the State Treasurer's Office. ASC opened an LAIF account for Bay RMP funds several years ago, and thought it prudent to deposit Delta RMP funds into the same account so those funds could earn interest as well (our regular business checking account at Wells Fargo does not return interest).

The LAIF account is interest bearing, and historically has had good rates of return. However, since the 2008 recession, interest rates have averaged less than 1% annually. For this fiscal year, the interest rate has averaged 0.75%.

How the Delta RMP's share of interest was calculated: SFEI-ASC has specific expense and income accounts set up in our accounting system to keep track of income and expenses at the restricted project level such as for the Delta RMP. This allows us to keep an accounting by project of the funds that are pooled in the LAIF bank account. All project deposits/withdrawals to the LAIF account are recorded with a project's unique code, so we can determine at month-end the change in each restricted project's balance within the account. Additionally, LAIF reports their daily interest rate so we are able to calculate the specific interest earned, for example, on a deposit made mid-month, by applying the daily interest rate to that deposit amount for the remainder of the month.

The interest reported here is for the period from 7/1/2017 to 5/31/2018. Our staff are currently in the process of calculating the interest for prior years (back to March of 2015 when the first Delta

RMP deposits were made). Going forward, we can expect to receive some interest income each year, however the amount is hard to predict – it will depend on the amount of cash invested and the rate of return of the LAIF account.

Planned Expenses

The planned expenses in the original FY17/18 workplan totaled **\$863,165**. Since then, ASC and the Finance Committee have made several changes to the workplan based on updated plans and priorities. A summary of these changes is shown in Table 2 below. The net fiscal impact has been to add \$23,000 in new expenses. In addition, we have rolled over several incomplete tasks from previous fiscal years into the current workplan. After these two changes, the total planned expense for FY17/18 is **\$1,158,660**. Planned expenses in current budget are:

FY17/18 Workplan Planned Expenses	\$863,165
Amendments to the FY17/18 Workplan (net)	\$23,000
Rollover Tasks from FY15/16 and FY16/17	\$272,495
Total planned expenses	\$1,158,660

Table 2 Changes to the FY17/18 Workplan budget lines.

	Budget in Workplan	New Budget amount	Description
Task 1A , Program Planning	\$65,000	\$67,500	\$2,500 added to budget to cover additional time and effort in planning and coordinating monitoring designs for pesticides and CECs. Previously, \$10,400 was transferred from planned ASC labor to a subcontract with a consulting statistician.
Task 2A , SC Meetings	\$48,484	\$44,734	\$3,750 transferred to Task 176D, Pesticides Data Management
Task 2B , TAC Meetings	\$61,620	\$57,870	\$3,750 transferred to Task 176D, Pesticides Data Management
Task 2C , Technical Subcommittee Meetings	\$20,000	\$22,500	\$2,500 added to budget to cover expense of additional subcommittee meetings and preparation of background materials – 7 pesticides subcommittee meetings, 4 of which were in person.
Task 3D , Data Management Subcommittee	--	\$5,000	New budget line created in Apr 2018. The Steering Committee requested the creation of a new subcommittee covering data management and quality assurance. This new subtask covers ASC staff time to plan and coordinate meetings, respond to requests from stakeholders for information, and plan and document new data management procedures.
Task 4B , Stakeholder Board Meetings	\$10,000	\$5,000	There has not been much demand for this service envisaged in the workplan. \$2,500 transferred to each Task 1A and 2C.
Task 4C , Data Assessment Framework Workshop	--	\$5,000	New budget line added in Dec 2017. Created at the request of the coordinating committee. This subtask is intended for ASC staff time to help plan and coordinate the upcoming Data Assessment Framework Workshop requested by the Steering Committee
Task 8A , Pesticides Interpretive Report	\$60,000	\$80,000	Budget amount increased in Jan 2018. To be used entirely to hire a subcontractor to ASC perform analyses and write the Pesticides Interpretive Report.
Task 8B , Contract Management (NEW)	--	\$8,000	New budget line created in Jan 2018. 10% of contract -- covering ASC staff time to help write and issue the request for proposals (RFP), select a contractor, and contract administration for the Pesticides Interpretive Report.
Task 176D , Data management and QA	\$7,151	\$14,651	\$7,500 added to budget. Transferred from Tasks 2A and 2B, in order to cover coverage.
Task 176E , Reporting	\$20,000	\$5,000	Budget amount decreased in Jan 2017. The Year 2 pesticides data report was cancelled by the Steering Committee. However, ASC is still obligated to produce a QA memo and to distribute draft data to the TAC and coordinate feedback on the UCD tox lab report.
Total	\$80,000	\$103,000	Net fiscal impact: Added \$23,000 in new expenses.

Actual Expenses Year-to-Date

In the current fiscal year, the program has spent **\$639,008** through May 31, 2018.

Table 3 shows a summary of the budget and year-to-date (YTD) expenses **by category**. **Table 4** shows budget vs. YTD expenses by task.

Figure 1 shows budget and expenses **by task** for the first two months of the fiscal year (this is the same information as in Table 4 in graphical form.)

Table 8, at the end of this memo, shows more detailed information on the budget and expenses at the **subtask** level. This table also provides details on expenses for the period since the last report in terms of labor (hours spent), invoices paid, and outputs and deliverables.

Table 3 Summary of the FY17/18 budget and year-to-date (YTD) expenses by category

	Budget	YTD Expense	Budget remaining	Percent spent
Direct Cost	\$2,500	\$781	\$1,719	31%
Labor (ASC)	\$444,987	\$338,158	\$106,829	76%
Subcontracts	\$711,174	\$300,069	\$411,105	42%
Total	\$1,158,661	\$639,008	\$519,653	55%

Table 4. Budget and expenses year-to-date (YTD) by task through May 31, 2018

Task	Budget	Expenses YTD	Percent of Budget Spent
01. Core Functions	\$121,500	\$117,715	97%
02. Governance	\$135,104	\$104,254	77%
03. Quality Assurance	\$35,000	\$34,639	99%
04. Communications	\$50,500	\$2,686	5%
08. Year 1-2 CUP Interpretive Report	\$88,000	\$7,858	9%
09. Nutrients	\$230,000	\$99,887	43%
10. Mercury Monitoring FY17/18	\$233,561	\$75,673	32%
166. CUP Monitoring (authorized in FY15/16)	-\$1,745	\$812	
173. Quality Assurance (authorized in FY16/17)	\$13,434	\$15,975	119%
174. Communications (authorized in FY16/17)	\$4,084	\$2,412	59%
176. CUP Monitoring (authorized in FY16/17)	\$172,428	\$131,036	76%
177. Nutrient Synthesis (authorized in FY16/17)	\$42,237	\$10,494	25%
178. Mercury (authorized in FY16/17)	\$34,557	\$35,568	103%
Total	\$1,158,660	\$639,008	55%

One conclusion from looking at year-to-date expenses is that the “burn rate” appears to be low – we are 92% of the way through fiscal year, but have only spent 55% of the overall budget.

In particular, less than half of the amount budgeted for subcontractors has been spent (Table 3). About 60% of the Delta RMP budget is for subcontractors. Many of these subcontractors have not invoiced us yet for their work. There is little risk of a “surprise” cost overrun with subcontractors, as all of the subcontracts with to ASC are on a “not to exceed” cost basis. However, there is also little opportunity for cost savings, as we expect that all subcontractors will eventually invoice us for 100% of the amount in their contract.

Labor expenses (ASC labor is 38% of budget) appear low primarily because the tasks in the workplan are planned to be completed after end of the fiscal year. *I am looking into making the reporting align more closely with the expected timeline for deliverables to avoid this mismatch in the future.*

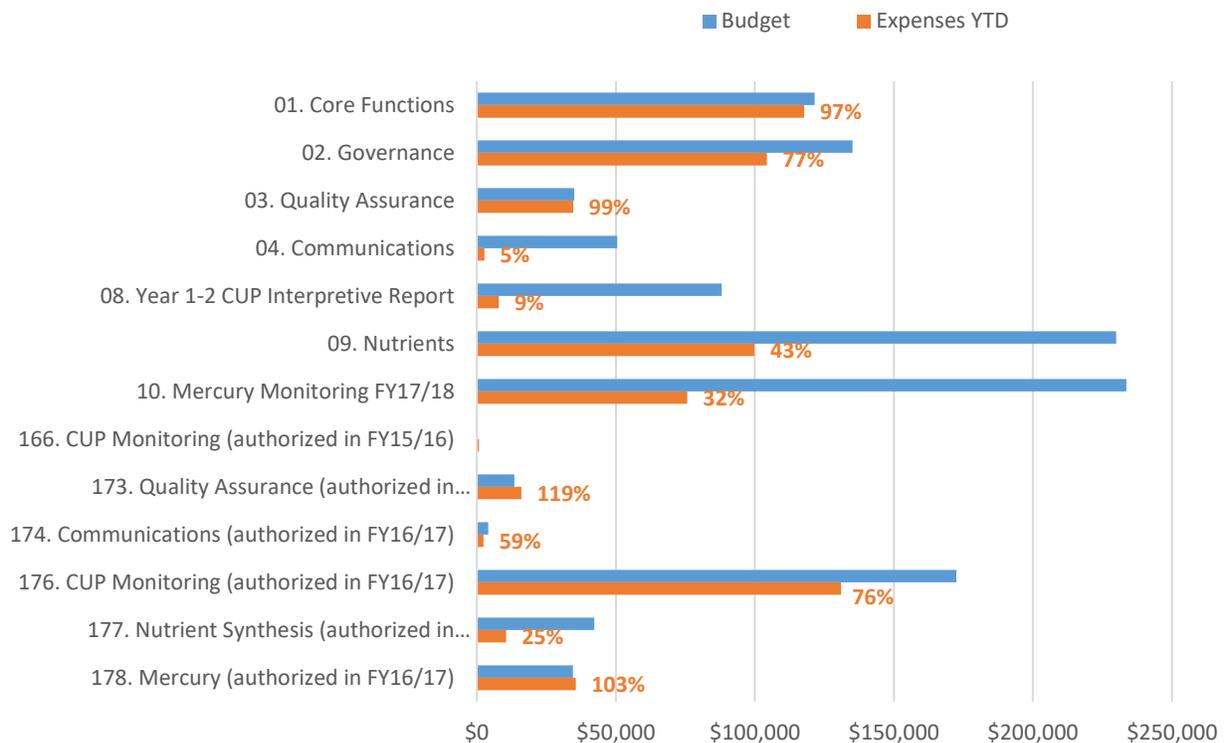


Figure 1 Delta RMP budget, showing budget and expenses (staff and subcontractors billing to date) from through 5/31/2018 by task.

Discussion of Expenses

Expenses for most tasks is in roughly line with our expectations. As a whole, we expect to finish the fiscal year on budget. Notes on tasks and subtasks requiring special attention are included below.

We continue to watch expenses for data management and quality assurance closely. In particular, the finance committee has had in-depth discussions regarding **Task 176D, FY16/17 Pesticides Data Management and Quality Assurance**. This task was budgeted in FY16/17 at \$37,400. A total of \$30,249 was spent in the previous fiscal year, and \$7,151 was rolled over to the current year's budget. This task has run overbudget due to several unexpected snags in the workflow and the need to repeat certain steps with revised data submitted by the lab.

We estimated that an additional \$7,500 to finalize and publish these data. In the last quarter, the Finance Committee approved transferring funds from subtasks which were underbudget to the budget line for pesticides data management. The decision to do this was cost neutral, i.e. has no fiscal impact to the program. Funds were transferred from:

- \$3,750 from Task 2A, SC meetings

- \$3,750 from Task 2B, TAC meetings

Here is the basis for our estimate that \$7,500 is needed to complete the FY16/17 pesticides data management task. ASC's data services manager estimated that an additional 55 hours are needed to intake corrected data and redo the QA checks. The detailed budget below describes necessary tasks in more detail. The job was estimated at a total of 55 hours. At an average rate of \$115 per hour, this is equal to \$6,325. To be safe, I added a contingency of 10% and rounded up to an even number. This forms the basis of my estimate that it would take an additional \$7,500 to complete this task. I have instructed our team that the work should not exceed this amount under any circumstances. Again, this explanation is provided to show that we are actively managing expenses. While this task is over budget, the overall project will end on budget as I anticipate savings on other tasks that will be completed under budget.

Task Description	Estimated hours required
Make a table with Regional Data Center (RDC) data before deleting it. Delete data from RDC database that are in our working Access database. Check for possible missed from the same time period from the RDC.	2.5
Update incorrect method detection limits (MDLs) for pyrethroids, troubleshoot with USGS chemist	1
Check Jira (our internal tracking software) for updates that were made to RDC after data was pulled into Access	1.5
Format missing data	10
Make updates to data	8
Send to USGS for review of the updates	2
Repeat QA review on newly-submitted data and make updates to QA memo and summary tables.	10
Upload data to RDC/CE DEN	20
Total	55

Undesignated Reserve Fund

The current balance of undesignated funds is \$133,579.

Table 5 shows a running list of deposits and withdrawals into the Undesignated Reserve Fund.

Table 5 Delta RMP Undesignated Reserve Fund ledger.

Budget Year	Deposit or Withdrawal	Authorized by	Date	Amount	Running Total	Comment
FY14/15	Deposit	Steering Committee	6/16/2015	\$41,000	\$41,000	Release funds allocated for CUP monitoring in FY14/15 budget in order to re-allocate these funds into the FY1516 budget for CUP monitoring.
FY15/16	Withdrawal	Steering Committee	6/16/2015	(\$41,000)	--	Released funds allocated for CUP monitoring in FY14/15 budget in order to re-allocate these funds into the FY1516 budget for CUP monitoring.
FY14/15	Deposit		10/15/2015	\$51,903	\$51,903	Extra revenue received in FY14/15. Actual revenue minus budgeted expenses for FY14/15.
FY15/16	Withdrawal	Steering Committee	4/25/2016	(\$20,000)	\$31,903	Allocate funding to FY15/16 for possible pathogen trigger study (TBD).
FY15/16	Deposit	Steering Committee	4/25/2016	\$100,000	\$131,903	SC directed that SFCWA funding of \$100,000 (contribution for FY15/16) be transferred to reserve.
FY 16/17	Withdrawal	Steering Committee	4/25/2016	(\$100,000)	\$31,903	SC directed that \$100,000 be withdrawn from the reserve to be reallocated as revenue for FY16/17. SFCWA contribution in March 2017 (\$100K) will be allocated to FY17/18 revenue.
FY15/16	Deposit	Steering Committee	7/20/2016	\$84,444	\$116,347	SC approved that \$84,444 be transferred from FY15/16 revenue to the reserve as undesignated funds.
FY16/17	Withdrawal	Steering Committee	10/18/2016	(\$10,000)	\$106,347	SC approved up to \$10,000 for coordinating and drafting a response to the External Panel Review.
FY16/17	Withdrawal	Finance Committee	5/23/2017	(\$7,500)	\$98,847	Finance Subcommittee approved transfer of funds to cover final phase of External Review.
FY14/15	Deposit	Steering Committee	7/28/2017	\$725	\$99,572	SC directed that \$725 surplus from FY14/15 budget be transferred to the reserve as undesignated funds.
FY17/18	Deposit	Steering Committee	3/2/2018	\$34,007	\$133,579	SC voted to unencumber the \$25,910 FY15/16 surplus and the \$8,097 FY16/17 surplus and transfer the amount of \$34,007 to the Reserve Fund
TOTAL				\$133,579		Undesignated funds balance

Revenue Forecast for FY18/19

In the past quarter's finance memo, we reported an expected revenue for the upcoming fiscal year, 2018-19 of **\$900,256**. Since that time, we have received word of three new participants:

- Army Corps of Engineers: \$50,000
- CalTrans, \$80,000
- Department of Water Resources: *participation likely, amount of contribution unknown*

Therefore, we are revising the revenue forecast upward by \$50,000 to **\$1,030,256**.

5-year Budget Outlook

At the request of the Finance Committee, we have drafted a 5-year budget outlook. The revenue forecast in Table 6 is conservative, in that it does not account for new participants joining the program. It plans for a 3% fee increase on all participants in FY19/20, and assumes no fee increase for the next 3 years.

The potential expenses in Table 7 show forecast expenses based on existing proposals and plans, such as the multi-year plan for nutrients outlined in the current workplan, and proposed pesticides monitoring described in the proposal currently under consideration by the TAC.

Numbers in bold have been allocated by the Steering Committee.

Numbers in italics are a part of a multi-year plan described in monitoring proposals by ASC. These amounts have not been committed. The SC may elect to allocate some portion of these funds, as it sees fit.

The amounts under pesticides are as anticipated under Option B in ASC's June 2018 proposal which describes a 4-year plan for monitoring culminating in an interpretive report in Year 5.

Under CECS, some portion of these funds may come from external sources.

Keep in mind that these are rough budget numbers for long-range planning purposes only.

Table 6. Delta RMP 5-year revenue forecast

FY Ending	Forecast Revenue (\$1,000s)	Notes
2019	\$1,030	Assumes \$50K from ACOE, \$80K from CalTrans, and \$10K interest income to continue annually. DWR amount TBD, not included here.
2020	\$1,061	Assumes a 3% fee increase by all participants.
2021	\$1,061	Assumes that no fee increase takes place.
2022	\$1,061	
2023	\$1,093	Assumes a 3% fee increase by all participants.

Table 7. Potential expenses over the next 5 years. (All amounts in \$1,000s.)

FY Ending	Core Functions	Pesticides	Nutrients	Mercury	CECs	Total	Notes
2019	\$292	\$256	\$271	\$241	\$250	\$1,185	Bold indicates that the amount is already budgeted or is part of a multi-year plan. Other entries assume a 2.5% cost escalation each year.
2020	\$299	\$264	\$410	\$354	\$250	\$1,452	
2021	\$307	\$272	\$300	\$345	\$250	\$1,223	
2022	\$314	\$280	\$308	\$150		\$1,255	
2023	\$322	\$120	\$315	\$150		\$1,120	

Invoices

Please follow this link to download the invoices covered by this memo:

<https://drive.google.com/drive/folders/0B8LZA-e4CFNIUVN2SjJCNGFnbTg?usp=sharing>

Appendix – Detailed Expense Tables

See the following pages for this table.

Table 8 Delta RMP FY17/18 budget and expenses through 5/31/2018 by task and subtask, with details on expenses for the period since the last report (2-month period including Apr 2018 and May 2018).

Table 8. Delta RMP FY17/18 budget and expenses through 5/31/2018 by task and subtask, with details on expenses for the period since the last report (2-month period including April and May 2018).

Task	Subtask	Budget	New expenses in this report	Total expenses to date	Budgeted funds remaining	Percent of budget spent	Staff and subcontractors billing	Description and Notes
01. Core Functions	A. Program Planning	\$67,500	\$19,124	\$67,276	\$224	99.7%	Davis, Jay - 2 hrs Franz, Amy - 14.75 hrs Heberger, Matthew - 64 hrs Safran, Samuel - 1 hr Salomon, Micha - 4.5 hrs Trowbridge, Philip - 13.5 hrs AMS Invoice Apr \$4,322.50 AMS Invoice May, \$2,437.50	Outputs: Wrote the FY18/19 Detailed Budget and Workplan for presentation to the Steering Committee at their May 11 meeting. Internal coordination, staff meetings, labor planning, oversight and project management. Deliverables completed: FY18/19 Detailed Budget and Workplan. Monitoring designs for nutrients special studies and mercury. Memo on statistical analysis of pesticides data (power analysis) by subcontractor, to be included as an appendix in the pesticides monitoring proposal. Two presentations by consultant to pesticides subcommittee.
	B. Contract and Financial Management	\$54,000	\$9,753	\$50,439	\$3,561	93%	Heberger, Matthew - 25 hrs Leung, Frank - 10 hrs Lofthouse, Meredith - 48 hrs Lowe, Sarah - 3 hrs Trowbridge, Philip - 0.75 hr Walsh, Patrick - 5 hrs	Outputs: Internal accounting; subcontract management; checked and approved internal and external invoices; tracked expenses by task. Prepared financial summary memo and tables. Finance committee meeting on April 25, 2018. Contracts officer reviewed draft Caltrans contract. Correspondence and phone discussions with finance officer and staff at USGS re: invoicing issues. Checked billed hours against budget. Worked with staff to correct some discrepancies and ensure proper billing codes were applied for all hours. Updated budget and revenue forecast. Investigated possibility of opening a separate bank account for the Delta RMP. Prepared financial summary for co-chairs related to the fee increase. Call with Water Board staff re: Caltrans and Army Corps contracts. Reviewed draft contract. Deliverables completed: Quarterly finance memo. Contract extension executed with USGS covering pesticides monitoring.
02. Governance	A. SC meetings	\$44,734	\$8,319	\$40,510	\$4,224	91%	Heberger, Matthew - 63.5 hrs Trowbridge, Philip - 4.5 hrs	Outputs: Phone meeting with co-chair and follow up on action items. Coordinating Committee meetings held before and after SC meeting. Follow up on action items. Edited and distributed meeting summary. Updated action items and deliverables tracking sheets. Sent email reminders to colleagues responsible for other action items. Scheduled future SC meetings and confirmed meeting rooms. Set dates for future Coordinating Committee phone calls. Updated participant list and roster. Deliverables: SC meeting held on May 11, 2018. Coordinating Committee meetings on April 11 and May 17. Meeting dates and locations set for summer and fall 2018. Meeting summary for May 11 meeting.
	B. TAC meetings	\$57,870	\$10,224	\$43,625	\$14,245	75%	Heberger, Matthew - 62.5 hrs MEI Invoice Apr: \$1,560 MEI Invoice May: \$1,320	Outputs: Preparation and participation in the TAC meeting held on Apr 23, 2018. Distributed agenda and meeting summaries, coordinated with co-chairs and facilitator. Follow up on action items. Updated action items and deliverables tracking sheets. Set dates and locations for next meeting and sent invitations. Deliverables: TAC meeting held on Apr 23, 2018.

Task	Subtask	Budget	New expenses in this report	Total expenses to date	Budgeted funds remaining	Percent of budget spent	Staff and subcontractors billing	Description and Notes
	C. Technical Subcommittees	\$22,500	\$5,939	\$20,119	\$2,381	89%	Heberger, Matthew - 48 hrs	Outputs: Meetings of the pesticides subcommittee held on April 12 and April 18. Followup from meeting on March 29. Deliverables completed: Meeting summaries for meetings. Technical memos on stratification, pesticide application rates in watershed.
	D. Science Advisors	\$10,000	\$0	\$0	\$10,000	0%		Earmarked for paying honoraria to our science advisors. Delayed in FY17/18 due to the lengthy nomination and selection process.
03. Quality Assurance	A. Quality Assurance System	\$15,000	\$58	\$17,250	(\$2,250)	115%	Heberger, Matthew - 0.5 hr	Outputs: Obtained final signatures for approving QAPP. Deliverables completed: Signed QAPP published.
	B. Technical Oversight and Coordination	\$15,000	\$2,001	\$14,755	\$245	98%	Franz, Amy - 2 hrs Heberger, Matthew - 9.5 hrs Yee, Donald - 4 hrs	Outputs: Drafted Data Management and Quality Assurance Standard Operating Procedures document requested by SWAMP QA Officer as a condition for approval of our QAPP. Distributed draft to partner laboratories for feedback. Held "Plus Delta" meeting with staff of USGS Organic Chemistry Research Laboratory (OCRL) to discuss past issues and streamline future work. Correspondence with USGS lab on data deliverables. Meeting with Data Science program managers to discuss labor and management issues. Correspondence with toxicity working group regarding the possibility of developing a new Chironomus method. Phone call with TAC member about issues with the toxicity data.
	D. Data Management Subcommittee	\$5,000	\$2,634	\$2,634	\$2,366	53%	Franz, Amy - 7.75 hrs Heberger, Matthew - 15.5 hrs	Outputs: Phone conversation with Director of State Water Board Office of Information Management and Analysis (OIMA) on the goals for creating a Data Management Subcommittee. Prepared for and held meeting on April 25. Prepared background materials for the Data Management Subcommittee. Prepared materials for the data management subcommittee, including Data Management and Quality Assurance SOP document and flow charts of processes and information flow. Created page on the TAC website for the Data Management Subcommittee, including tables of RMP data and a detailed "how to access Delta RMP data." Scheduled next meeting for Data Management Subcommittee on June 26. Deliverables completed: Draft Data Management and Quality Assurance SOP distributed to Data Management Subcommittee. New page on TAC website including tables and "howto" document.
04. Communications	A. Stakeholder Board Meetings	\$5,500	\$0	\$0	\$5,500	0%		
	B. Pulse of the Delta Draft	\$40,000	\$0	\$1,178	\$38,822	3%		Most labor deferred to FY18/19.
	C. Data Assessment Framework Workshop	\$5,000	\$0	\$1,508	\$3,492	30%		Note: This new budget line created at the request of the Coordinating Committee in Nov 2017 to enable ASC to help plan and coordinate a "Data Assessment Framework Workshop." However, the State Board withdrew their offer of support, leaving this task unable to be completed.
08. Year 1-2 CUP Interpretive Report	A. Report (subcontract)	\$80,000	\$0	\$3,045	\$76,955	4%		Earmarked to pay the consultant (Deltares) for the Pesticides Interpretive Report. Some spending occurred before decision was made to outsource.

Task	Subtask	Budget	New expenses in this report	Total expenses to date	Budgeted funds remaining	Percent of budget spent	Staff and subcontractors billing	Description and Notes
	B. Contract Management (Pesticides Report)	\$8,000	\$1,740	\$4,814	\$3,186	60%	Heberger, Matthew - 15 hrs	<p>Outputs: Sent email interview questions to finalists among bidders. Checked references for finalists via phone and email. Emailed followup interview questions to two finalists. Compiled information on the finalists for consideration by the Pesticides Subcommittee. Correspondence re: contractor selection with RMP members. Notified winning bidder; sent no-thank you letters to others. Followed up with two of the unsuccessful bidders to give them feedback at their request. Drew up draft contract and scope of work for Deltares. Correspondence with contractor.</p> <p>Deliverables completed: The TAC recommended and the SC approved a contractor for the study.</p>
09. Nutrients	A. Cross-Delta Monitoring Using High Frequency Tools	\$195,000	\$3,676	\$67,603	\$127,397	35%	USGS Invoice: \$3,676.29	<p>Outputs: USGS purchased equipment and supplies for next high-frequency monitoring cruise scheduled for May 14-17, 2018.</p> <p>Deliverables completed: None.</p>
	B. Nutrient Data Synthesis and Reporting	\$20,000	\$2,093	\$19,816	\$184	99%	Trowbridge, Philip - 11.75 hrs	<p>Outputs: Responded to comments on nutrient proposals. Revised nutrient proposals and responded to comments from TAC. Planned for and held joint meeting of Delta RMP Nutrients Subcommittee and Nutrient Management Strategy Technical Advisory Group.</p> <p>Deliverables completed: Secured matching funds from the NMS for chlorophyll intercalibration study in FY18/19.</p>
	C. Chlorophyll Sensor Intercalibration	\$15,000	\$89	\$12,468	\$2,532	83%	Trowbridge, Philip - 0.5 hr	<p>Outputs: Brief review of manuscript report by project partners.</p>
10. Mercury Monitoring FY17/18	A Data Collection and Analysis	\$209,016	\$0	\$67,517	\$141,499	32%	No invoices received in this reporting period.	Earmarked for paying subcontract with Moss Landing Marine Laboratory (MLML).
	B. RMP Data Management	\$19,545	\$6,338	\$6,722	\$12,823	34%	Franz, Amy - 9.25 hrs Ross, John - 10 hrs Weaver, Michael - 25.75 hrs Wong, Adam - 0.75 hr Yee, Donald - 10 hrs	<p>Outputs: Created contract analyte list. Checked in collection information that came in from MLML. Updated Controlled Vocabulary (Fraction, Method, Project and QAPP). Discuss grainsize fractions with lab. Logged in water and sediment chemistry data from MPLS. Internal meeting to discuss data progress. Logged in Field and Habitat data; set up Jira issue for field collection info; assign work to team. Discussed revised Chlorophyll-a results with lab manager and updated results in database.</p> <p>Deliverables: None this reporting period.</p>
	C. Technical Oversight	\$5,000	\$0	\$1,433	\$3,567	29%		
166. CUP Monitoring (authorized in FY15/16)	E. Reporting	(\$1,745)	\$0	\$812	(\$2,557)			Closed

Task	Subtask	Budget	New expenses in this report	Total expenses to date	Budgeted funds remaining	Percent of budget spent	Staff and subcontractors billing	Description and Notes
173. Quality Assurance (authorized in FY16/17)	A. Quality Assurance System	\$6,311	\$0	\$7,868	(\$1,557)	125%		Closed
	B. Technical Oversight	\$7,123	\$0	\$8,106	(\$983)	114%		Closed
174. Communications (authorized in FY16/17)	A. Factsheet	\$4,084	\$0	\$2,412	\$1,672	59%		<p>Outputs: None in this report.</p> <p>In the last quarter, we discussed with the Finance Committee using the small surplus in this budget line to support a poster and participation in the Bay Delta Science Conference in September.</p>
176. CUP Monitoring (authorized in FY16/17)	B. Pesticide Laboratory Work	\$154,029	\$60,288	\$111,663	\$42,366	72%	USGS Invoice: \$60,288	Earmarked for paying subcontractor (USGS).
	D. Data Management	\$14,651	\$3,664	\$16,735	(\$2,084)		Franz, Amy - 11.5 hrs Weaver, Michael - 25.5 hrs Franz, Amy - 3 hrs Ross, John - 2 hrs	<p>Note: USGS submitted incorrect data to ASC, and we have had to redo most data management and QA steps from scratch. In order to cover this overage, we transferred funds to this budget line from other subtasks which were running under budget. \$3,750 from Task 2A, SC meetings, and \$3,750 from Task 2B, TAC meetings.</p> <p>Outputs: USGS performed a review of the year 2 CUP data after we processed and QA'd the data, and sent us a long list of data updates, along with results that were missing from the original submittal. Data Services team updated the dataset to implement all of the changes, formatted the new records, and began the QA on all of the pesticides data, to continued and finalized in June 2018.</p> <p>Deliverables completed: None. Electronic data and QA memo expected in June 2018.</p>
	E. Reporting	\$3,748	\$547	\$2,638	\$1,110	70%		<p>Outputs: Revisions to QA Memo based on project manager's comments, sent QA Summary to RB5 staff</p> <p>Deliverables: None this reporting period.</p>
177. Nutrient Synthesis (authorized in FY16/17)	A. Nutrient Synthesis	\$8,670	\$0	\$5,534	\$3,136	64%		Closed
	B. Nutrient Modeling	(\$1,034)	\$0	\$3,658	(\$4,692)			Closed

Task	Subtask	Budget	New expenses in this report	Total expenses to date	Budgeted funds remaining	Percent of budget spent	Staff and subcontractors billing	Description and Notes
	C. Nutrient Statistical Analyses	\$34,601	\$0	\$1,302	\$33,299	4%		Outputs: None in this report. Most work done as an in-kind contribution by Dr. Marcus Beck, formerly at USEPA and now at SCCWRP. ASC hours have been for coordination and review of the draft manuscript.
178. Mercury (authorized in FY16/17)	A. Data Collection	\$19,224	\$0	\$19,224	(\$0)	100%		Closed
	B. Data Management	\$10,546	\$27	\$10,333	\$213	98%		Closed
	D. Reporting	\$4,787	\$0	\$6,011	(\$1,224)	126%		Closed
TOTAL		\$1,158,660	\$136,514	\$639,008	\$519,652	55%		

Meeting Materials for Item 6

DRAFT Memo

To: Delta RMP Steering Committee

From: Matthew Heberger, Aquatic Science Center

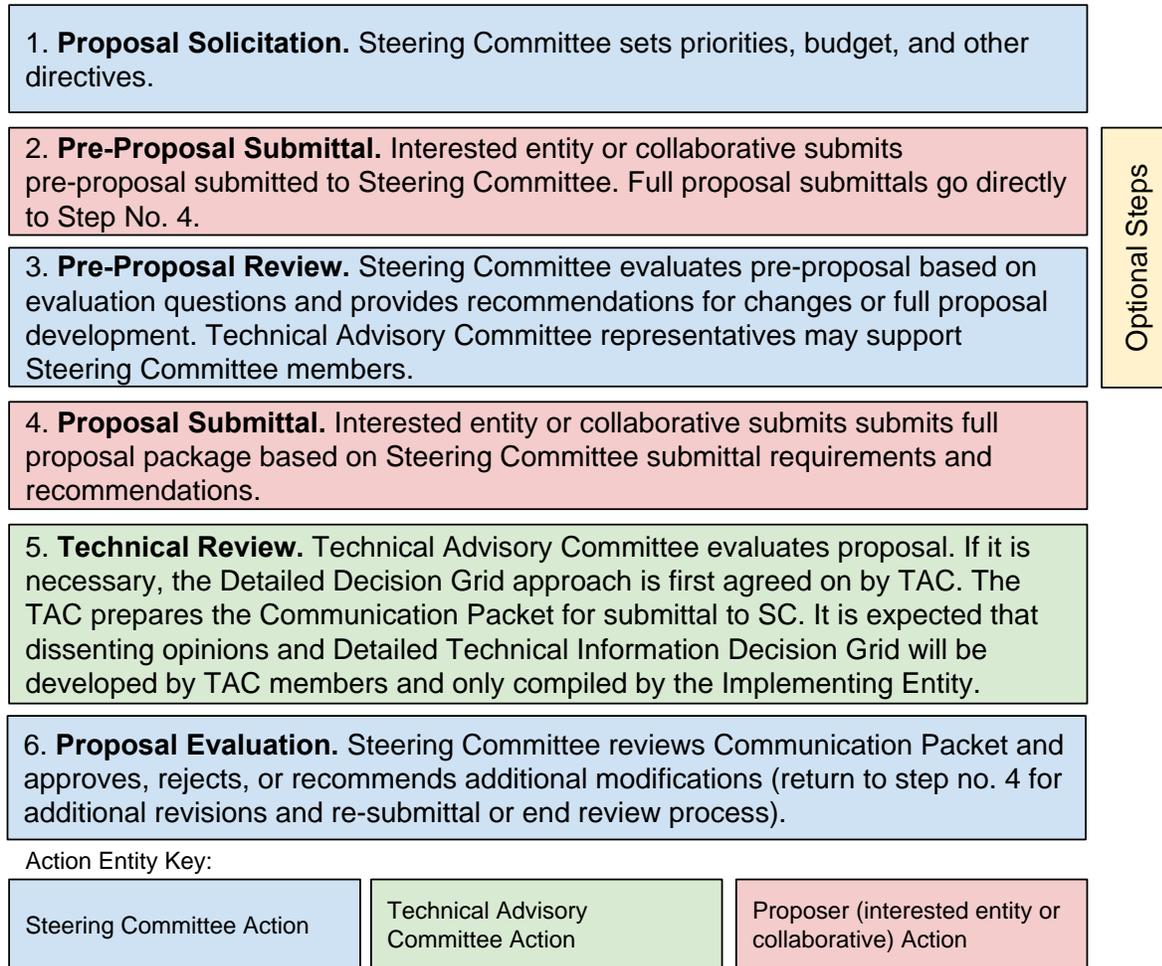
Date: July 3, 2018

Re: Description of this year's proposal development, selection, and ranking process

This memo provides a description of the process followed by ASC and the TAC in developing, selecting, and ranking proposals for pesticides and toxicity monitoring for Water Year 2019 (October 2018 – September 2019). The purpose of the review process was to:

- Identify any areas where proposals should be improved or strengthened.
- Recommend to the SC which proposals merit funding.
- Document the level of support for proposals among TAC members and any dissenting opinions.

We developed this ranking process in collaboration with stakeholders in response to direction from the Steering Committee to better capture the range of opinions and level of support among TAC members. We welcome your feedback as we continue to improve and streamline this process. Overall, we sought to follow the proposal review process as it was outlined by the ad hoc Decision Grid Working Group in 2017 as shown in Figure 1 below. For more information, see the [agenda package for the 10/24/2017 Delta RMP Joint TAC-SC Meeting, Item 8](#).



v.20180307

Figure 1. Proposal review process steps

Proposal development

Technical study proposals were developed in close collaboration with the technical subcommittees. The Pesticides Subcommittee met 7 times in the first half of 2018. Here is an abbreviated description of the process we followed:

1/9/2018: Discussed the types of projects, in general, that they would like to do in the future. Reviewed available budget and brainstormed project ideas. Discussed a concept note written by staff at the Central Valley Regional Water Quality Control Board.

1/30/2018: Review pros/cons of proposal ideas developed to date by subcommittee members, and further refined monitoring options. Discussed options for hiring a professional statistician to provide expert advice. Reviewed important practical

considerations: (1) analytical capabilities of different CA labs, and (2) information on sample preservation and hold time limits from the labs.

2/13/18: Went through the 7 planning steps of the of Data Quality Objectives process for each of the 2 main proposals under consideration.

2/27/18: For the 2 proposals, discussed the management drivers and statistical power. reresentation by and discussion with consulting statistician Aroon Melwani

3/29/18: Discussed the 2 pesticides monitoring proposals for FY18/19, with a view to finalizing aspects of the design (location, timing, and frequency of sampling). Second presentation by consulting statistician.

4/12/18: Presentation by consulting statistician on spatial and temporal patterns in bifenthrin and fipronil (requested by subcommittee members). Reviewed maps and summaries of crops and pesticide application prepared by ASC and requested by subcommittee members. Discussed unsettled questions regarding the probabilistic design, such as where, when, how often to sample.

4/18/18: Presentation by Mike Johnson and Cameron Irvine on their modified proposal. Continued to review options for the probabilistic design, and discussed important details on how to stratify the Delta, toxicity test species, etc.

Following meetings by the subcommittee, ASC staff drafted the proposal. The single proposal document describes two options for monitoring, which are slight variants of one another. The Pesticides Subcommittee chose the 2 existing options from among half a dozen alternatives at a meeting in March, led by our facilitator Gita Kapahi. The proposal has been reviewed by an ASC senior scientist prior to distribution to the TAC. The first draft of the proposal was distributed to members of the pesticides subcommittee, and 8 members submitted comments and suggestions. ASC made numerous changes to the proposal and replied to the committee with a compiled [response to comments](#).

The TAC discussed the proposal at two meetings on June 12 and June 29. Proposals were included in the agenda package for the TAC meeting on June 12, 2018. At this meeting, ASC staff gave an overview of each proposal and answered questions. About an hour of time was allocated for each study for presentations and for discussion of the proposals by TAC members.

After the first meeting, TAC members were asked to fill in the ranking survey. At the second meeting, we discussed the compiled ranking and comments. Some changes were made to the proposal after the June 29 meeting, to add additional information and clarifications. Changes did not affect the technical approach or the budget. A “track changes” version was distributed to the TAC.

The proposal was also sent to our new cadre of science advisors. However, some of them are

teaching summer courses or on vacation, and we only received feedback from one, Steve Saiz. He was generally supportive of the probabilistic approach, and stated he preferred Option B, as he also liked the idea of baseline monitoring at fixed sites over the long-term. If we receive additional substantive comments, we may choose to make modifications to the design during the development of the detailed sampling and analysis plan that will be included in the revised Quality Assurance Program Plan (QAPP).

Proposal template

We followed a roughly similar template to this year's other proposals, one that includes:

- Title
- Executive summary
- Background and motivation
- Applicable management decisions and assessment questions
- Study approach
- Map(s) of proposed monitoring locations (if applicable)
- Data Quality Objectives, including a statement of the null hypothesis, planned analytical methods, and tolerable limits on decision errors (if applicable)
- Schedule of deliverables
- Budget

Ranking Questionnaire

Following the meeting, some modifications were made to the proposal, and TAC members had the opportunity to rank and provide feedback on proposed monitoring designs. We created a standardized questionnaire for each proposal using Google Forms, and invited TAC members to fill in the questionnaire for each proposal. The questionnaires were based on the "Decision Grid" developed by a working group in 2017 and consisted of a series of questions. Some questions asked for a numerical ranking (1 to 5, with 5 being the highest score), and other questions asked for a written response. The numeric responses represented the level of agreement with a statement such as "The proposal demonstrates how the results will be presented."

We instructed respondents to interpret the responses as follows:¹

1. Strongly disagree
2. Disagree
3. Neutral (neither agree nor disagree)
4. Agree
5. Strongly agree.

At the March TAC meeting, we demonstrated the use of the questionnaire, and also reminded committee members of the conflict of interest COI policy in the Delta RMP Charter (i.e. the duty to *disclose* any COI and to *recuse* oneself from discussion and decision making on any item where an individual may have a conflict).

TAC members had from June 19 to June 26, or one week, to fill out the 2 questionnaires (one for each of the two monitoring options described in the proposal). In total, 11 TAC members filled in the questionnaires. We summarized the results of these questionnaires, and included the summary in the agenda package for the June 12, 2018 TAC meeting. The summaries included the average score for questions with a numeric reply, and the distribution of scores.

At the June 29 TAC meeting, members discussed and reviewed those rankings and comments with a view toward finalizing the proposals and making recommendations to the SC. The tables show the number of respondents who gave each score from 1 to 5. In the example below, for the first question, 3 people gave a “4,” and 5 people gave a “5.” The weighted average score was 4.6.

	1	2	3	4	5	Average Score	
A. Study Plan Responsiveness							
1. Does the study proposal identify the management question addressed?	-	-	-	3	5	4.6	
2. Are the Data Quality Objectives (DQOs; EPA 2006) clearly defined?	-	1	3	1	1	3.3	
3. Does the study provide testable hypotheses (written as assessment questions or otherwise)?	-	-	4	1	2	3.7	
4. Does the proposal demonstrate how the results will be presented?	-	1	1	3	2	3.9	

The little graph is a “sparkline” histogram showing the distribution of scores. Anytime we see a low score (a 1 or a 2), it is cause for concern, and we would like to follow up and find out the reason for it. It turns out some TAC members did not realize you could “pass” on a question, and clicked 1 when they felt the question did not apply. We agreed it would be appropriate to

¹ This 5-point scale is known as the Likert Scale, and is widely used in survey research. I discovered that there is a vast literature on how to use the Likert Scale and analyze its statistics, with Google Scholar returning over half a million hits.

add "n/a" as an option in the form in the future.

In addition, we compiled the written comments into a single document. The responses are anonymous in the sense that we did not attribute the comments to individuals.

Some comments pointed to desired changes in the proposals, or identified areas where more information could be provided. In these cases, we (ASC) have written a short response to several comments. We have also made minor changes to each of the proposals. However, they are not materially different from the versions reviewed the TAC.

In summary, we have gone to lengths to provide the Steering Committee a packet of information that will allow them to gage the level of support for proposals among TAC members, and any perceived strengths and weaknesses. Further, where possible, we have amended the proposals in response to feedback from the TAC and Pesticides Subcommittee. The packet of information for each focus area being forwarded to the SC includes:

1. Summary tables
2. Proposal(s)
3. Summary of numeric ranking by TAC members
4. Compilation of comments by TAC members

	Option A		Option B	
	Avg. Score	Distribution	Avg. Score	Distribution
A. Study Plan Responsiveness				
1. Does the study proposal identify the management question addressed?	4.1		4.4	
2. Are the Data Quality Objectives (DQOs; EPA 2006) clearly defined?	3.4		3.7	
3. Does the study provide testable hypotheses (written as assessment questions or otherwise)?	4.1		4.1	
4. Does the proposal demonstrate how the results will be presented?	3.5		3.8	
5. Does the proposal adequately demonstrate how the results will be interpreted?	3.1		3.3	
6. Does does the proposal contribute to a larger body of data that can be used to answer Management Questions in the future?	4.0		4.2	
7. Does the proposed study plan include an estimated budget that is responsive to Steering Committee guidance?	4.5		4.2	
Overall Study Plan Responsiveness	3.8		3.9	
B. Technical Foundation				
1. Geographic scope. Does the location selection support the study objectives?	4.4		4.3	
2. Geographic scope. Does the study adequately characterize an area relevant to the Delta RMP?	4.4		4.3	
4. Temporal resolution. Is the temporal scope and resolution of the study justified based on available data?	3.7		4.1	
5. Temporal resolution. Does the study clearly define the conditions of interest (e.g. high flows)?	3.7		3.8	
6. Temporal resolution. Can the results of the study be used to evaluate trends over the timescale of interest or target magnitude of change?	3.5		3.9	
8. Sample collection. Does the proposed data collection method introduce biases or errors that are not adequately mitigated or measured?	3.0		2.9	
9. Monitoring tools. Where do the analytical tools fit on the 'established methods' spectrum? (1 = experimental, 5 = long-established, known, reliable)	3.9		4.0	
12. Interpretation. Are study condition controls adequately considered given the study timeframe, data collection frequency, and proposed interpretation to answer study hypotheses reliably?	3.5		4.1	
13. Interpretation. Does the study have statistical power sufficient to answer study hypotheses reliably during the study timeframe?	3.8		3.8	
14. Interpretation. Is the basis for outcome assessments technically supported?	3.6		4.3	
15. Interpretation. Does the proposed study create new information to evaluate beneficial use attainment?	3.9		4.3	
16. Interpretation. Do the proposed study's research questions and outputs address specified management questions?	3.8		4.3	
Overall Technical Foundation	3.8		4.0	
C. Budget, Priority, and Coordination Considerations				
1. Budget. Is the proposed budget scalable in size?	4.2		4.3	
4. Priority. Is there urgency to conducting the monitoring, such as to inform planned policies or regulations?	4.2		4.1	
5. Priority. Does the study timeframe allow it to inform time-sensitive decisions?	3.7		3.6	
7. Coordination. Can the monitoring be coordinated with other efforts to increase they study's power or to reduce overall cost or duration?	3.3		3.5	
Overall Budget, Priority, and Coordination Considerations	3.9		3.9	
GRAND TOTAL	3.8		4.0	

Narrative Responses

Option A Rotating Basin Only

8. Comments on the overall study plan responsiveness:

Q1 - although the management and assessment questions are listed in Table 1, there is not an explicit explanation as to how each of the proposals informs the questions (this applies to both proposals). In addition - it seems like the proposal should combine the information from Tables 1, 5 and 6 to more clearly identify how the proposal will inform the management questions.

Q4-5 - the presentation of data section seems light. We probably have the basics there, but it does not seem robust. In addition, since there will be a data interpretive report and decisions that will be made later about how the data are to be interpreted it seems like this section should refer to that process instead of stating how the data will be interpreted. In addition, it is unclear what the "Annual Field Report" is within Table 4 since this is not explicitly called out in the budget.

Q6 - I would like to see this section of the proposal tie back to the regulatory drivers to identify how the information will be used in the future for these efforts.

Other - Table 1 includes a column "example information application" - however it seems that this column should identify how the proposal informs the regulatory drivers instead of identifying additional regulatory action that may be taken. This column also misses an important effort that is underway for stormwater and pesticide controls (STORMS).

"Several of the specific DQO steps are missing and information is scattered:

Step 1: State the Problem

Step 2: Identify the Goal of the Study

Step 3: Identify Information Inputs

Step 4: Define the Boundaries of the Study

Step 5: Develop the Analytical Approach

Step 6: Specify Performance or Acceptance Criteria

Step 7: Develop the Plan for Obtaining Data

"

I assume DQOs will be further defined in the QAPP. In the future it would be good to have the proposal approved earlier to ensure adequate time for QAPP approval before monitoring

1 begins. I also assume presentation and interpretation will be defined when the interpretive
2 report is done. Also see overall comments below.

3 It would be helpful to provide examples of data products or to tie more directly to the outcomes
4 from the Pesticide Interpretative Report.

5 "Table 1 is still very vague in regards to study objectives.

6 DQOs are more clearly defined for evaluating the co-occurrence of aquatic toxicity and
7 pesticides although there is nothing mentioned about considering the mode of action of the
8 pesticides (e.g. herbicides and algae toxicity vs fathead minnow toxicity).

9 By evaluating the data by subregion (rather than relying on the same location to be monitored
10 every year) it will be easier to combine data collected by other agencies/programs and add to
11 the DRMP data.

12 Its not clear how the stratification will affect analysis and data interpretation."

13 This proposal lacks basis to support the overall priority management question, Is the water
14 bodies meeting the toxicity narrative WQO and the no pesticide narrative statements as stated
15 in the Basin Plan.

16 3. Comments on the geographic scope:

17 This design does not characterize any inflowing water.

18 covers geographic scope. Answering the question about differences in subregions is not a
19 priority management question.

20 7. Comments on temporal scope:

21 We may need to repeat the study every three years for some timeframe in order to see trends
22 over time and within various conditions/strata.

23 Risk that subregions can't be adequately compared due to highly variable water years or
24 changes in pesticide use.

25 Greater temporal (and spatial) resolution would be preferred but is limited by the available
26 budget.

27 8.5. Comments on sample collection:

28 There are still concerns regarding Chironomus that need to be resolved. Re Q9 below - this falls
29 into the experimental/research area.

30 The plan defers to the QAPP development to further evaluate the stratification approach. This is
31 reasonable, but makes it difficult to confirm that the approach will be successful. Practically, it
32 may be difficult to access or collect samples at some randomly selected locations and
33 accessibility may then bias sample collection (e.g., only deeper locations without plant growth
34 are accessible). This can be worked out in the QAPP.

1 "More frequency of monitoring would be better. As would re-visiting fixed sites or a panel of
2 sites.

3 Never re-visiting sites makes temporal analysis and exceedance frequency nearly impossible in
4 all but the very long term. It also prevents the collection of data needed to make any specific
5 conclusions about specific segments that we should be identifying to truly answer our
6 assessment questions. "

7 The approach does not intend to evaluate temporal trends, but does identify key event timing
8 (first flush, high flow, etc.), but only intends to characterize the current condition.

9 "Events are to be determined in the QAPP; there is an example of what the DRMP has used as
10 triggers for sampling in the past but the specifics for this water year are punted to the QAPP.

11 Since this is supposed to be a long term program, I believe that the temporal resolution will
12 evaluate trends over the long term and include more representative monitoring of the entire
13 Delta rather a few locations. "

14 This proposal clearly underestimates the temporal scope.

15 **10. Monitoring tools. Are additional information/data outside of the proposed**
16 **study required to interpret study data and outcomes?**

17 Yes 4

18 No 5

19 n/a 2

20

21 **11. Comments on monitoring tools:**

22 This study needs to follow the approach that is ultimately agreed upon for the pesticides
23 interpretive approach.

24 Most proposed methods are clearly defined and reliable although some (i.e., midge toxicity) are
25 not and the approach is yet to be determined.

26 The thresholds are determined outside of this effort.

27 "Questions regarding the chironomus method for 10-day testing and reproducibility of the
28 testing. Also, a question regarding how to deal with sites with low EC and when a low EC
29 control should be used to evaluate toxicity.

30 Additional information is not required although it may be helpful for the interpretation
31 including other available monitoring data within the subregions."

32 Good analytical MDLs below the OPP benchmarks. Good diversity of toxicity test species being
33 evaluated.

1 **17. Comments on interpretation:**

2 Some of the data analysis and interpretation procedures (i.e., C. dubia tox) need to be clarified -
3 and this is identified as necessary information in the QAPP.

4 "The study relies heavily on thresholds and then defines thresholds as the OPP Aquatic Life
5 Benchmarks. The Work Plan should be modified to clean up the occurrences of the different
6 threshold naming conventions. It would be better to rely on the outcomes of the Pesticide
7 Interpretative Report to identify the appropriate threshold used to meet the study objectives.
8 The Aquatic Life Benchmarks are developed for pesticide registration and are not water quality
9 criteria - but may be useful for screening purposes as proposed. If used to define the study
10 effect thresholds the Work Plan should clearly state what the limitations are to drawing
11 conclusions based on Aquatic Life Benchmarks. There are other water quality objectives (e.g.,
12 pyrethroid TMDL) that could be applied.

13 The Work Plan or QAPP should provide specific information on the criteria for making findings
14 of a toxic or non-toxic sample. In some cases, significant differences from the control may not
15 conclusively identify toxicity - especially in the cases of non-lethal endpoints. "

16 "Addressing the potential variability within the study will depend partly on how the data are
17 stratified and when sampling events will be triggered; both of these items are still yet to be
18 determined."

19 **2. Budget. Is the proposed study modular?**

20 Yes 5

21 No 3

22 n/a 3

23 **3. Comments on budget:**

24 In the future I would personally like to see competitive proposals for the analytical and/or
25 reporting costs so that we can try to bring these down.

26 Data management cost is too high. Given the QA reviews by both SWAMP and USGS, it is
27 unclear why data from 48 samples cost \$41,000 to manage.

28 **ASC Response to this comment:**

29 The data management budget in this proposal is about 10% higher than in FY16/17. We have
30 had challenges with data management in the past, which have been discussed more than once
31 with the Finance Committee, described in the quarterly finance update memos, and in
32 presentations to the Steering Committee at least twice.

33 I asked my data management team for a realistic budget based on their past 2 years of
34 experience working with this data, and I added an additional 10% contingency because there

1 have been unexpected problems with missing or incorrect data from the labs that required us to
2 redo work. A more detailed budget for data management, showing a breakdown of hours by
3 task and hourly rates for staff, is available here:

4 [Detailed Pesticides Cost Estimate for Data Management & QA](#)

5 And here is a document that describes the data management and quality assurance work that
6 our team does. I believe that our data management and QA team brings a lot of value in
7 ensuring that the data are high quality and usable.

8 [Data Management and Quality Assurance SOP \(draft\)](#)

9 This being said, costs associated with data management are partly driven by the requirement to
10 load data into CEDEN, which is a strict database with many requirements.

11 I'm not clear on the difference between scalable and modular, but I'm assuming modular means
12 modules can be added/removed.

13 The budget can be increased in a modular manner to complete the study in a shorter time
14 frame.

15 Looking at the power analysis curves, there may be opportunities to reduce cost further without
16 too much increase in the sample error. It is not clear how the acceptable error was determined.

17 There have been questions raised regarding the cost of data management and this component
18 may not be exactly scalable. Ways to make the data entry into CEDEN templates and data
19 review more streamlined should be evaluated to help reduce cost. However, if there are QC
20 issues it would be expected that the data management costs would also increase even beyond
21 what is budgeted. Having efficient feedback communication to the laboratory and/or field
22 crews in a timely manner may help reduce QC costs long term.

23 6. Comments on priority:

24 More budget would cover the Delta sooner

25 I appreciate the introductory information on the regulatory drivers. It would be helpful to have
26 more direct coordination with the pyrethroid TMDL requirements.

27 The study design is focused on evaluating the entire Delta over 3 years. For the urgency of
28 evaluating beneficial use this time frame seems sufficient and appropriate in respect to limited
29 resources.

30 Not sure that proposal and design can provide time-sensitive decisions.

31 8. Comments on coordination:

32 I think that there are opportunities to coordinate, however it does not seem like they have been
33 fully vetted or identified yet.

1 The basic program can not be coordinated, however other monitoring data will likely help with
2 interpretation.

3 There are not much opportunity for coordination with external organizations in this monitoring
4 plan, because the samples requite highly-specialized analysis, are time sensitive, and will be
5 collected at precise, rotating locations.

6 Specific coordination is not identified. In addition to TMDL requirements, there are statewide
7 (e.g., STORMS, SPoT) and local pesticide monitoring programs that may be able to use the RMP
8 data. Additional coordination may be helpful in the future.

9 Overall comments:

10 I support the developed approach as a good compromise with the available resources. Also note
11 that the following strength applies to the rotating basin design (as it does for fixed sites – in
12 Table 6): Ability to determine frequency of exceedance of water quality thresholds, how
13 conditions vary by season or flow regime, and, possibly, the effectiveness of regulatory actions.

14 The set of chemistry and toxicity data produced by this design should be useful in
15 characterizing the Delta and specific sub-regions. However, this design emphasizes spatial
16 coverage and tells very little about what is going on temporally, because there are no fixed sites
17 or repeat visits. Therefore, making calculation of exceedance frequency in any segment will
18 likely be impossible with this data set. Since exceedance frequency is part of what is needed to
19 determine potential effects and criteria exceedances, this design does not provide much support
20 for the determination of Beneficial Use support/standards attainment for specific segments and
21 does not help very much, for the money spent, to identify specific problems that the Board and
22 dischargers should be solving. The data will support broad general analysis about the Delta
23 and sub-regions as a whole, but without the temporal and exceedance frequency aspects better
24 characterized, I feel it is likely those conclusions may be too broad and missing specific impacts
25 that are occurring. This could be partially resolved by allowing for follow-up studies at areas
26 with exceedances and/or toxicity. The potential for using the RMP to help meet discarger's
27 current and pending (pyrethroids) pesticide monitoring requirements, should also be a
28 consideration in discussions of future monitoring.

29 The study is well described and addresses the question of spatial pesticide concentration and
30 toxicity across the Delta. Thresholds should be addressed with Steering Committee input in the
31 Pesticide Interpretative Report process.

32 "It is not always clear in the proposal which ""option"" is being referred to. In essence, both
33 options include a rotating basin design and option B (hybrid) reduced the number of random
34 sites in a year by replacing those samples with samples collected from 2 fixed locations. The
35 rational for those fixed locations is not always consistent.

36 The time frame for determining stratification, event timing, low EC control methodology and
37 the 10 day Chironomus testing is concerning. The goal of having a draft QAPP done by August

1 with all of these items addressed is ambitious to say the least. It would be helpful to see a more
2 broken down timeline for how these pieces will be determined, drafted, discussed and
3 ultimately agreed upon. There is also mention of collecting additional habitat parameters which
4 would need to be discussed/determined as well."

5 "Does cover geographic scale of the Delta, however, will miss sampling events that may occur
6 from year to year. Meaning, if a particular pesticide usage is occurring in one year and not
7 another year because of pest demand/climatic/crop factors, these events will not be detected
8 with a rotating basin design.

9 This proposal is not sufficient in design with the limited budget. We really need to evaluate all
10 6 subregions on an annual basis; therefore, need to increase the budget to make this a better
11 proposal to answer the questions. This proposal only covers 2 subregions per year. This is a
12 major limitation to addressing Management questions.

13 This design lacks basis to support the overall priority management question is the water body –
14 meeting the narrative toxicity water quality objective (WQO) and meeting the narrative no
15 pesticide WQO in the RB basin plans?

16

Option B Rotating Basin + 2 Fixed Sites

8. Comments on the overall study plan responsiveness:

"Q1 - although the management and assessment questions are listed in Table 1, there is not an explicit explanation as to how each of the proposals informs the questions (this applies to both proposals). In addition - it seems like the proposal should combine the information from Tables 1, 5 and 6 to more clearly identify how the proposal will inform the management questions.

Q4-5 - the presentation of data section seems light. We probably have the basics there, but it does not seem robust. In addition, since there will be a data interpretive report and decisions that will be made later about how the data are to be interpreted it seems like this section should refer to that process instead of stating how the data will be interpreted. In addition, it is unclear what the "Annual Field Report" is within Table 4 since this is not explicitly called out in the budget.

Q6 - I would like to see this section of the proposal tie back to the regulatory drivers to identify how the information will be used in the future for these efforts.

Other - Table 1 includes a column "example information application" - however it seems that this column should identify how the proposal informs the regulatory drivers instead of identifying additional regulatory action that may be taken. This column also misses an important effort that is underway for stormwater and pesticide controls (STORMS)."

"Several of the specific DQO steps are missing and information is scattered

Step 1: State the Problem

Step 2: Identify the Goal of the Study

Step 3: Identify Information Inputs

Step 4: Define the Boundaries of the Study

Step 5: Develop the Analytical Approach

Step 6: Specify Performance or Acceptance Criteria

Step 7: Develop the Plan for Obtaining Data

"

I assume DQOs will be further defined in the QAPP. In the future it would be good to have the proposal approved earlier to ensure adequate time for QAPP approval before monitoring begins. I also assume presentation and interpretation will be defined when the interpretive report is done. Also see overall comments below.

It would be helpful to provide examples of data products or to tie more directly to the outcomes from the Pesticide Interpretative Report.

1 Budget for the hybrid is on average more than the rotating basin design and will take longer to
2 get the 24 samples per subregion.

3 This proposal will evaluate both the temporal and spatial aspects of the watershed. The 2
4 selected fixed stations are good sites to study further based on previous work.

5 3. Comments on the geographic scope:

6 Fixed sites are not a positive feature of a monitoring program. Selecting two sites that have
7 demonstrated toxicity in the past, just to see "if things change" is not a hypothesis-driven
8 monitoring design. At least not an interesting hypothesis.

9 This hybrid approach also characterizes representative inflows.

10 The map on Page 11 indicates 7 regions (#5-Suison bay) which we discussed briefly at the TAC
11 meeting, this should be updated to reflect the 6 regions of study with Suison Bay removed.

12 The selection of the fixed locations does not consider the tributary areas or how outcomes will
13 be considered relative to the associated areas.

14 the proposal is not always clear on the rational for selecting the two fixed locations. In one
15 place of the proposal it mentions that the fixed locations were chosen because of past toxicity
16 and in another location it mentions that they were picked as integrator sites. However,
17 "integrator" site is not well defined and it is unclear why these two sites are the chosen
18 integrator sites vs any other previously sampled location.

19 7. Comments on temporal scope:

20 Can use fixed sites to track interannual trends. Adding a fixed site on the Sacramento River
21 would also help.

22 Greater temporal (and spatial) resolution would be preferred but is limited by the available
23 budget.

24 using the two fixed locations, as in the hybrid version, will allow for some temporal resolution.

25 "More frequency of monitoring would be better.

26 Never re-visiting any but the fixed sites makes temporal analysis and exceedance frequency
27 nearly impossible in all but the very long term anywhere but at these fixed sites. It also
28 prevents the collection of data needed to make any specific conclusions about specific segments
29 that we should be identifying to truly answer our assessment questions. "

30 A power analysis is not performed to support how well long-term temporal trends can be
31 assessed. It seems that the purpose of the fixed sites is not so much the temporal trends as a
32 specific evaluation of a site with a toxicity history. It would be helpful to identify the historical
33 issues observed at these sites and develop specific assessment questions based on the historical
34 results.

1 **8.5. Comments on sample collection:**

2 There are still concerns regarding Chironomus that need to be resolved. Re Q9 below - this falls
3 into the experimental/research area.

4 still some questions to be answered as we discussed at the TAC, ie: breakdown of shallow/deep;
5 long residence time/short residence time

6 The plan defers to the QAPP development to further evaluate the stratification approach. This is
7 reasonable, but makes it difficult to confirm that the approach will be successful. Practically, it
8 may be difficult to access or collect samples at some randomly selected locations and
9 accessibility may then bias sample collection. This can be worked out in the QAPP.

10 Disagree that there are biases - the non-hybrid approach has less of a bias; adding the fixed sites
11 is biased towards monitoring sites with toxicity.

12 **10. Monitoring tools. Are additional information/data outside of the proposed**
13 **study required to interpret study data and outcomes?**

14 Yes 4

15 No 7

16 n/a 1

17 **11. Comments on monitoring tools:**

18 This study needs to follow the approach that is ultimately agreed upon for the pesticides
19 interpretive approach.

20 Most proposed methods are clearly defined and reliable although some (i.e., midge toxicity) are
21 not and the approach is yet to be determined.

22 The thresholds are determined outside of this effort.

23 "Good analytical MDLs which are below the OPP benchmarks. Good diversity toxicity test
24 species being evaluated."

25 **17. Comments on interpretation:**

26 Fixed sites provide no additional information about beneficial use attainment.

27 Some of the data analysis and interpretation procedures (i.e., *C. dubia* tox) need to be clarified -
28 and this is identified as necessary information in the QAPP.

29 "The temporal trend component of the fixed stations is not well defined and the shifting of
30 resources to the fixed stations results in sample collection/interpretation complications.

31 The study relies heavily on thresholds and then defines thresholds as the OPP Aquatic Life
32 Benchmarks. The Work Plan should be modified to clean up the occurrences of the different
33 threshold naming conventions. It would be better to rely on the outcomes of the Pesticide

1 Interpretative Report to identify the appropriate threshold used to meet the study objectives.
2 The Aquatic Life Benchmarks are developed for pesticide registration and are not water quality
3 criteria - but may be useful for screening purposes as proposed. If used to define the study
4 effect thresholds the Work Plan should clearly state what the limitations are to drawing
5 conclusions based on Aquatic Life Benchmarks. There are other water quality objectives (e.g.,
6 pyrethroid TMDL) that could be applied.

7 The Work Plan or QAPP should provide specific information on the criteria for making findings
8 of a toxic or non-toxic sample. In some cases, significant differences from the control may not
9 conclusively identify toxicity - especially in the cases of non-lethal endpoints. "

10 2. Budget. Is the proposed study modular?

11 Yes 7

12 No 2

13 n/a 3

14 3. Comments on budget:

15 In the future I would personally like to see competitive proposals for the analytical and/or
16 reporting costs so that we can try to bring these down.

17 Same comment as with Option A.

18 Unclear on term "modular".

19 The budget can be increased in a modular manner to complete the study in a shorter time
20 frame.

21 study could be sized up or down as demonstrated by the recent downsizing to meet the
22 suggested budget. Additional funds would allow for more comprehensive monitoring.
23 Additional stationary sites could be added if needed.

24 8. Comments on coordination:

25 I think that there are opportunities to coordinate, however it does not seem like they have been
26 fully vetted or identified yet.

27 There are not much opportunity for coordination with external organizations in this monitoring
28 plan, because the samples require highly-specialized analysis, are time sensitive, and will be
29 collected at precise, rotating locations. The two fixed locations offer a greater opportunity for
30 coordination, but none has been proposed.

31 coordination is being done as outlined, connections could be stronger

32 Specific coordination is not identified. In addition to TMDL requirements, there are statewide
33 (e.g., STORMS, SPoT) and local pesticide monitoring programs that may be able to use the RMP
34 data. Additional coordination may be helpful in the future.

1 Overall comments:

2 In general I think that this study rates very similarly to the rotating basin design. However, one
3 concern that I have with this study is that the two fixed sites are in areas that have had toxicity
4 and pesticide hits. I would have rather had one fixed site in an area that has had hits and one in
5 an area that has not so that we can get a more representative evaluation of status and trends in
6 both types of areas. I feel that selecting the two sites that we currently have for the fixed sites
7 skews this type of evaluation or gives a perception that the fixed sites are representative of the
8 Delta WRT status and trends.

9 For both designs, there are still misstatements in the proposal body but they apply equally to
10 both proposals (since there is only one document) and therefore should not impact a decision
11 about which design to use.

12 Adding the two fixed sites seems to outweigh the extra year needed to cover all subregions.

13 "I support the developed approach as a good compromise with the available resources. Also
14 note that the following strength applies to the rotating basin design (as it does for fixed sites – in
15 Table 6): Ability to determine frequency of exceedance of water quality thresholds, how
16 conditions vary by season or flow regime, and, possibly, the effectiveness of regulatory actions

17 The hybrid option (option B) is preferable to the complete rotating basin (option A) as it will
18 allow for some temporal analysis at the two stationary sites. the number of samples collected
19 each trip was reduced to meet the budget given by the SC, additional funds would allow for
20 more comprehensive sampling and likely better conditions analysis.

21 The set of chemistry and toxicity data produced by this design should be useful in
22 characterizing the Delta and specific sub-regions. However, this design emphasizes spatial
23 coverage and is somewhat limited in temporal understanding, since there are no repeat visits at
24 anything but the fixed sites. Therefore, making calculation of exceedance frequency in any
25 segment will likely be impossible with this data set. Since exceedance frequency is part of what
26 is needed to determine potential effects and criteria exceedances, this design does not provide a
27 great deal of support for the determination of Beneficial Use support/standards attainment for
28 specific segments and does not help very much, for the money spent, to identify specific
29 problems that the Board and dischargers should be solving. The data will support broad
30 general analysis about the Delta and sub-regions as a whole, and provides a somewhat
31 improved temporal characterization over the "rotating basin" design but there is still a chance
32 that, due to the lack of repetition at any but fixed sites, conclusions may be too broad and
33 missing specific impacts that are occurring. This could be partially resolved by allowing for
34 follow-up studies at areas with exceedances and/or toxicity. The potential for using the RMP to
35 help meet discharger's current and pending (pyrethroids) pesticide monitoring requirements,
36 should also be a consideration in discussions of future monitoring.

1 "Addition of the fixed sites may not provide the same benefit per dollar as the more focused
2 spatial probabilistic design. If fixed sites are included it may be helpful to include at least
3 another site and better understand the statistical power to evaluate trends over time.

4 The study is well described and addresses the question of spatial pesticide concentration and
5 toxicity across the Delta. The issue of thresholds should be addressed with Steering Committee
6 input in the Pesticide Interpretative Report process. "

7 By adding in the fixed locations, the time to assess each of the subregions increases as does the
8 average per year budget.

9 "The concurrent chemistry and toxicity results will be useful in characterizing the spatial and
10 temporal sub-regions. This proposal is an improvement over the rotating basins in that we will
11 achieve some information on both temporal and spatial responses; however, limited in that it is
12 only 2 fixed stations. It would be advantageous to increase the # of fixed stations; this should be
13 the objective based on information obtained after the 1st year. Or more appropriately would be
14 obtained more \$ to truly address the Basin Plan narrative and numerical WQOs.

Meeting Materials for Item 8

Contaminants of Emerging Concern Study Budget Request to Delta Regional Monitoring Program Steering Committee

Estimated Cost

The Stakeholders agreed to initiate the project in FY1819 through development of the Quality Assurance Project Plan (QAPP) and planning and procurement efforts in coordination with the TAC CEC Subcommittee. Sample collection would begin after July 1, 2019.

FY1819

The FY1819 cost and budget request to the Delta RMP is \$45,000, primarily for labor by the Aquatic Science Center (ASC). ASC prepared a detailed cost estimate for 1) QAPP development and 2) an additional contingency amount was estimated to support the initial set-up of the program:

- 1) \$23,000 QAPP revisions and approval through SWAMP – cost estimate provided by ASC, see budget table below.
- 2) \$22,000 Program implementation - optimization of Pilot Study Work Plan, logistics planning, sample collection and analysis vendor selection process administration, contract set-up with vendors, coordination with other monitoring programs, facilitation of TAC CEC Subcommittee, and start-up mobilization for FY1920 sample collection. This initial cost estimate to be refined and confirmed by ASC prior to the July 17, 2018 Steering Committee meeting.

FY1920, FY2021, and FY2122

Sample collection begins in FY1920 and the three sample collection years are budgeted at approximately \$200,000 annually. These costs will be further refined during FY1819 planning.

Oversight Group

Technical Advisory Committee (TAC) Contaminants of Emerging Concern (CEC) Subcommittee

Work Plan Development

Stakeholder group of MS4s, POTWs, State Water Resources Control Board (State Board), and Central Valley Regional Water Quality Control Board (Regional Board), collectively referred to as “Stakeholders”.

Work Plan Overview

The Pilot Study Work Plan includes water column, sediment, and tissue sample collection at Delta and immediate tributary locations over a three year sample collection period. Following a planning and mobilization year (FY1819), the first two years of sample collection include ambient surface waters, tissue, and sediment sample collection. The second and third years include “source” water sample collection. Finally, the Pilot Study Work Plan includes a gradient study in the third year.

The Stakeholders presented the Pilot Study Work Plan approach to the Delta Regional Monitoring Program (Delta RMP) Steering Committee on multiple occasions dating back to the October 24, 2017 Joint TAC-Steering Committee meeting. At that time specific funding guidance was provide to the TAC for other study components (methylmercury, nutrients, and pesticides) and CEC work was acknowledged as a special study for consideration with available funds. The TAC has provided comments only on specific questions from the Steering Committee (March 2, 2018 meeting), and this proposal was developed by the TAC CEC Subcommittee.

Finalized Pilot Study Work Plan

The three year Pilot Study Work Plan was approved by the Regional Water Board and State Board staff though final signature approval are pending. The approved Pilot Study Work Plan is provided with this budget request. The final approval letter will be provided to the Steering Committee at the July 17, 2018 Steering Committee meeting.

Table: Budget for amending the Delta RMP Quality Assurance Program Plan (QAPP) to cover CEC monitoring

Hours by Subtask	Program Manager	Environmental Scientist	Data Management Staff	QA Officer	Total Hours	Amount
Compile Method Details from Laboratories	4	16	-	-	20	\$ 1,796
Prepare CEC Section in QAPP	8	40	24	24	96	\$ 11,355
Get Lab QAOs Approvals	4	4	-	-	8	\$ 813
Get SWAMP QAO Approval	16	16	8	8	48	\$ 5,622
Get TAC Approval	4	4	8	8	24	\$ 3,183
Get final signatures	4	-	-	-	4	\$ 486
Total Hours	40	80	40	40	200	\$ 23,255

Rate Schedule

Position	Hourly Rate, fully loaded
Program Manager	\$ 121.42
Environmental Scientist	\$81.89
Data Management Staff	\$ 114.43
QA Officer	\$ 181.75

Meeting Materials for Item 10

Meeting Materials for Item 11

Delta RMP Action Items Stoplight Report

Key to Status Colors:

Green indicates greater than 90 days until the deliverable is due.

Yellow indicates a deliverable is due within 90 days.

Red indicates a deliverable that is overdue.

	Primary	Meeting Date	Deliverable	Assigned To	Due Date	Status	Comments
1	SC Action Items 5/11/2018	05/11/18					
2	SC Action Items 5/11/2018	05/11/18					
3	SC Action Items 5/11/2018	05/11/18					
4	SC Action Items 5/11/2018	05/11/18	Send a Doodle poll and schedule the joint meeting	Matthew Heberger	06/15/18	Complete	
5	TAC Action Items 4/23/2018	04/23/18	Correct attendance roster for past TAC meeting to add Steve Louie.	Matthew Heberger	04/30/18	Complete	
6	TAC Action Items 4/23/2018	04/23/18	Request our consulting statistician to pass on pertinent files to contractor for pesticides interpretive report.	Matthew Heberger	04/30/18	Complete	
7	TAC Action Items 4/23/2018	04/23/18	Move recommendation for the contractor forward to the steering committee.	Matthew Heberger	05/05/18	Complete	
8	TAC Action Items 4/23/2018	04/23/18	Add "n/a" as a response option on future decision grid questionnaire surveys	Matthew Heberger	05/15/18	Complete	
9	TAC Action Items 4/23/2018	04/23/18	Follow up with SFEI staff to find out if we are calculating mercury loading at Mallard Island.	Matthew Heberger	04/30/18	Complete	
10	TAC Action Items 4/23/2018	04/23/18	Add a cover sheet to the monitoring proposals which shows the rankings and summarizes the process (explains how the numbers were derived/what they mean)	Matthew Heberger	05/05/18	Complete	Drafted a 5-page memo which describes this year's proposal development, selection, and ranking process. Includes passages from the Decision Grid materials developed last year by a stakeholder-led working group.
11	TAC Action Items 4/23/2018	04/23/18	Schedule a meeting for mercury subcommittee to develop a more detailed plan about when to sample high flows/storms etc.	Jay Davis	05/30/18		Email reminder sent to Jay Davis on 7/2/2018.
12	TAC Action Items 4/23/2018	04/23/18	Provide additional detail on what a scaled down Mercury proposal might look like (if only spending 250k)	Jay Davis	04/30/18	Complete	
13	TAC Action Items 4/23/2018	04/23/18	Pesticides project planning, Evaluate the costs of running fathead minnow, rainbow trout, and Chironomus. And confirm with AHPL and USGS on feasibility of running tests on both test species and collecting the large volumes of sample water required.		05/15/18	Complete	Have confirmed with Jim Orlando and Marie Stillway that it is NOT feasible to run both fish species at once. Physical limitations based on the water volumes required, bench space, refrigeration, power load.
14	TAC Action Items 4/23/2018	04/23/18	Extend deadline for submission of comments on the AHPL Toxicity Report beyond May 10th.		04/30/18	Complete	
15	TAC Action Items 4/23/2018	04/23/18	Schedule a meeting of an ad hoc toxicity working group to discuss issue regarding the toxicity data interpretation (high variability, low EC samples). Work with Cam and Debra to figure out materials for meeting.	Matthew Heberger	05/15/18	Complete	
16	TAC Action Items 4/23/2018	04/23/18	Provide update on status of selection of science advisors at next TAC mtg.	Matthew Heberger	06/01/18	Complete	Placed on agenda for
17	TAC Action Items from 3/15/2018	03/15/18	Set April 23, 2018 and September 21, 2018 meeting locations and announce to TAC	Matthew Heberger	04/15/18	Complete	
18	TAC Action Items from 3/15/2019	03/15/18	Revise the December 12, 2017 TAC Summary to clarify the edit which was made to the Current Use Pesticides Data Report.	Matthew Heberger	04/15/18	Complete	
19	TAC Action Items from 3/15/2020	03/15/18	Revise the decision grid survey as appropriate for ranking monitoring proposals and forward a link for completing the surveys to TAC members for each proposal to be rated.	Matthew Heberger	03/21/18	Complete	

Delta RMP Steering Committee Agenda Package Page 67

	Primary	Meeting Date	Deliverable	Assigned To	Due Date	Status	Comments
20	TAC Action Items from 3/15/2021	03/15/18	Develop the modified versions of the proposed pesticides monitoring designs and have them ready for review by the Pesticides Subcommittee	Matthew Heberger	03/21/18	Complete	
21	TAC Action Items from 3/15/2022	03/15/18	Set the next Pesticide Subcommittee meeting date based on the Doodle Poll, closing March 16, 2018, and notify committee members of the meeting date.	Matthew Heberger	03/21/18	Complete	
22	TAC Action Items from 3/15/2022	03/15/18	Reconfirm their interest and availability of our science advisor nominees, and determine whether an honorarium can be paid to each; federal employees are typically not eligible to receive honoraria	Matthew Heberger	04/30/18	Complete	Emails sent the first week of May, awaiting confirmation from some.
23	TAC Action Items from 3/15/2022	03/15/18	Look into revising the Draft Mercury Data Report to use Liberty Island (instead of Prospect Slough) data for reporting conditions at Cache Slough.	Jay Davis	04/30/18	Complete	Changes to the report were made by the Principal Investigators, Jay Davis at SFEI and Wes Heim at the Moss Landing Marine Laboratory. The changes only affect the historic data shown in Figure 4 of the report.
24	SC Action Items 3/2/2018	03/02/18					
25	SC Action Items 3/2/2018	03/02/18	Finalize the October 24, 2017 Joint Meeting Summary and post to the website.	Matthew Heberger	03/31/18	Complete	
26	SC Action Items 3/2/2018	03/02/18	Schedule additional 1 to 1.5 hr. Steering Committee conference call as needed to cover agenda items that we did not have time to cover at the March SC meeting	Matthew Heberger	04/30/18	Complete	
27	SC Action Items 3/2/2018	03/02/18	Form a data management subcommittee	Matthew Heberger	04/30/18	Complete	
28	SC Action Items 3/2/2018	03/02/18	Adam Laputz, Greg Gearheart, Sam Safi, and Debbie Webster will meet and compile feedback from committee members on the draft Delta Science Plan and forward to Yumiko Henneberry.	Adam Laputz	04/30/18	Complete	Email reminder sent on 4/27. From Sam Safi: "Regional San staff attended the April 6 Delta Science Plan amendment workshop. Our overall feedback at the workshop was that Delta Science Program should collaborate with Regional Board and Delta RMP. There will be a public comment period when the draft plan along with public feedback released in summer 2018. So I believe the opportunity is still there."
29	SC Action Items 3/2/2018	03/02/18	Update the Monitoring Design to include recommended changes to the Nutrients Assessment Questions approved by the Steering Committee	Matthew Heberger	05/30/18	Complete	
30	SC Action Items 3/2/2018	03/02/18	The SC requested that ASC and the Finance Subcommittee begin considering options for the upcoming fiscal year's work plan that are in line with possible funding scenarios	Matthew Heberger	04/30/18	Complete	This is a regular part of our revenue forecasting and budgeting process.
31	SC Action Items 3/2/2018	03/02/18	The Finance Subcommittee was asked to develop some "out of the box" options for addressing the need to maintain purchasing power but the unwillingness of participants to vote for a fee increase at their next meeting	Finance Subcommittee		Complete	Discussed the week of April 23, 2018.
32	SC Action Items 3/2/2018	03/02/18	Schedule a conference call for committee discussion of the fee increase issue	Matthew Heberger	04/30/18	Complete	To discuss during the next regularly scheduled Finance Subcommittee meeting.
33	SC Action Items 3/2/2018	03/02/18	RMP should look into whether SCCWRP model is feasible for the Delta RMP contracting process (e.g., requiring labs to conduct inter-laboratory comparison testing so that they can participate in sampling for the program).	Adam Laputz	06/01/18	Complete	Discussed at a meeting of the Toxicity Work Group on May 14, 2018. We concluded it is not feasible because (a) SCWRPP awards millions in contracts which gives them leverage that we do not have (b) at present we are locked into a single-source contract.
34	SC Action Item 2/5/2018	02/05/18	Circulate the revised RFP document to SC members and asked them to share it widely with their professional networks.	Matthew Heberger	02/28/18	Complete	
35	TAC Action Items from 12/12/2017	12/12/17	Data Assessment Framework Workshop: Greg Gearheart will have OIMA staff draft a white paper. The ad hoc workgroup will hold a conference call in mid-January and the item will be included in the January 23, 2018 Steering Committee agenda, with a workshop tentatively planned for February.	Greg Gearheart	01/23/18		Update: Some initial planning had been done, but OIMA has informed us that they are no longer willing to pay for this workshop. To be discussed by the SC to determine whether this is still a priority, and whether they wish to allocate funding to cover it.

Delta RMP Steering Committee Agenda Package Page 68

	Primary	Meeting Date	Deliverable	Assigned To	Due Date	Status	Comments
36	TAC Action Items from 12/12/2017	12/12/17	Schedule a Pesticides Subcommittee meeting in the first half of January	Matthew Heberger	12/15/17	Complete	
37	TAC Action Items from 12/12/2017	12/12/17	Edit the proposed changes to Delta RMP Assessment Questions for Nutrients memo as described above	Philip Trowbridge	12/31/17	Complete	
38	TAC Action Items from 12/12/2017	12/12/17	Re: Science Advisors, Screen CVs based on the above criteria and bring results back to the March 15, 2018 TAC Meeting; (2) draft the job description, including \$2K/year stipend, one in-person meeting (with expenses paid), review reports, and provide guidance on monitoring designs.	Matthew Heberger	02/15/18	Complete	
39	TAC Action Items from 12/12/2017	12/12/17	Summarize the Technical Advisory Committee's understanding of the use of Reporting Limits and Method Detection Limits for inclusion in the Reporting Section of the QAPP	Matthew Heberger	07/31/18		To be done for the FY18/19 QAPP
40	SC Action Items 10/24/2017	10/24/17	Finalize the 7/28/17 Meeting Summary and post to the	Matthew Heberger	11/30/17	Complete	
41	SC Action Items 10/24/2017	10/24/17	Email the Science Advisor Form to Steering Committee members, as well as a reminder to TAC members to continue to submit additional nominations by the end of the year	Matthew Heberger	11/30/17	Complete	
42	SC Action Items 10/24/2017	10/24/17	Forward the Delta Science Plan questionnaire to Steering Committee members in advance of the January 23, 2018 meeting	Matthew Heberger	01/15/18	Complete	Included in agenda package.
43	SC Action Items 10/24/2017	10/24/17	Tom Grovhoug will work with Linda Dorn and Greg Gearheart to fund and host a half-day workshop to further develop the Assessment Framework.	Tom Grovhaug	02/28/18	Complete	Initial planning meetings have taken place. Coordinating Committee directed ASC to help facilitate and to budget up to \$5K for this task. Subsequently, State Board staff backed off their commitment to fund this workshop and asked that if it continues to be an SC priority, that they should fund it.
44	SC Action Items 10/24/2017	10/24/17	Revised grid and trial run results will be reviewed at the December TAC meeting	Brian Lauerson	12/12/17	Complete	
45	SC Action Items 10/24/2017	10/24/17	Decision grid results should be presented to the SC in its January 2018 meeting	Brian Lauerson	01/23/17	Complete	Pre-proposal for CECs is on the agenda.
46	SC Action Items 10/24/2017	10/24/17	Greg Gearheart and Adam Laputz will work on the clarifying language on Conflict of Interest for inclusion in the Charter, consulting State Board legal counsel as needed.	Adam Laputz	12/31/17		Email reminder sent March 2018.
47	SC Action Items 10/24/2017	10/24/17	A workgroup will be formed to support Greg's staff to draft data visualization products for TAC and SC review	Matthew Heberger	12/31/17	Complete	Team participants include: Selina Cole, Melissa Turner, Vyomini Upadhyay, Stephen McCord, and Matthew Heberger.
48	TAC Action Items from 9/21/2017	09/21/17	Prepare draft summary for 9/21 TAC meeting and distribute to TAC members for comments	Matthew Heberger	10/07/17	Complete	
49	TAC Action Items from 9/21/2017	09/21/17	Set 3/15/18 meeting location and announce to TAC	Matthew Heberger	10/15/17	Complete	
50	TAC Action Items from 9/21/2017	09/21/17	Add a presentation on USGS high frequency monitoring to 12/12/17 TAC Agenda	Matthew Heberger	11/15/17	Complete	
51	TAC Action Items from 9/21/2017	09/21/17	Include a last updated time stamp on monitoring table data in future reports	Matthew Heberger	11/15/17	Complete	
52	TAC Action Items from 9/21/2017	09/21/17	Revise the Year 1 CUP data report incorporating TAC comments and distribute final draft to TAC members for approval	Matthew Heberger	10/15/17	Complete	September discussion was tabled pending further review. To be discussed by TAC on 12/12/2017.
53	TAC Action Items from 9/21/2017	09/21/17	Decision Grid Small Group: Revise the grid per discussion and conduct trial run and provide feedback on the process	Brian Lauerson	10/13/17	Complete	
54	TAC Action Items from 9/21/2017	09/21/17	Design an online form for collecting potential science advisors	Matthew Heberger	10/15/17	Complete	
55	TAC Action Items from 9/21/2017	09/21/17	Send comments or suggested edits to the draft Nutrients Synthesis reports to ASC	TAC members	10/05/17	Complete	

Delta RMP Steering Committee Agenda Package Page 69

	Primary	Meeting Date	Deliverable	Assigned To	Due Date	Status	Comments
56	SC Action Items 7/28/2017	07/28/17	Finalize the 5/3/2017 SC Meeting Summary and post to the program website	Matthew Heberger	08/10/17	Complete	
57	SC Action Items 7/28/2017	07/28/17	Check on how TAC meetings are staffed and determine whether ASC hours are warranted	Matthew Heberger	10/01/17	Complete	We will be bringing fewer ASC staff to meetings going forward. For example, only when necessary to present on a special topic. Having a note-taker
58	SC Action Items 7/28/2017	07/28/17	Revise the charter to require Finance Committee approval for switching money between tasks. Up to \$5,000 at discretion of the Implementing Entity, more than \$5,000 shall require FC approval, and more than \$25,000 shall require approval by the Steering Committee.	Matthew Heberger	10/01/17	Complete	Draft charter language to be voted on in October
59	SC Action Items 7/28/2017	07/28/17	OIMA staff to prepare a visualization of Delta RMP pesticides/toxicity data using Tableau, to include various water quality standards, benchmarks and thresholds for aquatic toxicity...	Greg Gearhart	10/24/17	Complete	Greg will present the data viz at the 10/24/2017 SC meeting.
60	SC Action Items 7/28/2017	07/28/17	For the Decision Grid for ranking monitoring proposals, consider (1) assigning points, (2) assigning weights, and (3) adding something related to statistical expertise in the experimental design.	Matthew Heberger	09/21/17	Complete	Two Workgroup meetings have been held. To be discussed at the 9/21 TAC meeting.
61	SC Action Items 7/28/2017	07/28/17	Provide comments on the Year 1 Pesticides Data Report by end of August. Any suggestions that are interpretive in nature will NOT be included in this report, but rather forwarded to the authors of the forthcoming Interpretive Report.	Steering Committee	08/31/17	Complete	
62	SC Action Items 7/28/2017	07/28/17	Put together SEP proposal for CEC monitoring	Matthew Heberger	11/30/17	Complete	ASC has provided expert review of the draft monitoring plan jointly developed by the Central Valley Regional Water Quality Control Board and the POTW and MS4 communities.

Delta RMP Deliverables Stoplight Report

Delta RMP Deliverables Scorecard Report

Key to Status Colors:

Green indicates greater than 90 days until the deliverable is due.

Yellow indicates a deliverable due within 90 days.

Red indicates a deliverable that is overdue.

Project	Primary	Deliverable	Assigned To	Due Date	Status	Comments
1 Delta RMP (FY15/16)	Pathogens Study - Year 2	Sample Collection and Data Management of Year 2 Pathogens Data	Amy Franz	07/31/17	Complete	Data from BioVir and Eurofins. Formatting, transcribing field collection information, performing QA/QC review, and uploading field and analytical results to SFEI's RDC database and replicating to CEDEN. Expected to be complete by June 15, 2017.
2 Delta RMP (FY15/16)	Pathogens Study - Year 2	Quality Assurance Report on Year 2 Pathogens Data	Don Yee	07/31/17	Complete	QAO report. Funded from Data Management budget.
3 Delta RMP (FY16/17)	CUP Monitoring	6. Field Sampling Report for FY16/17 CUP Monitoring	Philip Trowbridge	09/29/17	Complete	The Steering Committee decided at its July 28, 2017 meeting that this report was not necessary and should be cancelled.
4 Delta RMP (FY16/17)	CUP Monitoring	6. Data Management of FY16/17 CUP Data	Amy Franz	12/31/17	Complete	Electronic data delivered by USGS in October 2017. ASC staff have finalized provisional data upload but data will not be made public until reviewed by TAC and approved by SC.
5 Delta RMP (FY16/17)	CUP Monitoring	6. Quality Assurance Report for FY16/17 CUP Monitoring	Don Yee	12/31/17	Complete	Final draft submitted by QAO on June 29, 2018. Forwarded to TAC first week of July.
6 Delta RMP (FY16/17)	Mercury	8. Mercury YR1 report summarizing fish and water analyses	Matthew Heberger	12/31/17		Draft report distributed to Mercury Subcommittee in December 2017, recommended by the TAC for publication on March 15, 2018, and will be presented to the SC for approval on July 17, 2017.
7 Delta RMP (FY16/17)	Nutrients Synthesis	7A1.3 Status and Trends Synthesis Report - Prepare synthesis report	Thomas Jabusch	01/31/18	Complete	Draft completed by mid-July. The Nutrient Subcommittee provided 3 rounds of comments before the text was finalized by the end of December. The Steering Committee approved the report in their February meeting.
8 Delta RMP (FY16/17)	Nutrients Synthesis	7B2.5 Modeling Synthesis Report - Prepare technical report.	Thomas Jabusch	01/31/18	Complete	Draft completed by mid-July. The Nutrient Subcommittee provided 3 rounds of comments before the text was finalized by the end of December. The Steering Committee approved the report in their February meeting.
9 Delta RMP (FY16/17)	CUP Monitoring	6. Permit Compliance Data for ILRP	Amy Franz	02/01/18	Complete	Not necessary in FY18, per agreement with ag coalitions
10 Delta RMP (FY16/17)	CUP Monitoring	6. Annual Monitoring Report for FY16/17 CUP Monitoring	Thomas Jabusch	02/28/18	Complete	The SC voted on 7/28 that this was no longer necessary, and that funds for this task should be reallocated to the Interpretive Report.
11 Delta RMP (FY16/17)	Nutrients Synthesis	7C3.1 Nutrients- Advanced Statistical Modeling	Thomas Jabusch	06/30/18		Marcus Beck of SCCWRP (formerly USEPA) is preparing this manuscript as an in-kind contribution. The manuscript was submitted to Environmental Science and Technology in May 2017, but it was rejected. The manuscript was revised and resubmitted to Estuarine and Coastal Shelf Science in May 2018. Limited funding has been used by ASC to review of the manuscript.

Delta RMP Steering Committee Agenda Package Page 71

	Project	Primary	Deliverable	Assigned To	Due Date	Status	Comments
12	Delta RMP (FY17/18)	Contract and Financial Management	Quarterly Financial Update #1	Matthew Heberger	07/15/17	Complete	
13	Delta RMP (FY17/18)	SC Meetings	Steering Committee Meeting #1 and Summary	Matthew Heberger	08/11/17	Complete	
14	Delta RMP (FY17/18)	Continued Nutrient Data Analysis and Biennial Reporting	Design additional statistical analyses to be completed in FY17/18	Philip Trowbridge	09/30/17	Complete	This task was a placeholder for any follow-on analyses after the three synthesis reports were completed. The subcommittee did not authorize any additional statistical analyses so this task no longer relevant.
15	Delta RMP (FY17/18)	TAC Meetings	TAC Meeting #1 and Summary	Matthew Heberger	10/06/17	Complete	
16	Delta RMP (FY17/18)	Contract and Financial Management	Quarterly Financial Update #2	Matthew Heberger	10/10/17	Complete	
17	Delta RMP (FY17/18)	SC Meetings	Steering Committee Meeting #2 and Summary	Matthew Heberger	10/31/17	Complete	
18	Delta RMP (FY17/18)	TAC Meetings	TAC Meeting #2 and Summary	Matthew Heberger	11/07/17	Complete	
19	Delta RMP (FY17/18)	Technical Reports	RFP for Pesticides/Toxicity Interpretive Report	Matthew Heberger	11/15/17	Complete	RFP issued in in spring 2018, proposals due March 16.
20	Delta RMP (FY17/18)	Science Advisors	Recruit 2-4 science advisors	Matthew Heberger	12/31/17	Complete	CVs have been collected and candidates screened based on qualifications and willingness to volunteer. For discussion by the TAC in spring 2018 then approval by SC.
21	Delta RMP (FY17/18)	Continued Nutrient Data Analysis and Biennial Reporting	Complete additional statistical analyses and prepare technical report	Philip Trowbridge	12/31/17	Complete	This task was a placeholder for any follow-on analyses after the three synthesis reports were completed. The subcommittee did not authorize any additional statistical analyses so this task no longer relevant.
22	Delta RMP (FY17/18)	Contract and Financial Management	Quarterly Financial Update #3	Matthew Heberger	01/09/18	Complete	
23	Delta RMP (FY17/18)	SC Meetings	Steering Committee Meeting #3 and Summary	Matthew Heberger	01/31/18	Complete	
24	Delta RMP (FY17/18)	TAC Meetings	TAC Meeting #3 and Summary	Matthew Heberger	04/15/18	Complete	
25	Delta RMP (FY17/18)	Contract and Financial Management	Quarterly Financial Update #4	Matthew Heberger	05/15/18	Complete	
26	Delta RMP (FY17/18)	SC Meetings	Steering Committee Meeting #4 and Summary	Matthew Heberger	05/15/18	Complete	
27	Delta RMP (FY17/18)	Program Planning	FY18/19 Workplan and Budget	Matthew Heberger	06/30/18	Complete	
28	Delta RMP (FY17/18)	Communications	"Pulse of the Delta" Draft	Matthew Heberger	06/30/18		As of April 2018, the Steering Committee has not yet scheduled a discussion of this or approved the outline, giving ASC the effective "notice to proceed."
29	Delta RMP (FY17/18)	Continued Nutrient Data Analysis and Biennial Reporting	Prepare, coordinate, and provide technical support to up to 4 nutrient subcommittee meetings	Philip Trowbridge	06/30/18	Complete	Meetings held on 9/29/17, 12/1/17, 1/18/18, 2/15/18. 4 project proposals for FY18/19 were developed.
30	Delta RMP (FY17/18)	Continued Nutrient Data Analysis and Biennial Reporting	Outline for biennial synthesis report to be completed in FY18/19	Philip Trowbridge	06/30/18	Complete	Proposal prepared for Nutrient Subcommittee. The Subcommittee set this project as a low priority for further action.
31	Delta RMP (FY17/18)	Chlorophyll Sensor Intercalibration	Prepare, coordinate, and facilitate Phase 1 Technical Team Meetings	Philip Trowbridge	06/30/18	Complete	3 meetings held on 9/28/17 and 12/5/17 and 2/6/18.
32	Delta RMP (FY17/18)	Chlorophyll Sensor Intercalibration	Develop Phase 2 Project Plan, including study design, logistics, and institutional coordination	Philip Trowbridge	06/30/18	Complete	Proposal for Phase II study prepared and presented to the SC on 5/11/18.