Executive Board Meeting Agenda

Thursday, January 3, 2013, 9:00 a.m. – 12:00 p.m.
EBMUD Lab Library, 2020 Wake Ave., Oakland, CA

ROLL CALL AND INTRODUCTIONS (9:00 a.m. – 9:05 a.m.)

PUBLIC COMMENT (9:05 a.m. – 9:10 a.m.)

CONSIDERATION TO TAKE AGENDA ITEMS OUT OF ORDER (9:10 a.m. – 9:15 a.m.)

CONSENT CALENDAR (9:15 a.m. – 9:20 a.m.)

1. November 29, 2012 BACWA Executive Board Meeting Minutes
2. October 2012 Treasurer's Report
3. Amendment 3 to Prop 84 legal support agreement with Day Carter Murphy to extend contract termination date to June 30, 2013; File 12,490
4. Amendment 2 to Recycled Water Committee support agreement with EPC Consultants, Inc to extend the contract termination date to June 30, 3013; File 12,381

REPORTS (9:20 a.m. – 10:20 a.m.)

5. Committee Reports
6. Executive Board Reports
7. Executive Director Report
8. Regulatory Program Manager Report
9. Chair & Executive Director Authorized Actions
    a. Vice Chair authorization of agreement with Hanson Bridgett for ED recruitment support, not to exceed $9,999.00 in FY 2012-13; File 12,855
    b. Executive Director authorization of agreement with International Contact for BAPPG Cu Algaecide outreach assistance, not to exceed $313.00 in FY 2012-13; File 12,872.

OTHER BUSINESS (10:20 a.m. – 12:00 p.m.)

10. Authorization: Approval of contract with Solano County Community College for WOT program (Bay Area Consortium for Water & Wastewater Education), not to exceed $104,500 for Spring 2013 semester; File 12,876.
11. Authorization: Approval of SFEI Technical Memo, *Selenium Fractionation and Speciation in Final Effluents of Selected San Francisco Bay Area Municipal Wastewater Treatment Facilities, April 24, 2012.*
12. Authorization: Renewal of annual membership for Stanford ERC ReNUWIt, not to exceed $10,000, FY 2012-13.

13. Authorization: Approve revised scope for SFEI Nutrients Strategy Development contract to redirect up to $25,000 of the current funds to support initial efforts toward assessing nutrient exchange through the Golden Gate.
14. Discussion: Nutrients
    a. SFEI Nutrients Strategy Development update (Dave Senn)
        i. Decision Tree draft
        ii. Development of Strawman Science Plan for Suisun Bay proposal
    b. Nutrient Governance Development update (Ben)
    c. Nutrient Permit Concept update (Tom Grovhoug/Denise Conners)
15. Discussion: CEC's and Pulse Article (Lorien)
16. Discussion: Whole Effluent Toxicity Policy update (Jim Ervin) - current approach and opportunities for additional information.
17. Discussion: NPDES Permit Petition Dismissal update (Jim Kelly).
18. Discussion: FOG White Paper update (Bhavani)
19. Discussion: Joint RWQCB/BACWA Meeting January 11th
20. Discussion: BACWA Annual Member Meeting, January 24th, 2013 at California Endowment Conference Center, 1111 Broadway, Oakland
21. Discussion: Fiscal Year 2013-14 Budget Process/Planning

NEXT MEETING

The next regular monthly meeting of the Board is tentatively scheduled for Thursday, February 28, 2013 at the EBMUD Treatment Plant Lab Library, 9:00 a.m. – 12 p.m.

ADJOURNMENT (12:00 p.m.)

Executive Board Meeting Minutes

Thursday, November 29, 2012, 9:00 a.m. – 12:00 p.m.
EBMUD Treatment Plant Lab Library
2020 Wake Avenue, Oakland, CA

ROLL CALL AND INTRODUCTIONS
Executive Board Representatives: Ben Horenstein, Chair (East Bay Municipal Utility District); Laura Pagano, Vice Chair (San Francisco Public Utilities Commission); Ann Farrell (Central Contra Costa Sanitary District); Mike Connor (East Bay Dischargers Authority); Jim Ervin (City of San Jose).

Other Attendees: Dave Williams(East Bay Municipal Utility District); Amanda Roa (Delta Diablo Sanitation District); Bhavani Yerrapotu (Sunnyvale); Tom Hall (Sunnyvale/EOA); David Senn (San Francisco Estuary Institute); Monica Oakley (RMC); Denise Conners (Larry Walker Associates); Holly Kennedy (HDR); Paul Causey (Causey Consulting); Lorien Fono (Patricia McGovern Engineers); Jim Kelly (BACWA); Alexandra Gunnell (BACWA).

PUBLIC COMMENT
There were no public comments.

CONSIDERATION TO TAKE AGENDA ITEMS OUT OF ORDER
The Board requested that Other Business items be moved to the beginning of the meeting and discussed before all other agenda items.

OTHER BUSINESS
Under **agenda item 8**, the Board appointed Dave Williams and Laura Pagano to serve as **BACWA representatives to the Aquatic Science Center Board**. Kirsten Struve and Jim Ervin will serve as alternates. *The motion was made by Mike Connor, seconded by Ben Horenstein and approved unanimously.* It was noted that Kirsten will attend the upcoming meeting and this action will take effect thereafter. It was also stipulated that representatives serve for a one year term, and that the BACWA Board appoint representatives at the beginning of each calendar year, beginning in January 2014.

For **agenda item 9**, the Board approved use of the existing As Needed agreement with **Larry Walker Associates for Nutrient Framework Development support, not to exceed $15,000**. *The motion was made by Mike Connor, seconded by Laura Pagano, and passed unanimously.* It was noted that obtaining feedback from member agencies was not included in the scope of work, though LWA will identify related issues. A suggestion was made that the Annual Meeting may provide a forum to communicate potential nutrient regulatory frameworks to BACWA members.

The Board authorized a **revised scope for the existing SFEI Nutrients Strategy Development agreement** under **agenda item 10**. In addition to the proposed reallocation of $15,000 to address Task 1 in the revised scope, the Board authorized reallocation of $12,000 to move forward with Task 2a. *The motion, made by Mike Connor and seconded by Jim Ervin, was approved unanimously.* The Executive Director (ED) informed the Board that Naomi Feger has reviewed the scope revision and is amenable to the reallocation, though she expressed concerns that this shift could detract from current efforts, could reduce support for the modeling effort, could move focus from

determining how to fund long-term projects, and funding Suisun Bay monitoring could be of greater benefit. Dave Senn also clarified that his drafting of the straw man Suisun Science Plan, as discussed at the last Suisun work group meeting, can be funded from the original portion of the BACWA scope (Feb 9 2012, Task 2), not funds allocated to this revised portion of the scope, though the Board agrees this could be tied into Task item 1c.

Paul Causey provided an update to the **Board on the Sewer Rate Survey** for **agenda item 11.** He noted the following corrections to the handouts included in the meeting packet: BACWA has been providing administration of the survey since August *2010* (not 2011); the State Water Board is no longer administering an annual survey. Paul reviewed options for increased administration and management of the survey, as well as possibilities for acquiring more comprehensive information. He compared BACWA's current survey to what is published by NACWA. The Board requested that Paul work with the ED to develop an analysis of the BACWA survey to present at the Annual Meeting and obtain member feedback. Based on member response, Paul could draft a scope of work for proposed services in 2013-14. The Board recommended competitive bids should be reviewed for this contract.

Under **agenda item 12,** the ED requested an update from any agency that had staff attend the **TAG November 8th Meeting.** Though there were individuals from EBDA and SFPUC that were interested in attending they were not able to due to scheduling conflicts. The Board requests that they be notified of future opportunities to attend meetings.

For **agenda item 13, Pardee Follow-up**, the Board reviewed various items that were discussed at the Technical Seminar on November 5 – 7**.** No further discussion was necessary for the **Nutrient Permit Concept Framework** since it had already been covered under agenda item 9.

Nutrient Governance Development status was reviewed by Ben Horenstein. As a result of his meeting with Naomi, the schematic developed at Pardee was edited with the addition of a Management Committee that could consist of the State Water Board staff, Regional Water Quality Control Board staff (RWQCB) and others. The Management Committee would meet less frequently than the Steering Committee (possibly annually for the Management and quarterly for the Steering Committee). The current Science Advisory Group (SAG) might evolve into the Steering Committee, which could provide a more formal structure for determining priorities and funding. Ben agreed to draft a document providing a more detailed description of the proposed Management and Steering committees to facilitate further discussions. He will also follow up with Naomi for more information about resources that may be needed.

The Regulatory Program Manager, Lorien Fono, updated the Board about **CEC's and the Pulse article.** As a follow up to discussions she has had with Tom Mumley and Karin North, she will draft a proposal for consideration at the next Board meeting (1/3/2013) outlining how she could support completion of the article.

The Board decided to forego further investigation into the development of a **BACWA Opportunities Subcommittee** until ED recruitment efforts have concluded, at which time a broader discussion about BACWA priorities could take place and provide better background for consideration of this proposal. The ED also distributed recommendations from Tom Hall for improved communication among BACWA members via the website. Paul Causey noted concerns about the current distribution process for the Sewer Survey. The ED and Assistant Executive Director will work with BACWA's web consultants on possible changes to the website and communication methods.

The ED will work to schedule the next **Joint meeting** between January 3, 2013 and January 24, 2013.

The ED informed the Board that he requested feedback from BACWA members on the proposed phased approach for **Toxicity** testing. Of the twelve responses he received, only three opposed phasing. Concerns were raised about cost increases that may result from monthly testing requirements, especially for small and mid-sized agencies. The State Board will not adopt the policy until February. The Board suggests that the ED continue to work with CASA and add this item to the next Board meeting agenda (January 3rd) for discussion in preparation for the next Joint meeting.

For **agenda item 14**, **NPDES Permit Petition Dismissal**, the ED proposed that the Principals dismiss their outstanding petitions, and then he will follow up with the remaining affected agencies. SFPUC and San Jose Board representatives give their permission to dismiss their petitions.

Attendees discussed the **BACWA Annual Member Meeting** scheduled for **January 24, 2013,** under **agenda item 15.** It was mentioned that the Collection Systems Committee would like to hold their meeting afterward, if time allows, otherwise the ED recommended holding the Collection Systems meeting separately. In addition to Paul Causey, many others were suggested as possible speakers or panel members. Amanda Roa agreed to provide a presentation to introduce members to nutrients issues. Mike Connor and Ann Farrell offered to assist her. A recommendation was made to include regional issues in this presentation. Felicia Marcus or Steve Moore were suggested as potential speakers to provide perspective on State Board priorities and could be scheduled with Bruce Wolfe's presentation on RWQCB priorities. Speakers or panel members to address nutrients strategy, framework, potential impact, and costs could also include Tom Grovhoug, Tom Mumley, and Tom Hall. It was noted that Dave Senn may be able to contribute some slides about the decision tree and that Ben or Ann could serve as a panel facilitator. The ED or Chair could also provide an introduction that would include a review of BACWA efforts over the past year, including WDR SSO MRP and Hg TMDL work. Monica Oakley offered to provide the ED with a write up on the MRP. The Chair will follow up with the suggestion to include a speaker from Baykeeper, by contacting Deb Self. Terry Flemming was suggested to provide EPA perspective. Other potential topics included BAPPG and other BACWA committee activities, CARB implementation, and BACWA member fees. CECs were noted but may also be considered for 2014 instead. Jim Ervin could provide a presentation on Toxicity (WET). ED and AED will work to secure speakers and draft an agenda to circulate for Board feedback.

CONSENT CALENDAR

Agenda items 1 and 2 *were approved in a motion made by Ben Horenstein and seconded by Ann Farrell. The motion carried unanimously.*

1. October 25, 2012 BACWA Executive Board Meeting Minutes
2. September 2012 Treasurer's Report

REPORTS

Committee Reports were reviewed under **agenda item 3.**

Is indicated in the **AIR Committee** report included in the handout packet, a BAAQMD representative will be attending the next AIR meeting, and it was noted that this may be of interest to other BACWA members. The Board inquired about the committee's financial concerns that were brought up during Pardee and requested that the AIR committee draft a proposal for increased funding. Included as an attachment to the AIR report was a presentation on CAMBI. A suggestion was made to include a CAMBI presentation at the Annual Meeting or that it could be included along with other pilot studies of removal technologies at a BACWA-sponsored workshop. Laura Pagano will

investigate scheduling a speaker from SFPUC for a CAMBI presentation at the Annual Meeting. The ED will follow up on the suggestion to include pilot technologies on the Annual Meeting agenda by contacting Don Gray to speak on behalf of WERF.

Of note in the **Collection Systems** committee report, included in the handout packet, was the notification from RWQCB that submission of SSO Annual Reports will no longer be required.

The **Permits** committee report in the handout packet provided a brief update on the Mercury PCB Watershed Permit and the Regulatory Program Manager (RPM) noted that some member agencies have expressed interest in the Permits and Lab committees work on an inter-laboratory comparison. The Board would like to review the results of Palo Alto and Delta Diablo's investigation, along with Mary Lou Esparza's analysis of reporting and then determine next steps, as recommended by the Lab Committee.

Executive Board Reports were covered under **agenda item 4.**

Ben Horenstein of **EBMUD** reported that he attended a wastewater managers meeting where he presented information on their FOG program. Attendees remarked that a white paper on analyzing potential cost and benefits of FOG programs could be beneficial for member agencies considering implementation. Bhavani Yerrapotu will investigate utilizing engineering and pollution prevention staff that could work on this paper, with possible assistance from DDSD staff, BAPPG, and the Engineering Info Share Group members. A scope of work for consultant support could be brought back to the Board for approval.

Laura Pagano reported that **SFPUC** is continuing investigations and clean up of a sewage discharge from a manhole cover at the intersection of the Great Highway and Balboa.

Ann Farrell provided an update on implementation of California Public Pension Reform Legislation (AB 197) affecting **CCCSD** employees. The Deputy Sheriff's Association and International Association of Firefighters have filed suit to prevent implementation of AB 197 and the Central Contra Costa County Superior Court has issued a stay order. This court order is in effect until 60 days after the court enters judgment in this case and determines whether or how AB 197 should be implemented. Ann also reported that Paul Causey is a new member of the CCCSD Board and that Barbara Hockett is no longer on the Board.

Representatives from **EBDA** and **San Jose** declined to report out.

The **Executive Director Report** for **agenda item 5** was included in the handout packet and reviewed by the ED. The ED informed the Board that BACWA has been contacted by Fred Andes regarding continued participation in the Federal Water Quality Coalition (FWQC). The Board recommended that the Chair use his authority to pay the outstanding 2012 membership dues. The Board also requested that they be included on the FWQC e-mail distribution list.

The **Regulatory Program Manager Report** for **agenda item 6** was also included in the handout packet. Most issues were already covered under other agenda items.

The next regular BACWA Board meeting is scheduled for, January 3rd, 2013 at the EBMUD Treatment Plant Lab Library from 9 a.m. – 2 p.m. and includes a holiday lunch.

The meeting adjourned at 12:00 p.m.

Bay Area Clean Water Agencies
A Joint Powers Public Agency
Leading the Way to Protect our Bay

December 20, 2012

MEMO TO: Bay Area Clean Water Agencies Executive Board
MEMO FROM: D. Scott Klein, Controller, East Bay Municipal Utility District
SUBJECT: Four Month Treasurer's Report

As required by section eight of the Joint Powers Agreement establishing the Bay Area Clean Water Agencies (BACWA) and California Government Code Sections 6500 et seq., attached is the BACWA Treasurer's Report for the period covering **July 1, 2012 through October 31, 2012** (four months of Fiscal Year 2012-2013). This report covers expenditures, cash receipts, and cash transfers for the following BACWA funds:

- Bay Area Clean Water Agencies (BACWA),
- BACWA Training Fund (Trng Fnd),
- Air Issues and Regulation Group (AIR),
- Bay Area Pollution Prevention Group (BAPPG),
- BACWA Legal Reserve Fund (Legal Rsrv),
- Water Quality Attainment Strategy (WQA CBC),
- BACWA Operating Reserve Fund (BACWAOpRes),
- Regional Water Recycling (RWR),
- BACWA Reserve (Reserve),
- Water/Wastewater Operator Training (WOT),
- Prop84 Bay Area Integrated Regional Water Mgmt (PRP84),
- WQA Emergency Reserve Fund (WQA Emerg),
- WQA Tech Action Fund (TechAction),
- CBC Operating Reserve Fund (CBC OpRsrv), and
- Prop50 Bay Area Integrated Regional Water Mgmt (PRP50)

Fund Balances as of month end 10/31/12

DESCRIPTION	BEGINNING FUND BALANCE 7/1/12	TOTAL RECEIPTS	TOTAL DISBURSEMENTS	ENDING FUND BALANCE 10/31/12	OUTSTANDING ENCUMBRANCES	UNOBLIGATED FUND BALANCE 10/31/12
BACWA	597,182	498,232	89,467	1,005,947	337,207	668,741
TRNG FND	247,407	420	-	247,827	-	247,827
AIR	3,372	72,392	-	75,764	79,556	(3,792)
BAPPG	41,498	28,437	17,389	52,546	13,983	38,564
LEGAL RSRV	302,900	514	-	303,413	-	303,413
WQA CBC	214,406	329,023	65,066	478,363	103,428	374,935
BACWAOPRES	152,408	258	-	152,666	-	152,666
RWR	16,676	28	-	16,704	-	16,704
RESERVE	120,000	-	-	120,000	-	120,000
WOT	67,662	140,677	77,500	130,839	-	130,839
PRP84	39,116	872,396	783,040	128,472	8,372	120,101
WQA EMERG	403,866	685	-	404,551	-	404,551
TECHACTION	252,416	428	-	252,844	-	252,844
CBC OPRSRV	163,566	277	-	163,843	-	163,843
PRP50	167,638	289	113	167,814	38,184	129,630
	2,790,112	1,944,056	1,032,574	3,701,594	580,728	3,120,866

BACWA Revenue Report for October 2012

DEPARTMENT	REVENUE TYPE	AMENDED BUDGET	CURRENT PERIOD			YEAR TO DATE				UNOBLIGATED
			DIRECT	INVOICED	JVS	DIRECT	INVOICED	JVS	ACTUAL	
Bay Area Clean Water Agencies	Administrative & General	-	-	-	-	7,341	-	-	7,341	(7,341)
Bay Area Clean Water Agencies	BDO Member Contributions	420,000	-	-	-	-	330,000	-	330,000	90,000
Bay Area Clean Water Agencies	BDO Fund Transfers	10,277	-	-	-	-	-	1,942	1,942	8,335
Bay Area Clean Water Agencies	BDO Interest Income	5,000	-	-	740	-	-	1,449	1,449	3,551
Bay Area Clean Water Agencies	BDO Assoc.&Affiliate Contr	159,000	-	12,000	-	-	157,500	-	157,500	1,500
BACWA TOTAL		**594,277**	**-**	**12,000**	**740**	**7,341**	**487,500**	**3,391**	**498,232**	**96,045**
BACWA Training Fund	BDO Interest Income	-	-	-	197	-	-	420	420	(420)
TRNG FND TOTAL		**-**	**-**	**-**	**197**	**-**	**-**	**420**	**420**	**(420)**
AIR-Air Issues&Regulation Grp	BDO Member Contributions	78,354	-	6,000	-	-	72,354	-	72,354	6,000
AIR-Air Issues&Regulation Grp	BDO Interest Income	-	-	-	28	-	-	38	38	(38)
AIR TOTAL		**78,354**	**-**	**6,000**	**28**	**-**	**72,354**	**38**	**72,392**	**5,962**
BAPPG-BayAreaPollutnPreventGrp	BDO Member Contributions	79,505	-	2,747	-	-	28,355	-	28,355	51,150
BAPPG-BayAreaPollutnPreventGrp	BDO Interest Income	3,079	-	-	40	-	-	82	82	2,997
BAPPG TOTAL		**82,584**	**-**	**2,747**	**40**	**-**	**28,355**	**82**	**28,437**	**54,147**
BACWA Legal Reserve Fnd	BDO Interest Income	-	-	-	241	-	-	514	514	(514)
LEGAL RSRV TOTAL		**-**	**-**	**-**	**241**	**-**	**-**	**514**	**514**	**(514)**
WQA-WtrQualityAttainmntStratgy	BDO Member Contributions	450,000	-	22,573	-	-	328,500	-	328,500	121,500
WQA-WtrQualityAttainmntStratgy	BDO Other Receipts	-	-	-	-	-	-	-	-	-
WQA-WtrQualityAttainmntStratgy	BDO Interest Income	1,600	-	-	280	-	-	523	523	1,077
WQA CBC TOTAL		**451,600**	**-**	**22,573**	**280**	**-**	**328,500**	**523**	**329,023**	**122,577**
BACWA OperatingRsrve Fnd	BDO Interest Income	-	-	-	121	-	-	258	258	(258)
BACWAOPRES TOTAL		**-**	**-**	**-**	**121**	**-**	**-**	**258**	**258**	**(258)**

BACWA Revenue Report for October 2012

DEPARTMENT	REVENUE TYPE	AMENDED BUDGET	CURRENT PERIOD			YEAR TO DATE				UNOBLIGATED
			DIRECT	INVOICED	JVS	DIRECT	INVOICED	JVS	ACTUAL	
Regional Water Recycling	BDO Interest Income	-	-	-	13	-	-	28	28	(28)
RWR TOTAL		-	-	-	**13**	-	-	**28**	**28**	**(28)**
WOT - Wtr/Wwtr Operat Training	BDO Member Contributions	150,000	-	6,000	-	-	140,500	-	140,500	9,500
WOT - Wtr/Wwtr Operat Training	BDO Interest Income	-	-	-	117	-	-	177	177	(177)
WOT TOTAL		**150,000**	-	**6,000**	**117**	-	**140,500**	**177**	**140,677**	**9,323**
Prop84BayAreaIntegRegnlWtrMgmt	BDO Interest Income	-	-	-	60	-	-	82	82	(82)
Prop84BayAreaIntegRegnlWtrMgmt	Administrative Support	-	-	-	-	-	71,569	-	71,569	(71,569)
Prop84BayAreaIntegRegnlWtrMgmt	Novato North Area Proj.	-	-	-	-	-	593,750	-	593,750	(593,750)
Prop84BayAreaIntegRegnlWtrMgmt	Sears Point Wtlnd & Wtrshd Res	-	-	-	-	-	6,667	-	6,667	(6,667)
Prop84BayAreaIntegRegnlWtrMgmt	Bair Island Restoration	-	-	-	-	-	6,667	-	6,667	(6,667)
Prop84BayAreaIntegRegnlWtrMgmt	South Bay Salt Pond Habitat Re	-	-	-	-	-	6,667	-	6,667	(6,667)
Prop84BayAreaIntegRegnlWtrMgmt	Regional Green Infrastructure	-	-	-	-	-	24,041	-	24,041	(24,041)
Prop84BayAreaIntegRegnlWtrMgmt	Watershed Partnership Technica	-	-	-	-	-	11,417	-	11,417	(11,417)
Prop84BayAreaIntegRegnlWtrMgmt	Stream Restoration w/Schools i	-	-	-	-	-	149,491	-	149,491	(149,491)
Prop84BayAreaIntegRegnlWtrMgmt	Flood Infrastructure Mapping	-	-	-	-	-	2,047	-	2,047	(2,047)
PRP84 TOTAL		-	-	-	**60**	-	**872,315**	**82**	**872,396**	**(872,396)**
WQA Emergency Resrve Fnd	BDO Interest Income	-	-	-	321	-	-	685	685	(685)
WQA EMERG TOTAL		-	-	-	**321**	-	-	**685**	**685**	**(685)**
WQA Tech Action Fund	BDO Interest Income	-	-	-	200	-	-	428	428	(428)
TECHACTION TOTAL		-	-	-	**200**	-	-	**428**	**428**	**(428)**
CBC Operating Resrve Fnd	BDO Interest Income	-	-	-	130	-	-	277	277	(277)
CBC OPRSRV TOTAL		-	-	-	**130**	-	-	**277**	**277**	**(277)**
Prop50BayAreaIntegRegnlWtrMgmt	BDO Interest Income	-	-	-	133	-	-	289	289	(289)
PRP50 TOTAL		-	-	-	**133**	-	-	**289**	**289**	**(289)**

BACWA Expense Report for October 2012

DEPARTMENT	EXPENSE TYPE	AMENDED BUDGET	CURRENT PERIOD				YEAR TO DATE				OBLIGATED	UNOBLIGATED
			ENC	PV	DA	JV	ENC	PV	DA	JV		
Bay Area Clean Water Agencies	BC-Collections System	25,000	(2,198)	2,198	-	-	19,562	5,438	-	-	25,000	-
Bay Area Clean Water Agencies	BC-Permit Committee	-	-	-	-	-	-	-	-	-	-	-
Bay Area Clean Water Agencies	BC-Water Recycling Committee	13,359	-	-	-	-	13,269	-	-	-	13,269	90
Bay Area Clean Water Agencies	BC-Biosolids Committee	6,515	-	-	-	-	570	945	-	-	1,515	5,000
Bay Area Clean Water Agencies	BC-InfoShare Groups	25,000	-	-	-	-	22,965	2,035	-	-	25,000	-
Bay Area Clean Water Agencies	BC-Laboratory Committee	7,000	-	-	-	-	-	-	-	-	-	7,000
Bay Area Clean Water Agencies	BC-Miscellaneous Committee Sup	140,000	-	-	-	-	122,358	22,293	-	(349)	144,302	(4,302)
Bay Area Clean Water Agencies	LS-Regulatory Support	2,000	-	-	-	-	1,693	307	-	-	2,000	-
Bay Area Clean Water Agencies	LS-Executive Board Support	2,000	(530)	530	-	-	1,470	530	-	-	2,000	-
Bay Area Clean Water Agencies	CAS-CWAA	1,000	-	-	-	-	-	-	-	-	-	1,000
Bay Area Clean Water Agencies	CAS-PSSEP	20,000	-	-	-	-	-	-	-	-	-	20,000
Bay Area Clean Water Agencies	CAS-CPSC	5,000	-	-	-	-	-	-	5,000	-	5,000	-
Bay Area Clean Water Agencies	CAS-PSI	500	-	-	-	-	-	-	-	-	-	500
Bay Area Clean Water Agencies	CAR-BACWA Annual Report	15,000	-	-	-	-	15,433	-	-	-	15,433	(433)
Bay Area Clean Water Agencies	CAR-BACWA Website Development/	10,720	-	-	-	-	11,694	815	600	(2,285)	10,824	(104)
Bay Area Clean Water Agencies	AS-BACWA Admin Expense	3,000	-	-	-	-	-	-	984	-	984	2,016
Bay Area Clean Water Agencies	CAR-Other Communications	5,000	-	-	-	-	2,000	-	-	-	2,000	3,000
Bay Area Clean Water Agencies	SP-BAPPG Contribution	50,000	-	-	-	-	-	-	-	-	-	50,000
Bay Area Clean Water Agencies	GBS-Contingency	30,000	-	-	-	-	21,000	4,000	10,478	(4,478)	31,000	(1,000)
Bay Area Clean Water Agencies	GBS- Meeting Support	13,000	-	-	-	-	800	200	347	-	1,347	11,653
Bay Area Clean Water Agencies	AS-Executive Director	160,000	-	-	-	-	11,649	23,290	-	-	34,939	125,061
Bay Area Clean Water Agencies	AS-Assistant Executive Directo	70,000	(4,815)	4,815	-	-	52,743	15,457	-	-	68,200	1,800
Bay Area Clean Water Agencies	AS-EBMUD Administrative Servic	40,000	-	-	-	-	40,000	-	-	-	40,000	-
Bay Area Clean Water Agencies	AS-Insurance	4,000	-	-	-	-	-	-	3,860	-	3,860	140
Bay Area Clean Water Agencies	BDO-CAS-Stanford ERC	10,000	-	-	-	-	-	-	-	-	-	10,000
BACWA TOTAL		**658,094**	**(7,543)**	**7,543**	**-**	**-**	**337,207**	**75,310**	**21,269**	**(7,112)**	**426,673**	**231,421**
AIR-Air Issues&Regulation Grp	Administrative Support	3,977	-	-	-	-	-	-	-	-	-	3,977
AIR-Air Issues&Regulation Grp	BDO Contract Expenses	79,556	-	-	-	-	79,556	-	-	-	79,556	-
AIR TOTAL		**83,533**	**-**	**-**	**-**	**-**	**79,556**	**-**	**-**	**-**	**79,556**	**3,977**
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-Fog	14,000	-	-	-	-	-	-	-	-	-	14,000
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-Mercury	-	-	-	-	-	-	-	-	-	-	-
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-Pesticides	10,000	-	-	-	-	-	-	-	-	-	10,000
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-Copper	5,000	-	-	-	-	-	-	4,833	-	4,833	167
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-Pharmaceutical	7,499	(6,094)	6,094	-	-	-	6,499	-	-	6,499	1,000
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-General P2	-	-	-	-	-	-	-	-	-	-	-
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-Emerging Issues	8,000	-	-	-	-	-	-	-	-	-	8,000
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-Other	16,539	-	-	-	-	279	3,760	-	-	4,039	12,500
BAPPG-BayAreaPollutnPreventGrp	Administrative Support	3,800	-	-	-	-	-	-	-	-	-	3,800
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-Multi-Pollutant	19,000	-	-	-	-	13,704	2,297	-	-	16,000	3,000
BAPPG TOTAL		**83,838**	**(6,094)**	**6,094**	**-**	**-**	**13,983**	**12,556**	**4,833**	**-**	**31,371**	**52,467**

BACWA Expense Report for October 2012

DEPARTMENT	EXPENSE TYPE	AMENDED BUDGET	CURRENT PERIOD				YEAR TO DATE				OBLIGATED	UNOBLIGATED
			ENC	PV	DA	JV	ENC	PV	DA	JV		
WQA-WtrQualityAttainmntStratgy	WQA-CE-Technical Support	525,838	(799)	799	-	-	65,651	49,931	-	(4,644)	110,938	414,900
WQA-WtrQualityAttainmntStratgy	WQA-CE-Collaborations & Sponso	65,000	-	-	-	-	-	-	15,000	-	15,000	50,000
WQA-WtrQualityAttainmntStratgy	WQA-CE-Commun. & Reporting	26,000	-	-	-	-	6,000	-	-	-	6,000	20,000
WQA-WtrQualityAttainmntStratgy	WQA-CE-Other	45,000	(4,778)	4,778	-	-	31,777	4,778	-	-	36,555	8,445
WQA CBC TOTAL		**661,838**	**(5,577)**	**5,577**	**-**	**-**	**103,428**	**54,709**	**15,000**	**(4,644)**	**168,493**	**493,345**
WOT - Wtr/Wwtr Operat Training	Administrative Support	2,500	-	-	-	-	-	-	-	-	-	2,500
WOT - Wtr/Wwtr Operat Training	BDO Contract Expenses	158,000	-	-	77,500	-	-	-	77,500	-	77,500	80,500
WOT TOTAL		**160,500**	**-**	**-**	**77,500**	**-**	**-**	**-**	**77,500**	**-**	**77,500**	**83,000**
Prop84BayAreaIntegRegnlWtrMgmt	Administrative Support	-	(120)	120	-	-	8,372	352	-	1,942	10,666	(10,666)
Prop84BayAreaIntegRegnlWtrMgmt	Novato North Area Proj.	-	-	-	-	-	-	-	593,750	-	593,750	(593,750)
Prop84BayAreaIntegRegnlWtrMgmt	Regional Green Infrastructure	-	-	-	-	-	-	-	24,041	-	24,041	(24,041)
Prop84BayAreaIntegRegnlWtrMgmt	Weather Based Irrigation Contr	-	-	-	-	-	-	-	162,955	-	162,955	(162,955)
PRP84 TOTAL		**-**	**(120)**	**120**	**-**	**-**	**8,372**	**352**	**780,746**	**1,942**	**791,411**	**(791,411)**
Prop50BayAreaIntegRegnlWtrMgmt	Administrative Support	-	-	-	-	-	887	113	-	-	1,000	(1,000)
Prop50BayAreaIntegRegnlWtrMgmt	BDO Contract Expenses	-	-	-	-	-	37,297	1,608	-	(1,608)	37,297	(37,297)
PRP50 TOTAL		**-**	**-**	**-**	**-**	**-**	**38,184**	**1,721**	**-**	**(1,608)**	**38,297**	**(38,297)**

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 3
FILE NO.: 12,490
MEETING DATE: January 3, 2013

TITLE: Amendment to DCM Proposition 84 Legal Support

☒ **MOTION** ☐ **RESOLUTION** ☐ **DISCUSSION**

RECOMMENDED ACTION

Amend an existing agreement with Day, Carter, Murphy to enable continued legal support in negotiating Proposition 84 agreements and approvals with the California Department of Water Resources (DWR) and Local Projects Sponsors (LPS), by extending the contract termination date to June 30, 2013.

SUMMARY

Amendment 3 to this current agreement with Day, Carter, Murphy (DCM) will extend the termination date of the contract allowing them to continue to provide legal counsel regarding Prop 84 grant administration.

Contract Background

DCM was BACWA's legal counsel in the negotiations with DWR and LPSs regarding the Proposition 50 grant currently administered by BACWA. Based on this experience and the recognition that similar legal issues would arise in the Proposition 84 negotiations, BACWA retained DCM to assist with the Proposition 84 negotiations.

In August 2011, BACWA entered into a contract with DCM for a total of $30,000 for Proposition 84 assistance. In March 2012 the Board approved contract Amendment 1 which increased the total contract value to $50,000 and authorized revised DCM billing rates for April 1, 2012 – June 30, 2013. Amendment 2, approved in June 2012, increased the contract amount to $55,000 and extended the termination date from June 30, 2012 to December 2012.

FISCAL IMPACT

This is a no-cost time extension amendment and has no direct impact the total value of this contract.

ALTERNATIVES

N/A

Attachments:

1. Contract Amendment 3

AMENDMENT NO. 3
TO
AGREEMENT BETWEEN
BAY AREA CLEAN WATER AGENCIES
AND
DAY CARTER, MURPHY
FOR
Prop 84 LegalSupport

This Amendment No. 3 is made this 3rd day of January, 2013, in the City of Oakland, County of Alameda, State of California, to that certain agreement dated August 1, 2011, File 12,490, Amendment 1 dated March 22, 2012, and Amendment 2, dated June 28, 2102 by and between Day, Carter, Murphy ("DCM") and Bay Area Clean Water Agencies, (BACWA) (the "Agreement") in consideration of the covenants hereinafter set forth.

The Agreement is hereby amended as follows:

1. BACWA and DCM agree to extend the termination date of the contract to June 30, 2013.

3. Except as herein expressly modified, the Agreement, Amendment 1, and Amendment 2 remain in full force and effect.

BAY AREA CLEAN WATER AGENCIES

By _____ Dated _____
Ben Horenstein, Chair Executive Board

DAY, CARTER, MURPHY

By _____ Dated _____
James Day, Partner

BACWA EIN: 94-3389334

EXECUTIVE BOARD AUTHORIZATION REQUEST

AGENDA NO.: 4

FILE NO.: 12,381

MEETING DATE: January 3, 2013

TITLE: BACWA Executive Board Approval to Amend Agreement with EPC

☒ **MOTION** ☐ **RESOLUTION**

RECOMMENDED ACTION

Authorize Amendment 2 to the EPC Consultants, Inc. (EPC) agreement for Recycled Water Committee support to extend the termination date to June 30, 2013.

SUMMARY

This amendment will allow additional time for EPC to complete all work necessary to prepare the final report on BACWA agencies recycled water use and uses. The report is currently in draft form. Amendment 1, executed in July 2012 extended the original contract termination date to December 2012.

FISCAL IMPACT

There is no fiscal impact since this amendment is only authorizing a time extension to the current contract.

ALTERNATIVES

No other alternatives were considered as the terms of this contract are consistent with BACWA contracting policies.

Attachments:

1. EPC Amendment 2

AMENDMENT NO. 2
TO
AGREEMENT BETWEEN
BAY AREA CLEAN WATER AGENCIES
AND
EPC Consultants, Inc.
FOR
Recycled Water Committee Support

This Amendment No. 2 is made this 3rd day of January, 2013, in the City of Oakland, County of Alameda, State of California, to that certain agreement File 12,381 of March 24th , 2011 and Amendment 1 dated June 28, 2012 by and between EPC Consultants, Inc (EPC) and Bay Area Clean Water Agencies, (BACWA) (the "Agreement") in consideration of the covenants hereinafter set forth.

1. BACWA and EPC agree to extend the contract termination date to June 30, 2013.

2. Except as herein expressly modified, the Agreement and Amendment 1 remain in full force and effect.

BAY AREA CLEAN WATER AGENCIES

By _____ Dated _____
Ben Horenstein, Chair Executive Board

EPC CONSULTANTS, INC.

By _____ Dated _____

BAPPG Committee Report to BACWA Board

Meeting Date: January 3, 2013
Prepared By: Catherine L. Allin, City of Millbrae
BAPPG Committee Chair

Committee Request for Board Action

- Acknowledge the following retiring BAPPG members who received Certificates of Appreciation under the BAPPG Recognition Program:
  - Cassie Prudhel, City of South San Francisco
  - Stephen Friday, City of Richmond
  - Charlie Freas, San Francisco International Airport

Successes

- *2012 Our Water Our World*

  Ten IPM Advocates completed the program in June. More than 250 retail employees have been trained through the program, with more to come. In the fall, the Greener Pesticides for Cleaner Waterways program furthered the advocates' work in 14 stores over the next two years. Annie Joseph will conduct additional training with the advocates. Orchard Supply Hardware and Home Depot increased their engagement with OWOW through increased display of less toxic products and 69% of the stores have had outreach events as well. We hope to create a partnership with Lowe's in the future. OWOW reps met with StopWaste.org staff to discuss coordination of related efforts, and are planning a similar one with BayFriendly Landscaping staff. Revision, translation, and reprinting of program materials are ongoing. Developing a bed bug fact sheet. Looking into doing a Spanish translation for the "10 most wanted."

- *FOG Holiday Outreach Program-Spanish*

  Univision aired paid advertisements and PSAs from November 19-22 (Thanksgiving), on radio stations KSOL (98.9 FM), KBRG (98.9-99.1 FM), and Univision's online stations (120 paid ads with not less than 90 free PSAs along with a banner) started December 18. Univision ran advertisements and PSAs again between December 21-31.

- *Presentations at December 5, 2012 General Meeting*

  Healthy Nail Salon Program—Swati Sharma, SF Dept of the Environment
  Regional Campaign—Athena Honore, SFEP/ABAG

- *Copper*

  Results of Consultant meeting with the Peninsula Chapter of the International Code Council (www.iccpeninsula.org). There was regional representation and an engineer from the Underwriters Laboratory (UL) who sits on the tech committee for the National Plumbing Code. Consultant provided the BAPPG copper plumbing presentation. Discussed finding non-compliant fluxes at the hardware/plumbing stores and some stores ONLY selling the non-compliant flux. Discovered non-compliant flux is legal for NON-POTABLE uses (i.e., cooling towers or industrial equipment). Issue: Difficult for Building Inspectors to enforce flux use because even if they see the non-compliant flux in the truck/job site, the plumber can say that is for some non-potable installations. Solution: Code change would be very helpful. Alternatives presented and under consideration:

1. Work with the local representative of the Copper Development Association (CDA) and two of the ICC members (from foster city and UL) to propose a code change to the National Plumbing Code to include NON-POTABLE uses for the required use of the ASTM water flushable flux. Submittals for change due Jan 3, 2013 for consideration for the national 2015 plumbing code edits. (3-year cycle, next opportunity 2016 for 2018 code edits)
2. Outreach to wholesalers and distributors.

3. Continue reaching out to Bay Area building inspectors.
4. Consider recommending an alteration in current ASTM standard.

Discussions and Action Items

BAPPG Steering Meeting on December 5, 2012 (8 attendees)

- Regional Board Update—Mercury/PCB regulations to be approved 12/12/12 including requirements to continue dtnal programs and be alert for and report PCB sources if found or NOT. Continuing work on P2 Guidelines for Reporting (NOT Guidance Document).
- Regional Campaign—Got Ants is putting up a website and ads which include guidance.
- Mercury in Hospitals—Karin and Robert are working on a Long Term care/Medical brochure based on CCCSD's brochure that was sent to medical offices in their service area. Robert to work on contract aspect. Karin will post Brochure on yahoo group. Hope to print brochure for all agencies who want them. Agencies can develop a contact list for Long Term care and medical offices for distribution (check with AMA and business license office). Will take $1500 from Hospital Audit Contract to print.
- Copper—Consultant to develop training for building inspector education regarding copper.
- General Outreach: Regional Poster for bayshore locations - Sharon from San Jose shared an opportunity to put Baywise contact on a regional poster that is posted at various locations on the bayshore. Approved budgeting amount of $860 to have Baywise printed on the sign to be posted in 60 locations.

BAPPG General Committee Meeting on December 5, 2012 (22 attendees)

- Members shared their recent EPA audit experiences.
- Requested members submit contact information for baywise and internal use.
- Requested members determine if their agencies would allow access to cloud file storage services such as dropbox.
- Green Chemistry Update–Melody LaBella
  - The safer consumer products effort received a comment letter from the water industry
  - Kelly Moran anticipates another version of the regs in December with a 30 to 45 day comment period
  - 303d list for POCs was added back
  - DTSC will choose a handful of products likely that impact health more than H2O quality, Water is hoping for a least one product that is a water contaminant.
  - Any recommendations should come with documented benefits for govt agencies including compliance and cost savings.
  - Dylan is looking at 303dlist for potential priority products.
- February Presentations on Brominated Fire Retardants (DR. Petreus) and Green Chemistry (DTSC).
- Outreach Piece—Toilet cut out with the dirty dozen were discussed and people were interested in ordering for their agencies and as a group. Robert Cole is working on graphics and pricing with the company that did his dirty dozen brochure.

Next BAPPG General Meeting

February 6, 2013 10am – 12 pm
Elihu Harris State Building
1515 Clay Street, 2nd Floor, Room 12
Oakland, CA

Collection Systems Committee Report to BACWA Board

December 20, 2012
From: Dan Stevenson, Committee Chair
Prepared By: Andy Eggleston

Committee Request for Board Action: None

Highlights of New Items Discussed and Action Items

Tech-Topic: Trenchless Rehabilitation and Replacement

Jen Glynn, P.E., a Senior Project Manager with RMC Water and Environment and Board Member of the North American Society for Trenchless Technology (NASTT) gave a presentation on an overview of trenchless sewer rehabilitation and replacement techniques at our December 13 Collection Systems Committee meeting. Her presentation focused on pipes 15" in diameter and smaller. Trenchless techniques are an alternative to the more common open-cut methods, and are often preferable because they can be less disruptive, faster, and less expensive. Rather than digging a trench along the length of the pipeline to be repaired or replaced, trenchless techniques generally utilize two access pits, one at each end of the repair. Selecting a trenchless repair or replacement method depends on number of factors, including the condition of the existing pipe (for example, some methods rely on the existing pipe for at least some structural support). The presentation provided information on several available trenchless replacement techniques, including pipe reaming and pipe bursting or splitting. With these methods, the old pipe is basically cut or broken up in the ground and new pipe is pulled in along the original alignment. A number of trenchless rehabilitation methods were also discussed, including slip lining, cured-in-place pipe (CIPP), spiral wound liners, fold and form pipe, and lateral chemical grouting.

Jose Rodrigues of Union Sanitary District followed with a brief presentation on Pipe Patch, a small localized pipe lining product. District staff has been using this product for spot repairs (2' or 4' in length), on 6" to 21" diameter pipes within their service area, and have been honing their application techniques as they gain experience. For example, staff has outfitted an old CCTV truck specifically for use in these repairs, which is now fully equipped with supplies for these projects. The District has found the product to significantly reduce cost and time spent on repairs (compared to open-trench methods).

Emergency Bypass Success

Dante Marchetti of Central Contra Costa Sanitary District gave a brief presentation at the December 13 Committee meeting on an impressive emergency by-pass that District staff set up in response to a sink-hole that occurred in their service area during the recent storms.

Changes to SSS WDR Monitoring and Reporting Program Update

BACWA leadership has confirmed that State Water Board staff is still working on a "surgical" markup of the Monitoring and Reporting Program (MRP) of the Sanitary Sewer System (SSS) Waste Discharge Requirements (WDR). As of December 17, State Water Board Executive Director Tom Howard reported that he had received the latest version of the markup from his staff, and indicated that the document would be made available to stakeholders following his review and revisions. State Water Board staff hopes to have the document signed in January with a March effective date (to accompany some anticipated updates to the California Integrated Water Quality System (CIWQS)).

Upcoming Conferences and Meetings

NASTT's 2013 National No-Dig Conference will be held in Sacramento from March 3 - 7. Scholarships are available for municipal employees to attend the conference. More information is available online at www.nodigshow.com.

Next Collection System Committee Meeting

Our next meeting will be held on Thursday, January 24, 2013 from 1:30 – 3:00 PM at the California Endowment Conference Facility in Oakland, following the BACWA Annual Meeting.

Permits Committee – Report to BACWA Board

Reporting Date: 12/20/12
Executive Board Meeting Date: 1/3/13
Committee Chair: Jim Ervin

Committee Request for Board Action: None.

Adoption of Permits/Permit Amendments –

Dec – Mercury and PCBs Watershed Permit.

Recent EPA inspections: San Jose, Sunnyvale and EBDA were inspected during the week of 26 November. No significant discrepancies were reported. Permits and Lab committees discussed basic inspection preparation procedures and experiences.

Water Board staff updates: Lila Tang, Bill Johnson, and Robert Schlipf attended the Joint Permits and Lab Committee Luncheon. Lila reported that Water Board staff is essentially at the full staff level – no significant changes.

Mercury & PCBs Watershed Permit: This permit was adopted on 12 December:

1. Dischargers no longer sample effluent for methlymercury.
2. Quarterly PCBs monitoring by method 1668C now only has to evaluate 66 congeners vice the 209 previously required (– see footnote (8) on page E-4 and table F-14.)
3. Dischargers no longer participate in a separate BACWA group mercury annual report.
4. Mercury and PCBs source control and risk reduction requirements – see bottom of page 16 to page 17.
5. Read the compliance summary on pages F-11 thru F-12. Wastewater dischargers are well below allocations.

Palo Alto and Delta Diablo are performing their own interlaboratory comparisons of PCBs analyses in 2013. Frontier Analytical has announced that it is now offering PCBs method 1668C analyses.

Tim Potter commented that EPA is still evaluating the Federal Dental Amalgam Rule which could impose requirements regarding regulation and inspection of dental offices.

Nutrients 13267: Richard Looker from Water Board staff reported that many agencies are not transmitting Nutrient 13267 data correctly. Most agencies are modifying the spreadsheet or not also sending corresponding MS-DOS.csv files.

Jim Ervin provided the list of affected agencies at the meeting and via email and also resent the most recent reporting excel spreadsheet. Each agency will make corrections prior to the next 13267 submission in January. A new Excel summary of all agency results was also sent out (37 agencies summarized.)

Toxicity Policy: The State Board is now intending to adopt this policy as a "Plan" so that it can be amended into the SIP. Public review of the "Plan" has now been delayed until late Spring. Adoption may occur in summer 2013. CASA continues to urge phasing of implementation.

- Jim Kelly and Lorien will continue discussion with Region 2 staff to resolve toxicity "Plan" regarding Reasonable Potential for Acute testing and application of instream waste concentration.

Training Announcement: Tim Potter announced that with the P3S the Annual P3S Conference will be held on 25-27 February in Napa. The conference provides good training opportunity for pretreatment personnel. http://www.cwea.org/et_attendees_conferences.shtml

Next BACWA Permits Committee Meeting: Tuesday, December 11th, 2012, at EBMUD Plant Library.

Nutrient 13267 - 1st Quarter - Influent (mg/l)

	Flow	TKN	NO3	NO2	Total NH3	TP	DRP	TSS	
San Jose	104.9	47	0.2	0.090	31	7.7	4.5	317	
EBMUD	58.0	49	0.08	0.086	30	10	4.6	340	
SFPUC	59.4	49	4.7	0.070	38	6.4	11.4	249	
CCCSD	35.5	46	0.5	0.300	31	6.0	2.7	262	
EBDA USD	24.6	47	0	0.053	31	5.9	3.1	260	
EBDA Hayward	11.3	57	0	0.000	34	7.5	1.6	270	
EBDA Ora Loma	12.1	39	0.67	0.310	19	4.7	4.1	356	
EBDA San Leandro	5.2	50	0	0.000	25	6.4	4.8	352	
Palo Alto	21.0	45	0.1	0.012	35	6.4	4.0	291	
SBSA	11.3	60	0.3	0.300	42	6.2	10.0	290	
Vallejo	9.0	46	0.1	0.000	30	4.4	3.2	251	
Sunnyvale	13.4	43	0.5	0.180	34	5.8	3.7	323	
Dub-San Ramon	10.4	49	0.08	0.021	33	5.1	3.5	168	
DDSD	12.9	46	0.039	0.018	32	7.5	3.4	316	
Fairfield-Suisun	12.2	54	0.1	[redacted]	35	8.1	6.2	332	
South SF - San Bruno	8.7	53	0.035	0.036	35	8.1	5.6	368	
CMSA	8.2	62	0.85	0.000	41	8.7	4.3	396	
Livermore	6.7	55	0.1	0.020	41	6.0	5.7	190	
Petaluma	5.8	52	0	0.000	35	7.8	7	230	
West County	5.8	59	0.069	[redacted]	42	6.4	5.1	514	
Novato	4.2	45	0.4	[redacted]	36	5.7	5.3	387	
Sonoma Valley	3.9	37	0.2	0.200	20	6.1	3.1		Low NH3 - High organic N from wineries
Burlingame WWTF	3.0	52	0.04	0.020	35	5.8	3.8	370	
Pinole	2.6	45	11.8	7.700	30	5.2	4.7	291	
Benicia	2.4	47	0.08	[redacted]	36	5.1	4.1	313	
Las Gallinas	2.1	46	ND	0.100	36	6.4	6.7	196	
SASM	2.0	41	0.74	[redacted]	26	3	4	279	
Mount View	1.6	45	0.05	[redacted]	32	6.1	3.5	204	
Millbrae	1.4	52	0.31	[redacted]	34	5.5	3.5	468	
Sausalito-Marin	1.4	45	0.12	0.4	29	4.1	3.2	290	
SF Airport	1.0								
Rodeo	0.6	41	1.0	1.000	29	4.5	3.4	278	
St Helena	0.4	56	0.1	0.1	38	9.8		313	
Yountville	0.4	40	0.1	0.03	27	5.5	3.2	159	
Calistoga - single sample - c	0.3	34	0.1	0.100	27	4.7	3.5	170	
TI	0.3	30	7.9	0.040	23	3.6	5.9	135	
American Canyon	0.2	23	28	2.9	17	11	8.3	94	
Mean	12.5	48	0.9	0.399	32	6.2	4.7	292	
Max	104.9	62	28.0	7.700	42	11.0	11.4	514	
Min	0.2	23	0.0	0.000	17	3.0	1.6	94	

Nutrient 13267 Data - combined 1st quarter
Influent

Nutrient 13267 - 1st Quarter - Effluent (mg/l)

		Flow	TDN	TKN	SKN	NO3	NO2	Total NH3	Urea**	TP	TDP	DRP	TSS	Total N % removal	Total P % removal	
Advanced Secondary	San Jose	85.1	12.8	1.2	1.0	11.7	0.093	0.48	0.070	0.32	0.28	0.22	1.6	0.73	0.96	
	Palo Alto	21.9	27.7	0.8	0.7	26.9	0.129	0.04		4.5	4.5	4.3	1.1	0.37	0.29	
	Sunnyvale	7.7	24.2	3.1	2.4	21.7	0.100	0.70		8.0	7.7	7.6	8.7			
	Fairfield Suisun	11.7	30.0	0.7	0.2	29.5	0.010	0.03		4.9	4.8	4.6	0.1	0.45	0.47	
	Mount View	1.3	16.0	0.7	0.4	23.3	0.016	0.23		3.9	3.7	3.5	3.0			
	American Canyon	1.3	9.8	1.2	1.3	8.5	0.035	0.25		5.5	5.4	5.0	ND	0.44		
	Mean	25.5	22.2	1.3	0.9	22.6	0.070	0.30	0.070	4.3	4.2	4.1	2.9			
Secondary	EBMUD	52	47.9	44.2	41.3	5.0	1.46	38.1	0.32	4.9	4.1	2.8	20	0.0	0.52	
	SFPUC	53.3	41.7	40.3	39.6	1.7	0.37	38.9	0.39	0.8	0.2	1.6	15.9	0.21	0.88	
	EBDA	56.2	34.8	32.0	31.1	2.2	1.60	28.0	...	2.4	2.1	22.9	10.8	0.24	0.60	
	CCCSD	33.0	29.5	28.7	28.4	0.5	0.60	26.2	0.20	1.1	0.9	0.6	7.9			
	SBSA	12.9	40.5	41.3	39.8	0.4	0.40	38.5		3.5	3.2	4.6	4.6	0.31	0.43	
	Vallejo	9.1	21.4	14.2	12.3	8.2	0.83	10.6		3.9	3.5	3.2	11.8	0.49	0.16	
	South SF - San Bruno	8.7	33.5	31.2	30.8	0.9	1.80	29.8		3.9	4.8	3.6	7.5	0.40	0.50	
	Dub-San Ramon	8.0		30.0		0.3	0.60	29.0		0.7		0.7	23.0	0.37	0.87	
	West County	7.0	26.2	25.7	25.0	1.5	0.22	23.7		2.0	2.0	1.6	12.5	0.54	0.70	
	DDSD	5.7	64.6	29.2	29.7	30.2	4.80	29.2		1.5	1.4	0.8	13.5	-0.39	0.81	Recycled blowdown
	CMSA	5.8	41.9	39.5	38.5	2.7	0.72	38.3		4.2	4.4	3.7	5.3	0.0	0.50	
	Livermore	3.5	0.3	47.0	...	0.0	0.25	44.0		0.8	...	0.6	6.0	0.1	0.86	
	Pinole	2.8	39.6	32.3	31.3	6.6	1.67	29.7		3.9	3.7	3.7	13.0			
	Burlingame WWTF	2.7	27.3	24.0	23.3	3.4	0.62	21.4		5.3	3.7	1.6	7.1			
	Benicia	2.0	26.8	22.7	21.7	2.1	3.00	25.7		3.9	3.4	3.2	5.3			
	Millbrae	1.3	43.9	44.7	43.7	0.1	0.16	41.3		3.7	3.2	3.2	10.0			
	Sausalto-Marin	1.3	24.9	12.3	11.3	12.1	1.44	10.7		5.2	5.0	4.6	15.0	0.38		
	SF Airport	1.0	55.7	54.7	51.3	3.6	0.87	41.1		4.2	4.0	2.2	10.4	0.40	0.61	
	Mean	14.8	35.3	33.0	31.2	4.5	1.19	30.2	0.3	3.1	3.1	3.6	11.1			
Secondary + ??	Petaluma	5.8	2.8	3.1	2.8	0.0	0.0	1.3		1.9	1.9	1.7	1.6	0.94	0.76	
	Novato	4.2	13.8	1.8	1.5	12.0	0.30	0.53		0.3	0.2	0.0	2.5	0.31	0.96	
	Sonoma Valley	3.2	24.9	0.9	0.7	24.0	0.20	0.25		3.7	3.3	3.8	1.7	0.33	0.39	
	Las Gallinas	2.1	26.6	3.1	2.5	24.0	0.08	1.6		5.7	4.4	4.4	1.6	0.18	0.70	
	SASM	2.0	19.1	5.4	4.3	14.3	0.50	2.8		5.2	5.0	4.7	19.3			
	Mean	3.5	17.4	2.9	2.4	14.9	0.2	1.3		3.4	3.0	2.9	5.3	0.4	0.7	
Tiny Plants	St Helena	0.9	11.1	19.0	11.0	0.1	0.03	8.3		9.8	9.3	3.1	50.0			
	Calistoga - single sample - o	0.7	19.6	0.7	0.5	19.0	0.1	0.1		4.0	3.2	3.8	3.0	14.9		
	Rodeo	0.6	10.0	4.9	4.5	11.8	0.3	3.8		4.3	4.1	3.8	3.3			
	Yountville	0.4	29.0	7.6	7.8	21.0	0.2	8.2		4.1	3.9	4.0	0.0	0.28	0.25	
	TI	0.3	9.1	3.6	2.6	6.4	0.0	0.1		2.0	0.5	3.4	11.3	0.74	0.44	
	Mean	0.6	15.7	7.1	5.3	11.7	0.1	4.1		4.8	4.2	3.6	13.5			

Nutrient 13267 Data - combined 1st quarter

Effluent Conc

Nutrient 13267 - 1st Quarter - Effluent (Kg/d)

		Flow MGD	TDN	TKN	SKN	NO3	NO2	Total NH3	Urea**	TP	TDP	DRP	TSS	Total N % removal	Total P % removal	
Advanced Secondary	San Jose	85.1	4137	386	333	3774	29.9	155.7	11.6	102	91	96	523	0.78	0.97	
	Palo Alto	21.9	2291	69	58	2220	10.5	3.2		374	370	473	88	0.35	0.27	
	Sunnyvale	8.8	709	91	70	635	4.2	22.4		233	226	219	261			
	Fairfield Suisun	11.7	1327	29	11	1305	0.5	1.4		216	213	330	0	0.48	0.50	
	Mount View	1.3	76	3	2	119	0.04	0.9		20	19	31	8			
	American Canyon	1.3	47	6	6	41	0.2	1.2		26	26	28	ND			
	Mean	31.9	1708	115	95	1610	11.3	45.7	11.6	189	184	230	176			
Secondary	EBMUD	52	8492	8712	8105	998	293.3	7508.7	30.8	969	678	756	3927	0.07	0.56	
	SFPUC	53.3	8401	8127	7989	340	71.4	7839.2	39.8	152	29	455	3216	0.29	0.89	
	EBDA	56.2	7413	6803	6613	459	340.3	5954.5		505	447		2301			
	CCCSD	33	3674	3566	3530	64	80	3258.2	24.7	133	106	76	975			
	SBSA	12.9	1977	2014	1942	17	18.2	1848.3		172	157	289	221	0.21	0.39	
	Vallejo	9.1	736	487	424	284	28.4	363.2		134	120	109	408	0.49	0.02	
	South SF - San Bruno	8.7	1102	1025	1014	29	59.2	980.1		129	156	202	148	0.40	0.50	
	Dub-San Ramon	8.0	28	908		10	18.2	878.1		20		34	696	0.51	0.90	
	West County	7.0	695	680	662	30	5.0	626.6		52	53	50	335	0.59	0.78	
	DDSD	5.7	1356	635	644	600	111.7	632.5		32	31	34	284	0.40	0.91	Recycled blowdown
	CMSA	5.8	916	862	842	58	15.8	837.4		92	95	124	115	0.51954	0.65	
	Livermore	3.5	3	626	…	0	3.3	583.6		11	…	9	80			
	Pinole	2.8														
	Burlingame WWTF	2.7	261	213	199	54	7.2	166.9		52	40	40	69			
	Benicia	2.0	207	175	167	16	23.5	197.9		30	26	53	41			
	Millbrae	1.3	219	223	217	1	0.9	207.6		19	16	16	53	0.58		
	Sausalto-Marin	1.3	118	59	54	58	6.9	50.6		25	24	46	73	0.48		
	SF Airport	1.0	219	215	202	14	3.2	158.0		16	14	9	41	0.40	0.61	
	Mean	14.8	2107	2078	2174	178	63.9	1887.7	31.8	150	133	144	764	0.39	0.62	
Secondary + ??	Petaluma	5.8	54	59	54	0	0.0	24.9		36	36	47	31	0.94	0.74	
	Novato	4.2	220	29	24	192	4.5	8.5		4	3	1	40	0.69	0.96	
	Sonoma Valley	3.2	299	11	8	289	2.4	3.0		45	40	46	20	0.45	0.51	
	Las Gallinas	2.1	207	24	19	18	0.6	12.5		44	34	61	13			
	SASM	2.0	143	40	32	107	3.5	21.3		39	33	65	145	0.53		
	Mean	3.5	184.5	32.6	27.4	121.1	2.2	14.0		33.6	29.1	43.9	49.7	0.7	0.7	
Tiny Plants	St Helena	0.93	39.25	67.01	38.8	0.35	0.106	29.3		34.6	32.8	10.9	176			
	Calistoga - single sample - ol	0.7	52	2	1	51	0.3	0.4		11	9	11	8			
	Rodeo	0.6	35	10	10	25	0.6	8.1		9	9	19	7			
	Yountville	0.4	41	11	11	30	0.3	11.6		6	6	6	0	0.28	0.25	
	TI	0.3	10	4	3	7	0.0	0.1		2	1	4	13	0.75	0.47	
	Mean	0.5	35	7	6	28	0.3	5.0		7	6	10	7			
	Totals	*416*	*45503*	*36168*	*33284*	*11844*	*1144*	*32396*	*107*	*3742*	*3136*	*3750*	*14315*			

Nutrient 13267 Data - combined 1st quarter

Effluent Loads

Recycled Water Committee Report to BACWA Board

December 20, 2012

Prepared By: Cheryl Muñoz
Committee Chair

Committee Requests for Board Action:

None.

Business Discussed and Action Items:

Business	Discussion
BAIRWMP and Prop 84 Updates	Prop 84/BAIRWMP Updates • Update on BAIRWMP Activities o Chapter Updates – Resource Management Strategies, Financing, and Stakeholder Engagement chapters are in draft form and are being reviewed by the Project Update Team. o Project Review – Projects that were submitted by the September 7, 2012 deadline for inclusion in the BAIRWMP, were scored and ranked based on the Project Scoring and Ranking Methodology that was developed (incorporates the BAIRWMP Goals & Objectives and scoring metrics). o Public Workshops – Next public workshop is scheduled for January 28, 2013 from 4-6 pm at StopWaste.org. • Update on Prop 84 Activities o Round 2 Project Submission - 67 projects were submitted for requesting $110M ($20M available to Bay Area in Round 2) o As the Recycled Water Wastewater Functional Area leads, the BACWA Recycled Water Committee evaluated all of the recycled water/wastewater projects submitted, and selected five projects totaling $5M. The list of projects was forwarded to the Project Screening Committee for further evaluation with projects from the other three Functional Areas. o Options for Composition of Suite of Round 2 Projects –The Project Screening Committee is developing a number of options for projects that would be submitted for Round 2 funding. The options included suites of projects with the emphasis on the most integrated (DWR criteria and factors), Functional Area, sub-regional, climate change Project Ranking. The options will be forwarded to the Coordinating Committee in December 2012 for consideration. • Information on the BAIRWMP/Prop 84 status can be found at http://bairwmp.org/

Legislative/Regulatory Updates	AB 2398 (Water Recycling Act of 2012) Update • Work continues to revise the language of the bill. The current language focuses primarily on revising regulations for potable reuse projects, but may be changing to include language on non-potable reuse projects as well. Title XVI Update- Bay Area Recycled Water Coalition • The Coalition is continuing to solicit new membership. Some agencies/cities in the Central Valley are interested in joining the Coalition which would expand the group's purview from the Bay Area. • The Coalition is working with Congress on the development of a water infrastructure low-interest loan program. CA Medical Association • The CMA adopted Resolution No. 118A-12 encouraging efforts to establish and expand non-potable and potable reuse in California.
Projects	Recycled Water Survey • EPC Consultants are finalizing the survey report. It will be available in early 2013.
Agency Projects and Announcements	North Bay Water Users Association • The Phase 2 Project Definition Scoping Study was completed and available online at http://www.nbwra.org/docs/index.html. The purpose of the Phase 2 studies is to explore options for recycled water use and, as feasible, to develop a program expanding recycled water use within the North San Pablo Bay region beyond the projects currently being constructed as Phase 1 of the NBWRP. SFPUC • A project dedication breakfast was held on 12/ /12 for the Harding Park Recycled Water Project. The project is a partnership between the SFPUC, Daly City and the CA Department of Water Resources (Prop 84 funding). On-line Site Supervisor Training Program • The WateReuse Association CA Section is working on developing an on-line Recycled Water Site Supervisor Training Program that will be available to its membership. Irvine Ranch Water District is preparing a Request for Proposals for consultant services to implement the computer-based training.
Next RW Committee Meeting	January 9, 2012, from 10:00 am to 12:00 pm EBMUD Headquarters, 6th Floor Conference Rooms A & B.

Director's Report to the Board

November 21-December 29, 2012
Prepared for the January 3, 2013 Executive Board Meeting

NUTRIENTs:

13267 Letter: Following up on data and how to transfer to RWQCB.

REGULATORY FRAMEWORK/PERMITING STRATEGY: Met with Regional Board to further define what might be required in a watershed permit for LWA to develop a comparison "pro/Con" document for a follow up discussion between BACWA and the RWQCB. The draft comparison document is in the agenda packet.

NUTRIENT STRATEGY: Discussed status of SFEI effort with Dave Senn: Confirmed scope changes, worked with Dave on the decision tree and BAR for GG transfer.

Freshwater Cyanotoxin Workshop: Attended conference held in Oakland November 28th.

Selenium: Met with WSPA representatives and held telephone conversations with their consultant re status of WSPA studies. Followed up on SFEI report on Se speciation and status of TMDL for North Bay. This is on the agenda for the January 3, 2013 Board meeting.

Annual Meeting: Finalize agenda and speakers.

Review and Comment on SSS MRP PROPOSED REVISIONS: Proposed changes are being prepared by the SWRCB they still have not been released.

RWQCB/BACWA MEETING: Scheduled meeting for January 11th to discuss Regulatory Framework, Nutrient Strategy Oversight, and other topics.

REGULATORY PROGRAM MANAGER (RPM): See RPM report in the agenda packet.

DRAFT POLICY FOR TOXICITY ASSESSMENT AND CONTROL: See RPM's report for more information

MEETINGS ATTENDED: Permits Committee; RWQCB meeting (Testified on PCB/Hg Watershed Permit); Stakeholder Advisory Group Meeting; Meeting with RB2 Staff, LWA and Lorien Fono to discuss Tentative Order for the Hg/PCB Watershed Permit.

DISMISS PETITIONS: Gained concurrence to dismiss all but two petitions. They may be agreed upon by the meeting. Good feed back was received from the Associates, and many of them are conducting master plans for their plants.

MISCELLANEOUS:

-Answered miscellaneous questions of from the public.

-Laypersons Guide: Work with Board to name a BACWA representative for the editorial board.

FUTURE ITEMS:

FOLLOWUP ON SACRAMENTO REGIONAL PERMIT: Does Board want to consider potential next steps?

SUISUN BAY: January 31, 2013.

RWQCB/ BACWA JOINT MEETING: January 11, 2013

NPDES PERMIT PETITION DISMISSAL: Finish last two.

NUTRIENT SUMMIT: Attend meeting with SWRCB: Date TBD

FUTURE MEETING: Hold at SFPUC's new offices?

AIR COMMITTEE: Work with Air Committee Leadership to develop fee and funding alternatives, and contact Air Board regarding a number of issues.

Hg/PCB WATERSHED PERMIT: Follow-up on risk reduction; and method verification.

TECHNOLOGY RESEARCH & DEVELOPMENT: Follow up with Isle Utilities Technology Approval Group (TAG) to determine if BACWA member representatives could attend a future TAG Meeting.

Regulatory Program Manager's Report to the Board

November 28 – December 27, 2012
Prepared for the January 3, 2013 Executive Board Meeting

WATERSHED PERMIT REISSUANCE/PCB DATA: Worked with RB staff on response to our comments on the Tentative Order. Watershed permit adopted at Board Meeting on 12/12. Based on BCWA's oral comments made at the Board Meeting, Board members expressed concerns about PCB data quality, and Member Young asked how permit might be reopened if there is new information on method 1668C. Lila said it could be addressed through a "minor modification" of permit, unless they had to stop monitoring, in which case it would go back to Board. Member McGrath pointed out the need to address the relative contributions of wastewater and stormwater.

DRAFT PLAN FOR TOXICITY ASSESSMENT AND CONTROL: Policy adoption is delayed until spring, and is now a "Plan", not a "Policy". Adoption is targeted for Summer 2013. Held call with workgroup to address acute toxicity and IWC, and communicated with RB staff on these items. Per RB staff, it is likely that new draft of the plan will include a phased approach, and perhaps a change in how acute toxicity reasonable potential is assessed. RB has communicated with State Board staff requesting discretion in using existing data to calculate reasonable potential.

CECs: Met with RB staff and Karin North to work out outline for article on CECs management for the pulse. Developed and distributed more detailed outline. Will continue to work with TED/ED to determine level of involvement moving forward.

STATE BOARD REALIGNMENT: Participated in conference call with NPDES stakeholder to identify potential cost-saving program ideas. Developed a write-up discussing how contributions to TMDL implementation programs should be proportional to source allocations. Other issues being developed are included in attached meeting notes.

EPA DISINVESTMENT IN BIOSOLIDS ENFORCEMENT: EPA was considering, but seems to have partially backed off from, plans to disinvest from biosolids enforcement. Fortunately, this issue does not have a direct impact in the near term for CA, because Region 9 has decided to provide the funding required to maintain program oversight by Lauren Fondahl. The potential indirect impact is that the lack of oversight in another part of the country could have a mismanagement incident due to lack of oversight that grows to threaten long-standing biosolids management practices (i.e., land application). Last communication from EPA to Greg Kester of CASA was that they would continue to fund 2 national positions out of Region 7. Request Board direction on whether to engage further on this issue.

NUTRIENTS: Met with LWA and RB staff to discuss watershed permit concept, including what a watershed permit would include, and the overarching regulatory framework. Commented on TED's notes from meetings.

MEETINGS ATTENDED:, Resource Alignment Teleconference (12/6), Meeting with RB Staff on Pulse CEC article (12/5), Meetings with RB staff on Nutrient Watershed Permit Concept (12/11 and 12/12), Permits Committee (12/11), Regional Board Meeting (12/12), Tri-TAC (12/14).

NEXT MONTH

- Toxicity: will plan to meet with Regional Board staff to hammer out approach to IWC and acute toxicity
- Work on Pulse article on CECs
- Continue to assist TED with Watershed Permit concepts
- Assist TED to prepare for Annual Meeting, and prepare annual issues summary for membership
- Assist with nutrient data collection for the 13267 letter as needed

Meeting Notes
POTW Resource Realignment
Conference Call

December 6, 2012
10:00 a.m. to Noon

Meeting Participants

Jacki Kepke, EBMUD	John Pastore, SCAP
Bobbi Larson, CASA	Beverly Hann, Carollo Engineers
Terrie Mitchell, SRCSD	Monica Oakley, RMC Water
Betsy Elzufon, Larry Walker Associates	Linda Garcia, WMWD
Rebecca Franklin, City of San Bernardino Water Dept.	Dennis Laniohan, DDSD
Jennifer Shepardson, City of San Bernardino Water Dept.	Lorien Fono, BACWA

The group brainstormed ideas for wastewater agency cost savings and identified the following potential proposals. By December 18, 2012, a short (1 to 2 paragraph) description of each will be developed by the responsible person(s) and emailed to Bobbi Larson (blarson@casaweb.org) and Jackie Kepke (jkepke@ebmud.com) that identifies the following:

- Issue or requirement associated with POTW costs
- Concept for addressing issue/reducing POTW costs
- Rough estimate of potential savings (low, moderate, major)

The list of issues will be reported to the State Water Board in January and those deemed to meet the State Water Board's criteria will be further developed into detailed proposals.

Issue	Proposal	Responsible Person(s)
1. Penalties/costs associated with SSO enforcement action	Tiered/progressive approach to enforcement beginning with inspection/correction	Monica Oakley
2. Regional Monitoring	More streamlined approach to allow monitoring to be reduced/discontinued	Sharon Green, Betsy Elzufon
3. Disproportionate study/other actions required of de minimis point sources under TMDLs	Policy that burden of studies, etc. be proportionate to the loadings of source categories	Lorien Fono, Terrie Mitchell

Issue	Proposal	Responsible Person(s)
4. High costs to eliminate blending	Allow POTWs to conduct monitoring, studies to demonstrate no WQ impact from blending	Monica Oakley
5. Uncertainty/ inconsistent application of process for UAAs and site specific objectives	Develop procedures/guidelines for these actions, based on a review of successful UAAs, SSOs	Sharon Green
6. Costs associated with mercury WLAs	Establish phased approach to POTW WLA implementation that specifies P2 as first phase	Sharon Green
7. Costs/burdens on recycled water systems of emergency discharge prohibition	Develop alternative approach that allows agencies to maximize RW use	Monica Oakley
8. Unnecessary sanitary sewer overflow monitoring and reporting	Revise SSO MRP	Bobbi Larson, Dennis Laniohan
9. Unnecessary/duplicative sampling of TSS	Allow turbidity measure to serve as indicator of TSS	Dennis Laniohan

CHAIR AUTHORIZATION REQUEST

FILE NO.: 12,855

DATE: November 28, 2012

TITLE: Chair Authorization for Agreement with Hanson Bridgett LLP for Executive Director Recruitment Legal Assistance

RECOMMENDED ACTION

BACWA Chair authorization for an agreement with Hanson Bridgett LLP, in an amount not to exceed $9,999, for Executive Director recruitment legal assistance during the period of November 28, 2012 – June 30, 2013.

SUMMARY

This agreement will allow the BACWA Board to obtain legal assistance required for the Executive Director recruitment process. This contract will be managed by Laura Pagano, of the San Francisco Public Utilities Commission. The BACWA Chair has delegated his authority to approve agreements under $10,000 to the Vice Chair, Laura Pagano, to acquire these services.

FISCAL IMPACT

This project will be funded by the BACWA Contingency FY 2012-13 budget line item. Primarily due to Executive Director recruitment costs, this line item currently has encumbered $1,000 more than originally allotted for this fiscal year and this agreement will result in an exceedance of $10,999.

ALTERNATIVES

This action does not require consideration of alternatives.

Attachments:

1. HB 2012-13, 12,855 Scope of Work

JOAN L. CASSMAN
PARTNER
DIRECT DIAL (415) 995-5021
DIRECT FAX (415) 995-3414
E-MAIL jcassman@hansonbridgett.com

HansonBridgett

November 28, 2012

Laura Pagano
Regulatory Program Manager
San Francisco Public Utilities Commission
525 Golden Gate Avenue, 11th Floor
San Francisco CA 94102

Re: Engagement Letter

Dear Laura:

It was a pleasure to speak with you about your matter. This letter will confirm your engagement of Hanson Bridgett LLP to provide legal services to the Bay Area Clean Water Agencies (BACWA). Our engagement will involve reviewing, analyzing and advising on conflicts of interest issues related to the recruitment of the Executive Director of BACWA. We look forward to working with BACWA in resolving these issues. If we can assist BACWA in other areas, please let me know.

The attached Billing and Policy Summary provides details as to our representation. We have also attached the firm's W-9 form which specifies our ID number is 94-1205338.

I will be the attorney responsible for this matter. My billing rate is $425 per hour. I will be assisted by Shayna van Hoften whose hourly rate is $335. When appropriate, we use attorneys, paralegals, and legal research assistants at different hourly rates to handle work commensurate with their experience and expertise. Attorneys with special expertise in a given area may become involved in your representation from time to time, with your approval.

As is typically the case, the estimated cost of our services derives from the required time commitment. There are various levels of analysis involved here and the time devoted to this project will largely depend on the number of levels we will need to penetrate. For instance, if we find that the rules on incompatibility apply, we will not need to drill down to 1090 and Political Reform Act analyses. We recognize that your contract authority limit is $10,000. Please be assured we will approach this matter in a cost effective manner.

Our invoices contain a detailed narrative of the services rendered, together with the name of the attorney or paralegal involved, the time spent, and the amount charged. I will direct our invoices to your attention.

We realize there are many qualified firms to choose from and are pleased you have selected our firm to assist you with your matter. We care deeply about our clients and are proud to say we have many clients who have been with our firm for more than 50 years. We strive to provide

exceptional client service to all of our clients. We welcome BACWA as a valued client and look forward to assisting in the achievement of your objectives. You can obtain more information about my background and our firm's services from our website, www.hansonbridgett.com.

Very truly yours,

Joan L. Cassman

Attachment

BACWA CHAIR / EXECUTIVE DIRECTOR AUTHORIZATION REQUEST

FILE NO.: 12,872

DATE: 12/04/12

TITLE: International Contact for BAPPG FY 2012/13

RECOMMENDED ACTION

Chair authorization for an agreement with International Contact in an amount not to exceed $313.00 for translation services for the BAPPG Copper Algaecide project FY 2012/13, to be completed by December 31, 2012. BAPPG members will perform proofing of document to realize a cost savings of $105.00.

SUMMARY

This contract will provide translation of the Our Water Our World Pools (OWOW), Spas, and Fountains Maintenance Fact Sheet from English to Spanish for posting to the Bay Area Pollution Prevention Committee's Baywise website and the OWOW website, as well as be available for printing on an as needed basis.

This work will be carried out under the supervision of Catherine L. Allin, City of Millbrae.

FISCAL IMPACT

The Copper Algaecide line item budget is $5000.00. $4833.00 was used for printing the English version leaving an available balance of $167.00. An additional $146 is needed to complete translation. There are sufficient funds in the BAPPG account to pay for this project. BAPPG has funds allocated to the BAPPG "Unplanned Issues" budget line ($8000) that will not be spent or obligated before the end of the fiscal year. Therefore, this project will not cause BAPPG's actual year-end expenses to be greater than that for which they budgeted.

ALTERNATIVES

No other alternatives were considered as the BACWA contracting policies authorize a sole source selection process for contracts under $50,000.

Attachments:

1. Estimate Terms and Agreement

Approved By: James M. Kelly	Date: 12/14/2012

INTERNATIONAL CONTACT, INC. ESTIMATE TERMS & CONDITIONS

The estimated price shown on the front of this form cannot be confirmed until International Contact has reviewed all original materials. In the event that a discrepancy occurs between the estimate and the work performed, a change order must be submitted and approved.

Project will be started upon receipt of a signed copy of this estimate. Services and materials provided by client are necessary for production; failure to provide them in a timely manner can produce serious budget overruns. Client will be solely responsible for failure to provide required materials.

International Contact exercises best efforts to deliver accurate, effective translations; however, we cannot be responsible for the content of the material. Thus, we require that clients approve their translations or specifically release International Contact's liability in writing before production begins. *

Translation and copy editing fees include one re-write per client's corrections. Consultation or re-translation services regarding the copy will be billed at an hourly rate of $75.00 per hour. Translated page counts are determined from target language manuscript copy.

Administration fees include project management, scheduling, reference services, and general overhead expenses. They vary between 20–75% of the total cost of the production, according to the number of services required and the time frame of production.

Long distance telephone, messenger, and overnight services will be billed additionally at cost. Sales tax is not included and will be charged where applicable.

To begin work on the Project we require a fifty percent deposit, with the balance due upon completion. Masters, art boards, and other materials will not be released until payment has been received.

In the event the client puts a project on hold, the project will be deemed closed and all work done to date will be due and payable as billed. If the client desires to resume the project after it has been closed then a new estimate and contract must be agreed to and signed.

In the event a project is delayed but not put on hold by the client for any reason including but not limited to revisions or changes, the client will be billed for all work in progress which will be due and payable as billed.

Client acknowledges International Contact may introduce that client to persons employed and/or hired by International Contact for the benefit of client. Client agrees not to contract with, solicit, employ, or hire any person introduced to them by International Contact for any purpose without the prior written consent of International Contact. Client further acknowledges that such persons may have confidential trade secret information regarding International Contact.

In the event of a dispute arising out of this agreement, the prevailing party shall be entitled to collect reasonable attorney's fees and costs.

The parties hereto agree to submit all disputes regarding the performance or interpretation of this Agreement to binding commercial arbitration in Alameda County, California.

This Agreement is binding on the heirs, successors and assigns of the parties hereto and contains the entire agreement between the parties unless otherwise agreed to in writing.

International Contact will receive translation credit as follows:

Foreign Language Version produced by International Contact, Inc.

Client will provide 5 samples of all finished product for International Contact's files.

Maintenance Tips for Pools,
Spas and Fountains Fact Sheet

PROJECT NAME: **Spanish Translation Services** TOTAL ESTIMATED: **$313.00 to $418.00**

TOTAL ACCEPTED: _____ SIGNATURE: _____

P.O. NUMBER: _____ DATE: _____

* Copy approval required: **YES**

ESTIMATE FOR PRINT TRANSLATION

CLIENT NAME: Catherine Allin
COMPANY: City of Milbrae
ADDRESS:
CITY:
PHONE: 650-259-2470 FAX:

DATE: 11/14/2012
PROJECT NAME:
Maintenance Tips for Pools Spas and Fountains Fact Sheet

LANGUAGES: Spanish
FINAL COPY: YES [x] NO [ ]

SERVICE	RATE	Without Proofreading	With Proofreading
COPYWRITING			
TRANSLATING	Approximately 950 Words	$266	$266
BACK TRANSLATION			
REVIEW/EDIT			
RESEARCH			
TYPESETTING			
DESKTOP PUBLISHING		client	client
OUTPUT -			
COLOR KEY			
FIERY (pr-film color proofs)			
PROOFREADING	PROOF 1	client	$60
	PROOF 2	client	$30
	PROOF 3		
PRODUCTION MANAGEMENT		$47	$62
	EACH LANGUAGE:	$313	$418

ESTIMATE TOTAL: $313 TO $418

PLEASE READ THE TERMS AND CONDITIONS ON THE BACK OF THIS ESTIMATE FORM, THEN INDICATE THE ACCEPTED ESTIMATE AMOUNT & SIGN YOUR NAME IN THE SPACE PROVIDED. PROJECT WILL NOT BE STARTED UNTIL A SIGNED COPY IS IN OUR FILES. THIS ESTIMATE IS VALID FOR ONLY NINETY (90) DAYS.

THANK YOU FOR TRUSTING US WITH YOUR FOREIGN LANGUAGE NEEDS!

International Contact, Inc.
351 15th Street, Oakland, CA 94612 (510) 836-1180 Fax 835-1314

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 10

FILE NO.: 12,876

MEETING DATE: January 3, 2013

TITLE: Solano Community College Agreement for Spring 2013 WOT

☒ **MOTION** ☐ **DISCUSSION** ☐ **RESOLUTION**

RECOMMENDED ACTION

Approve execution of a contract with Solano Community College for WOT program (Bay Area Consortium for Water & Wastewater Education), not to exceed $104,500 for Spring 2013 semester courses.

SUMMARY

Since June of 2007 BACWA has provided contracting and financial management services for the Water Operator Training program, now called the Bay Area Consortium for Water & Wastewater Education. Participating agencies are billed by BACWA and their contributions fund the Solano Community College courses for the program and a $2,500 annual BACWA administration fee. In July of 2008, the BACWA Board approved execution of the Fall 2008 agreement with Solano Community College and also granted the Chair to execute future agreements for this program as long as they did not exceed $79,200 (10% increase over the Fall 2008 contract amount of $72,000). This program has grown from its ten original sponsors to 22 agencies from five counties contributing funds for Spring 2013. To date, nearly 800 students have taken courses offered by this program. The Spring 2013 agreement exceeds $79,200 contracting cap set by the BACWA Board in July 2008, and is being brought before the Board under this action in accordance with that stipulation.

FISCAL IMPACT

Funds are available for this agreement in the Water Operator Training (WOT) account. Based on the current Treasurer's Report, as of November 1, 2012 the account has a balance of $130,839; minus the annual administration fee of $2,500, the remaining unobligated balance for fiscal year 2012-13 is $128,339.

ALTERNATIVES

This action does not require consideration of alternatives.

Attachments:

1. SOLANO COMMUNITY COLLEGE DISTRICT AGREEMENT FOR EDUCATIONAL SERVICES

SOLANO COMMUNITY COLLEGE DISTRICT
AGREEMENT FOR EDUCATIONAL SERVICES

This agreement is entered into by and between **SOLANO COMMUNITY COLLEGE DISTRICT**, hereinafter referred to as "District" and **Bay Area Clean Water Agencies,** hereinafter referred to as "BACWA."

WHEREAS, BACWA desires to engage the District to render special educational services,

THEREFORE, THE PARTIES AGREE AS FOLLOWS:

A. The District will provide seven (7) credit classes, WATER 100, Wastewater Treatment I, WATER 103, Biological Principles of Water & Wastewater, WATER 104, Water Treatment I, (2 classes), WATER 107, Mathematics for Water & Wastewater, WATER 120, Distribution Systems Maintenance, and WATER 121, Collections Systems Maintenance, for up to 30 students per class, for BACWA member organizations.

B. The District will develop, coordinate, deliver, and evaluate the training. Instruction/training will be delivered at various BACWA sites, to be determined. Classes will begin in January 2013, exact dates to be determined. Additional training can be scheduled as needed with an addendum to this contract.

C. The District will maintain the BACWWE (Bay Area Consortium for Water & Wastewater Education) website and database and provide marketing and marketing materials for sponsoring agencies.

D. BACWA will recruit, identify and select all trainees who will participate in training.

E. BACWA will compensate the District for all services rendered and expenses at a rate of one hundred four thousand five hundred dollars ($104,500). The fee for each 3 or 4 credit hour class is fifteen thousand five hundred dollars ($15,500). The fee for each 2 or 2 ½ credit hour class is thirteen thousand five hundred dollars ($13,500). The cost is inclusive of all instruction and teaching/ training materials.

F. Payments by BACWA to the District will be due upon receipt of invoice. An invoice will be generated upon completion of the first month of instruction.

G. This contract may be terminated by either party with notice of ten (10) business days.

H. **IT IS MUTUALLY UNDERSTOOD** that BACWA and the District shall secure and maintain in full force and effect during the full term of this Agreement, liability insurance in the amounts and written by carriers satisfactory to BACWA and the District respectively.

I. The District will indemnify, and hold harmless, in any actions of law or equity, BACWA, its officers, employees, agents and elective and appointive boards from all claims, losses, damage, including property damages, personal injury, including death, and liability of every kind, nature and description, directly or indirectly arising from the operations of the District under this Agreement or of any persons directly or indirectly employed by, or acting as agent for the District, but not including sole negligence or willful misconduct of BACWA. This

indemnification shall extend to claims, losses, damages, injury and liability for injuries occurring after completion of the services rendered pursuant to this Agreement, as well as during the process of rendering such services. Acceptance of insurance certificates required under this Agreement does not relieve the District from liability under this indemnification and hold harmless clause. This indemnification and hold harmless clause shall apply to all damages and claims for damages of every kind suffered, by reason of any of the District's operations under this Agreement regardless of whether or not such insurance policies shall have been determined to be applicable to any of such damages or claims for damages.

J. BACWA will indemnify, and hold harmless in any actions of law or equity, the District, its officers, employees, agents and elective and appointive boards from all claims, losses, damage, including property damages, personal injury, including death, and liability of every kind, nature and description, directly or indirectly arising from the operations of BACWA under this Agreement or of any persons directly or indirectly employed by, or acting as agent for BACWA, but not including the sole negligence or willful misconduct of the District. This indemnification shall extend to claims losses, damages, injury and liability for injuries occurring after completion of the services rendered pursuant to this Agreement, as well as during the process of rendering such services. Acceptance of insurance certificates required under this Agreement does not relieve BACWA from liability under this indemnification and hold harmless clause. This indemnification and hold harmless clause shall apply to all damages and claims for damages of every kind suffered, by reason of any of BACWA operations under this Agreement regardless of whether or not such insurance policies shall have been determined to be applicable to any of such damages or claims for damages.

K. BACWA agrees that it will not discriminate in the selection of any student to receive instruction pursuant to the Agreement because of sex, sexual preference, race, color, religious creed, national origin, marital status, veteran status, medical condition, age (over 40), pregnancy, disability, and political affiliation. In the event of BACWA's non-compliance with this section, the Agreement may be canceled, terminated, or suspended in whole or in part by the District.

_____	_____
Ben Horenstein	Jowel C. Laguerre, Ph.D.
BACWA Executive Board Chair	Superintendent-President
375 11th Street	Solano Community College District
Oakland, CA	Fairfield, CA
Date_____	Date_____

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 11

FILE NO.: 12,314

MEETING DATE: January 3, 2013

TITLE: Approval of SFEI Technical Memo on Selenium

☒ **MOTION** ☐ **DISCUSSION** ☐ **RESOLUTION**

RECOMMENDED ACTION

Accept memorandum from SFEI entitled *Selenium Fractionation and Speciation in Final Effluents of Selected San Francisco Bay Area Municipal Wastewater Treatment Facilities* produced on April 24, 2012.

SUMMARY

On December 16, 2012 the BACWA Executive Board approved a contract with the Aquatic Science Center (ASC) to determine the speciation of selenium in Bay Area municipal wastewater discharges, in an amount not to exceed $24,000.The technical memorandum entitled *Selenium Fractionation and Speciation in Final Effluents of Selected San Francisco Bay Area Municipal Wastewater Treatment Facilities* produced on April 24, 2012 by Don Yee of the San Francisco Estuary Institute (SFEI) and his presentation to the BACWA Executive Board on March 23, 2012 complete the deliverables outlined in this agreement. This document was circulated to the BACWA Board for final review in May of 2012. SFEI is requesting that this memo be made available to the public and posted on their website and RWQCB staff have requested the information for consideration in their north Bay Se TMDL .

Project Background

On September 28, 2010, the San Francisco Bay Regional Water Quality Control Board (Regional Board) informally requested that municipal wastewater agencies submit data to inform their development of a Total Maximum Daily Load for Selenium. Similar information is being required of other permittees via formal request pursuant to section 13267 of the California Water Code. Specifically, the Regional Board requested the following:

1. Updated selenium loads based on at least one year of flow and concentration data from a minimum of all major publicly owned treatment works (POTWs);
2. Information on the "typical" selenium speciation in POTWs using analytical methods comparable to those used by the other permittees; and
3. Information on the proportion of particulate (versus dissolved) selenium in POTW effluent.

This contract was executed to generate the data needed to respond to the request for information on the speciation of selenium and the proportion that is particulate bound. Four samples (two wet and two dry) will be collected from six POTWs beginning the first quarter of 2011.

This work was supervised by the Executive Director and Board Member Mike Connor.

FISCAL IMPACT

This action has no fiscal impact on the 2012-13 Budget. All work was funded in fiscal year 2011-12 and there are no outstanding invoices against this agreement.

ALTERNATIVES

This action does not require consideration of alternatives.

Attachments:

1. SFEI Technical Memo: *Selenium Fractionation and Speciation in Final Effluents of Selected San Francisco Bay Area Municipal Wastewater Treatment Facilities, April 24, 2012*
2. ASC/SFEI Proposal to Determine Selenium Speciation in Treated Municipal Effluent, December 7, 2012

TECHNICAL MEMORANDUM

Selenium Fractionation and Speciation in Final Effluents of Selected San Francisco Bay Area Municipal Wastewater Treatment Facilities

Prepared for:

Bay Area Clean Water Agencies

Submitted by:

Donald Yee

San Francisco Estuary Institute

Richmond, CA

April 24th, 2012

Background

San Francisco Bay is listed under section 303(d) of the Clean Water Act as impaired by selenium due to bioaccumulation in diving ducks leading to health advisories on their consumption by hunters. Selenium concentrations may also be above safe levels in other wildlife, potentially causing reproductive impacts in white sturgeon and other species.

Selenium (Se) occurs in various chemical forms with different oxidation states in the environment, which affects its chemical partitioning and biological uptake. Selenate, SeO_4^{2-}, with a +6 oxidation state (Se VI), is the dominant species in aerobic aquatic environments, but is the form least strongly bioaccumulated or adsorbed to particulate matter. Selenite, SeO_3^{2-}, with a +4 oxidation state (Se IV), is less abundant but much more strongly adsorbed and bioaccumulated. After uptake into microorganisms (e.g., bacteria and phytoplankton) these inorganic selenium species can be transformed into organic species such as the selenium containing amino acids, selenocysteine and selenomethionine, and incorporated into cellular peptides and proteins. Once taken up and transformed into organic forms in microbes and algae, selenium is transferred to and bioaccumulated in higher trophic organisms, with dietary uptake serving as the primary route of exposure. Although selenium chemical speciation is not static and can be altered through abiotic and biological processes within the Bay, understanding the speciation and partitioning of selenium loads is needed to understand their magnitudes relative to in Bay transformation and uptake processes.

Because of the differences in partitioning and biouptake, in addition to total selenium loads, the chemical speciation of various selenium sources is important to estimating their relative risks and any benefits of controls or other management actions. Previous work in the Bay characterized ambient concentrations of various selenium species as well as those of major inputs to the system including refineries and municipal dischargers (Cutter and San Diego-McGlone 1990). In that work, some refinery effluents showed selenite as a majority of their selenium discharge. Municipal wastewater effluent showed a different speciation, where selenate was often 70-90% of total dissolved selenium, selenite 10-20%, and all other species (primarily organo selenides) typically comprising 0-10% of dissolved Se. However, there were many exceptions, with instances where municipal effluents were not dominantly selenate, including cases of 100% selenite, >50% organic selenium, and others less extreme. Total Se concentrations in that work ranged ~3-28 ug/L in municipal effluents.

Following controls introduced at refineries, a subsequent study showed decreases in selenite loads and concentrations in both refinery effluent and the ambient environment (Cutter and Cutter 2004). More recent monthly monitoring at refineries (2010-2011) for the Selenium Characterization Study in North Bay (unpublished preliminary data) generally showed continued lower selenite and organic selenium species compared to selenate, averaging 21%, 24%, and 53% of dissolved selenium respectively, although distributions for individual samples still varied widely among plants and events (e.g., selenite ranging 0-99% of dissolved selenium).

Since that earlier study in the 1980's (Cutter and San Diego-McGlone 1990), selenium speciation in municipal wastewater effluent has not been measured widely in the Bay Area, so the Bay Area Clean Water Agencies (BACWA) sponsored a study conducted by

the San Francisco Estuary Institute (SFEI) to determine current speciation characteristics of effluents at selected municipal POTWs. In consultation with BACWA and the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), SFEI selected for sampling treatment plants of three of the largest dischargers (East Bay Dischargers Association (EBDA), East Bay Municipal Utility District (EBMUD), and Central Contra Costa Sanitary District (CCCSD) and four smaller plants with the highest average total selenium concentrations in recent (2009-2010) discharge permit reporting to the SFBRWQCB.

Methodology

Sampling

Grab samples of final effluent post-chlorination and dechlorination were collected by treatment plant staff on four occasions: two during the wet season (November to March), and two in the dry season (April to October). Wet season samples were collected at least 6 to 8 hours following rain events that caused increased influent flow into the plant, allowing sufficient time for rain-influenced effluent to be sampled at the collection point. Dry season samples were collected in the morning on Mondays, primarily for logistical considerations. Monday morning sampling afforded sufficient time for sample preparation, shipping, and delivery to the Trent University analytical laboratory to conduct sample analysis within the desired holding time (~7 days). Samples at each site were collected into three 1L pre-cleaned HDPE bottles with minimal headspace, stored chilled in the dark at the treatment plants until pickup, then transported in coolers with wet ice to the EBMUD Laboratory for storage chilled (~4 C) in the dark until processing.

Processing

EBMUD Laboratory staff filtered ~800 ml to 1L of sample through pre-weighed 0.45 um pore-size nitrocellulose membrane filters to allow determination of total suspended solids (TSS), with subsequent digestion and analysis for particulate selenium at the EBMUD lab. The filtrate was collected and transferred to 3 ~250ml precleaned HDPE bottles with minimal headspace and sent to Trent University (Ontario, Canada) for dissolved-phase selenium species analysis. EBMUD retained a portion of the filtrate for dissolved phase (unspeciated) selenium analysis. Samples for total (whole water) Se determination at EBMUD were stored without further processing until analysis.

Laboratory analysis

EBMUD measured collected solids on filters for TSS by Standard Methods 2540. Pre-weighed filters with filtered material from selenium samples were dried in an oven at 103 to 105 C for a minimum of 1 hour, until stable weights were measured. TSS was then calculated for each sample as the difference between the initial and final filter weights.

EBMUD analyzed samples for total suspended solids and total, dissolved, and particulate phase selenium in-house. Samples were analyzed for selenium using Standard Methods SM 3114B, (manual) hydride generation atomic absorbance spectrometry. Samples were first digested in an oxidizing acidic solution, with Se(VI) then prereduced to Se(IV) by heating in a hydrochloric acid solution, and subsequently converted to volatile hydrides

in an acidic sodium borohydride solution, purged by inert carrier gas, and measured by atomic absorption spectrometry.

Discrete soluble selenium species in filtered effluent samples were measured by Trent University using anion-exchange chromatography-anion self-regenerating suppressor-inductively-coupled plasma-dynamic reaction cell-mass spectrometry (AEC-ASRS-ICP-DRC-MS). Samples were analyzed as is without digestion or dilution; methane was used as the reaction gas, and the major isotope ^{80}Se was used for quantification. An example chromatogram (Figure 1) shows a signal of hydrogen bromide ($^{1}H^{79}Br$), with the same mass as target ^{80}Se isotope, but its signal is well-separated from those of target selenium species by the anion-exchange column. Three known selenium species, selenite = Se(IV), selenate = Se(VI) and selenocyanate = SeCN, are identified, along with four unidentified species (with retention times or peaks labeled US1 to US4 in Figure 1).

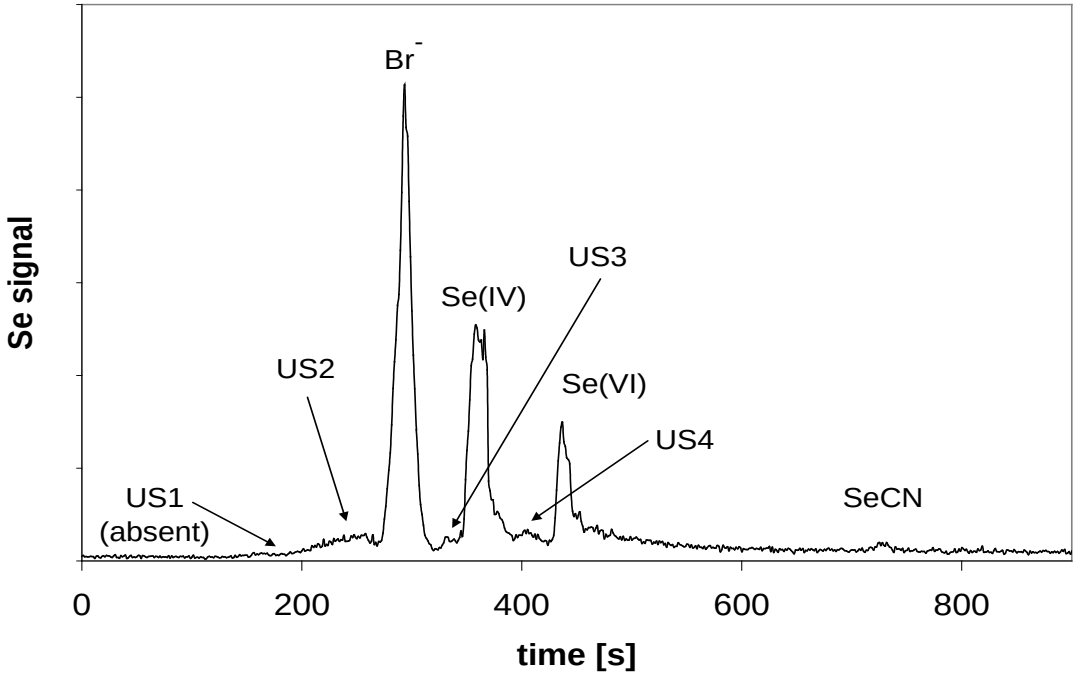

Figure 1 – Example AEC-ASRS-ICP-DRC-MS chromatogram. US1 to US4 indicate retention times for unidentified selenium containing species often found in these effluent samples.

Subsamples of the filtered samples sent to Trent University for analysis were analyzed for total dissolved Se using ICP-DRC-MS. Nitric acid was used to oxidize volatile Se species to non-volatile ones and yielded a more stable instrument response. Due to the bromide interference at atomic mass 80 (without column chromatography, not distinguished from ^{80}Se), the ^{78}Se isotope was used for measurement total dissolved Se.

A subsample of filtered material sent to Trent University was sent to Laurentian University for measurement of organic selenium species using selective sequential hydride generation-atomic fluorescence spectrometry (SSHG-AFS) using UV-assisted breakdown of organic matter and discrete organic Se compounds to the hydride generation-active Se(IV) (Chen et al., 2005). This method measures Se(IV) directly in the sample by HG-AFS, and then measures a separate sample aliquot which has been

digested by a combined oxidation-UV irradiation procedure. The latter treatment converts organic selenium species into Se(IV), with "organic selenium" (Se-org) estimated by difference between the two measurements.

Results

Tables of the results for individual samples collected and analyzed are reported in tabular form in the Appendix. Dissolved, particulate, and total selenium fractions were analyzed for all samples collected. Speciation of dissolved selenium was analyzed for all samples for all treatment plants, except for Delta Diablo, for which only the first two samples were sent to Trent University and analyzed.

Concentrations of selenium in whole water samples ranged 0.21 to 2.0 ug/L, much lower than in the earlier (Cutter and San Diego-McGlone 1990) study of Bay area treatment plants. Concentrations were higher in the wet weather events for most plants (Figure 2), significantly so with all plants considered together ($P<0.05$, t-test), suggesting increased input of selenium from inflow and infiltration to the treatment plants in those periods. For many of the treatment plants considered individually, despite the small number of samples for each season ($n=2$), differences between wet and dry season averages were sometimes also significant ($p<0.05$).

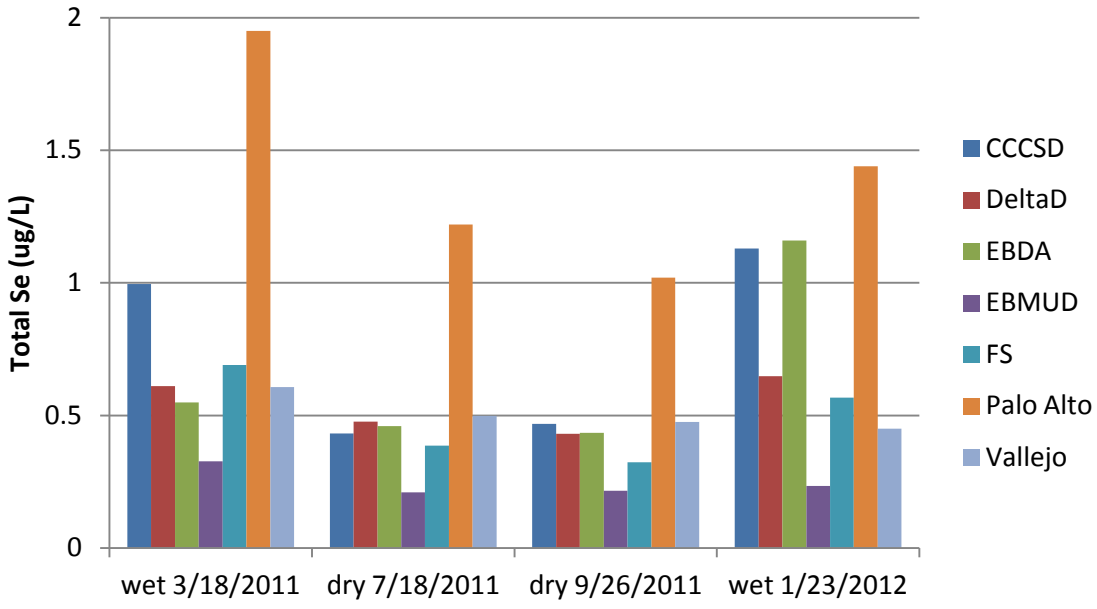

Figure 2 -Total selenium concentrations in wastewater effluents. Wet weather concentrations were higher than in dry season at most plants.

The plants with the lowest and highest selenium concentrations also generally remained the same among both wet and dry season events, suggesting consistent selenium input sources for each area. However, only the difference between the highest concentration plant and all the others was significant ($p<0.05$, t-test); the plant with the lowest average concentration was not significantly different from plants other than the highest when all

events were included. The lack of significance for other pairings is likely due to the small number of samples (n=4) and the variation between wet and dry season results within a plant. Analyzing only within a single season, sample numbers are further reduced (n=2), so significant differences between most pairs of plants (other than the lowest versus highest) are still not found.

Dissolved selenium concentrations covered virtually the same range as total selenium, from 0.17 to 1.9 ug/L. Consistent with the dissolved fraction constituting the majority of selenium in effluent (Figure 3), the dissolved selenium fraction was highly correlated to total selenium concentrations (R^2 = 0.99), and ranged from 71 to 101% of total (unfractionated) selenium, averaging(±stdev) 89(±8) % (Table 1). The patterns of higher concentrations in wet season samples at most plants remained the same, although the differences were slightly outside the threshold for significance (p=0.053, t-test). Plants with the lowest and highest concentrations remained the same, again with a significant difference ($p<0.05$, t-test) between the highest versus all others, but few significant differences between most other pairs.

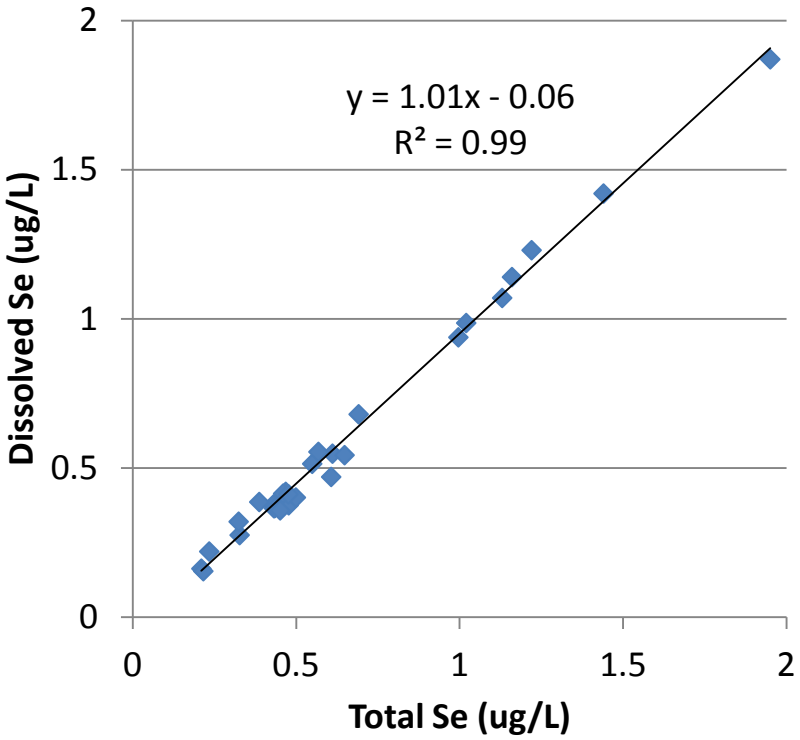

Figure 3 -Dissolved versus total selenium concentrations. Dissolved selenium constitutes the majority of selenium in effluent.

Table 1 -Average percentages (±stdev) of dissolved and particulate fraction selenium in municipal wastewater effluents. Selenium was dominantly dissolved phase at all plants.

	Dissolved	Particulate
CCCSD	91(±5)	7(±4)
DDSD	85(±5)	9(±3)
EBDA	92(±6)	8(±4)
EBMUD	82(±10)	7(±4)
FSSD	99(±1)	2(±1)
Palo Alto	98(±2)	1(±0)
VSFCD	81(±4)	14(±2)
All	89(±8)	7(±5)

Particulate Se was consistently only a small fraction, ranging 1 to 14% of total (unfractionated) selenium in effluent. No seasonal patterns were apparent in particulate selenium, with high concentrations occurring in dry season for some plants and in the wet season for others (Figure 4), and no significant differences between seasons for all plants considered together. However, there were significant differences ($P<0.05$, t-test) among some treatment plants (i.e. between those with the lowest and highest concentrations for both all seasons combined, and wet or dry season individually), with the same plants generally at the higher and lower ends of the range for all the sampling events. These differences in particulate Se in samples correlated moderately ($R^2 = .43$) and significantly ($p=0.001$) to the total particulate mass (total suspended solids, TSS Figure 5), suggesting similar partitioning behavior of Se among plants.

As a check of the internal consistency of the results for analysis of Se fractionation, the selenium as sums of dissolved and particulate fractions generally added up to close to the same concentrations as separately analyzed (unfractionated) total selenium samples, ranging 81 to 102% of the total samples (Figure 6). The largest relative deviations were in the lowest concentration samples, where analytical noise would be expected to be largest relative (as a percentage) to reported concentrations, even if the nominal variations (i.e. in ug/L) are similar across the range.

There was also reasonably good agreement and correlation ($R^2 = 0.90$) between concentrations reported for the dissolved fraction analyzed by EBMUD compared to those reported by Trent (Figure 7). Relative percent differences between the labs ranged up to 60%, but most were in a lower range (35% or lower, averaging 12%).

For most of the samples, selenate was the dominant dissolved phase species, accounting for 5% to 92% of dissolved selenium species in individual samples, averaging(±stdev) 40(±24)% (Figure 8,Table 2) for all samples together. The organic selenium analyzed by Laurentian University was often the next most abundant, accounting for 0% to 76% (average 33(±21)%) of dissolved selenium. Selenite typically accounted for a smaller portion (1% to 46%, average 15(±17)%), with the various unidentified species isolated by anion exchange chromatography (US1 to US4) and selenocyanate (SeCN) accounting for the remainder (average 8(±10)% and 4(±7)% of dissolved selenium respectively).

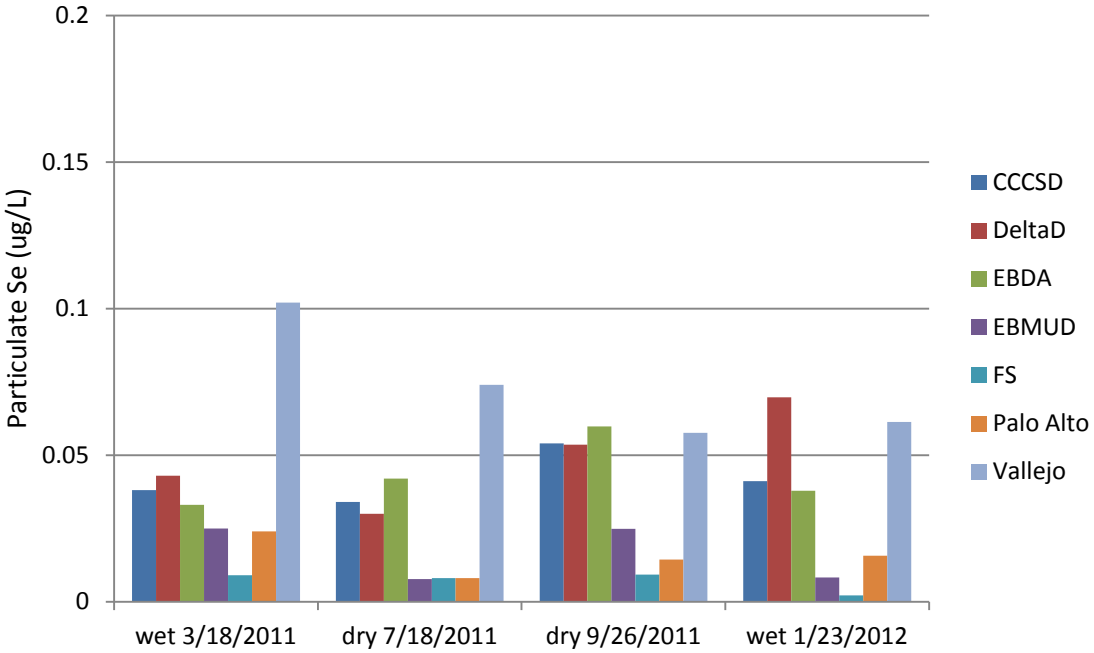

Figure 4 - Particulate selenium in effluent samples. Particulate selenium showed no seasonal patterns, with the highest concentrations occurring in the dry season at some plants and in the wet season at others.

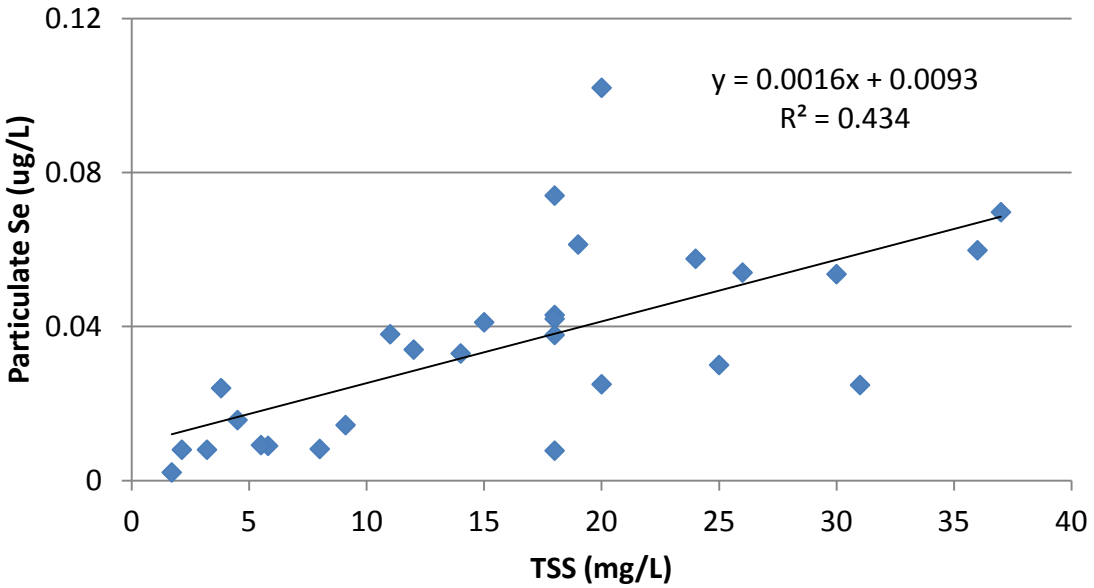

Figure 5 -Particulate selenium versus total suspended solids. Particulate selenium generally correlated to total suspended solids, suggesting similar partitioning behavior and concentrations of selenium in solids among plants and events.

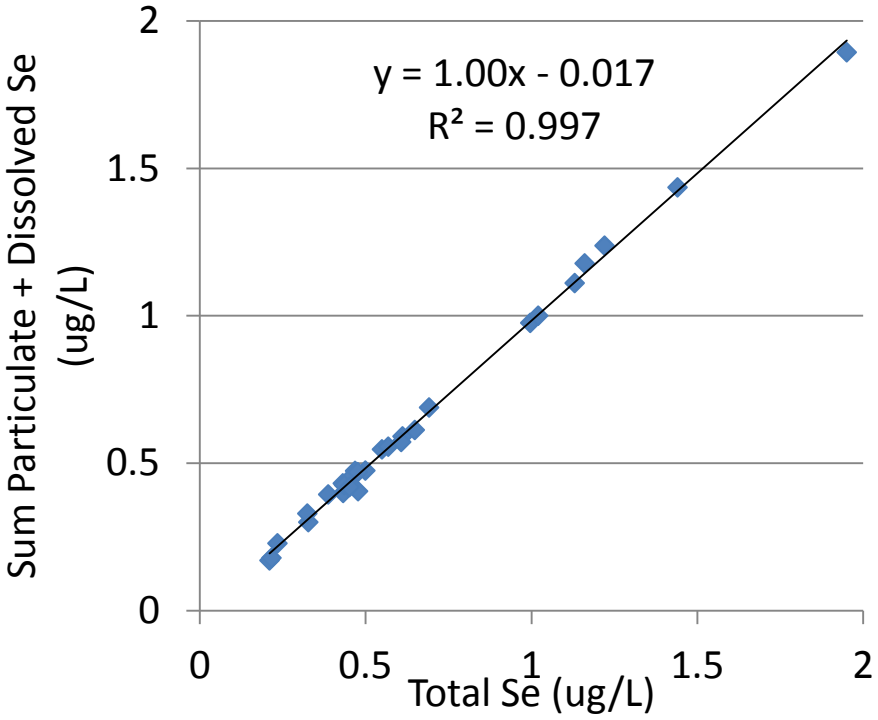

Figure 6 -Sum of dissolved and particulate fractions compared to total selenium. Sums of fractions generally were equivalent to total fractions within the range of analytical precision.

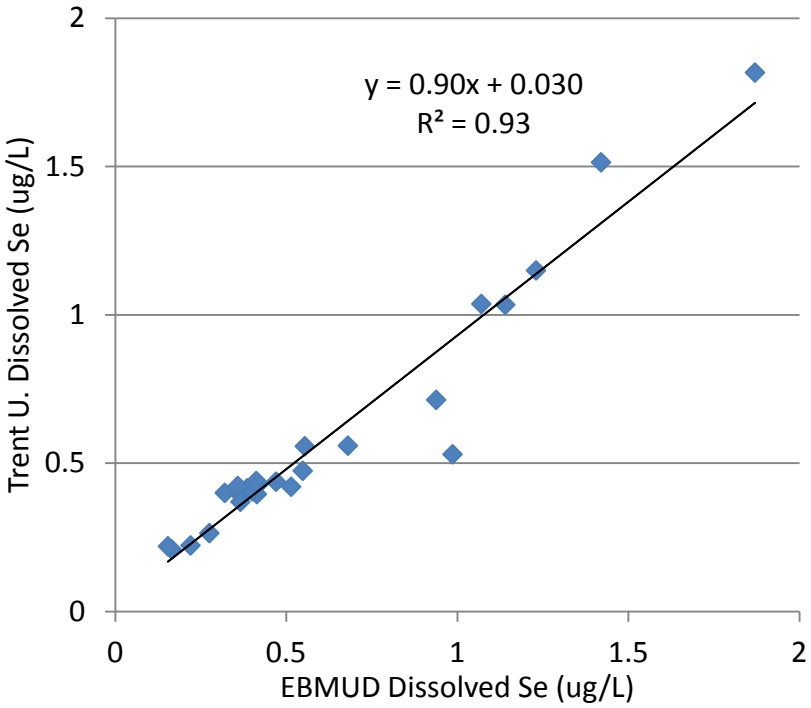

Figure 7 -Dissolved selenium concentrations reported by Trent versus EBMUD. Results were generally similar between laboratories for most samples.

Two plants had unique dissolved species distributions; Palo Alto had dominantly selenite (Se IV), significantly ($p<0.05$, t-test) higher than all other plants, and Vallejo samples had primarily the organic selenium species reported by Laurentian University, significantly higher than three of the six other plants. Selenium originating from different sources can have different speciation characteristics, and bacteria such as those in sludge reactors are capable of transforming selenium species (van Hullenbusch et al. 2007). The specific causes of the differences in these Bay Area plants is unknown, and would require analysis of samples from water suppliers, influent, and/or other points in the water supply and treatment stream to determine their origin.

Table 2 -Average (%(±stdev)) contribution of individual species to dissolved fraction selenium. SeCN = selenocyanate, Org Se (LU) = ograno selenium species anslyzed by Laurentian University, and UnID'd Se (TU) = the sum of unidentified selenium species by anion chromatography analyzed by Trent University.

	Selenate (Se VI)	Selenite (Se IV)	SeCN	Org Se (LU)	US1 – US4 (TU)
CCCSD	33(±9)	9(±10)	13(±15)	42(±14)	3(±3)
DDSD	37(±2)	8(±4)	5(±3)	44(±2)	6(±7)
EBDA	57(±19)	6(±5)	3(±1)	28(±14)	7(±8)
EBMUD	36(±19)	17(±5)	4(±4)	27(±21)	17(±20)
FSSD	78(±12)	2(±1)	2(±1)	13(±15)	5(±5)
Palo Alto	23(±8)	48(±14)	1(±0)	20(±13)	8(±4)
VSFCD	12(±6)	11(±4)	3(±1)	65(±12)	9(±10)
All	40(±24)	15(±17)	4(±7)	33(±21)	8(±10)

One sample from CCCSD had an unusually high proportion of selenocyanate, about ten times higher than in any other samples. On requested reexamination of the instrument data, the laboratory confirmed the identification and quantification of selenocyanate; the peak location and ratio of selenium isotopes in the sample were consistent with that identification. Although at a much lower concentration, the second highest concentration of selenocyanate was also in a sample from CCCSD, which suggests that the other result was a valid signal.

Seasonal differences in mean concentrations were not significant for any species when considering all the plants together, as there was large variation among all the plants within each season. However, some selenium species in individual plants showed significant differences between seasons. For selenite (Se IV) and selenate (SeVI), only CCCSD showed significantly ($p<0.05$ t-test) higher concentrations in wet season. For the sum of unidentified species by anionic chromatography (analyzed by Trent), only Vallejo samples showed significantly higher concentrations in the wet season. Organo-selenium species (reported by Laurentian) and selenocyanate showed no significant seasonal patterns for any of the plants.

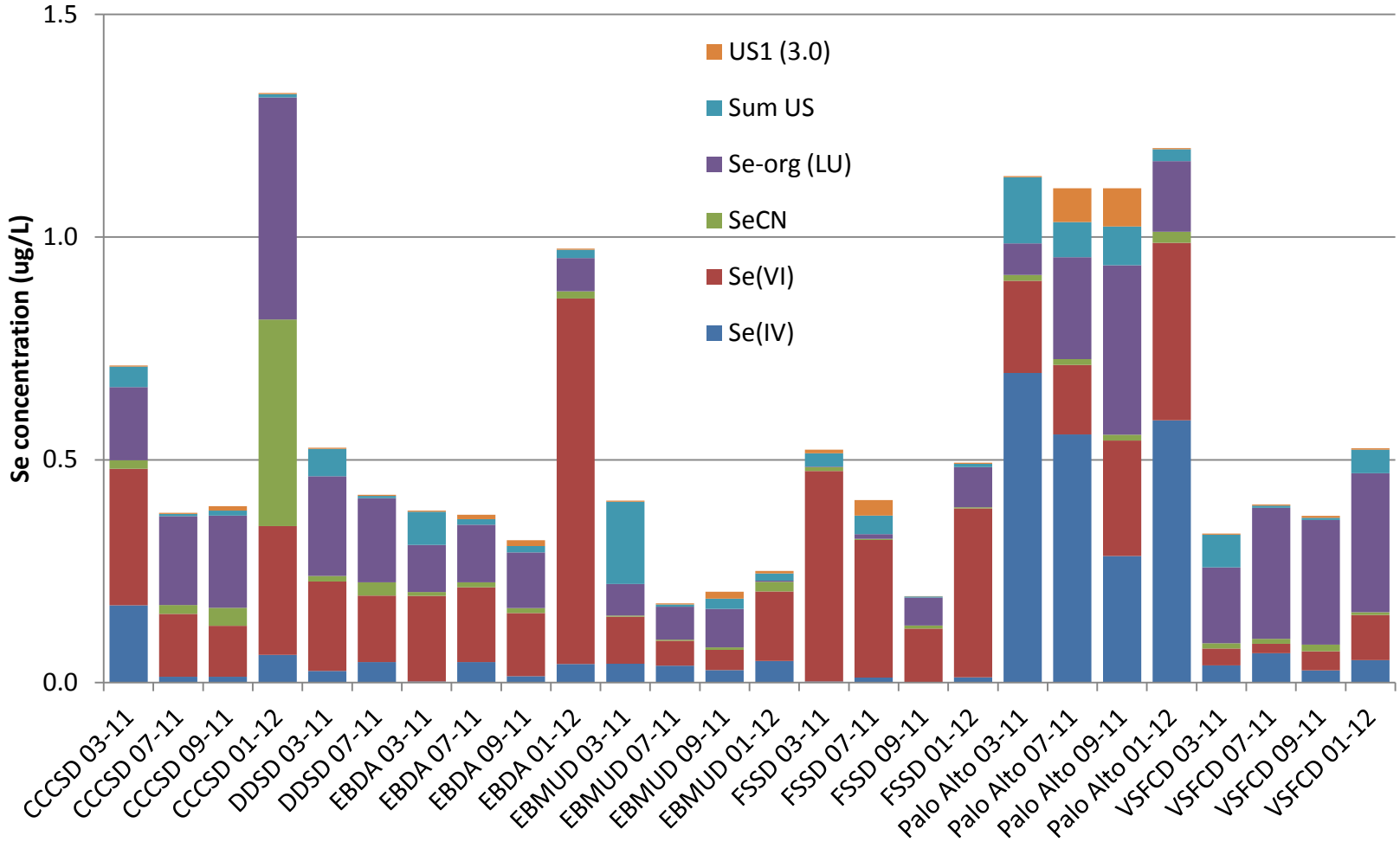

Figure 8 - Dissolved fraction selenium speciation. Selenate (Se VI) was the dominant species, with organic selenium (Se-org, as analyzed by Laurentian University), and selenite (Se IV) as the next most abundant species in most samples. However, two plants had atypical distributions, one with dominantly selenite, and another mostly organic selenium in all sample events. There was also one sample with unusually high selenocyanate (SeCN).Wet weather events were sampled on 03-11 and 01-12

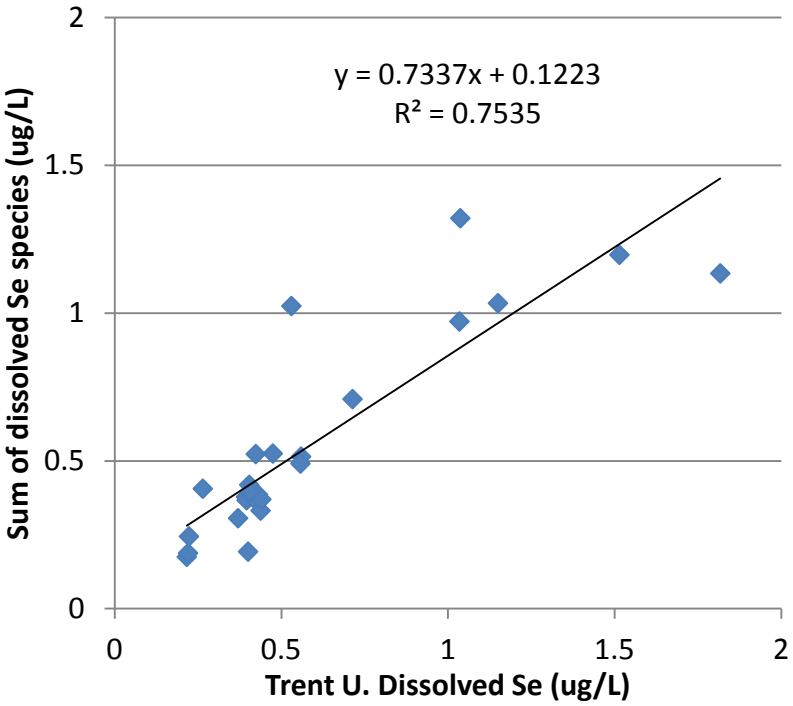

Figure 9 - Sum of all Se species versus unspeciated dissolved Se concentrations. The sum of species includes organic selenium reported by Laurentian; the low bias relative to unspeciated dissolved Se reported by Trent suggests little or no overlap with the unidentified selenium species reported by Trent in anion exchange chromatogaphy.

Because analyses by Trent (by AEC-ASRS-ICP-DRC-MS) and Laurentian (by SSHG-AFS) were performed on parallel subsamples rather than sequentially analyzing the same sample, the possibility exists that there is overlap in some of the unidentified selenium species reported by Trent and the organic selenium species reported by Laurentian. Sums of the quantified species including and excluding organic selenium species reported by Laurentian were therefore compared to separate analyses of (unspeciated) dissolved selenium performed by Trent. If both analyses reported some of the same species, the sum including the Laurentian results would double count those species, resulting in a high bias of the sum compared to the unspeciated analysis concentration. A plot of the sum of species including the Laurentian results however still mostly biases low compared to unspeciated dissolved selenium analyses (Figure 9). A regression with the sums excluding the Laurentian results showed an even lower bias (slope of 0.70 versus the 0.73 shown), and a slightly worse correlation ($R^2 = 0.70$), so it is likely that there is little to no overlap in the species reported by Trent and Laurentian.

Discussion

Overall, the results are similar to those in previous studies examining selenium fractionation and speciation in municipal wastewater dischargers. Most selenium was found in the dissolved fraction, with only a small percentage in particulate forms. Among the dissolved selenium forms, selenate (Se VI) was the dominant species for most locations, with unspecified organic species and selenite (Se IV) accounting for smaller portions of the dissolved species. However, also similar to previous results, the relative

contributions of various dissolved selenium species were somewhat variable among plants and events.

A correlation of particulate selenium concentration with total suspended solids suggests that solids removal is generally effective at reducing the particulate fraction in discharged effluent. Increased solids removal for effluents with higher TSS can reduce that fraction further, but will not prevent uptake or re-partitioning of dissolved fraction selenium to particulate phases once released into the environment. The latter processes, as well as particulate selenium inputs from riverine and tributary sources are likely important in determining ambient concentrations, as effluent discharged from municipal wastewater plants (approximately 600 million gallons per day, or 830 million cubic meters per year), combined with particulate selenium average concentrations measured in this study (avg(±stdev) = 0.035(±0.025) ug/L) yielded estimated loads of only 29(±20) kg per year. In comparison, the Delta delivers an estimated 47 to 686 kg of particulate selenium per year ((Abu-Saba and Ogle 2005), using data from Cutter and co-authors). Most of the fifteen-fold variation in Delta loads was from variations in annual flow, as particulate selenium concentrations in the Delta used for that calculation varied by less than a factor of two (Doblin et al. 2006). The suspended particulate selenium in the Bay (based on the difference between areally averaged total (0.119 ug/L) and dissolved (0.100 ug/L) selenium concentrations from Regional Monitoring Program data 2005 to 2010, and an approximate Bay volume of 6.7×10^9 cubic meters) yields an inventory of 128 kg. Thus upper end estimates of annual particulate selenium loads from municipal wastewater are approximately equal to minimum Delta loads, and less than half the Bay inventory

Concentrations of dissolved selenium were generally much higher, averaging(±stdev) 0.606(±0.416) ug/L, yielding annual loads of 503(±345) kg/year from municipal wastewater. These loads were above the low end of estimated dissolved selenium discharge from the Delta (282 to 9570 kg/year (Abu-Saba and Ogle 2005)), and of the same magnitude as the inventory in the water column estimated using RMP data from 2005 to 2010 (666 kg). The load estimated here for municipal wastewater is likely to be near its upper limit, as the sampled facilities include three of the largest dischargers, and the smaller plants sampled include those with the highest selenium concentrations in previous discharge permit monitoring reported to the SFBRWQCB. Because of this overrepresentation of plants with previously high reported concentrations in the sampled group of facilities, the simple mean concentration reported here is likely higher than would be obtained by a flow weighted mean of all municipal wastewater plants in the region, and thus likely represents a conservative maximum load from municipal wastewater sources.

Another factor likely leading to an overestimate from use of a simple mean of results for this study is the over-representation of wet season selenium concentrations, which tended to be higher than those collected in the dry season. Although dry periods in the wet season were not sampled, it would be expected that the water and selenium sources in those periods would be more similar in constitution and thus concentrations to dry season samples rather than wet season rain event samples. More refined estimates dissolved and particulate selenium fraction loads, or of individual dissolved selenium species could be made using the data provided here, but their results would largely depend on the assumptions made for unsampled locations and periods. For example, wet season

concentrations could be applied to all days in a designated wet season period, any days with measurable precipitation, or the number of days with influent flow above some baseline for each plant. Similarly, assumptions would need to be made about the effluent characteristics of unsampled facilities to get more refined estimates; remaining facilities could be assumed to have concentration distributions similar to the sampled group, similar to the lowest concentration sites in the sampled group (since few facilities likely have comparably high total selenium), or estimated by relative percentages of water supplied from sources with known lower to higher selenium concentrations (e.g. from reservoirs in the Sierra Nevada, Delta pumps, or local groundwater respectively).

The speciation data collected in this study can be used in building mass balance estimates of selenium species in the Bay, and consequently the selenium exposure risk posed by various loads interacting with environmental transport and transformation processes can be estimated. A key step is the initial uptake into the food web by bacteria or phytoplankton. Uptake rates are variable among species, but ambient concentrations of dissolved selenium species measured or estimated through mass balance models can be applied to uptake rates reported in the literature via models (e.g., (Meseck and Cutter 2006), and assimilation efficiencies for higher trophic organisms then used to estimate risk posed to species of interest. The USGS DYMBAM model (Luoma and Presser 2006) uses a similar approach, although rather than tracking individual dissolved Se species it simplifies the initial uptake to a range of partition coefficients (Kd) to particulate selenium forms under scenarios which are then accumulated through the food web.

Information on exposure and effects on biota are most abundant and unambiguous for the simpler inorganic species, selenate and selenite, as these can be easily added in purified form for toxicological and uptake studies. There is also information on selenocyanate uptake for at least one species of algae; although its uptake was lower than for selenate or selenate, there was also evidence of biotic formation of selenocyanate (Simmons and Wallschläger 2011). Uptake studies of organic selenium species are also generally performed using spikes of purified forms such as seleno-amino acids, Operationally defined organic selenium species such as characterized in this study require assumptions about the (likely mixed and complex) species present (e.g., assuming their uptake is analogous to known species such as a seleno-amino acid), or require more involved digestion and separation techniques to distinguish and quantify specific individual species. Alternatively, uptake studies can potentially be undertaken with operationally defined mixtures, but results may be variable among samples depending on the underlying mixture of true chemical species.

Although it is clear that differences among facilities in particulate selenium are mostly due to differences in total suspended sediments (TSS) discharged, the specific causes of differences in total (primarily dissolved) selenium among plants and between wet and dry season were not examined here. However, a likely cause is differences in water supplies used for the service areas of different plants, e.g., high selenium (2-8 ug/L) is found in groundwater for some wells in South Bay (Santa Clara Valley Water District 1994) , with another (but less likely) possibility being distinctive residential or industrial uses of selenium containing products for different areas. The differences in wet versus dry season contributions may also be due to infiltration from groundwater sources, or from selenium in wet deposition; although atmospheric sources in this region may not be

identical, a study from Maryland (Mason et al. 2000) reported average concentrations of 0.49(±0.70) ug/L, greater than concentrations in dry season effluents for some facilities reported here. Similarly, differences in dissolved selenium species among plants (e.g. high selenite and organic selenium found in some plants here) would require sampling of influent and possibly other process points to determine their origin.

Despite these remaining uncertainties, this work provides improved understanding of the characteristics of selenium in municipal wastewater discharages in the Bay area. In combination with information currently being collected on other regional loads (e.g., petroleum refinery effluent, and stormwater flows), a more complete picture of selenium sources and fate can be constructed for the region, to allow better assessment and management of the risk posed to the local ecosystem by selenium.

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Appendix

Appendix Table 1 – Analytical results for samples collected from municipal wastewater facilities. Analyzing labs: EB=EBMUD, TU=Trent U., LU=Laurentian U. Results reported in ug/L unless otherwise noted. For calculating sums of species, <MDL results were substituted by ½ MDL.

Facility	Sample Date	Dissolved Se (EB)	Particulate Se (EB)	Sum Fractions (EB)	Total Se (EB)	TSS mg/L (EB)	Selenite (TU)	Selenate (TU)	Selenocyanate (TU)	US1 (TU)	US2 (TU)	US3 (TU)	US4 (TU)	Organic Se (LU)	Sum Species (TU)	Dissolved Se (TU)	DOC mg/L (TU)
CCCSD	3/18/2011	0.938	0.038	0.976	0.996	11	0.173	0.307	0.020	< 0.005	0.039	< 0.005	< 0.005	0.164	0.709	0.713	8.3
CCCSD	7/18/2011	0.365	0.034	0.399	0.432	12	0.013	0.141	0.020	< 0.005	< 0.005	< 0.005	< 0.005	0.199	0.378	0.394	12.4
CCCSD	9/26/2011	0.42	0.054	0.474	0.468	26	0.013	0.114	0.041	0.010	< 0.005	< 0.002	< 0.005	0.207	0.386	0.430	11.5
CCCSD	1/23/2012	1.07	0.0411	1.1111	1.13	15	0.062	0.289	0.464	< 0.005	< 0.005	< 0.005	< 0.005	0.499	1.321	1.037	10.8
DDSD	3/18/2011	0.548	0.043	0.591	0.611	18	0.026	0.201	0.012	< 0.005	0.054	< 0.005	< 0.005	0.224	0.525	0.474	14.0
DDSD	7/18/2011	0.375	0.03	0.405	0.477	25	0.046	0.149	0.030	< 0.005	< 0.005	< 0.005	< 0.005	0.189	0.419	0.403	16.7
DDSD	9/26/2011	0.378	0.0536	0.4316	0.431	30											
DDSD	1/23/2012	0.543	0.0697	0.6127	0.648	37											
EBDA	3/18/2011	0.514	0.033	0.547	0.549	14	< 0.005	0.192	0.009	< 0.005	0.067	< 0.005	< 0.005	0.106	0.383	0.421	12.7
EBDA	7/18/2011	0.414	0.042	0.456	0.46	18	0.046	0.168	0.011	0.010	< 0.005	< 0.005	< 0.005	0.129	0.367	0.396	13.6
EBDA	9/26/2011	0.366	0.0598	0.4258	0.435	36	0.014	0.142	0.011	0.013	< 0.005	< 0.002	< 0.005	0.125	0.306	0.370	12.1
EBDA	1/23/2012	1.14	0.0378	1.1778	1.16	18	0.041	0.821	0.016	< 0.005	0.013	< 0.005	< 0.005	0.075	0.972	1.034	11.4
EBMUD	3/18/2011	0.275	0.025	0.3	0.327	20	0.042	0.105	< 0.005	< 0.005	0.178	< 0.005	< 0.005	0.071	0.406	0.264	15.0
EBMUD	7/18/2011	0.165	0.008	0.173	0.21	17	0.038	0.061	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.079	0.101	0.21	16.0
EBMUD	7/18/2011	0.16	0.0075	0.1675		19	0.038	0.050	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.069	0.090	0.22	16.0
EBMUD	9/26/2011	0.154	0.0248	0.1788	0.216	31	0.028	0.045	0.006	0.016	< 0.005	< 0.005	< 0.005	0.086	0.188	0.220	14.8
EBMUD	1/23/2012	0.22	0.0082	0.2282	0.234	8	0.049	0.156	0.021	0.006	0.008	< 0.005	< 0.005	< 0.005	0.245	0.223	9.3
FSSD	3/19/2011	0.68	0.009	0.689	0.691	5.8	< 0.005	0.472	0.009	0.008	0.017	< 0.005	< 0.005	0.001	0.515	0.559	6.0
FSSD	7/18/2011	0.386	0.008	0.394	0.387	2.1	0.011	0.309	< 0.005	0.035	< 0.005	< 0.005	< 0.005	0.010	0.375	0.416	9.8
FSSD	9/26/2011	0.32	0.0092	0.3292	0.324	5.5	< 0.002	0.120	0.007	< 0.002	< 0.005	< 0.005	< 0.005	0.063	0.193	0.400	7.4
FSSD	1/23/2012	0.554	0.0021	0.5561	0.568	1.7	0.012	0.379	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.090	0.491	0.557	6.4
Palo Alto	3/18/2011	1.87	0.024	1.894	1.95	3.8	0.695	0.207	0.013	< 0.005	0.096	< 0.005	0.033	0.071	1.134	1.817	8.1
Palo Alto	7/18/2011	1.23	0.008	1.238	1.22	3.2	0.557	0.156	0.013	0.076	< 0.005	< 0.005	< 0.005	0.229	1.033	1.150	9.4
Palo Alto	9/26/2011	0.986	0.0144	1.0004	1.02	9.1	0.284	0.259	0.013	0.086	< 0.005	< 0.005	< 0.005	0.381	1.024	0.530	7.3
Palo Alto	1/23/2012	1.42	0.0157	1.4357	1.44	4.5	0.588	0.399	0.025	< 0.005	0.022	< 0.005	< 0.005	0.158	1.197	1.514	7.2
VSFCD	3/18/2011	0.47	0.102	0.572	0.607	20	0.038	0.038	0.012	< 0.005	0.066	< 0.005	< 0.005	0.171	0.332	0.438	9.0
VSFCD	7/18/2011	0.401	0.074	0.475	0.499	18	0.066	0.021	0.011	< 0.005	< 0.005	< 0.005	< 0.005	0.294	0.397	0.405	14.9
VSFCD	9/26/2011	0.412	0.0576	0.4696	0.476	24	0.027	0.043	0.015	0.004	< 0.005	< 0.005	< 0.005	0.280	0.370	0.440	10.2
VSFCD	1/23/2012	0.358	0.0613	0.4193	0.451	19	0.050	0.101	0.007	< 0.005	0.007	< 0.005	0.044	0.312	0.523	0.423	8.6

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December 7, 2010,

Dr. Mike Connor
General Manager
East Bay Dischargers Association
2651 Grant Avenue
San Lorenzo, CA 94580

Re: Revised Proposal to Determine of Selenium Speciation in Treated Municipal Effluent

Dear Mike;

Thank you for the opportunity to submit a proposal to determine dissolved selenium concentrations in municipal effluent. Based on the preliminary information you have provided, we understand that the Regional Water Quality Control Board is requesting additional information regarding the percentages of particulate and dissolved selenium, and the speciation of dissolved selenium in Bay Area effluent. This information will be used in the review of the Total Maximum Daily Load (TMDL) for selenium (Se).

Background

The Conceptual Model of Selenium in North San Francisco Bay developed (Tetra Tech 2008) for the Se TMDL highlights a number of key pathways for understanding the fate of Se in the Bay, including the speciation of Se detected in the water column. Although Se chemical species can be altered through abiotic and biological processes in the Bay, understanding the speciation of Se loads is important to understand their magnitudes relative to in-Bay transformation and uptake processes.

Previous work on San Francisco Bay characterized ambient concentrations of various Se species as well as those of major inputs to the system including refineries and municipal wastewater treatment plant dischargers (Cutter and San Diego-McGlone 1990). In that work, selenate in municipal wastewater effluent was frequently 70 to 90 percent of the total dissolved Se, selenite was 10 to 20 percent, and all other species (primarily organo selenides) typically comprising 0-10% of dissolved Se. However, there were many exceptions, with instances where effluents were not dominantly selenate, including cases

of 100 percent selenite, >50 percent organoselenides, and others less extreme. Total Se concentrations in that work ranged from approximately 3 to 28 ug/L.

A recent survey of North Bay dischargers for the period 2008 to 2009 observed effluent concentrations much lower, more typically <1 ug/L, suggesting overall decreases in total Se discharges (BACWA, unpublished data). The typical distribution of Se species in current effluent discharges is unknown and represents a data gap for understanding the current sources of Se to biota (from the dissolved phase to phytoplankton and bacteria), and once in particulate forms (including phytoplankton and organic detritus) to zooplankton, bivalves, and higher trophic organisms.

The Se TMDL project uses first order rate constants from the literature for application to a model to estimate uptake rates to phytoplankton. Selenite uptake rates are 4-5x rates for selenate, and organoselenide uptake rates are half those for selenite (2-2.5x rates for selenate). Therefore, any nondetects for selenite should ideally be <10% of the concentration for selenate. With a higher selenite detection limit at 20% of the selenate concentration for a given sample, the potential uptake rates for selenate and selenite could be equivalent. Similarly organo-selenium species method detection limits could be at most half the selenate concentration to have equivalent uptake rates.

Measurement of particulate Se concentrations in effluent can provide information on the loading of particulate sources of Se to the Bay and can be compared to model estimated phytoplankton uptake/adsorption. The Se TMDL model applies the USGS dynamic multi-pathway bioaccumulation model (DYBAM; Luoma et al., 1992; Stewart et al., 2004; Presser and Luoma, 2006), which calculates zooplankton and bivalve uptake rates based on dissolved Se in the water column and solid concentrations on suspended particulate matter. Uptake rates from water for zooplankton used in the model are around .025 $L/g_{tissue}/d$ (x Cw, the ug/L dissolved Se concentration in water) from the dissolved phase, and 0.4 $g/g_{tissue}/d$ ingestion rate x 50% assimilation efficiency x Cp (concentration in particulate, ug/g).

Bay dissolved selenium concentrations are typically around 0.1 ug/L, with particulate concentrations about 10 times lower (0.01 ug/L), and TSS 10-20 mg/L, yielding 0.5-1.0 ug/g concentrations on suspended particles. Based on these estimates, direct uptake from the water column accounts for only 2% of selenium uptake for low trophic level animals such as zooplankton. It will be important to have quantitative results for the particulate phase in order to compare these results to particulate selenium generated by processes in the Bay. Assuming Se partitioning in wastewater is similar to that in ambient waters, if the detection limit for the particulate phase (in ug/L) is about 2% that for the dissolved phase, the uncertainty in uptake rates for the dissolved and particulate phase will be about the same order of magnitude, even if we get non-detects on the particulate phase.

Approach

Based on your correspondence to us, we understand that you would like us to collect effluent from six San Francisco Bay Area wastewater treatment plants during wet and dry

season conditions. The baseline assumption for this proposal is that six facilities will be sampled for 4 events (2 each in wet and dry seasons); the number of samples can be adjusted to include more locations or more samples per season with roughly a proportional change in cost. It is our understanding that you would like the project to begin in the first quarter of 2011. The effluent will then be analyzed for particulate Se and dissolved Se species using the approaches described below.

It is likely that the fraction of particulate Se in the effluent samples will be low, as the concentrations of total dissolved solids are not very high (typically < 20 mg/L). If this is indeed the case, it will not be feasible to determine particulate Se by difference between the total Se concentrations in a filtered and an unfiltered sample aliquot (after digestion), because the sum of the analytical errors would likely be larger than the actual particulate fraction. Specifically, this approach may suggest the presence of a significant particulate Se fraction in some samples when there is in fact none.

The better approach to measure particulate Se is to filter a large volume of water in order to collect the particulate matter, and then digest the filter and measure the Se associated with the particles. This "positive" measurement approach will determine accurately if and how much particulate Se there is in a water sample, but it requires a much larger sample volume and significantly more time/effort for the sample filtration. We understand that large volume samples (10-20 L) will be collected from six wastewater plants for four events to cover a range of seasonal flows. Samples would be filtered "in house" by the POTWs and the filters would be sent to a BACWA laboratory (likely EBMUD) for analysis. Although many POTW's may have in house capabilities for Se analysis, especially if large enough samples are collected, we recommend that all participating plants send a sample to the same BACWA laboratory to minimize questions of comparability, optionally analyzing collected duplicate samples in house if desired.

Samples will be filtered to < 0.45 µm. The filtrate will be collected, with subsamples of the collected filtrate for a given site (e.g. for 10 filters of 1L each, 100ml of filtrate will be taken from each filtration to make a 1L composite sample). SFEI staff will be sent to the different POTWs to collect the filtrate composites for shipment to the analytical laboratory (Trent University, the laboratory of Prof. Dirk Wallschläger). Filtrate will be analyzed undiluted for discrete dissolved Se species by anion exchange chromatography-inductively-coupled plasma-mass spectrometry (AEC-ICP-MS) (Wallschläger & Roehl, 2001) with estimated detection limits around 0.01 µg/L per species. It is expected that selenite (= Se(IV)) and selenate (= Se(VI)) will be the only Se species detected by this method, but if any other discrete Se species are present in the samples and elute from the chromatographic separation (e.g. selenomethionine or selenocyanate), they will be detected and can be quantified. Their identity can possibly be determined by co-elution with standards.

The same sample will be analyzed for total dissolved Se by ICP-MS with similar detection limits to establish the dissolved Se mass balance (= sum of individual species / total dissolved Se concentration). This will check for the presence of any major dissolved Se species that are not detected by the AEC-ICP-MS method and can be used to estimate

by difference the "organic Se" species similar to that operationally estimated by difference in previous work by Cutter and coworkers for Bay ambient waters.

A parallel sample split will be analyzed at Laurentian University for "total dissolved organic" Se by selective sequential hydride generation-atomic fluorescence spectrometry (SSHG-AFS) using UV-assisted breakdown of organic matter and discrete organic Se compounds to the hydride generation-active Se(IV) (Chen et al., 2005). This would provide a more specific breakdown of the chemical species to get a "positive" determination of contributions to "organic" Se. Optionally, organo-Se could be reported using only one of the two methods, with a reduction in analysis cost by ~$2,400.

Deliverables

San Francisco Estuary Institute will provide a short memorandum highlighting the findings which will include a summary table of results and appendix with the data reported by the laboratory. The laboratory will report the results to us within a one month sample turn around time. SFEI review of results after the first sampling event will allow adjustment of sample sizes for future events as needed. Based on one month lab turnaround, we anticipate the summary memorandum could be completed in the fourth quarter of 2011 (e.g. by sampling in January, April, July, and September).

Cost Estimate

For purposes of developing the cost estimate, we have assumed that we will be collecting already filtered effluent samples from six facilities for four events during the course of 2011. We have assumed that we can collect effluent from all six facilities in two days or less. Plant staff will conduct the large volume filtration at the plants using 10-20 liter samples, and provide composites of filtrate for SFEI staff to collect and send to Trent Univ. in Peterborough, ON, Canada. SFEI staff can also drop off particulate samples collected from other plants at any designated treatment plant laboratory (e.g. EBMUD) while arranging pickup of filtrate from that plant.

The cost to conduct this work is:

SFEI labor	$14,000
Indirect costs	$ 1,500
Laboratory	$ 8,300
Total cost	$23,800

If the scope of work that we have outlined above or a variant thereof (e.g. adjustments to sample number, timing, types of analyses) is of interest to BACWA, please let us know so that we can develop a contract. We look forward to working with you.

Regards,

Donald Yee
Senior Scientist

Meg Sedlak
RMP Program Manager

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 12

FILE NO.: 12,877

MEETING DATE: January 3, 2013

TITLE: Annual ReNUWIt Membership Dues

☒ **MOTION** ☐ **DISCUSSION** ☐ **RESOLUTION**

RECOMMENDED ACTION

Consider continued participation in ReNUWIt; consider approval of participation dues for membership in the Affiliates Program of Stanford University's Engineering Research Center for Re-inventing the Nations's Urban Water Infrastructure (ReNUWIt).

SUMMARY

This action would allow BACWA to continue to participate as a member of the Affiliates Program of the ReNUWIt. BACWA budgeted $10,000 for continued participation. The letter from ReNUIt and its fee structure is attached. There is not a fee structure for JPA's. BACWA participated at the $10,000 level last year.

FISCAL IMPACT

Funds are available for this contribution under the BACWA Collaboratives & Sponsorships, Stanford ERC FY 2012-13 Budget line item.

ALTERNATIVES

This action does not require consideration of alternatives.

Attachments:

1. ReNUWIt Letter and Membership Application/Invoice, December 21, 2012

Department of Civil &
Environmental Engineering
Stanford University
Stanford, CA 94305-4211

December 21, 2012

Mr. Jim Kelly
Bay Area Clean Water Agencies
P.O. Box 24055
MS 702
Oakland, CA 94623

Dear Jim:

As one of the initial members of ReNUWIt's Industrial Advisory Board (IAB), you've been integral to our success during our first year of operation. Among our numerous accomplishments this past year were:

- Establishment of an IAB comprising 25 innovative water industry partners in the US and abroad;
- Successful Annual Meeting at Stanford in May with unanimous support from NSF to continue ReNUWIt funding;
- Working with various IAB members on specific projects/initiatives (e.g., Veolia, OCWD, Geosyntec, Sonoma County, BACWA, LADWP, Aqua-Aerobics, Biovantage, Aurora, Palo Alto, Discovery Bay, and Plum Creek among others);
- Joint authorship on research papers, e.g., Kennedy/Jenks
- Utility Forum at Stanford on February 28; 20+ managers helping us better understand barriers to implementation;
- Industrial Advisory Board meeting in Golden, CO on October 25-26 with discussions on smart water grids and strategies for more effective collaboration;
- Established monthly newsletters with the IAB to better share information; and
- Website improvements provide each IAB member with access to a members-only section, which includes project briefs, annual report, publications, and presentations.

While we consider our first year to be successful, there is much left to accomplish going forward and we need your continuing support and contributions. Among the initiatives we've identified for Year 2 are:

- Working to better address areas identified in the IAB SWOT:
  - Communications and IAB involvement: regular webcasts, more active participation in Center vision assessment & review;
  - More IAB participation on U thrust projects;
  - Continue to explore links among IAB members and current/future projects through targeted meetings and workshops, e.g., with local and regional agencies and engineering firms; and

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Stanford University
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  - Better outreach to stakeholders and general public (and funding to do so)
- Recruiting IAB members that bring new experiences/expertise and can benefit from membership in ReNUWIt;
- Exploring workshops, with IAB support, that can expand the reach of ReNUWIt (e.g., NGOs, utility board members, regulators);
- Ramping up IAB subcommittees and generate outcomes that help the IAB and ReNUWIt in communications, workforce development and technology implementation; and
- Working together on a successful SWOT analysis with more engagement from the IAB and more time for participation and comment.

Enclosed is an invoice for Year 2 membership in the ERC Affiliates Program. Thank you in advance for your continuing participation and please let me or Terri Tippets know if you have any questions in the meantime. We look forward to working with you again this year and in the years ahead.

Sincerely,

Richard G. Luthy
Stanford University
Director, Engineering Research Center for
Re-inventing the Nation's Urban Water
Infrastructure (ReNUWIt)

ERC INDUSTRIAL AFFILIATES
MEMBERSHIP FORM

[Revised December 4, 2012]

ERC Industrial Affiliates Program contributions are used to expand the research and education activities of the Center and its impact towards advancing re-invention. The ERC Industrial Affiliates Program goals, operations and benefits on the date of execution are described at http://urbanwatererc.org/industry. The membership structure is based on the number of employees. Principal Members and Student Fellowship Members may designate their annual contribution be directed towards a research thrust or theme.

Membership Structure	Annual Contribution Amount
Associate Member (less than 15 employees)	$2,000
Member (between 16 and 49 employees)	Proportional from $2,000 to $10,000
Member (greater than 50 employees)	$10,000
Principal Member	$25,000
Student Fellowship Member	$50,000
Non-profit Organization (IRS code 501(c)(3))	$5,000

Please make check payable to Stanford University, fill out and return completed form to:

Ms. Terri Tippets, Administrative Director
Re-inventing the Nation's Urban Water Infrastructure [ReNUWIt]
Stanford University
473 Via Ortega, Room 117
Stanford, CA 94305-4211

DETAILS

Business Name: _____

Business ID Number: _____

Purchase Order #: _____

ReNUWIt Vendor #: _____

Period Covered by Payment: _____

TOTAL AMOUNT DUE: _____

Business Address

Number or PO Box: _____
Street: _____
City: _____
Country: _____
Postal Code / Zip code: _____

Contact Person:

Name: _____
Title: _____
Email address: _____
Phone: _____

Signature: _____ **Date:** _____

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 13

FILE NO.: 12,680

MEETING DATE: January 3, 2013

TITLE: Revised Scope of SFEI Nutrient Strategy Development to Redirect $25,000 to Ocean Exchange Project

☒ **MOTION** ☐ **DISCUSSION** ☐ **RESOLUTION**

RECOMMENDED ACTION

Approve revision to scope of SFEI Nutrients Strategy Development agreement redirecting up to $25,000 of current funds to support initial efforts toward assessing nutrient exchange through the Golden Gate.

SUMMARY

As described in the attached memo from David Senn, the Board is being asked to authorize reallocation of up to $25,000 to a new task under the current agreement with the San Francisco Estuary Institute (SFEI) for Nutrients Strategy Development. This will not impact the total amount BACWA has committed to this project, $350,000 ($175,000 from FY2011-12 and $175,000 from FY2012-13) to support Nutrients Strategy Development through June 30, 2013. The original scope dated February 2012 allocated funds among 4 tasks, and on October 5 and November 29 the Board approved reallocating funds as indicated below. This request would result in further shifting of funds from the revised estimate, though it is not clear which task(s) will be impacted by the reallocation. The table below also shows the cumulative amount billed through the most recent invoice, covering services through October 31, 2012.

Estimated Task Budget and Current Balance

Task	*Description*	*Original Estimate*	*Revised Estimate*	*Billed thru 10/2012*
1	Project Administration and Reporting	$38,547	$18,547[1]	$17,069
2	Nutrient Strategy Development and Coordination	$115,114	N/C	$65,537
3	Numeric Modeling: Suisun Bay and South Bay	$116,672	$89,672[2]	$0
4	Synthesis of Science: Suisun Bay	$79,667	$99,667[1]	$80,813
	November 29th Revised Scope Proposal Part 1a, scope development for Decision Tree Part 2a, Decision Tree development		 $15,000[2] $12,000[2]	 $0 $0
TOTAL		$350,000	$350,000	$163,418

[1] October 5, 2012 Board authorized reallocation
[2] November 29, 2012 Board authorized reallocation

FISCAL IMPACT

No new funding is being requested for this action, as this is only a reallocation of current contract funds, however shifting funds may impact the ability to complete other work outlined in the scope.

ALTERNATIVES

This action does not require consideration of alternatives.

Attachments:
1. Memo from David Senn dated 12/18/2012

Memo 12/18/2013
To: BACWA Board
From: David Senn
Re: Proposal to revise scope from CY2013 funding to redirect a portion (up to $25k) of the current funds to support initial efforts toward assessing nutrient exchange through the Golden Gate.

With funding from the RMP, SFEI is currently developing a loading assessment report for San Francisco Bay (SFB) to quantify nutrient loads from known sources at the subembayment level, and identify major uncertainties. The major potential loads identified include loads from POTWs, loads from the Delta, loads from stormwater, and exchange through the Golden Gate (GG). Overall, that project is proceeding well, and on schedule for a draft report in March 2013.

Thus far we have made considerable progress on quantifying nutrient loads from the Delta, and how these vary on a monthly/seasonal basis and have changed over the past ~35 years. We have also made steady progress compiling data and quantifying nutrient loads from individual POTWs, refining those estimates based on historic and new effluent characterization data, where possible evaluating long-term trends in loads, and aggregating that information at the subembayments level for comparison with other sources. Stormwater data is quite limited in the Bay Area and loads from stormwater are highly uncertain. Nonetheless, we are developing an approach at the subembayments scale for obtaining order of magnitude estimates of stormwater nutrient loads based on spatially-varying precipitation data, runoff coefficients in >300 subcatchments calculated based on detailed GIS-based land-use and slope data, and estimates of land-use specific nutrient concentrations.

However, nutrient exchange between SFB and the coastal ocean through the GG currently remains a major unknown, and will not be sufficiently addressed by the RMP-funded study. On a daily basis, ~25% of SFB's volume is tidally exchanged with the coastal ocean. Recently-upwelled coastal waters can contain nitrate at fairly high concentrations (up to ~30 μmol L^{-1} or 0.4 mg N L^{-1}; for comparison Central Bay concentrations ~20 μmol L^{-1}). Under certain conditions, when recently upwelled water is present in the Gulf of Farallones outside the GG, rough calculations suggest that exchange through the GG could result in large net loads of nitrate into SFB. However, the conceptual model for nutrient exchange through the GG has not been sufficiently developed, and order of magnitude estimates of exchange under various conditions (and the duration of the conditions) are highly uncertain. In addition, the export and fate of nutrients exiting SFB to the coastal zone has not been adequately explored.

We propose a small project aimed at better characterizing nutrient exchange across the GG that, when combined with the RMP-funded loading study, will provide an overall fuller view of nutrient loads to SFB from major sources. This project will have five components:

1. Develop a conceptual model that lays out the factors regulating exchange across the GG of dissolved (nutrients) and particulate (e.g., phytoplankton) constituents, including:

factors regulating upwelling and its timing vs. no upwelling; conditions that favor vs. inhibit movement of freshly upwelled water into the Gulf of Farallones and in front of GG; flow and hydrodynamics within and at the GG that influence magnitude of net exchange into SFB (e.g.,gravitational intrusions vs. tidal dispersive exchange); and the transport by ocean currents of nutrients exported from SFB to the coastal zone.
2. Develop order of magnitude estimates of exchange under end-member and hybrid exchange conditions;
3. Perform a conceptual or semi-quantitative assessment of the relative frequency with which the different end-member and hybrid conditions would be expected to occur;
4. Identify factors/processes that would ultimately need to be considered in a future Bay hydrodynamic/water-quality model to account for nutrient exchange across the GG.

The project would be carried out by Dr. John Largier (UC-Davis) and Dr. Mark Stacey (UC-Berkeley), two experts in this field and with particularly strong experience in SFB on this topic. Largier and Stacey would carry out this work in close collaboration with SFEI. SFEI will subcontract directly with Largier and Stacey, using existing funds from the BACWA CY2013 funding. Thus, this is not a request for additional funds at this time (although it obviously impacts funds available for other planned work). The deliverable will be a stand alone short technical report describing 1-5 above. That report will also be incorporated as a chapter in the RMP-funded loading study.

Budget:

Largier, Stacey:	$15-20k	final scope still to be developed
SFEI:	$3k	collaboration, and project coordination
Total	$20-23k	

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 14a
FILE NO.: N/A
MEETING DATE: January 3, 2013

TITLE: Nutrient Decision Tree and Strawman Science Proposal for Suisun Bay

☐ **MOTION** ☐ **RESOLUTION** ☒ **DISCUSSION**

RECOMMENDED ACTION

Review draft Nutrient Decision Tree and Strawman Science Proposal for Suisun Bay and provide feedback to David Senn and Executive Director to determine next steps.

SUMMARY

As a follow up to discussions at the November 2012 Pardee Technical Seminar and Board authorization (on 11/29/2012) to redirect funds in the existing SFEI Nutrients Strategy Development agreement, David Senn worked with Jim Kelly and Dave Williams to prepare the attached Decision Tree slides and Strawman Science Proposal for Suisun Bay.

The two attachments have been provided to illustrate the approach that is being taken to prepare a decision tree(s) for Nutrients:

- Decision Tree Power Point (7 slides)
- Strawman Science Proposal for Suisun Bay

Slide 1 presents San Francisco Bay (SFB) nutrient loading versus other estuaries plotted against chlorophyll a (Chl-a) for different subembayments. The high nutrient load and low Chl-a compared to other estuaries illustrates the resilience of SFB and reliance on high turbidity, strong tidal mixing and filter-feeding clams, and potentially other factors to maintain that resilience.

Slide 2 presents the overarching management questions; these were paraphrased from the nutrient strategy developed by the RWQCB and SFEI.

Slide 3 presents the masterwork flow diagram-it applies to the overall approach, and to each subembayment.

Slides 4 and 6 are a word charts that describe the management questions addressed in the decision trees on Slides 5 and 7.

Slide 5 is a decision tree for determining whether or not LSB is impaired. Within slide 5 the colored the boxes are coordinated to the colored boxes in Slide 3, but because of time constraints, the details of those boxes are not completed. A decision tree like this will be needed for each subembayment.

Slide 7 is a decision tree is for determining whether or not ammonia is impairing beneficial uses of the Suisun Bay. Again, the colored boxes in Slide 7 are coordinated with the boxes in Slide 3. And again, a decision tree like this one will be needed for each subembayment.

The Strawman Science Plan for Suisun Bay, the second attachment, is an example of what will likely need to be prepared for each subembayment. The types of science questions posed in the Strawman Science Plan will define the number of decision trees needed for each subembayment.

Dave Williams, Dave Senn, and Jim Kelly discussed these two attachments; the general consensus of the discussion was:

- The format used can define the needed science plan for the nutrient strategy.
- The projects, costs and schedule need to be added to either the decision trees or the science plans to allow the program to be defined, agreed upon, tracked and managed.

These attachments are being provided for discussion at the January 3rd BACWA Board meeting; based on the direction of the Board, Dave Senn will develop the remainder of the decision trees.

FISCAL IMPACT

This is a discussion item and has no direct fiscal impact, though this discussion may precipitate next steps which could require the Board to consider a reallocation of existing contract funds.

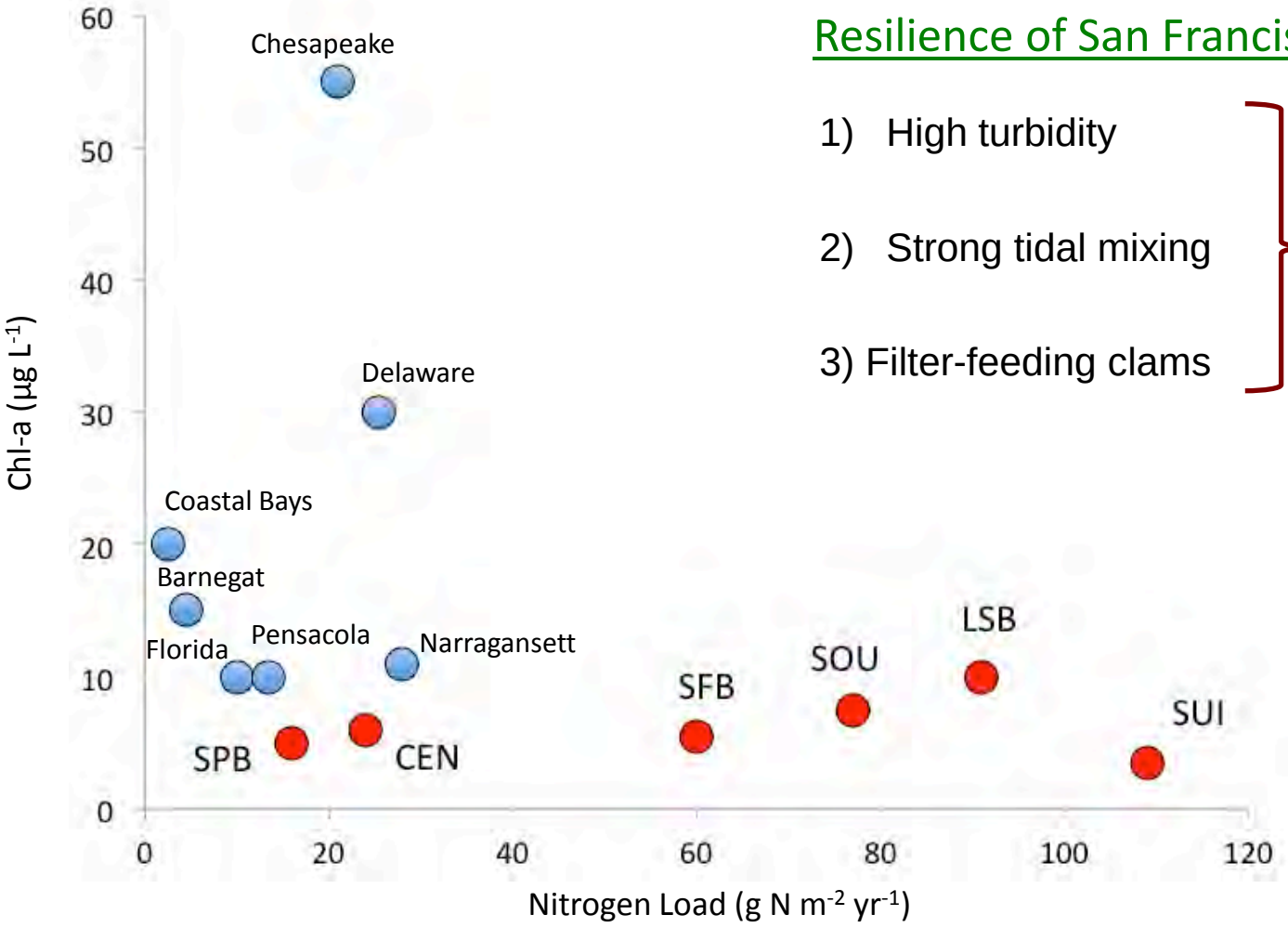
ALTERNATIVES

N/A

Attachments:

1. Nutrient Decision Tree Slides
2. Strawman Science Plan for Suisun Bay

Some subembayments of SFB receive extremely high areal N loads compared to other estuaries. If those subemebayments are not currently experiencing nutrient issues, it is reasonable to suggest that they may be considered as "poised for a future problem" if any major changes occurred to factors that currently keep nutrient problems in check.



Resilience of San Francisco Bay

1) High turbidity
2) Strong tidal mixing
3) Filter-feeding clams

Subject to change?

National Estuarine Experts Workgroup (2010)

SFEI 2013. LSB = Lower South Bay; SUI=Suisun; SOU= South Bay; SFB – overall San Francisco Bay; CEN = Central Bay; SPB = San Pablo Bay. Loads are direct POTW loads to specific subembayments, and currently do not include movement from one subembayment to another (e.g., SPB receives much of the input to Suisun, but that is not included in its load presented here. SUI includes POTW loads + loads from the Delta, which includes SacRegional POTW and also Agriculture

Primary Overarching Management Questions

1. Is there a nutrient problem or are there signs of a problem?
   - Currently, or trending towards, adversely affecting beneficial uses?
   - Impairment in the future due under environmental or management scenarios?

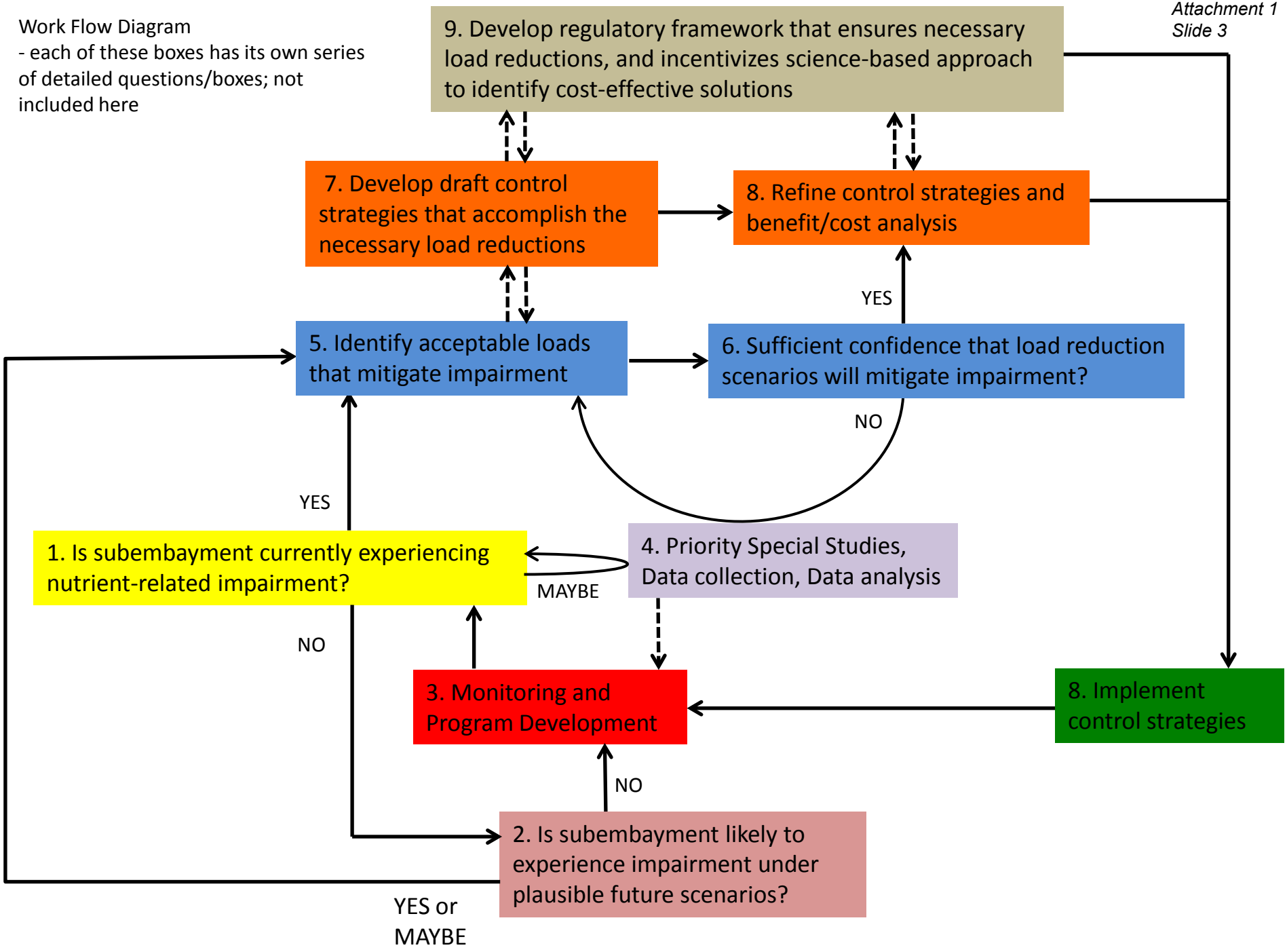
2. What are appropriate guidelines for identifying a nutrient-related problem?

3. What is the relative contribution of each loading pathway?

4. What nutrient loads can the Bay assimilate without impairment of beneficial uses?
   - Nutrient fate and transport: magnitude of internal transformations?
   - Grazing, light limitation, NH4-inhibition of primary production, frequency/duration of stratification?

5. What is the likelihood that the Bay will be impaired by nutrient overenrichment/eutrophication in the future?

Work Flow Diagram
- each of these boxes has its own series of detailed questions/boxes; not included here

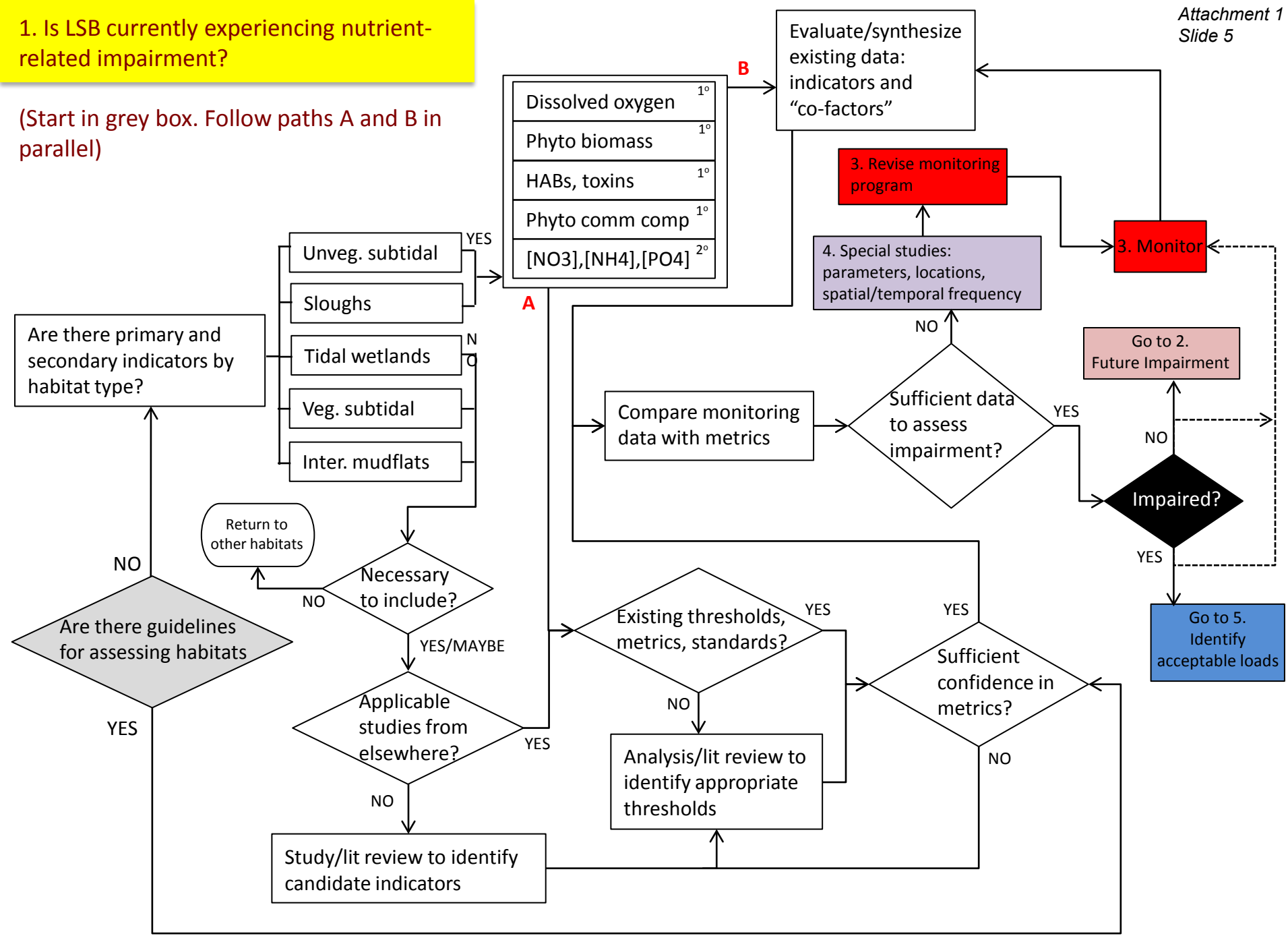


Example 1

- Decisions/work flow related to answering the question “Is subembayment impaired…” for the specific example of
  - Is LSB currently experiencing nutrient-related impairment?
    - for multiple potential indicators
    - additional prioritizations include deciding which indicator(s) are most likely to be a problem, and/or most tractable to evaluate.

1. Is LSB currently experiencing nutrient-related impairment?

(Start in grey box. Follow paths A and B in parallel)

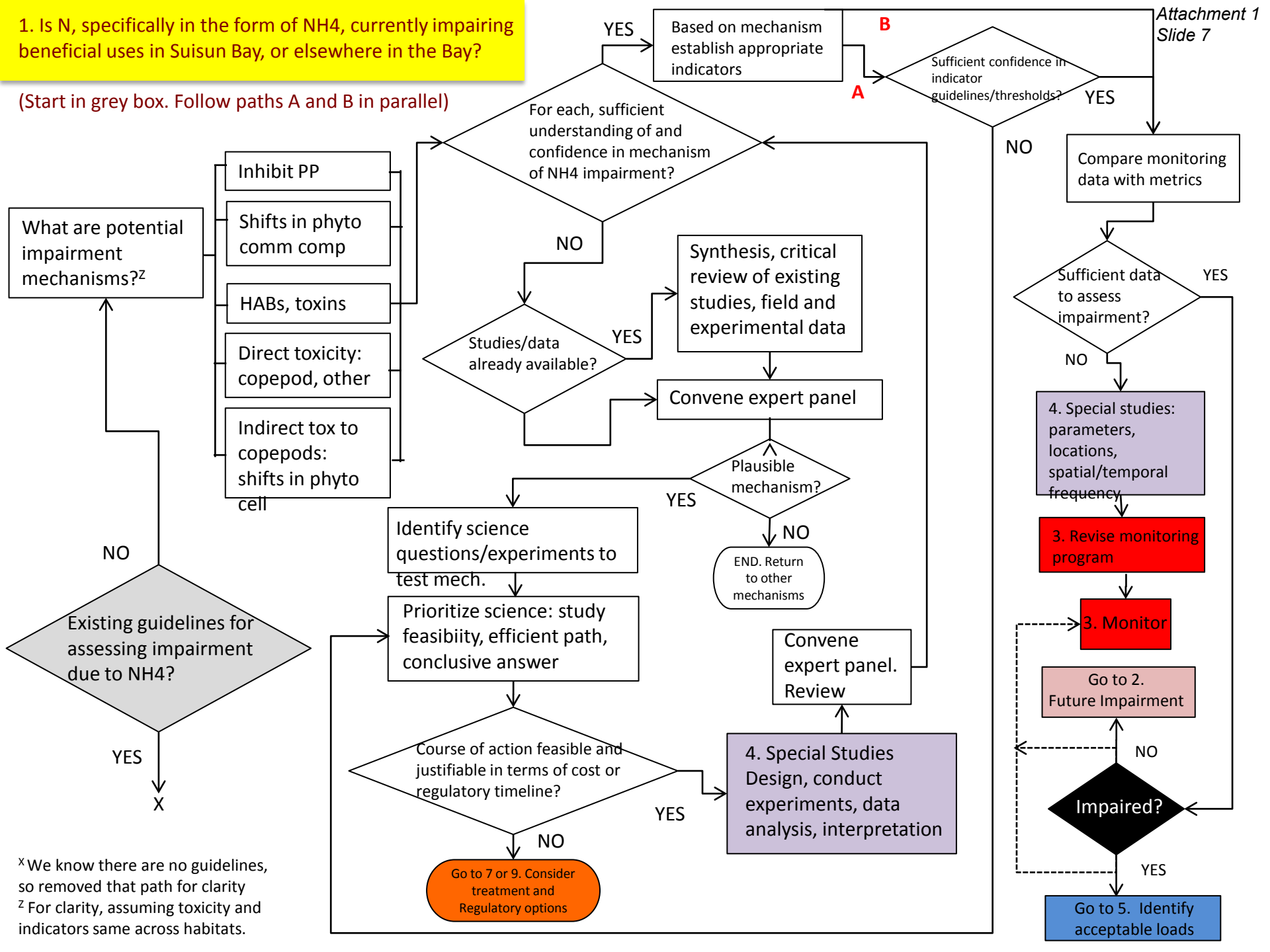


Example 2

- Decisions/work flow related to answering the question "Is subembayment impaired…" for the specific example of
  - Is N, specifically in the form of NH4, currently impairing beneficial uses in Suisun Bay, or elsewhere in the Bay?
  - For the box "Identify science questions/experiments to test mechanisms"
    - See word document with detailed management and science questions for Suisun Bay Science Plan development.
    - Only questions for NH4 inhibition of primary production included.
    - Parallel questions need to be developed for other potential impairment mechanisms

1. Is N, specifically in the form of NH4, currently impairing beneficial uses in Suisun Bay, or elsewhere in the Bay?

(Start in grey box. Follow paths A and B in parallel)



X We know there are no guidelines, so removed that path for clarity

Z For clarity, assuming toxicity and indicators same across habitats.

Approach for soliciting input on and Developing a Strawman Science Plan for Suisun Bay to serve as a starting point for the December meeting

Ask members of Suisun Work Group to provide input on the following…

1. Review management questions and…
    a. Identify questions you agree with
    b. Recommend minor and major changes or nuances
    c. Suggest additional questions

2. Identify studies that are either underway, proposed, or need to be carried out to inform management questions.
    a. Where we already have clear ideas and/or studies are already underway, we can provide these as starting point
    b. Leave opportunity for input

3. Recognizing the need to follow an efficient path toward informing costly management/regulatory decisions, identify the high(est) priority studies for funding.

4. Dave and Emily organize responses and present a strawman (and caveats) to the group at January meeting

5. January meeting will focus on discussing/commenting only on NH4 inhibition questions. After January meeting, a small working group can develop the questions for other potential impairment mechanisms following a similar process, and sending out to group for comment.

General Nutrient Strategy Management Questions

G.1. Is there a problem or are there signs of a problem in subembayments of San Francisco Bay?

- Are current nutrient loads and ambient concentrations presently - or trending toward - adversely affecting beneficial uses of the Bay?

G.2. What are appropriate guidelines for identifying a nutrient-related problem?

G.3. Which sources, pathways, transformations of nutrients are of most concern?

- What is the relative contribution of each loading pathway, and how do these loads vary in magnitude and relative importance in space, season, and time?
- What are the contributions of internal sources (e.g. benthic fluxes) from sediments and sinks (e.g. denitrification) to the Bay nutrient budgets?

G.4. What nutrient loads can subembayments assimilate without impairment of beneficial uses?

G.5. What is the likelihood that the subembayments will be impaired by nutrient overenrichment/eutrophication in the future?

Relevant Management Questions and Science Questions in Suisun Bay

1. Basic Management Questions

1.1. Are current levels of NH4 impairing beneficial uses by preventing phytoplankton blooms, or inhibiting primary production, which in turn contributes to a food-limited ecosystem?

1.2. Are current levels of NH4 (or NH4:NO3 or NH4:DIN) impairing beneficial uses by causing shifts in phytoplankton community composition toward suboptimal assemblages for primary consumers of concern (e.g., copepods)?

1.3. Are current levels of NH4 (or NH4:NO3 or NH4:DIN or high [DIN]) impairing beneficial uses by favoring blooms of harmful algae and production of algal toxins, or nuisance algae?

1.4. Are current levels of NH4 impairing beneficial uses by exerting direct chronic toxic effects primary consumers of concern (e.g., copepods)?

1.5. Are current N:P (or NH4:P or NO3:P or high [NH4], [NO3], [DIP]) impairing beneficial uses by causing shifts in phytoplankton community composition toward suboptimal assemblages for primary consumers of concern (e.g., copepods)?

1.6. Are current values of N:P (or NH4:P or NO3:P or high [NH4], [NO3]) impairing beneficial uses by causing shifts in the composition of individual cells (i.e., changes in individual cell N:P) that exerts stress on primary consumers who (e.g., copepods)? (i.e., they must direct resources toward excreting excess N or it causes physiological stress that impairs individual copepod survival or reproductive success)

1.7 Are current N:P (or NH4:P or NO3:P or high [NH4] or high [NO3]) impairing beneficial uses by impacting the food web at the primary consumer level or higher by additional mechanisms that, for example, adversely effect size, individual survival, reproductive success, or food quality?

2. Management questions if a problem does exist…

2.1 What levels of NH4 (or values of NH4:NO3, NH4:DIN, N:P, [DIN], [DIP]), over what periods of time, induce beneficial use impairment due to 1.1-1.7?
or 2.1.a Recognizing that there is no bright line, what would be considered clearly a problem and what would be considered well within the range of good?

2.2 When (seasonal, tidal, diurnal) and where do NH4 levels (or values of NH4:NO3, NH4:DIN, N:P, [DIN], [DIP]), exceed values that lead to beneficial use impairment due to 1.1-1.7?

3. Questions that Will Shape Management or Regulatory Action

What reductions in loads are required to alleviate, minimize, or reduce impairment due to…

3.1 NH4 inhibition of primary production?

3.2 NH4-related shifts in phytoplankton community composition toward suboptimal assemblages?

3.3. NH4-related blooms of harmful algae and production of algal toxins, or nuisance algae?

3.4. direct chronic toxicity from NH4 on primary consumers of concern (e.g., copepods)?

3.5. N:P (or NH4:P or NO3:P) –related shifts in phytoplankton community composition toward suboptimal assemblages for primary consumers of concern (e.g., copepods)?

3.6. N:P (or NH4:P or NO3:P or elevated [NH4] or elevated [NO3]) –related shifts in the composition of individual cells (i.e., changes in individual cell N:P) that exert stress on primary consumers who (e.g., copepods)?

3.7 N:P (or NH4:P or NO3:P or elevated [NH4] or elevated [NO3]) –related direct impacts on the food web at the primary consumer level or higher?

4. General Science Questions that will inform management questions

4.1 What are the external major loads of NH4 (or NO3 or PO4)? How do they vary seasonally and how have they changed overtime?

4.2 What are the magnitudes of internal transformations/sinks/sources?

4.3 Considering the combination of 4.1 and 4.2, what loads can be sustained without impairing beneficial uses due to 1.1-1.7. In other words, what loads can be assimilated by Suisun Bay?

4.4 Given the multiple stressors in Suisun Bay, to what extent do nutrient-related impairments contribute to overall impairments, and what would be the benefit:cost of reducing nutrient loads from various sources?

5. Science Questions specific to inhibition of primary production

5.1 Does elevated [NH4] inhibit primary production rates, and, if so, what concentrations represent no/low impairment vs. medium or high impairment?

- 5.1.a How do natural assemblages respond in controlled experiments?
  - 5.1.a.i. What are community-average V_{max} and k_s for NH4 and NO3? Does $V_{max,NO3}$ exceed $V_{max,NH4}$?
  - 5.1.a.ii Across a range of typical ambient [NH4], does the combined uptake rate of DIN, $V_{DIN} = V_{NO3} + V_{NH4}$ vary systematically, such that V_{DIN} is low due to certain NH4 concentration ranges?
  - 5.1.a.iii How do the above relationships vary as a function of light, temperature, or t=0 community composition?

- 5.1.b How do monocultures of typically-important phytoplankton species or taxa respond in controlled experiments?
  - 5.1.b.i (same as for 5.1.a)
  - 5.1.b.ii (same as for 5.1.a)
  - 5.1.b.iii (same as for 5.1.a)

- 5.1.c Are primary production rates lower at elevated ambient [NH4] using natural assemblages in controlled experiments?
  - 5.1.c.i Measured using C uptake rates (^{13}C, ^{14}C)
  - 5.1.c.ii Measured using photosynthetic efficiency (e.g., phytoflash)

- 5.1.d Are primary production rates lower at elevated ambient [NH4] using monocultures in controlled experiments?
  - 5.1.d.i Measured using C uptake rates (^{13}C, ^{14}C)
  - 5.1.d.ii Measured using photosynthetic efficiency (e.g., phytoflash)
  - 5.1.d.iii Do these relationships vary based on light?

- 5.1.e Are field observations consistent with NH4 inhibiting primary production? During periods when blooms would be generally be expected, does…
  - 5.1.e.i low chl co-occur with high NH4 in space and time, and vice versa?
  - 5.1.e.ii low DIN uptake rates co-occur with high NH4 in space and time, and vice versa?
  - 5.1.e.iii low primary production rates co-occur with high NH4 in space and time, and vice versa, measured by ^{13}C or ^{14}C uptake?
  - 5.1.e.iii low primary production rates co-occur with high NH4 in space and time, and vice versa, measured by photosynthetic efficiency (phytoflash)?

5.2 Do other substances contribute to lower primary production rates?

5.2a Do other substances in treated wastewater effluent inhibit N uptake and primary production, and what are the relative contributions of NH4 vs. non-NH4 inhibition?

5.2.a.i natural phytoplankton assemblages?

5.2.a.ii monocultures?

5.2.a.iii light-depdendence?

5.2b Are other substances known to impair phytoplankton growth detected in ambient water?

5.2.b.i at levels known to affect phytoplankton growth?

5.2.b.ii have studies been conducted in the literature that were performed using sensitive enough approaches, or is more work needed to determine NOELs?

5.2.c Does selective removal of contaminants from ambient water result in greater phytoplankton primary production rates?

5.2.c.i natural phytoplankton assemblage

- NH4 removal?
- organic contaminant removal?
- metals removal?

5.2.c.ii monocultures

- NH4 removal?
- organic contaminant removal?
- metals removal?

5.2.c.iii With either natural assemblages and monocultures, does one come to different conclusions about growth using different measurement techniques?

- change in chl-a
- ^{13}C or ^{14}C uptake
- photosynthetic efficiency

5.2.c.iv light-depdendence of any 5.2.c.i or 5.2.c.ii?

5.2.d Does spiking individual contaminants (or mixtures) at ambient concentrations result in decreases in phytoplankton primary production rates?

5.2.d.i natural phytoplankton assemblage

- NH4?
- organic contaminant removal?
- metals removal?

5.2.d.ii monocultures

- NH4?
- organic contaminants?
- metals?

5.2.d.iii With either natural assemblages or monocultures, what are the best combination of measurement techniques?
- change in chl-a
- ^{13}C or ^{14}C uptake
- photosynthetic efficiency

5.2.d.iv light-depdendence of any 5.d.c.i or 5.d.c.ii?

5.2.e Do other bioassay-type tests that can evaluate multiple specific toxicity endpoints (B. Escher et al.) identify toxicants to phytoplankton?
5.2.e.i in wastewater effluent?
5.2.e.ii in ambient water?
5.2.e.iii in specific chemical fractions that can lead to identification?

5.3 Is the mechanism of NH4 inhibition of primary production consistent with the scientific literature on factors regulating N uptake, N assimilation, and primary production? In other systems or in controlled experiments, does elevated NH4…
5.3.a inhibit the uptake of NO3?
5.3.b cause lower overall DIN uptake?
5.3.c cause lower rates of primary production?

5.4 Based on current understanding of NH4 inhibition of primary production, what is the ecosystem-scale importance of NH4 inhibition, in terms of limiting either the rate of primary production or the accumulation of biomass, relative to other factors?
5.4.a grazing by clams?
5.4.b light limitation
5.4.c flushing (high flow rate)
5.4.d how does the relative importance vary seasonally or interannually or under realistic scenarios (e.g., flows, clam abundance, changes in SPM)?

5.5 Are observations in South Bay consistent with the NH4 inhibition hypothesis?
5.4.a analysis/statistical analysis of existing data
5.4.b any of the experiments in 5.1-5.3

6. Science Questions specific to Phytoplankton Community Composition
to be completed

7. Science Questions specific to HABs and HAB toxins
to be completed

8. Science Questions specific to direct NH4 toxicity to copepods
to be completed

9. Science questions specific to nutrient loads and cycling
to be completed

Past, on-going, or future studies, and the management questions that they are addressing

	Status	1.1	1.2	1.3	1.4	1.5	1.6	1.7	2.1	2.2	3.1	3.2	3.3	3.4	3.5	3.6	3.7	4.1	4.2	4.3	4.4
RTC 1999-2004 (Wilkerson et al 2006; Dugdale et al, 2007)		■							■	■									■		
SWAMP/RTC 2010		■							■	■									■		
SWAMP/RTC 2011		■							■	■									■		
SWAMP/RTC 2012		■							■	■									■		
TIE – SFCWA/CCCSD		■							■												
Sacramento R. Surveys		■							■	■									■		
Parker et al. 2012 Suisun enclosures		■							■										■		
Parker et al. Effluent spiking growth experiments		■							■												
Glibert et al. SFCWA/DSP: N, P ratios and species/growth		■	■	■		■			■												
Parker et al. DSP/SFCWA: microcystis			■	■					■	■											
Phytoplankton “spiking” study		■							■												
POTW effluent characterization																		■			
Modeling – nutrients, phytoplankton		■							■	■	■	■	■	■	■	■	■	■	■	■	■
Loading estimates - RMP																		■			
Suisun Synthesis I		■							■	■								■	■		
Suisun Synthesis II			■						■	■								■	■		
Kudela et al. IEP 2013		■							■	■											
Dugdale et al. IEP 2013		■							■	■											
Senn et al IEP 2013																		■	■	■	
Glibert et al IEP 2013							■		■												
Cornwell and Glibert, SFCWA																			■		
CCCSD effluent plume modeling					■				■									■			
NH4 toxicity to copepods- Redo of Teh et al chronic toxicity					■				■												
NH4 toxicity to copepods – NH4 + Food					■				■												

Other tables under development…

- Which studies are addressing which science questions

Use this as a specific example to walk through…Antioch microcystis hot spot

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 14c
FILE NO.: N/A
MEETING DATE: January 3, 2013

TITLE: LWA Evaluation of Nutrient Watershed Permit Concept

☐ **MOTION** ☐ **RESOLUTION** ☒ **DISCUSSION**

RECOMMENDED ACTION

Review draft Comprehensive Evaluation of the Nutrient Watershed Permit Concept and provide feedback to Larry Walker Associates (LWA) and Executive Director to determine next steps.

SUMMARY

At the BACWA Technical Seminar on November 6, 2012, the Board listened to and discussed a presentation by LWA on a Nutrient Watershed Permit and other regulatory concepts. That presentation relied upon information contained in two documents prepared by LWA/HDR, titled:

- Evaluation of BACWA Nutrient Watershed Permit Concept – Evaluate Pros and Cons of Nutrient Watershed Permit and Alternatives
- Evaluation of BACWA Nutrient Watershed Permit Concept – Implementing the Best Apparent Alternative

Based on the November 6, 2012 discussion, BACWA presented the Nutrient Watershed Permit and other permit concepts to Regional Water Board staff on the following day (November 7, 2012), as a first brainstorming of ideas. As a result of that discussion, BACWA agreed to have a concept paper prepared that included a comprehensive evaluation of the pros and cons of the current permit-by-permit approach, a Nutrient Watershed Permit approach, and a TMDL-like approach.

Meetings were held with Regional Water Board staff, LWA, and BACWA's IED and RPM on December 11 and 12, 2012 to further discuss ideas for permitting options consistent with the Nutrient Management Strategy and develop a Nutrient Management Plan for the San Francisco Bay.

The attached draft memorandum provides a comprehensive evaluation of the regulatory options that emerged from the above discussions. These options are:

- Individual NPDES Permits (with MOU)
- Nutrient Watershed Permit (with MOU and Basin Plan Amendment)

The factors considered in the analysis include structure, timing, efficiencies to be achieved, permit contents, opportunities for pooling special study resources, commitments by regulated and regulatory agencies, protection from unachievable regulatory requirements, exit strategies, prospects for total or partial agency participation, approach for engaging BACWA Associate and Affiliate members, and ability to address common San Francisco Bay issues and sub-regional issues. Other questions and concerns that are addressed include equitable cost sharing, increased

costs, loss of local agency control, increased demand on staff resources, risk of pursuing the concept, uncertainty of USEPA/SWRCB approvals, detours caused by 3rd party intervention, and ability to change course.

Additional considerations are noted for the following overarching frameworks:

- TMDL-like Implementation Plan (with Basin Plan Amendment)
- MOU

The draft recommended approach is presented at the end of the attached memorandum along with a draft implementation plan drawn from the findings of the attached and prior referenced memorandums.

Tom Grovhoug will attend the January 3rd Board meeting, describe LWA analysis, and receive the Board's input and guidance prior to finalizing the memorandum.

FISCAL IMPACT

This is a discussion item and has no direct fiscal impact.

ALTERNATIVES

N/A

Attachments:

1. LWA Comprehensive Evaluation of the Nutrient Watershed Permit Concept

Comprehensive Evaluation of the Nutrient Watershed Permit Concept [DRAFT]

Prepared by:

TR Grovhoug and Denise Conners, LWA

Introduction

A Nutrient Management Strategy has been developed for the San Francisco Bay by the Regional Water Board and the San Francisco Bay Numeric Nutrient Endpoint (NNE) science team (San Francisco Estuary Institute and Southern California Coastal Water Research Project). The Nutrient Management Strategy is a "living document" that is adapted to address findings from ongoing research and incorporate stakeholder input. The most recent version of the San Francisco Bay Nutrient Management Strategy was released in November 2012 (attached) and was discussed at a November 19, 2012 meeting of the stakeholder advisory group for the San Francisco Bay NNE process.

The purpose of this memorandum is to document BACWA's effort to consider regulatory options[1] for implementation of a Nutrient Management Plan. The Nutrient Management Plan[2] is expected to include POTW management measures informed by joint fact finding and outcome scenarios based on ecological responses and beneficial use protection.

Background

At the BACWA Technical Seminar on November 6, 2012, the Board listened to and discussed a presentation by LWA on a Nutrient Watershed Permit and other regulatory concepts. That presentation relied upon information contained in two documents prepared by LWA/HDR, titled:

- Evaluation of BACWA Nutrient Watershed Permit Concept – Evaluate Pros and Cons of Nutrient Watershed Permit and Alternatives
- Evaluation of BACWA Nutrient Watershed Permit Concept – Implementing the Best Apparent Alternative

[1] Work Element 8 of the San Francisco Bay Nutrient Management Strategy (November 2012).
[2] Work Element 7 of the San Francisco Bay Nutrient Management Strategy (November 2012).

Based on the November 6, 2012 discussion, BACWA presented the Nutrient Watershed Permit concept to Regional Water Board staff on the following day (November 7, 2012), as a first brainstorming of ideas. As a result of that discussion, BACWA agreed to have a concept paper prepared that included a comprehensive evaluation of the pros and cons of the current permit-by-permit approach, a Nutrient Watershed Permit approach, and a TMDL-like approach.

Meetings were held with Regional Water Board staff on December 11 and 12, 2012 to further discuss ideas for permitting options consistent with the Nutrient Management Strategy and develop a Nutrient Management Plan for theSan Francisco Bay.

This memorandum provides a comprehensive evaluation of the regulatory options that emerged from the above discussions. These options are:

- Individual NPDES Permits (with MOU)
- Nutrient Watershed Permit (with MOU and Basin Plan Amendment)

Advantages and disadvantages of the above regulatory options for the San Francisco Bay are described. The factors considered in the analysis include structure, timing, efficiencies to be achieved, permit contents, opportunities for pooling special study resources, commitments by regulated and regulatory agencies, protection from unachievable regulatory requirements, exit strategies, prospects for total or partial agency participation, approach for engaging BACWA Associate and Affiliate members, and ability to address common San Francisco Bay issues and sub-regional issues. Other questions and concerns that are addressed include equitable cost sharing, increased costs, loss of local agency control, increased demand on staff resources, risk of pursuing the concept, uncertainty of USEPA/SWRCB approvals, detours caused by 3rd party intervention, and ability to change course.

Additional considerations are noted for the following overarching frameworks:

- TMDL-like Implementation Plan (with Basin Plan Amendment)
- MOU

The recommended approach is presented at the end of this memorandum. The implementation plan is drawn from the findings of this comprehensive evaluation, previous assessments completed by LWA/HDR, and input provided by Regional Water Board staff and BACWA Executive Board Members.

Individual NPDES Permits (with MOU)

Advantages and disadvantages of using the individual NPDES permit option to implement the San Francisco Bay Nutrient Management Strategy are:

Structure: PRO – The continued use of individual permits will be the easiest structure to implement in the short term. No changes in status quo would be required. Flexibility would exist to change the approach over time, from permit to permit. Individual permittees may be able to negotiate special conditions and requirements to address local or sub-regional issues. CON – The sequential nature of individual permit reissuances will make coordination on a Bay-wide or sub-regional basis difficult. Consideration of Bay-wide issues will be lacking without extra effort to develop and formalize an MOU. Potential changes to individual permits over time also may impact long term consistency of nutrient regulatory decisions and direction.

Timing: PRO - Timing (in terms of permit adoption) is fairly predictable, will be spaced out over at least a five year interval, will depend on individual reissuance schedules and available resources. CON – Sequential nature of reissuances will make coordination and consistency on common issues difficult.

Efficiencies: PRO – Use of the current approach will avoid possible inefficiencies of work efforts associated with implementing a different protocol for nutrients. CON – Permit-by-permit consideration will not be the most efficient method in the long term to implement a Bay-wide Nutrient Management Plan. It will be more difficult to maintain a consistent approach

Permit contents: PRO – Use of the existing permit template will govern the content of individual permits. CON – New content will need to be added to each permit to address common elements of a Bay-wide Nutrient Management Plan.

Opportunity to pool resources: PRO – Language could be included in individual permits to require participation in Bay-wide studies in support of a Nutrient Management Plan, consistent with the MOU. Additionally, CWC Section 13267 letters could be used to compel Bay-wide participation in specific study requests. CON – Extra effort between Regional Water Board permitting staff and Basin Planning staff would be needed to coordinate permit language in upcoming permits to avoid inconsistency with language in later permits. Over time, language in later permits will likely be different unless adherence to the agreement embodied in the MOU is strong.

Commitments by regulated/regulatory parties: PRO – Commitments under individual permits are clear and well understood. CON – Some permit requirements may offer little flexibility. Commitments to implement elements of the Nutrient Management Plan as a group will require extra effort to coordinate and document such intent as specified in the MOU.

Protection from unachievable requirements: PRO – Each individual permittee will be able to try to negotiate its permit to avoid such requirements. Timing of such requirements will apply at some time over a five year permit cycle, providing more or less time and /or flexibility for some permittees to react. CON – Individual permittees will have less ability to address Bay-wide regulatory issues (e.g., adoption of nutrient objectives which may lead to unachievable effluent limits). Application of requirements will impact some individual permittees much earlier than others.

Exit Strategies: PRO – Continued use of individual permits may avoid some commitments that will occur through participation in a watershed permit. The commitments associated with the Nutrient Management Plan and MOU will limit the ability to entirely "exit" from San Francisco Bay nutrient management activities. CON – The ability of individual permittees to "exit" or otherwise affect the Bay-wide nutrient management effort will likely be less than the aggregated influence of multiple cooperating permittees.

Agency participation: PRO – The individual permitting approach will allow each agency to make its own decisions. If agencies decide not to support the MOU, they would be under no obligation to implement elements of the Nutrient Management Plan. CON – The Regional Water Board has indicated its strong desire to move forward with nutrient management activities and has worked cooperatively with BACWA and others to develop the San Francico Bay Nutrient Management Strategy. The Regional Water Board has numerous tools at its disposal (e.g., CWC Section 13267 letters, permit provisions, best professional judgment, etc.) to encourage participation in Bay-wide initiatives. Therefore, the option by an agency to "not participate" may be more costly than the alternative.

BACWA member engagement: PRO – No special permitting outreach effort is needed in the short term. Special BACWA member engagement will be required to develop and reach agreement on the MOU and associated permit provisions. CON – BACWA member attention during permitting will not necessarily be focused on the nutrient issue. Extra effort may be required by BACWA over time to maintain communication with individual permittees on each permit.

Ability to address common Bay issues: PRO - The MOU and Nutrient Management Plan will provide opportunity to identify and address common nutrient issues. CON – Attention will be required to ensure that common issues are addressed in a consistent way in each permit. Ultimately, this will result in a greater demand on resources than would occur with a single watershed permit.

Ability to address sub-regional issues: PRO – Individual permits, by nature, will focus on local issues. This may include sub-regional nutrient management actions. CON – Individual permits

may not adequately address sub-regional nutrient management issues. Extra effort will likely be required ensure the adequate consideration of sub-regional actions.

Equitable cost sharing: PRO – Costs will be apportioned to each permittee as permits are renewed. Assignment of costs to a specific discharger will be less ambiguous. CON – Costs among POTWs may not be equitable, and no mechanism will exist to balance the cost burden.

Increased costs: PRO – Short term permitting costs will not be increased, apart from any agreements to implement portions of the Nutrient Management Plan under the MOU. CON – Permitting costs for POTWs and the Regional Water Board will likely be increased in the long term due to the inefficiency of implementing provisions of the Nutrient Management Plan in multiple permits.

Loss of local agency control: PRO – Individual permits ensure local control over permitting issues, within the boundaries of the typical regulatory framework. CON – An individual permitting approach may not maximize local interests, to the extent leverage associated with a group approach is not realized or applied. The MOU may partially offset this potential lost opportunity.

Demand on Regional Water Board staff resources: PRO – The demand on NPDES staff resources will be as usual, with the exception of extra efforts to coordinate with Basin Planning staff to incorporate Nutrient Management Plan elements into individual permits. CON - If permit appeal issues arise on multiple permits, NPDES staff resource requirements will increase dramatically.

Risks: PRO – The short term risks will be relatively low. Exceptions may occur if pressure is brought to issue permits with stringent effluent limits prior to completion of appropriate studies under the San Francisco Bay Nutrient Management Strategy. An MOU may help reduce short term risks. CON – The argest long term risk is inclusion of unachievable effluent limits derived from stringent numeric nutrient objectives. An MOU may reduce the impact, but cannot eliminate this risk.

USEPA/SWRCB approvals: PRO – USEPA and SWRCB will support the individual permit approach, but may not support or be constrained by the MOU or Nutrient Management Plan. CON – When numeric objectives are adopted, USEPA and SWRCB will require effluent limit derivation from the objectives, without regards to achievability or MOU agreements.

Third party intervention: PRO – Third party intervention will only occur as each permit is issued. It would be more difficult for a third party to influence Bay-wide permitting decisions through permit appeals. CON – Individual permittees would be compelled to address third party issues in a piece meal fashion.

Flexibility to change course: PRO – On an individual permit basis, flexibility to change course will exist. CON – On an aggregate basis, it will not be possible to implement changes over time through individual permit actions. On a limited basis, aggregate changes may be possible with a Bay-wide permit order or through issuance of CWC Section 13267 letters.

Watershed Permit (with MOU and Basin Plan Amendment)

Advantages and disadvantages of using a Nutrient Watershed Permit option to implement the San Francisco Bay Nutrient Management Strategy for are:

Structure: PRO – The watershed permit structure lends itself to Bay-wide coordination on nutrient management issues of common interest. A watershed permit would provide inherent resource and communication efficiencies over the individual permitting approach during the long term. CON – The structure is a change from current practice and will require resources to develop and implement. The structure focuses all nutrient regulatory issues in a single permit, which forces uniformity and consistency. A watershed permit will prevent individual permittees from negotiating special conditions and requirements to address local or sub-regional issues.

Timing: PRO - A watershed permit could be developed and implemented within one year. It is projected that a watershed permit, together with an MOU and possibly a formal Basin Plan amendment, will allow the most efficient implementation of the Nutrient Management Plan. CON – Individual permits that have already been renewed or will be renewed during the period of transition to a nutrient watershed permit must be prepared with the future watershed permit in mind. This will require extra initial effort and resources to develop the watershed permit elements and provisions. Provisions must also be made to account for requirements adopted during the transition period so that proper credit can be granted to those early permittees.

Efficiencies: PRO – The watershed permit option would be the most efficient regulatory framework to implement a unified approach to nutrient management in the San Francisco Bay. CON – Implementation will require some short term inefficiencies as a trade for long term efficiency.

Permit contents: PRO – A watershed permit can include the essential requirements and provisions needed to implement the Nutrient Management Plan. A watershed permit can effectively address nutrient issues of common interest and sub-regional issues as necessary. CON – The specific contents of the watershed permit must be developed and negotiated. Therefore, some uncertainty exists regarding the specific requirements and provisions of the permit.

Opportunity to pool resources: PRO – A watershed permit offers an efficient way to pool resources and policy development efforts for nutrient management. CON – The specific terms and pooling arrangements are yet to be developed, giving rise to uncertainty and concern among prospective permittees.

Commitments by regulated/regulatory parties: PRO – Adoption and implementation of a nutrient watershed permit would represent a strong commitment to the Nutrient Management Plan by both the regulated and regulatory parties. A watershed permit would provide a focus for discussion about the specific commitments by all parties. CON – Perceived lack of flexibility during five-year permit term for all POTWs.

Protection from unachievable requirements: PRO – The Nutrient Management Plan will provide a path to effective and appropriate management measures and regulatory requirements. A watershed permit can provide an effective regulatory construct for successful implementation of the Nutrient Management Plan. CON – A number of uncertainties and challenges exist in creating protection from unachievable regulatory requirements for nutrients. A watershed permit supported by an overarching MOU and Basin Plan Amendment create an opportunity to achieve this goal, but do not guarantee success.

Exit Strategies: PRO – Cooperation under a watershed permit creates negotiating leverage that could be applied to influence nutrient management issues in a watershed permit. CON – A watershed permit and either MOU or Basin Plan Amendment represent a significant commitment to implementing the Nutrient Management Plan. It is not likely that either individual agencies or the collective POTW groups could entirely "exit" a watershed permit, once adopted and implemented.

Agency participation: PRO – The watershed permit provides an easy option for agency participation. CON – The watershed permit "sets the bar" and creates strong momentum for all POTWs in the Bay Area to be covered by the permit. Regional Water Board staff has indicated no interest in allowing agencies to "opt-out" of a watershed permit.

BACWA member engagement: PRO – A watershed permit would both require and result in significant BACWA member engagement. CON – Extra effort, resources and outreach will be required to provide information and advice to garner support for a nutrient watershed permit by BACWA members.

Ability to address common Bay issues: PRO – A watershed permit provides an efficient framework for addressing issues of common interest. It would allow common issues contained in the San Francisco Bay Nutrient Management Strategy to be addressed in a consistent manner. CON – Effort will be required to identify and adequately address common issues

within the watershed permit,MOU, and Basin Plan Amendment.

Ability to address sub-regional issues: PRO – A watershed permit can accommodate sub-regional issues through specific sections and provisions of the permit. CON – Effort will be required to identify and document sub-regional issues and to develop permit,MOU, or Basin Plan Amendment language to address these issues within the context of a watershed permit.

Equitable cost sharing: PRO – A watershed permit consolidates requirements into a single permit document, which facilitates efforts to share costs equitably. CON - Cost sharing arrangements need to be developed separately from the watershed permit. Effort will be required initially to identify and establish the cost sharing parameters and to capture those in a separate BACWA document.

Increased costs: PRO – A watershed permit is projected to be part of a regulatory framework that will reduce permitting costs in the long term. The Nutrient Management Plan has the potential to save significant capital and operating costs for Bay Area POTWs. CON – Initial costs to develop and implement a watershed permit and MOU will be significant. Commitments to fund joint fact finding studies and modeling tool development to support the Nutrient Management Strategy will be significant.

Loss of local agency control: PRO – The joint cooperative approach by multiple permittees on a watershed permit will create negotiating leverage that will at least partially offset a loss of local agency control. CON – A watershed permit will diminish local agency control over the nutrient provisions of its individual NPDES permit.

Demand on Regional Water Board staff resources: PRO – Big picture, long term projections indicate that a watershed permit and MOU will result in a lower demand on staff resources than other regulatory options and approaches. CON - Initial resource demands to develop and implement a watershed permit, MOU, Basin Plan Amendment, and cost sharing approach will be significant.

Risks: PRO – Implementation of the Nutrient Management Plan through a watershed permit, MOU, and Basin Plan Amendment reduces the long term risk of inappropriate management decisions and regulatory conflict. CON – Risks and uncertainties exist for a watershed permit approach that is yet to be defined and approved. However, the risks of business-as-usual permitting are believed to outweigh the risks associated with a new nutrient watershed permit.

USEPA/SWRCB approvals: PRO - USEPA and SWRCB have approved the use of watershed permits in the Bay Area previously. The potential exists to have USEPA and SWRCB to join in an MOU or at least to support the elements of an MOU to implement the Nutrient Management Plan. CON – Effort will be needed to outreach to USEPA and SWRCB to gain support for the

Nutrient Management Plan and the associated regulatory approach.

Third party intervention: PRO – The merging of nutrient issues into a single watershed permit will consolidate third party intervention, if it occurs. This will allow a more effective use of resources in dealing with third party issues. CON – Third parties only concerned with a sub-region of the Bay may be compelled to challenge the watershed permit, potentially impacting regulatory decisions and activities in other areas of the Bay.

Flexibility to change course: PRO – The increased leverage of a coordinated and consolidated permitting effort will likely provide greater potential to shape the course of the nutrient management plan and associated regulatory requirements. CON – Once adopted, it would be very difficult to change course away from a watershed permit or the commitments made in an associated MOU or Basin Plan Amendment.

Considerations for a TMDL-like Implementation Plan (with Basin Plan Amendment)

Another regulatory option that has been identified is to develop a TMDL-like implementation plan to formalize the Nutrient Management Strategy. This option is called "TMDL-like" because it is not, in fact, a TMDL. TMDLs are prepared as plans to attain water quality objectives where a determination has been made that those objectives are not achieved. For San Francisco Bay, the determination has not been made that nutrient objectives are not achieved (i.e., that the Bay is impaired due to nutrients). The goal of the San Francisco Bay Nutrient Management Strategy is to prevent such impairment from occurring in the future.

To clarify, this option is not an alternative to either of the NPDES permitting options described previously. It would instead represent a means to memorialize the overarching approach that the permitting options are implementing and to accrue some of the regulatory benefits associated with an approved TMDL. As such, the decision to develop and adopt a TMDL-like implementation as a Basin Plan Amendment is discretionary and will depend on the consideration of various factors. The decision to move forward with this option should only be made after considering the following:

Content: The content of the Basin Plan Amendment as a water quality-based management strategy should be described in a detailed outline. This is necessary to provide clarity for discussions of this option with BACWA members, Regional Water Board staff, and other parties.

Benefits: The argument for a Basin Plan Amendment to formalize a TMDL-like plan is that it will provide an increased level of certainty that the Nutrient Management Plan and associated NPDES permits will be implemented in accordance with the original vision. Since a Basin Plan

Amendment involves review and approval by the SWRCB and at least a partial review and approval by USEPA, the amendment would formalize the acceptance of the overarching approach by those two key agencies. It has been pointed out that Basin Plan language does not provide absolute security from action by either the SWRCB or USEPA (e.g., SWRCB own motion review of the EBMUD wet weather facilities and management plan). As such, this issue should be fully vetted.

Another argument for a TMDL-like plan is that it could provide greater influence over NPDES permitting decisions and timing, to the degree that it is formally recognized as a TMDL equivalent by USEPA. The Basin Plan Amendment would provide the opportunity for formal adoption of the Nutrient Management Plan.

The above benefits need to be given greater scrutiny to ensure that the effort to develop and adopt a Basin Plan Amendment is worthwhile.

Costs: Basin Plan Amendments typically take two to five years to develop and to get through the approval process. The monetary and Regional Water Board staff resource cost for this effort is significant. Estimates of staff resources to complete the Basin Plan Amendment should be prepared and plans for funding the effort should be developed.

Timing: Since the Basin Plan Amendment process takes up to three years to complete, the decision process regarding a Basin Plan Amendment should occur in the near term. Key parties to this process should be BACWA and Regional Water Board management. A decision whether to move forward with a Basin Plan Amendment does not directly impact efforts to develop and implement an MOU and associated NPDES permitting actions. The decision may have an indirect impact to the extent a Basin Plan Amendment is seen as imperative to the overall effort by one or more parties.

Risks: Given the magnitude and formality of the Basin Planning process, it involves various risks and uncertainties. These risks include (a) Regional Board/USEPA/SWRCB demand for modifications that would alter the original intent of the plan, (b) third party Intervention (public comment, appeals, legal action) that would disrupt and add costs and time to the process, (c) inability to “exit” or modify the process, once started, and (d) unintentional encouragement of early adoption of NNEs as water quality objectives. These risks, and others, should be considered as part of the decision process.

Considerations for an MOU

Several important considerations exist regarding the concept of developing and executing an MOU to provide a written commitment to the overall nutrient management/regulatory process.

- BACWA has advocated development of an MOU with the Regional Water Board (and potentially with other parties) to provide some level of connection between the Nutrient Management Strategy and the NPDES permitting process. It is understood that an MOU can only provide a certain level of security, but the MOU is favored over singular reliance on a watershed permit to capture the overarching framework of agreement regarding the long term nutrient management planning effort.
- Regional Water Board staff has expressed concern that the development of an MOU may be unnecessary and would take resources and time away from the development of a watershed permit. An alternative would be to develop a straw proposal, discuss details of the proposal during watershed permit negotiations, use the public review process to discuss benefits, and memorialize the plan in the watershed permit fact sheet.
- Regional Water Board staff also raised the question of whether the details of a watershed permit would be needed before executing an MOU. This brings into question the timing of the effort for an MOU versus the watershed permit, if that option is selected. An MOU could be developed in parallel with a nutrient watershed permit.
- Regional Water Board staff indicated that an MOU could be acceptable if it is simple and just outlines the framework and goals of the nutrient management strategy and planning effort. The agreement would then be used as a guide for development of a watershed permit and for implementation of the management plan. An MOU is also seen as valuable in garnering the support of BACWA members. Regional Water Board staff also sees advantages to including governance principles in the MOU.
- It is recognized that it will be easier to develop an MOU if just BACWA principals and Regional Water Board management have to sign the agreement. It is also recognized that there are advantages to having other BACWA members, SWRCB and USEPA as signatories to the MOU. To explore this possibility, State Water Board and USEPA should be included in preliminary MOU discussions in order to identify any opportunities/problems/concerns early.

Recommended Approach

A Nutrient Watershed Permit supported by an MOU (and potentially by a TMDL-Like Basin Plan Amendment) is the recommended regulatory option. Details on how the approach may be implemented are presented in the following paragraphs based on previous assessments completed by LWA/HDR and input received from BACWA Executive Board Members, Regional Water Board NPDES Wastewater Division staff, and Regional Water Board Watershed Management Division staff.

Outreach to Regulators and BACWA Members

A next step in the process is expanded outreach regarding the recommended approach. Regional Water Board staff has been involved in early discussions and planning activities. They support the recommended approach and have provided feedback regarding watershed permit conditions with BACWA representatives. Discussions with Regional Water Board staff should continue.

The BACWA Annual Member Meeting (scheduled for January 24, 2013) will be the first public opportunity to introduce the concept of a Nutrient Watershed Permit to BACWA Associate and Affiliate Members. Most BACWA members are aware of the San Francisco Bay NNE effort and the regulatory push for nutrient management, but don't understand how these activities could impact NPDES permit requirements or capital planning efforts. The planned Annual Member Meeting presentations will lay the foundation for BACWA members' understanding and an impetus for early actions, as outlined below.

- Overview of Nutrient Issues (Amanda Roa, DDSD) – Discuss Suisun Bay studies, CCCSD NPDES permit requirements, San Francisco Bay NNE status/stakeholder process, and implications of SRCSD NPDES permit requirements.
- SWRCB Priorities (SWRCB member) – Discuss nutrients along with other regulatory priorities.
- Regional Water Board Priorities (Bruce Wolfe) – Discuss nutrients along with other regulatory priorities.
- Regulatory Alternatives (Tom Grovhoug) – Present Nutrient Watershed Permit concept with MOU/Basin Plan Amendment and compare it to the current permit-by-permit approach. Explain the benefits of a proactive effort.

Outreach to BACWA members should continue on a regular basis after the BACWA Executive Board and the Regional Water Board reach agreement on a preferred regulatory approach. Thorough and timely explanations of selected actions will help garner member support and involvement. Communication should include e-mail notices to members as milestones are reached, invitations to public meetings or workshops, requests for feedback on proposed permit provisions, and discussions at the BACWA Permits Committee meetings.

It is recommended that BACWA and Regional Water Board staff develop a joint strategy for engaging and keeping the USEPA and State Water Board apprised of how the MOU, Nutrient Watershed Permit, Nutrient Management Plan, and Basin Plan Amendment (if pursued) are progressing. While the State

Water Board and EPA don't have to be signatories on an MOU developed between BAWCA and the Regional Water Board, obtaining and documenting their conceptual buy-in on the overall approach is essential.

Memorandum of Understanding (MOU)

The MOU should outline the framework for a 20-year planning period, defining goals and good faith commitments to implement a process to manage nutrients in San Francisco Bay by BACWA and its member agencies, the Regional Water Board, and potentially other parties. The framework is expected to include Nutrient Management Plan development, commitments to undertaking and funding joint fact finding studies, basic provisions and approach for a Nutrient Watershed Permit, and adoption of a Basin Plan Amendment (if deemed beneficial). The MOU should also define governance roles, within the boundaries of the California Water Code. As stated previously, while the State Water Board and the USEPA don't necessarily have to sign the agreement, it should be explored as a means to document their support for the approach.

Nutrient Watershed Permit

The Nutrient Watershed Permit approach may be implemented in phases over 3 to 4 permit terms. For example, permit conditions during the first 5-year term could be utilized to initiate joint fact finding and modeling tool development, while permit conditions during the second 5-year term could be used to begin the evaluation of control measure scenarios and effectiveness. Permit conditions during the third and fourth terms could be used to prescribe and implement management activities, as needed.

The initial Nutrient Watershed Permit would assist in implementation of the San Francisco Bay Nutrient Management Strategy, with consideration for provisions adopted in the Central Contra Costa Sanitary District 2012 NPDES permit and the data collection effort required by the March, 2012 CWC Section 13267 letter issued by the Regional Water Board. With BACWA membership support, the first Nutrient Watershed Permit could be developed and adopted in 9 to 12 months. Permit requirements during the first 5-year term are expected to include a cap on nutrient loadings at current performance, evaluation of feasible treatment technologies (building off work performed to date by HDR for BACWA and by individual agencies), and participation in studies described in the San Francisco Bay Nutrient Management Strategy.[3] Nutrient load reductions would not be expected during the first permit term, but credit may be acknowledged and granted to agencies that implement management practices early. The initial watershed permit will establish a framework for the entire San Francisco Bay. If controversies arise during permit issuance, specific sub-regional requirements may be required. It is expected that clearly defined permit reopener provisions will be needed in the event that special study results point towards problems that should be addressed immediately by POTWs. The Nutrient Watershed Permit provisions and approach will have to be consistent with NNE efforts, but may only cover POTWs at the outset. According to current Regional Water Board policies, any schedules established in the Nutrient Watershed Permit will only be changed if the permit is reopened and amended.

[3] Work Elements 2 and 3 of the San Francisco Bay Nutrient Management Strategy (November 2012).

Initial Watershed Permit Requirements (first 5 years):

(1) Evaluate feasible technologies or actions to reduce effluent nutrient loadings – Applicable technologies/actions may include side-stream treatment, upgrading treatment technologies, optimizing existing treatment processes, operating existing treatment processes in a different manner.

A credit banking system may be developed and implemented to account for early activities undertaken by POTWs. Agencies that implement feasible technologies or optimize existing processes would report on activities undertaken. The credit system should account for such actions and create incentives to promote proactive load reduction activities.

(2) Compliance with existing un-ionized ammonia objective – It is expected that current WQBELs for total ammonia will be implemented in the initial Nutrient Watershed Permit.

(3) Compliance with existing narrative objectives for biostimulatory substances – Compliance may be demonstrated by supporting efforts identified in the San Francisco Bay Nutrient Management Strategy, evaluating management actions, and capping existing performance. Data generated as a result of the March 2, 2012 CWC Section 13267 letter should be used to establish current baseline conditions.

(4) Participate in special studies identified in the San Francisco Bay Nutrient Management Strategy – A requirement to support projects identified in the San Francisco Bay Nutrient Management Strategy and necessary to the development of the Nutrient Management Plan should be anticipated.

(5) Compliance with total mass loading limits - Established as either Bay-wide or sub-regional aggregate limits.

Nutrient Management Plan and TMDL-Like Basin Plan Amendment

It is recommended that a Nutrient Management Plan be developed by BACWA, the Regional Water Board, and SFEI during the first term of the Nutrient Watershed Permit. The Nutrient Management Plan should address the overall approach to joint fact finding, modeling tool development and utilization, control measure scenario evaluation, and development of nutrient management objectives. The Nutrient Management Plan should also define the process of evaluating compliance with the existing narrative objectives for biostimulatory substances. Consideration should be given to formalizing this plan as an implementation section in Chapter 4 of the Basin Plan and structured to meet federal TMDL requirements, to the extent possible. The plan could be, in essence, a "prevention-based" TMDL. An advantage to a Nutrient Management Plan approved as a TMDL is that it could supersede other approaches to the establishment of water quality based effluent limitations. If a Basin Plan Amendment is structured as a prevention-based TMDL, the action could provide regulatory certainty for up to 20 years (a reasonable planning horizon) and memorialize the phased approach embodied in the Nutrient Management Plan. A decision process should be commenced to determine whether the development of a TMDL-like Basin Plan Amendment is advantageous to the overall process and should move forward.

Executive Board Special Meeting Agenda

Friday, January 11, 2013, 10:00 a.m. – 12:00 p.m.
Regional Water Board, 1515 Clay Street, St. 1400 Oakland, CA

ROLL CALL AND INTRODUCTIONS (10:00 a.m. – 10:05 a.m.)

PUBLIC COMMENT (10:05 a.m. – 10:10 a.m.)

OTHER BUSINESS (10:10 a.m. – 12:00 p.m.)

1. Toxicity Policy (10:10 a.m.- 10:20 a.m.)
    a. Status report on State Water Board draft toxicity policy.
    b. Discuss IWC/Acute Reasonable Potential
2. SFRWQCB Permit related issues (10:20 a.m.-10:30 a.m.)
    a. Future permit issues:
        i. Risk Reduction for PCB and Hg: Discuss how to prepare for next permit renewal
        ii. Discuss 1668C review.
        iii. Discuss how to reduce future 1669C testing
    b. PCB P2 reporting
        i. Background: Agency PCBs P2 Annual Reports for 2011 were summarized and reviewed by BAPPG. There were a lot of differences in the submittals in part to how the Order's language on page 7 reads.
        ii. The Regional Board will prepare a list of what they think should be in the P2 report. Lila Tang also requested BACWA prepare suggested language to clarify. What is the status?
3. Pardee Technical Seminar: Feedback (10:30-10:40)

4. Nutrients – 13267 Letter; On track? (10:40 a.m.- 10:50 a.m.)
    a. Nutrient Monitoring began in July –discuss first submittals. How much more is needed
    b. Data reporting format/template: Needed next steps?
5. Nutrients Strategy (10:50 a.m.- 12:00 p.m.)
    a. Developing the nutrient strategy is expected to be a very long-term effort for the Bay. Science plans and decision trees should foster a common understanding of the work plan, cost, and schedule. Discuss SEI effort to date on Decision Tree development
    b. Given the magnitude and duration of nutrient effort, setting it up the management and oversight structure in the near future is important to BACWA. Report on Naomi and Ben's effort

c. Discuss NPDES permitting nutrient strategy and Watershed Permit pros and cons.

ADJOURNMENT (12:00 p.m.)

Members Meeting

Thursday, January 24, 2013, 8:00 a.m. – 12:00 p.m.
California Endowment Conference Facility, 7th Floor, Laurel Room
1111 Broadway, Oakland, CA

8:00 a.m. – 8:30 a.m. **Coffee and Refreshments**

8:30 a.m. – 9:00 a.m. **Welcome**

- Introduction
Ben Horenstein, BACWA Executive Board Chair
- Year in Review
Jim Kelly, BACWA Interim Executive Director ??

9:00 a.m. – 10:00 a.m. **SWRCB, RWQCB, U.S. EPA, & Baykeeper Priorities**

Moderator-Ben Horenstein, BACWA Chair

Frances Spivey-Weber, State Water Resources Control Board(Confirmed)

Bruce Wolfe, Executive Officer, SF Water Board(confirmed)

Terry Fleming, Region IX EPA(confirmed)

Deb Self, Executive Director, Baykeeper (confirmed)

10:00 a.m. – 10:45 a.m. **Nutrients – What is happening in the San Francisco Bay**

Moderator - *Ann Farrell, Central Contra Costa Sanitary District*

- The State of the Science on Nutrients in SF Bay
Amanda Roa, Delta Diablo Sanitation District

- Bay Area Nutrient Strategy
David Senn, San Francisco Estuary Institute

- San Francisco Bay Regional Water Board Perspective
Tom Mumley, San Francisco Regional Water Quality Control Board

- Considerations of an Alternative Regulatory Framework
Tom Grovhoug, Larry Walker Associates

10:45 a.m. – 11:15 a.m. **Nutrient Removal Technologies**

- Survey of Nutrient Technologies and Considerations
Don Grey, East Bay Municipal Utilities District

11:15 a.m. – 11:45 a.m. **Regulatory Update**

Moderator – *Laura Pagano, San Francisco Public Utilities Commission*

– Mercury & PCB Watershed Permit Renewal
Lorien Fono, BACWA Regulatory Program Manager

– TST & WET Policy
James Ervin, City of San Jose(confirmed)

– SWRCB WDR for Collection Systems
Monica Oakley, RMC Water and Environment

11:45 a.m. – 12:00 p.m. **Wrap up –BACWA Board member-TBD**

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 21
FILE NO.: 12,879
MEETING DATE: January 3, 2013

TITLE: Process and Planning for Fiscal Year 2013-14 Budget & Workplan Development

☐ **MOTION** ☐ **RESOLUTION** ☒ **DISCUSSION**

RECOMMENDED ACTION

Review BACWA Budget planning requirements and historical process to determine next steps and timeline for development and approval of the Fiscal Year 2013-14 BACWA, CBC and Special Program budgets.

SUMMARY

The Joint Powers Agreement (JPA) establishing BACWA requires approval of a budget and workplan for the coming fiscal year's activities no later than June of the preceding fiscal year. In practice, the budget and workplan must be approved at least sixty days in advance of the start of the fiscal year to allow time for BACWA's Treasurer to enter the budget into the accounting systems. The JPA also requires notification to all agencies of their dues for the upcoming fiscal year by March 1st.

Over the years BACWA has spent a varied amount of time on budget and workplan development. Some years, the Board has held as many as two half-day workshops (that included Committee Chair participation) to prepare a draft budget and workplan, whereas in other years, planning discussions that took place during regular monthly Board meetings were sufficient for development of the draft budget and workplan.

As discussed during the 2012 Pardee Technical Seminar, FY2012-13 BACWA and CBC expenditures were budgeted to exceed revenues. Current projections indicate that actual expenses for this fiscal year may be less than budgeted and as a result, it may not be necessary to utilize reserve funds during fiscal year 2012-13, as previously planned. However, if CBC expenditures, specifically those that address regulatory issues, are expected to remain the same or increase in 2013-14, the Board will need to consider funding options, which may include an increase in membership dues and use of reserve funds.

At this time the Board is being asked to determine their preferred process and timeline for Fiscal Year 2013-14 budget and workplan development.

FISCAL IMPACT

This is a discussion item and has no direct fiscal impact at this time.

ALTERNATIVES

This action does not require consideration of alternatives.

Attachments:

1. Fiscal Year 2012-13 Budget and Workplan

Strategic Plan & Workplan

FISCAL YEAR 2012 – 2013

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INTRODUCTION

The Bay Area Clean Water Agencies (BACWA) is a joint public powers agency created by a 1984 Joint Powers Agreement (JPA) between the Central Contra Costa Sanitary District (CCCSD), the East Bay Dischargers Association (EBDA), the East Bay Municipal Utility District (EBMUD), the City of San Francisco, and the City of San Jose (collectively, "the Principal Agencies"). The JPA requires approval of an annual budget and workplan divided into three parts: overhead (Part A), general benefit programs (Part B), and special benefit programs (Part C).

The JPA requires that revenues for each fiscal year be equivalent to anticipated expenditures. Expenditures for Management & Administration (Part A), and General Benefit Programs (Part B) are funded by all BACWA members because these programs are carried out on behalf of all member agencies. BACWA currently has two General Benefit Programs: the core BACWA program to support member agencies and the Clean Bay Collaborative. Expenditures for Special Benefit Programs (Part C) are funded by those agencies that elect to fund those programs because those benefits accrue primarily to those participating agencies. BACWA currently has five Special Benefit Programs: the Air Information and Resources Committee, the Bay Area Pollution Prevention Committee, Water Operator Training, Proposition 50 Administration, and Proposition 84 Administration.

The purpose of this document is to fulfill the requirements of the JPA for the 2012 – 2013 Fiscal Year (2012 FY). This workplan and budget specify the purpose of each of BACWA's programs during the 2012 FY, the methods by which they will be carried out, the products that will be developed, and the persons responsible for implementation. The schedule for implementation of these programs is July 1, 2012 through June 30, 2013.

STRATEGIC PLAN

BACWA adopted its first strategic plan and accompanying workplan in 2009 and subsequently refined it in 2011. The strategic plan states the mission, values and goals of the organization as demonstrated in the work undertaken annually by the agency.

Mission

Through leadership, science and advocacy, BACWA provides an effective regional voice for the clean water community's role in stewardship of the San Francisco Bay environment.

Values

Leadership
Environmental Stewardship
Collaboration
Transparency
Fiscal Responsibility
Member Service

Goals

Member Service

1. Members are informed of critical issues and activities.
2. Members comply with applicable rules and regulations.

Informed Regulation

3. Environmental regulations and policies reflect the best available scientific, technical, and economic information.
4. Regulations consider environmental, social and economic sustainability.

Environmental Stewardship

5. Members optimize the value available from wastewater.
6. Watershed management principles are applied to address San Francisco Bay management challenges.

MANAGEMENT AND ADMINISTRATION (PART A)

BACWA has administrative and management expenses that are necessary for the agency to carry out its non-program related core functions (JPA, Section 9). They include expenses related to financial management, insurance, and organizational support. Administration of BACWA is carried out by an Executive Director and Assistant Executive Director selected by the Executive Board. Treasurer services are provided by EBMUD who manages BACWA's finances and performs an annual audit. The objective of these expenditures is to ensure effective, efficient, and transparent management of BACWA, which serves all of BACWA's goals.

Management & Administration				
Objective	**Deliverables/Outcomes**	**Lead**	**FY13 Budget**	**Budget Line**
A. Effectively and efficiently manage BACWA as an organization	**A.1.** Executive Board meetings	ED, AED	6,000	Mtg Expenses
	A.2. Monthly Treasurer Reports, annual audit	ED, AED, EBMUD	$40,000	Financial Services
	A.3. Compliance with organization legal requirements	ED, AED	$2,000	EB Legal Support
	A.4. Insurance to manage organizational risk	ED, AED	$4,000	Insurance
	A.5. Administrative support services for organization (incl. file hosting)	ED, AED	$137,720	ED (40%), AED Services, Admin Exp.
		TOTAL	**$189,720**	

GENERAL BENEFIT PROGRAMS (PART B)

There are two general benefit programs: the core BACWA Member Agency program and the technically –focused Clean Bay Collaborative (CBC) program.

BACWA MEMBER AGENCY PROGRAM (PART B.1.)

The **BACWA Member Agency Program** serves the following of BACWA's goals: (1) Members are informed of critical issues and activities, (2) Members comply with applicable rules and regulations, and (3) Environmental regulations and policies reflect the best available scientific, technical, and economic information.

These goals are accomplished by providing member agencies with information on regulations, scientific and technical developments; forums for participating in policy discussions and collaborating on mutually beneficial projects; and opportunities to engage with the larger Bay Area environmental community. Program expenses include support for committee facilitation and special projects; member workshops and trainings; membership in state and national organizations that disseminate information to

members; and communication expenses such as the website, newsletters, the annual report, and the annual meeting.

Bay Area Clean Water Agencies				
Objective(s)	**Deliverables/Outcomes**	**Lead**	**FY13 Budget**	**Budget Line**
A. Provide forums for members to share information, learn, participate in policy and regulatory discussions, and collaborate on mutually beneficial projects **(Comm. Support)**	**A.1.** Collection System Meeting Support	Chair, Consultant	$25,000	CS Comm.
	A.2. Permits Comm. Meeting Support	Chair, Consultant	$0	Permits Comm.
	A.3. Recycled Water Comm. Support	Chair, Consultant	$10,000	RW Comm.
	A.4. Biosolids Comm. Support - Conference attendance - Workshop/Training	Chair	$5,000	Biosolids Comm.
	A.5. Laboratory Comm. Support - Conference attendance - Workshop/Training	Chair	$7,000	Lab. Comm.
	A.6. Infoshare Groups	Consultant	$25,000	Infoshare Groups
	A.7. IRWM Plan Update Support	ED, Chairs, Consultant	$40,000	Misc. Comm. Support
	A.8. Executive Director (60%)	Board Chair	$96,000	Misc. Comm. Support
	A.9. Regulatory Program Manager	ED, Board Chair	$100,000	Misc. Comm. Support
	A.10. Legal Support	ED	$2,000	Misc. Comm. Support
B. Increase direct communication with members regarding regulatory developments and BACWA accomplishments **(Commun.)**	**B.1.** Monthly newsletter	ED	$2,000	Commun. & Reports
	B.2. Annual Report	ED, AED Consultant	$15,000	Commun. & Reports
	B.3. Annual Meeting	ED, AED	$7,000	Commun.
	B.4. Website	ED, AED, Consultant	$10,000	Commun.
	B.5. Misc. media support	ED	$3,000	Commun.
C. Encourage partnerships and relationships that further BACWA's strategic goals. **(Collaborations)**	**C.1.** CWAA	ED, AED	$1,000	Collaborations
	C.2. State of the Estuary Conf.	ED, AED	$20,000	Collaborations
	C.3. CPSC	ED, AED	$5,000	Collaborations
	C.4. PSI	ED, AED	$500	Collaborations
	C.5. ReNUWIt ERC IAB	ED, AED	$10,000	Collaborations
	C.1. BAPPG	ED, AED	$50,000	Special Programs
D. Contingency			$30,000	Contingency
		TOTAL	**$463,500**	

CLEAN BAY COLLABORATIVE PROGRAM (PART B.2.)

The purpose of the **CBC program** is to respond to current regulatory requirements and to develop scientific, technical and industry information to inform future regulations and policies affecting Bay Area POTWs and the environment. Program expenses include the costs of special studies and reports requested by regulatory agencies, policy strategy development and implementation, and collaborations with statewide organizations to do the same. The goals of the CBC are to ensure that (1) regulations and policies reflect the best available scientific, technical, and economic information; (2) regulations consider environmental, social and economic sustainability; (3) members optimize the value available from wastewater; and (4) watershed management principles are applied to address San Francisco Bay management challenges.

Clean Bay Collaborative				
Objective(s)	**Deliverables/Outcomes**	**Lead**	**FY13 Budget**	**Budget Line**
A. Further **nutrient** related science and management goals for SF Bay	**A.1.** SFEI	ED, SFEI	$175,000	Tech. Support
	A.2. Nutrients workshop	ED, Consultant	$10,000	Tech. Support
	A.3. To be determined	ED	$140,000	Tech. Support
B. Inform development and implementation of **Whole Effluent Toxicity** regulations	**B.1.** Comments on draft policy	ED, Consultant	$20,000	Tech. Support
	B.2. Consultant assistance with implementation (experts, workshops)	ED, Consultant	$10,000	Tech. Support
C. Ensure compliance with the **Mercury/PCBs Permit**	**C.1.** Annual mass report	ED, Consultant	$20,000	Commun. & Reporting
	C.2. Risk reduction contribution	ED, Consultant	$15,000	Tech. Support
	C.3. Successful permit renewal	ED, Consultant	$15,000	Tech. Support
D. Advance understanding of the impacts of and controls for **Chemicals of Concern**	**D.1.** Participate in statewide Green Chemistry/Pesticide regulation efforts	ED, Consultant	$15,000	Tech. Support
E. Ensure Climate Change regulations reflect POTW perspectives	**E.1.** Participate in CWCCG	ED, Consultant	$50,000	Collaborations & Sponsorships
	F.1. Maintain sewer rate database	ED, Consultant	$6,000	Commun. & Reporting
F. Other	**F.2.** Contingency	ED, Board	$45,000	
		TOTAL	**$521,000**	

SPECIAL BENEFITS PROGRAMS (PART C)

BACWA has five active special benefit programs: the Bay Area Pollution Prevention Group (BAPPG), the Air Committee, Proposition 50, Proposition 84 Administration, and Water Operator Training (WOT). Member dues for BAPPG, the Air Committee, and WOT are optional and are established on an annual basis by the entities (the BAPPG Executive Committee, the Air Committee Chair, and the Central Contra Costa Sanitary District in conjunction with Solano Community College, respectively) that manage those programs. Proposition costs are paid for by the agencies that receive the grants from the Department of Water Resources.

BAY AREA POLLUTION PREVENTION GROUP (PART C.1.)

BAY AREA POLLUTION PREVENTION GROUP ($80,114)		
Deliverables/Outcomes	**Manager**	**FY13 Budget**
Fats, Oils, Grease • Spanish holiday outreach ($8,000). • Asian holiday outreach ($6,000).	Comm. Rep, Consultant	$14,000
Pharmaceuticals • No Drugs Down the Drain ($4,999). • Disposal campaign ($2,500). • Kaiser Partnership ($0)	Comm. Rep, Consultant	$7,499
Copper • Copper Algaecide Outreach ($5,000).	Comm. Rep, Consultant	$5,000
Dioxins • Partnership with Air District	Comm. Rep, Consultant	$2,000
Pesticides • "Our Water Our World" Program ($10,000). • Permetherin Outreach ($0).	Comm. Rep, Consultant	$10,000
Sanitary Sewer Overflows • Outreach re toilet is not a trash can	Comm. Rep, Consultant	$3,000
Multi-Pollutant • Parents Groups/Neighborhood Outreach ($0) • Hospital P2 audits ($1,500) • Training/outreach to professional orgs ($16,000) • Outreach to demo contractors ($1,500)	Comm. Rep, Consultant	$19,000
Misc. • Agency coord. For P2 week ($1,500) • Regional msg coord. ($0) • Nutrients cross-comm. work ($0) • BAPPG website ($6,000)	Comm. Rep, Consultant	$7,500
Unplanned Issues		$8,000
Administration	AED	$3,800
	Total	$79,799

AIR RESOURCES & INFORMATION GROUP (PART C.2.)

AIR INFORMATION & RESOURCE GROUP		
Deliverables/Outcomes	**Manager**	**FY13 Budget**
Provide member agencies with assistance regarding air quality related issues, research and regulations as they affect the operation and maintenance of Bay Area POTWs.	Chair, Consultant	To be determined by member interest.

WATER OPERATOR TRAINING (PART C.3.)

WATER OPERATOR TRAINING		
Deliverables/Outcomes	**Manager**	**FY13 Budget**
Encourage development of a skilled workforce by offering classes.	CCCSD, Solano Community College, AED	To be determined by member interest.

PROPOSITION 50 ADMINISTRATION (PART C.4)

PROPOSITION 50 ADMINISTRATIVE SUPPORT		
Deliverables/Outcomes	**Manager**	**FY13 Budget**
Continue administration of Proposition 50 to fund projects that benefit the environment and BACWA members by ensuring timely generation of invoices and progress reports to DWR, and distribution of grant funds to participating agencies.	EBMUD, Consultant, AED, ED	Annual budget to be determined by DWR schedule. See expense summary for entire project budget.

PROPOSITION 84 ADMINISTRATION (PART C.5)

PROPOSITION 84 ADMINISTRATIVE SUPPORT		
Deliverables/Outcomes	**Manager**	**FY13 Budget**
Continue administration of Proposition 84 to fund projects that benefit the environment and BACWA members by ensuring timely generation of invoices and progress reports to DWR, and distribution of grant funds to participating agencies.	EBMUD, Consultant, AED, ED	Annual budget to be determined by DWR schedule. See expense summary for entire project budget.

REVENUE AND EXPENSE ACCOUNT SUMMARY

BACWA	2013 Budget	Notes
REVENUES	**597,000**	No change from 2012 proj
Principals' Contributions	420,000	
Assoc. & Aff. Contributions	162,000	
Other	10,000	Carryforwards to be added later
Interest Income	5,000	
EXPENSES	**653,220**	
BACWA Committees	**212,000**	
Collections System	25,000	
Permit Committee	0	Moved to RPM
Water Recycling Committee	10,000	
Biosolids Committee	5,000	
InfoShare Groups	25,000	
Laboratory Committee	7,000	
Misc. Tech. & Reg	140,000	
IRWMP Update assistance	*40,000*	
Regulatory Program Manager	*100,000*	
Legal Support	**4,000**	
Regulatory Support	2,000	
Executive Board Support	2,000	
Collaboratives and Sponsorships	**36,500**	
CWAA	1,000	
State of the Estuary	20,000	
CPSC	5,000	
PSI	500	
Stanford ERC	10,000	
Communications and Reporting	**30,720**	
Annual Report	15,000	
Website Development/Maintenance	10,720	
Power DNN	*500*	
Box.net	*720*	
Circlepoint (web)	*8,000*	
Adammer as-needed	*1,500*	
Other Communications	5,000	
I-contact	*2,000*	
Media relations support	*3,000*	
Special Programs	**50,000**	
Contribution to BAPPG	50,000	
General BACWA Support	**43,000**	
Contingency	30,000	5% of revenues
Meeting Support	13,000	
EB Meetings	*1,000*	
Annual Meeting	*7,000*	
Pardee	*5,000*	

Administrative Support	**277,000**	
Executive Director	160,000	Assumes new ED @ 175k
Assistant Executive Director	70,000	
EBMUD Financial Service & Audit	40,000	
Administrative Expenses	3,000	
Insurance	4,000	
TOTAL	(56,220)	Will be funded through reserves or the projected 2012 surplus

CBC	**2013 Budget**	**Notes**
REVENUES	**451,600**	No change
Principals' Contributions	300,000	
Assoc. & Aff. Contributions	150,000	
Interest	1,600	
EXPENSES	**521,000**	
Technical Support	**385,000**	
Nutrients	325,000	
SFEI 2012/2013	*175,000*	
Annual workshop	*10,000*	
To be determined	*140,000*	
PCBs/Hg	15,000	Permit Rewrite
Whole Effluent Toxicity	30,000	
Comments on draft policy	*20,000*	
Implementation Assistance	*10,000*	
Risk Reduction	15,000	
Collaborations & Sponsorships	**65,000**	
CWCCG	50,000	
CECs	15,000	
Commun. & Reporting	**26,000**	
Hg Emissions Report	20,000	
Rate database	6,000	
Contingency	**45,000**	10% of revenues
TOTAL	(69,400)	Deficit funded through reserves

BAPPG	2013 Budget	Notes
REVENUES	**80,000**	No change
Member Contributions	80,000	
EXPENSES	**79,799**	
Mercury	0	
FOG	14,000	
Pharmaceuticals	7,499	
Copper	5,000	
Dioxin	2,000	
Pesticides	10,000	
SSOs	3,000	
Unplanned Issues	8,000	
Multi-Pollutant	19,000	
Misc.	7,500	
BACWA Indirect Costs	3,800	Per BACWA Policy
TOTAL	201	

AIR	2013 Budget	Notes
REVENUES	**85,000**	
Participant's Contributions	85,000	Est. depends on member interest.
EXPENSES	**85,000**	
Contract expenses	81,000	Est. depends on member interest.
BACWA Indirect Expenses	4,000	Per BACWA Policy
TOTAL	0	

WOT	2013 Budget	Notes
REVENUES	**160,500**	
Participant's Contributions	160,500	Est. depends on member interest.
EXPENSES	**160,500**	
Contract expenses	158,000	Est. depends on member interest.
BACWA Indirect Expenses	2,500	Per BACWA Policy
TOTAL	0	

Prop 50 Admin	2012-2015 (est) Budget	Notes
REVENUES	**265,245**	
Grant Funds	250,000	Includes pre-funding
Interest	15,245	
EXPENSES	**265,245**	
Consultant	109,000	
BACWA Legal	50,000	
BACWA Staff - Direct	40,000	
BACWA Accounting	15,000	
Other Direct Costs	12,000	
EBMUD Grant Manager	15,000	New for 2013. In-kind contribution prior
EBMUD Admin Support	0	
Indirect Costs	8,025	Per BACWA policy
Contingency	16,220	
TOTAL	0	

Prop 84 Admin	2012-2017 (est) Budget	Notes
REVENUES	**640,000**	
Agencies' Pre-funding	100,000	
Grant Funds	540,000	Reimbursement of admin costs; or invoice agencies again if necessary
EXPENSES	**640,000**	
Consultant	157,000	Assist with DWR reporting and coord.
BACWA Legal	51,000	
BACWA Staff - Direct	57,000	
BACWA Accounting	51,000	
Other Direct Costs	35,000	Mailing, shipping , telecom, etc.
EBMUD Grant Manager	180,000	Includes allowable overhead
EBMUD Admin Support	60,000	
Indirect Costs	18,000	Per BACWA policy
Contingency	31,000	
TOTAL	0	