BACWA BAY AREA CLEAN WATER AGENCIES

Executive Board Meeting
AGENDA
Friday, April 21, 2017, 9:00 a.m. – 12:30 p.m.
SFPUC, Hetch Hetchy Room, 13th Floor
525 Golden Gate Ave., San Francisco, CA

Agenda Item		Time	Pages
ROLL CALL AND INTRODUCTIONS		**9:00 AM**	
PUBLIC COMMENT		**9:03 AM**	
CONSIDERATION TO TAKE AGENDA ITEMS OUT OF ORDER		**9:04 AM**	
CONSENT CALENDAR		**9:05 AM**	
1 March 17, 2017 BACWA Executive Board Meeting Minutes			**3-9**
2 February 2017 Treasurer's Reports			**10-20**
APPROVALS & AUTHORIZATIONS		**9:06 AM**	
3 Approval: FY18 BACWA Budget			**21-23**
4 Approval: Agreement with ABAG to Administer Proposition 84			**24-30**
5 Authorization: Biosolids Research			**31-37**
OTHER BUSINESS - POLICY/STRATEGIC			
6 Discussion: Nutrients		**9:15 AM**	
a. Regulatory			
i. Layperson's Guide to Nutrients	Guide		
ii. 2nd Watershed Permit			
iii. Interview with Bay Area Monitor			
b. Technical Work			
i. Nereda Nutrient Removal Technology			**38-39**
ii. Impacts on Bay of Sidestream Treatment			
iii. Upcoming Workshops			**40-45**
c. Governance Structure			
i. Planning Subcommittee Meeting # 25	Delta Nutrient Forms & Ratios		**46-67**
7 Discussion: Toxicity		**10:25 AM**	
i. 303 (d) List			**68-70**
ii. Pacifica Permit			**71-81**
iii. State Toxicity Provision	State Toxicity Provisions		**82-86**
iv. Toxicity Workshop			**87**
8 Discussion: Update on BAAQMD Regulations		**10:45 AM**	**88-107**
9 Discussion: Mercury Water Quality Objectives and Beneficial Uses		**11:00 AM**	**108**
OTHER BUSINESS - OPERATIONAL			
10 Discussion: CASA Climate Change Program		**11:05 AM**	
11 Discussion: Update on Regional and Statewide Biosolids Issues		**11:30 AM**	
12 Discussion: Bay Area Regional Reliability Study Update	TM 2	**11:58 AM**	
13 Discussion: Update on Microplastics Research		**12:08 PM**	**109-110**
14 Discussion: Executive Board Meeting Format		**12:13 PM**	

REPORTS			**12:18 PM**	
15	Committee Reports			**111-119**
16	Member Highlights			
17	Executive Director Report			**120-127**
18	Regulatory Program Manager Report			**128**
19	Other BACWA Representative Reports			
	a. RMP TRC	Rod Miller		
	b. RMP Steering Committee	Karin North; Jim Ervin; Leah Walker		
	c. Summit Partners	**Dave Williams**		
	d. ASC/SFEI	Laura Pagano; Dave Williams		
	e. Nutrient Governance Steering Committee	Jim Ervin; Mike Connor		
	f. SWRCB Nutrient SAG	**Dave Williams**		
	Index	Stakeholder Advisory		
	g. SWRCB Focus Group – Bacterial Objectives	Lorien Fono; Amy Chastain		
	h. SWRCB Focus Group – Mercury Amendments to the State Plan	Tim Potter; Dave Williams, Lorien Fono		
	i. Nutrient Technical Workgroup	Eric Dunlavey		
	j. NACWA Taskforce on Dental Amalgam	Tim Potter		
	k. BAIRWMP	Cheryl Munoz; Linda Hu; Dave Williams		
	l. NACWA Emerging Contaminants	Karin North; Melody LaBella		
	m. CASA Statewide Pesticide Steering Committee	Melody LaBella		
	n. CASA State Legislative Committee	Lori Schectel		
	o. CASA Regulatory Workgroup	Lorien Fono		
	p. ReNUWIt	Mike Connor; Karin North		
	q. RMP Microplastics Liaison	Nirmela Arsem		
	r. AWT Certification Committee	Maura Bonnarens,		
	s. Bay Area Regional Reliability Project	Roger Bailey; Mike Connor		
	t. WateReuse Working Group	Cheryl Munoz;		
20	**SUGGESTIONS FOR FUTURE AGENDA ITEMS**		**12:27 PM**	
21	**ANNOUNCEMENTS**		**12:28 PM**	
NEXT MEETING **The next regular meeting of the Board is scheduled for May 19, 2017 from 9:00 am – 12:30 pm at the EBMUD Treatment Plant, Lab Library, 2020 Wake Ave, Oakland, CA**			**12:29 PM**	
ADJOURNMENT			**12:30 PM**	

Executive Board Meeting Minutes

March 17, 2017

ROLL CALL AND INTRODUCTIONS

Executive Board Representatives: Laura Pagano (San Francisco Public Utilities Commission); Jim Ervin (San Jose); Michael Connor (East Bay Dischargers Authority); Vince De Lange (East Bay Municipal Utility District); Lori Schectel (Central Contra Costa Sanitary District).

Other Attendees:

Name	Agency/Company
Amanda Roa	Delta Diablo
Bhavani Yerrapotu	Sunnyvale
Tom Hall	EOA
Linda Sawyer	Brown & Caldwell
Karri Ving	SFPUC
Ralph Eschborn	AECOM
Yuyun Shang	EBMUD
Phoebe Grow	EBMUD
Alex Johnson	Freshwater Trust
Sarah Deslauriers	Carollo
Sheba Hafiz	AECOM
Beverly Stinson	AECOM
Manon Fisher	SFPUC
Jordan Damerel	FSSD
Jackie Zipkin	EBMUD
Greg Baatrup	FSSD
Roger Bailey	CCCSD
Amit Mutsuddy	San Jose
David Williams	BACWA
Lorien Fono	BACWA
Sherry Hull	BACWA

PUBLIC COMMENT

None.

CONSIDERATION TO TAKE AGENDA ITEMS OUT OF ORDER

Several items were taken out of order: the Biosolids Committee Report, the Nereda presentation, and the Nutrient Trading Overview.

CONSENT CALENDAR

1. February 17, 2017, BACWA Executive Board Meeting Minutes – The approved minutes will be posted on the BACWA website.

2. January, 2017 Treasurer's Reports and Financial Summary – A Financial Summary Report was included in the Packet. A copy of the FY17 Budget as of January 31, 2017, (58% of the fiscal year) was included. It, along with the Summary, provides the Board with a concise overview of the Fund Balances and the current status of the Annual Budget and points out any variances in the budget to date.

Consent Calendar items 1 and 2 *were approved in a motion made by Vince De Lange and seconded by Mike Connor. The motion carried unanimously.*

AUTHORIZATIONS & APPROVALS

3. Approval: New Co-Chair for Biosolids Committee – A Board Authorization Request was included in the Packet. The Executive Director gave an overview of the request.

Item 3 *was approved in a motion made by Mike Connor and seconded by Vince De Lange. The motion carried unanimously.*

4. Chair Authorization: Agreement with Computer Courage to transfer Baywise website to a new platform. A Chair Authorization was included in the Packet. The Executive Director gave an overview of the Authorization.

OTHER BUSINESS-POLICY/STRATEGIC

Agenda **Item 5 –** Discussion: California Indian Environmental Alliance – New Beneficial Use Designations. A **LINK** to the CVCWA Comment and a **LINK** to the BACWA Comment were included in the Packet. The Executive Director and Regulatory Program Manager gave an overview of the status. There will be a meeting on 3/23 between POTW representatives, as well as Tribal and Environmental Justice representatives, to discuss POTWs' proposed language on implementing the proposed beneficial uses.

Agenda **Item 6 –** Discussion: Nutrients

a. Technical Work -
    i. Nereda Nutrient Removal Technology (Aerobic Granular Sludge) – Beverly Stinson of AECOM gave a presentation **LINK** on the technology. There are currently 30 full-scale plants in operation worldwide. AECOM is involved with a pilot project in Hong Kong and they are also working with FSSD to test it in the Bay Area. Because the microbes are attached to granules, they settle quickly and reduce the need for clarifiers. Energy use is approximately 40 percent lower than in a traditional activated sludge facility. They will keep BACWA apprised on their efforts to obtain matching funding for a WRF study involving a demonstration project at FSSD. They are also soliciting contributions, or participation, from BACWA members for the project.

b. Governance Structure -
   i. Steering Committee Meeting # 12 Debrief – The Agenda for the meeting, along with a LINK to Item 6 on the Agenda and a **LINK** to Meeting Materials, were included in the Packet. The Executive Directed expressed an appreciation for the information provided there.
   ii. Program Coordination FY18 – The Executive Director explained that BACWA had funded a one-year pilot program for NMS Program Coordination. One of the goals of the program was to secure additional funding for the NMS science program. The Program Coordination team identified over $900k of additional funding for the NMS science plan in FY 17. BACWA had originally considered further financial assistance for extending the Coordination effort in FY 18 if it proved to be successful, however now with the large increase in anticipated funding by BACWA associated with the 2nd Nutrient Watershed Permit any additional funding for the Program Coordination effort will need to be authorized by the NMS Steering Committee utilizing general funds available for the NMS.

c. Regulatory
   i. Opt/Upgrade 2nd Workshop - The Executive Director gave an overview of the plans for the workshop which is scheduled for June 7, 2017 at the EBMUD Training Resource Center.
   ii. Layperson's Guide to the Nutrient Watershed Permit – A **LINK** to the Guide was included in the Packet. The Executive Director updated the Guide and asked for additional suggestions for updates from the Board.
   iii. Nutrient Trading Overview – A presentation **LINK** was given by Alex Johnson from the Freshwater Trust. He discussed how a nutrient trading scheme could be developed for the San Francisco Bay area, and what the challenges specific to the Region would be. He described how trading between subembayments could be implemented with trading ratios, although there would likely be subembayments that could not trade with one another.
   iv. CCCSD Permit Comment Letter – A copy of the Comment Letter was included in the Packet. The Executive Director gave an overview.
   v. Update on the 2nd Watershed Permit – The Executive Director gave a presentation **LINK** on the status of the permit. He outlined different negotiating scenarios based on the number of agencies participating in the Watershed permit. There was also a discussion about whether agencies that commit to early actions can reduce their level of support for scientific studies.

Agenda **Item 7 –** Discussion: Water Board Joint Meeting Debrief – A Summary of the meeting was included in the Packet.

Agenda **Item 8** – Discussion: BAAQMD Workshop Debrief – A Summary of the meeting was included in the Packet. The 3/9 workshop dealt with technical issues, and there will be another meeting with senior staff on policy issues on 3/23. Sarah Deslauriers of Carollo Engineers gave an update, including a proposed agenda for the 3/23 meeting, and asked Board members to provide specific "asks" to deliver to BAAQMD staff at the meeting.

Agenda **Item 9** – Discussion: Toxicity

i. April 11 Meeting with Water Board on Toxicity Plan – The State Water Board is planning a soft rollout of the latest version of the Toxicity Plan. An email announcing an invitation-only stakeholder meeting was included in the Packet.
ii. Pacifica Permit – A BACWA Comment Letter was included in the Packet. BACWA will provide a copy of the SCCWRP graphic on toxicity at the adoption hearing for the Pacifica permit on 4/12.
iii. EBDA Permit – A LINK to the EBDA TO was included in the Packet. BACWA will provide a letter of support for EBDA on increasing the effluent chlorine limit in recognition of chorine die-off in the outfall.
iv. Toxicity Workshop – A workshop will be planned after the April 11th meeting.

Agenda **Item 10** – Discussion: Comment Letters

i. 303 (d) List Comment Letter – A BACWA Comment Letter was included in the Packet. BACWA will attend the Regional Water Board hearing on April 12 and will plan to testify.
ii. Enforcement Policy – A Multi-Agency Comment Letter was included in the Packet with proposed edits to the State's revised Enforcement Policy. The Chair gave an overview of the edit, noting that there are areas where consensus can be reached between POTWs Statewide, and other were it cannot. A letter on items agreed upon is in development for delivery to State Water Board staff.
iii. pH Monitoring – A BACWA Comment Letter was included in the Packet, along with a response from the Water Board. The Executive Director gave an overview, and noted that the Water Board agreed with the Pretreatment Committee's suggestion to allow field monitoring of pH.
iv. Climate Change Resolution Letter – A BACWA Comment Letter was included in the Packet. The Executive Director gave an overview of BACWA's request to implement recycled water reporting in a manner that will not be duplicative, and will be consistent with other reporting efforts.

Agenda **Item 11** – Discussion: Microplastics Update – A **LINK** to an update was included in the Packet. The Regulatory Program Manager gave a presentation on the update. Concerns about the analysis methods have been heard by SFEI and they are looking for more POTW participants.

Agenda **Item 12** – Discussion: FWQC Issues Matrix – A LINK to the FWQC Issue Matrix was included in the Packet.

OTHER BUSINESS-OPERATIONAL

Agenda **Item 13** – Discussion: Final Draft of FY18 Budget – The final Draft of the FY18 BACWA Budget was included in the Packet. The Executive Director gave an overview of changes since the last draft. The final Budget will be presented at the April 21, 2017 BACWA Executive Board meeting for approval.

Agenda **Item 14** – Discussion: Revised Dates for Pardee Technical Seminar– The Executive Director explained to the Board that the previously reserved dates are no longer available and provided the new alternative dates. The Board agreed to October 26-27, 2017 as the new dates and the Assistant Executive Director will send an Outlook invitation to the Board for their calendars.

Agenda **Item 15** – Discussion: Update on BARR Taskforce – A **LINK** to the Update was included in the Packet. The Executive Director asked Board members to send any comments on the update to him.

Agenda **Item 16** – Discussion: Recycled Water – TO Policy & Strategy – Delta Diablo is developing a proposal to transfer coverage from 96-011 to the State General Order, since they have a project that needs to be permitted across Regional Water Board jurisdictional boundaries. Regional Water Board staff have stated that they do not have the resources to transfer existing 96-011 permittees that do not have new projects to the State General Order.

Agenda **Item 17** – Discussion: Update on CWCCG – Due to the late hour, Sarah Deslauriers was asked to return on April 21, 2017 to present the update to the Board.

REPORTS

Agenda **Item 20** – Committee Reports – BACWA Committee Reports were included in the Packet.

AIR Committee: No meeting.
BAPPG: No meeting.
Biosolids Committee: A report from the March 9, 2017 meeting was included in the Packet. SFPUC updated the Board on the status of the $500,000 grant from the Foundation for Farming on Agricultural research. The Committee will be requesting a matching funds commitment from BACWA.
Collections Committee: No meeting.

InfoShare - Asset Management: A report from the February 23, 2017 meeting was included in the Packet.
InfoShare – Operations & Maintenance: No meeting.
Lab Committee: No meeting.
Permits Committee: A Report from the March 9, 2017 was included in the Packet**.**
Pretreatment Committee: No meeting.
Recycled Water Committee: A report from the March 1, 2017 meeting was included in the Packet.

Agenda **Item 21** - Discussion: Member Highlights - Executive Board Representatives (Board) were given an opportunity to provide updates from each of the Principal agencies. Non-principal members were also given an opportunity to report out on behalf of their agencies. No actions were taken on the report-outs.

EBDA: No report.
EBMUD: No report.
Central Contra Costa: Expects a hearing on their TO in April.
San Francisco: No report.
San Jose: No report.
Delta Diablo: No report.
Palo Alto: No report.
Sunnyvale: No report.

Agenda **Item 22** - The **Executive Director's Report** for February 2017, along with the Board Calendar, and BACWA Action Items, were included in the Packet. It was noted that 94 of the 97 action items from FY16 and 40 of the 45 action items from FY17 have been completed.

Agenda **Item 23** - The **Regulatory Program Manager (RPM) Report** for February 2017 was included in the Packet.

Agenda **Item 24 - Other BACWA Representative Reports** – BACWA Representative were given an opportunity to provide updates. No actions were taken based on the reports.

a. RMP-TRC: Rod Miller; Laura Pagano – No report.
b. RMP Steering Committee: Karin North; Jim Ervin – No report.
c. Summit Partners: Dave Williams **–** No report.
d. ASC/SFEI: Laura Pagano; Dave Williams – No report.
e. Nutrient Governance Steering Committee: Ben Horenstein; Jim Ervin – No report.
f. SWRCB Nutrient SAG: Dave Williams – No report.
g. SWRCB Focus Group – Bacterial Objectives: Lorien Fono; Amy Chastain – No report.
h. SWRCB Focus Group – Mercury Amendments to the State Plan: Tim Potter – No report.
i. Nutrient Technical Workgroup: Eric Dunlavey – No report.
j. NACWA Taskforce on Dental Amalgam: Tim Potter – No report.

k. BAIRWMP: Cheryl Munoz, Linda Hu, Dave Williams – No report.
l. NACWA Emerging Contaminants: Karin North, Melody La Bella – No report.
m. CASA Statewide Pesticide Steering Committee: Melody La Bella – No report.
n. CASA State Legislative Committee: Lori Schectel – Has information on a list of bills in process at the State Legislature.
o. CASA Regulatory Workgroup – No report.
p. RMP Microplastics Liaison: Nirmela Arsem – No report.
q. ReNUWIt: Mike Connor; Ben Horenstein – No report.
r. AWT Certification Committee: Maura Bonnarens – No report.
s. Bay Area Regional Reliability Project: Roger Bailey; Mike Connor – No report.
t. WateReuse Working Group: Cheryl Munoz – No report.

Agenda **Item 25 - SUGGESTIONS FOR FUTURE AGENDA ITEMS**.
Items suggested were:

1. A Discussion on Nereda Funding
2. Budgeting and Funding under the new Federal Budget
3. A Board Member commented at this point that there are lots of opportunities available like Nereda, methane, biosolids, LIFT and ISLE Technologies. He asked if some of them could be mentioned in the BACWA Bulletin.

ANNOUNCEMENTS:
The next regular meeting of the Board is scheduled for **April 21, 2017 from 9:00 am – 12:30 pm** at the **SFPUC, Hetch Hetchy Room, 13th Floor, 525 Golden Gate Ave., San Francisco, CA**

The Assistant Executive Director reminded the Board Members to include BACWA as an additional Agency when filling out the Conflict of Interest Form 700's due on April 1, 2017. Since BACWA is not eligible for electronic filing, wet signature copies must be sent to BACWA.

To receive a copy of any materials provided to the Board at a BACWA Executive Board meeting contact Sherry Hull at shull@bacwa.org.

The meeting adjourned at 12:45 pm.

Fund Balances

In FY 16 BACWA had seven funds of which three were operating funds (BACWA, Legal, and CBC) and four were pass-through funds for which BACWA provided only contract administration services. Beginning in FY17, with the AIR Committee becoming a regular BACWA committee supported by BACWA dues, the balance from the Pass-through AIR Fund has been consolidated into the BACWA Fund. The remaining three pass-through funds are not of particular concern as these funds simply track expenses and revenues to ensure that receipts are adequate to pay all expected expenses.

BACWA Fund: This fund provides the resources for BACWA staff, its committees, and other administrative needs. The ending fund balance on February 28, 2017 was $1,410,076 which is significantly higher than the target reserve of $160,000 which is intended to cover 3 months of normal operating expenses. $325,095 of the ending fund balance is obligated to meet on-going operating line item expenses for BAPPG Committee Support, Legal services, IT services, Board meeting expenses, accounting services and BACWA staff support. This leaves an unobligated excess fund balance of $1,084.981. As the details of what regulatory requirements will be included in the next Nutrient Watershed Permit, these excess funds may be used to offset potential dues increases to the BACWA members.

CBC Fund: This fund provides the resources for completing special investigations as well as meeting regulatory requirements. The ending fund balance on February 28, 2017 was $1,649,000 which is significantly higher than the target reserve of $400,000. However, $325,753 of the ending balance is obligated to meet line item expenses for completion of the Optimization/Upgrade Studies contract, the Risk Reduction contracts, and for technical support. Total Disbursements for FY17 from the CBC Fund include the annual payment of $880,000 to SFEI for the Nutrient Watershed Permit commitment. As the details of what regulatory requirements will be included in the next Nutrient Watershed Permit, any excess CBC funds may be used to offset potential dues increases to the BACWA members.

Legal Fund: This fund provides for needed legal services. The ending balance was $300,000 which is at the target reserve of $300,000.

Budget To Actual

The BACWA Annual Budget includes all expected revenues as well as budgeted expenses. Transfers are made from the BACWA Fund and/or the CBC Fund to balance the Annual Budget if expenses exceed revenues and vice versa. It is therefore important to achieve the anticipated revenues and not exceed the budgeted expenses on an annual basis in order to maintain the BACWA and CBC Fund balances at the levels projected in the 5 Year Plan.

Revenues as of February 28, 2017 (67% of the FY) are at 110% primarily due to the payment of FY17 invoices by the Principal members and higher than budgeted interest earnings. Another major factor is the receipt of $187,500 in voluntary contributions by some members to fund additional scientific investigations.

This revenue however will be offset with an FY 17 expense as the collected funds from the members need to be passed on to SFEI for conducting the scientific investigations.

Overall Expenses as of February 28, 2017 (67% of the FY) are at 91% and are tracking in accordance with the Annual Budget due to payment of Watershed Permit commitment early in the fiscal year. Individual expense categories with a plus or minus 10% variance at this point in the fiscal year are as follows:

Administration: This category is under-expended at 51% due primarily to the timing of invoices.

Meetings: This category is 90% expended at 67% of the FY due to a higher than expected expenditure on the Annual Meeting and inclusion of Executive Director expenses for Summit Partners and the CASA Annual Meeting under Miscellaneous Meetings.

Communications: This category is under-expended (i.e. 37%) due primarily to no expenditures on website changes and low expenditures on IT Support.

Legal Support: Budget of $4,500 and expenditures to date of $350 resulting in a favorable variance of $4,150 due to a low need for legal administrative advice.

Committees: This category is under-expended (i.e. 57%) due primarily to timing of invoices.

Collaboratives: This category is under-expended (i.e. 19%) due to timing of invoices.

Tech Support: This category is 113% expended at 67% of the FY partly due to timing of the Watershed Permit Commitment invoice and to the payment of Optimization/Upgrade obligations. In addition, an expenses was incurred for the voluntary contributions for FY 17 by some members for funding additional science. The Opt/Upgrade expenditures were significantly below budget in FY16 and will, therefore, be significantly above budget in FY17.

BACWA
BAY AREA
CLEAN WATER
AGENCIES

BACWA
FY 2017 Budget

67% of Fiscal Year

BACWA FY17 BUDGET	Line Item Description	FY 2017 Budget	Actuals Feb 2017	Actual % of Budget Feb 2017	Variance	NOTES
REVENUES & FUNDING						
Dues	Principals' Contributions	$477,544	$477,545	100%	$1	**FY17:** 2% increase.
	Associate & Affiliate Contributions	$175,072	$164,855	94%	-$10,217	**FY17:** approx. 2% increase.
Fees	Clean Bay Collaborative	$675,000	$659,582	98%	-$15,418	Unchanged from FY16
	Nutrient Surcharge	$800,000	$781,463	98%	-$18,537	Increased from $600,000 in FY16
	Voluntary Nutrient Contributions	$0	$187,500		$187,500	**FY17:** Palo Alto ($30k); Sunnyvale ($60k) CCCSD ($195k) **FY18:** Palo Alto ($30k)
	Other	$0	$67,650		$67,650	Passthrough for Pharm Study; est. carryforward to FY17: $TBD (curr bal $28,409)
Other Receipts	AIR Non-Member	$6,350	$6,350	100%	$0	Approx. 2% increase.
	BAPPG Non-Members	$3,700	$3,699	100%	-$1	Approx. 2% increase.
	Other	$0	$13,698		$13,698	Transfer of AIR Fund to BACWA Fund (not included in total Revenues)
Fund Transfer	Special Program Admin Fees	$2,500	$0	0%	-$2,500	Budgeted for WOT only. Continue to have Props into FY17.
Interest Income	Funds	$4,000	$11,477	287%	$7,477	**FY17:** Actuals includes BACWA, Legal, & Nutrients Funds from LAIF
	Investments	$0	$1,105		$1,105	Alternative Investments Interest
	Total Revenue	**$2,144,166**	**$2,361,226**	110%	$217,060	

BACWA FY16 BUDGET	Line Item Description	FY 2017 Budget	Actuals Feb 2017	Actual % of Budget Feb 2017	Variance	NOTES
EXPENSES						
Labor						
	Executive Director	$189,370	$110,466	58%	-$78,904	3.2% CPI (SF/Oakland/San Jose Metro Area Dec 2015)
	Assistant Executive Director	$85,000	$54,602	64%	-$30,398	8.08% increase - requested 8.2%
	Regulatory Program Manager	$112,500	$61,425	55%	-$51,075	New contract for FY17 with L Fono
	Total	**$386,870**	**$226,493**	59%	-$160,377	
Administration						
	EBMUD Financial Services	$40,000	$26,894	67%	-$13,106	$3,070 is Audit Fee from FY16 when it was on same line item as Accounting.
	Auditing Services (Maze)	$6,200	-$3,666	-59%	-$9,866	**FY17:** a separate line item from EBMUD Financial Services. (-$3,666=accrual from FY16)
	Administrative Expenses	$7,500	$2,308	31%	-$5,192	Travel, Supplies, Parking, Mileage, Tolls, Misc.
	Insurance	$4,500	$4,266	95%	-$234	
	Total	**$58,200**	**$29,802**	51%	-$28,398	
Meetings						
	EB Meetings	$2,500	$978	39%	-$1,522	Catering, Venue, other expenses
	Annual Meeting	$7,000	$7,127	102%	$127	Catering, Venue, other expenses
	Pardee	$6,000	$4,421	74%	-$1,579	Catering, Venue, other expenses
	Misc. Meetings	$1,100	$2,473	225%	$1,373	Holiday Lunch, Committee Chair Lunch, Staff Mtgs, Summit Partners, CASA Annual Meeting
	Total	**$16,600**	**$14,999**	90%	-$1,601	
Communication						
	Website Hosting (Computer Courage)	$600	$600	100%	$0	
	File Storage (Box.net)	$750	$720	96%	-$30	
	Website Development/Maintenance	$1,200	$0	0%	-$1,200	Domains, website changes, Logo EPS file
	IT Support (As Needed)	$2,600	$248	10%	-$2,352	
	Other Communication (MS, SM & Code42)	$800	$642	80%	-$158	MS Exchange, Survey Monkey, CrashPlanPro
	Total	**$5,950**	**$2,210**	37%	-$3,740	

EXPENSES						
Legal						
	Regulatory Support	$2,500	$350	14%	-$2,150	
	Executive Board Support	$2,000	$0	0%	-$2,000	
	Total	**$4,500**	**$350**	8%	-$4,150	
Committees						
	AIR	$50,000	$25,005	50%	-$24,995	Full BACWA Committee beginning in FY17
	BAPPG	$86,000	$80,478	94%	-$5,522	Includes CPSC @ $10,000,
	Biosolids Committee	$3,100	$342	11%	-$2,758	
	Collections System	$1,000	$300	30%	-$700	
	InfoShare Groups	$1,200	$723	60%	-$477	funds for 2 workgroups (Asset Mgmt & O&M)
	Laboratory Committee	$6,000	$2,070	35%	-$3,930	
	Permit Committee	$1,000	$0	0%	-$1,000	
	Pretreatment	$7,000	$84	1%	-$6,916	Request includes specific training sessions
	Recycled Water Committee	$1,000	$0	0%	-$1,000	
	Misc Committee Support	$35,000	$0	0%	-$35,000	
	Total	**$191,300**	**$109,002**	57%	-$82,298	
Collaboratives						
	Collaboratives					
	State of the Estuary (biennial)	$20,000	$0	0%	-$20,000	Bienniel in Odd Years
	Arleen Navarret Award	$0	$0		$0	Bienniel in Even Years
	FWQC (Fred Andes)	$7,500	$7,500	100%	$0	Dues raised to $7,500 in FY16
	Stanford ERC (ReNUWIt)	$10,000	$0	0%	-$10,000	
	CWCCG	$0	$0		$0	State-wide function, being absorbed by CASA in FY17
	Misc	$3,000	$0	0%	-$3,000	new budget line item in recognition of unanticipated expenses
	Total	**$40,500**	**$7,500**	19%	-$33,000	
Tech Support	**Technical Support**					
	Nutrients					
	Watershed	$880,000	$880,000	100%	$0	
	Additional work under permit	$50,000	$17,367	35%	-$32,633	**FY17:** Pilot. LimnoTech
	Opt/Upgrade/Annual Reporting Studies	$18,128	$176,634	974%	$158,506	**FY17:** remainder of lump sum budget
	Nutrient Program Coordination	$50,000	$0	0%	-$50,000	Prog Coord Pilot Study scheduled for FY17, started in April 2016
	Voluntary Nutrient Contributions	$0	$157,500		$157,500	**FY17:** Palo Alto ($30k); Sunnyvale ($60k) CCCSD ($195k) **FY18:** Palo Alto ($30k)
	General Tech Support	$50,000	$0	0%	-$50,000	SFEI agrmt bal: $28,409.12. **FY17:** Assesmt Framework
	Chemicals of Concern	$15,000	$2,500	17%	-$12,500	Pesticide Mgmt support (Kelly Moran-TDC)
	Risk Reduction	$32,500	$4,548	14%	-$27,952	Remainder of Contracts executed for $50k in FY16 to be paid over two years
	Total	**$1,095,628**	**$1,238,549**	113%	$142,921	
	TOTAL EXPENSES	**$1,799,548**	**$1,628,905**	**91%**	**-$170,643**	
	NET INCOME BEFORE TRANSFERS	**$344,618**	**$732,321**			
	TRANSFERS FROM RESERVES	**$0**				

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

April 5, 2017

MEMO TO: Bay Area Clean Water Agencies Executive Board
MEMO FROM: D. Scott Klein, Controller, East Bay Municipal Utility District
SUBJECT: Eighth 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, 2016 through February 28, 2017** (eighth months of Fiscal Year 2016-2017). This report covers expenditures, cash receipts, and cash transfers for the following BACWA funds:

- Bay Area Clean Water Agencies (BACWA),
- BACWA Legal Reserve Fund (Legal Rsrv),
- Water Quality Attainment Strategy (WQA CBC),
- Air Issues and Regulation Group (AIR),
- Water/Wastewater Operator Training (WOT),
- Prop84 Bay Area Integrated Regional Water Mgmt (PRP84),
- Prop50 Bay Area Integrated Regional Water Mgmt (PRP50)

BACWA Fund Report as of February 28, 2017

BACWA FUND BALANCES - PREPARED BY ACCOUNTING DEPT.

DEPTID	DESCRIPTION	FISCAL YEAR BEGINNING FUND BALANCE	TOTAL RECEIPTS TO-DATE	TOTAL DISBURSEMENTS TO-DATE	MONTH-ENDING FUND BALANCE	OUTSTANDING ENCUMBRANCES	MONTH-END UNOBLIGATED FUND BALANCE
800	BACWA	1,060,239	740,192	390,355	1,410,076	325,095	1,084,981
804	LEGAL RSRV	300,000	-	-	300,000	-	300,000
805	CBC	1,252,817	1,634,732	1,238,549	1,649,000	325,753	1,323,248
802	AIR	13,698	-	13,698	0	-	0
	SUBTOTAL 1	*2,626,754*	*2,374,924*	*1,642,602*	*3,359,076*	*650,848*	*2,708,229*
810	WOT	33,608	141,214	41,722	133,100	-	133,100
	SUBTOTAL 2	*33,608*	*141,214*	*41,722*	*133,100*	-	*133,100*
811	PRP84	118,356	290,522	181,615	227,263	-	227,263
815	PRP50	150,663	558,049	532,617	176,096	-	176,096
	SUBTOTAL 3	*269,019*	*848,572*	*714,232*	*403,359*	-	*403,359*
	GRAND TOTAL	**2,929,381**	**3,364,709**	**2,398,555**	**3,895,535**	**650,848**	**3,244,688**

Top Chart: Reflects CASH on the Books — Includes Encumbrances
Bottom Chart: Reflects CASH in the Bank — Includes Payables (bills received but not paid)
Allocations: Priority for investments

BACWA INVESTMENTS BALANCES - PREPARED BY TREASURY DEPT.

DEPTID	DESCRIPTION	FISCAL YEAR BEGINNING FUND BALANCE	TOTAL RECEIPTS TO-DATE	TOTAL DISBURSEMENTS TO-DATE	MONTH-ENDING FUND BALANCE	RECONCILIATION TO FINANCIAL STATEMENTS	MONTH-END RECONCILED FUND BALANCE	UNINVESTED CASH BALANCES	LAIF INVESTMENTS AMOUNTS	LAIF INVESTMENTS PERCENTAGE	ALTERNATIVE INVESTMENTS AMOUNTS	ALTERNATIVE INVESTMENTS	INVESTMENT INSTRUCTIONS AND NOTES
800	BACWA	1,060,239	740,192	390,355	1,410,076	32,098	1,442,174	-	1,442,174	57%	(0)	0%	priority # 3 for allocation
804	LEGAL RSRV	300,000	-	-	300,000	-	300,000	-	-	0%	300,000	33%	priority # 1 for allocation
805	CBC	1,252,817	1,634,732	1,238,549	1,649,000		1,649,000	-	1,044,001	42%	605,000	67%	priority # 2 for allocation
802	AIR	13,698	-	13,698	0	-	0	-	-	0%	0	0%	This fund is gone
	SUBTOTAL 1	*2,626,754*	*2,374,924*	*1,642,602*	*3,359,076*	*32,098*	*3,391,174*	-	*2,486,174*	*99%*	*905,000*	*100%*	
810	WOT	33,608	141,214	41,722	133,100		133,100	133,100		0%	-	0%	pass-through funds, no allocation
	SUBTOTAL 2	*33,608*	*141,214*	*41,722*	*133,100*	-	*133,100*	*133,100*	-	*0%*	-	*0%*	
811	PRP84	118,356	290,522	181,615	227,263		227,263	227,263	-	0%	-	0%	pass-through funds, no allocation
815	PRP50	150,663	558,049	532,617	176,096		176,096	176,096	-	0%	-	0%	pass-through funds, no allocation
	SUBTOTAL 3	*269,019*	*848,572*	*714,232*	*403,359*	-	*403,359*	*403,359*	-	*0%*	-	*0%*	
	GRAND TOTAL	**2,929,381**	**3,364,709**	**2,398,555**	**3,895,535**	**32,098**	**3,927,633**	**536,459**	**2,512,600**		**905,000**	**100%**	
						verification	(26,426)	-	26,426		-	-	

To be used to cover Reconciliation to Financial Statements ($32,098)

CHECK ON BACWA LIQUIDITY THRESHHOLD

	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total FY 17	Total FY 18
BEGINNING UNOBLIGATED FUND BALANCE		$3,359,076	$3,282,447	$3,205,818	$3,129,189	$3,052,560	$2,934,172	$2,311,526	$2,768,880	$3,226,234	$3,683,588	$3,565,200	$3,446,812		
Average Monthly Revenues		$0	$0	$0	$0	$0	$575,742	$575,742	$575,742	$575,742	$0	$0	$0	$2,144,165	$2,302,969
Average Monthly Expenditures (Less Large one time Expenses)		($76,629)	($76,629)	($76,629)	($76,629)	($118,388)	($118,388)	($118,388)	($118,388)	($118,388)	($118,388)	($118,388)	($118,388)	$919,548	$1,420,659
Less Large Expenditures		$0	$0	$0	$0	$0	($1,080,000)	$0	$0	$0	$0	$0	$0		
NET AVAILABLE FOR INVESTMENT	$3,359,076	$3,282,447	$3,205,818	$3,129,189	$3,052,560	$2,934,172	$2,311,526	$2,768,880	$3,226,234	$3,683,588	$3,565,200	$3,446,812	$3,328,423		
NEW INVESTMENTS	.														
Higher Yield (non-liquid)	($905,000)	($905,000)	($905,000)	($605,000)	($605,000)	($605,000)	($605,000)	($605,000)	($605,000)	($605,000)	($605,000)	($605,000)	($605,000)		
MATURITIES															
Higher Yield (non-liquid)	$0	$0	$300,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
AVAILABLE LIQUID FUNDS	$2,454,076	$2,377,447	$2,600,818	$2,524,189	$2,447,560	$2,329,172	$1,706,526	$2,163,880	$2,621,234	$3,078,588	$2,960,200	$2,841,812	$2,723,423		
TARGET AVAILABLE LIQUID FUNDS	$1,500,000 ok	$1,500,000 ok	$1,500,000 ok	$1,500,000 ok	$1,500,000 ok	$1,500,000 ok	$1,500,000 ok	$1,500,000 ok	$1,500,000 ok	$1,500,000 ok	$1,500,000 ok	$1,500,000 ok	$1,500,000 ok		

BACWA Revenue Report as of February 28, 2017

							(99,000)					(99,000)	99,000
					CURRENT PERIOD			YEAR TO DATE					
FUND #	DEPARTMENT	JOB	REVENUE TYPE	AMENDED BUDGET	Admin & General	Contributons	Interest, Transfers,Ot hers	Admin & General	Contributons	Interest, Transfers,Ot hers	ACTUAL	UNOBLIGATED
800	BACWA	1011099	Principal's Contributions	477,544	-	-	-	-	477,545	-	477,545	(1)
800	BACWA	1011133	Assoc.& Affiliate Contr	175,072	-	3,940	-	-	164,855	-	164,855	10,217
800	BACWA	0408511	Administrative & General	-	-	-	-	-	-	(369)	(369)	369
800	BACWA	1014251	Non-Member Contributions (BAPPG)	3,700	-	-	-	-	3,699	-	3,699	1
800	BACWA	1011109	Fund Transfers	2,500	-	-	-	-	-	-	-	2,500
800	BACWA	1011117	BDO Interest Income	4,000	-	-	2,095	-	-	6,764	6,764	(2,764)
800	BACWA	1011108	BDO Other Receipts	-	-	-	-	-	-	13,698	13,698	(13,698)
800	BACWA	1014252	BDO Non-Member Contr AIR	6,350	-	-	-	-	6,350	-	6,350	-
800	BACWA	1014511	BDO-Alternative Investment Inc	-	-	-	-	1,105	-	(1,105)	-	-
800	BACWA	1014550	BDO-Other Receipts (PHARM)	-	-	-	-	-	67,650	-	67,650	(67,650)
	BACWA TOTAL			**669,166**	**-**	**3,940**	**2,095**	**1,105**	**720,099**	**18,988**	**740,192**	**(71,026)**
804	LEGAL	1011117	Interest Income	-	-	-	-	-	-	-	-	-
	LEGAL TOTAL			**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
805	WQA-CBC	1011099	BDO Member Contributions	675,000	-	750	-	-	719,582	(60,000)	659,582	15,418
805	WQA-CBC	1011108	BDO Other Receipts	800,000	-	-	-	-	781,463	-	781,463	18,537
805	WQA-CBC	1011117	BDO Interest Income	-	-	-	-	-	-	6,187	6,187	(6,187)
805	WQA-CBC	1014528	BDO-Voluntary Nutrient Contrib	-	-	-	-	-	127,500	60,000	187,500	(187,500)
	WQA CBC TOTAL			**1,475,000**	**-**	**750**	**-**	**-**	**1,628,545**	**6,187**	**1,634,732**	**(159,732)**
	TOTAL			**2,144,166**	**-**	**4,690**	**2,095**	**1,105**	**2,348,644**	**25,175**	**2,374,924**	**(230,758)**

					CURRENT PERIOD			YEAR TO DATE				
	DEPARTMENT	JOB	REVENUE TYPE	AMENDED BUDGET	Admin & General	Contributons	Interest, Transfers,Ot hers	Admin & General	Contributons	Interest, Transfers,Ot hers	ACTUAL	UNOBLIGATED
810	WOT	1011099	BDO Member Contributions	-	-	14,000	-	-	141,000	-	141,000	(141,000)
810	WOT	1011108	BDO Other Receipts	-	-	-	-	-		-		
810	WOT	1011117	BDO Interest Income	-	-	-	114	-	-	214	214	(214)
	WOT TOTAL			**-**	**-**	**14,000**	**114**	**-**	**141,000**	**214**	**141,214**	**(141,214)**

					CURRENT PERIOD			YEAR TO DATE				
	DEPARTMENT	JOB	REVENUE TYPE	AMENDED BUDGET	Admin & General	Contributons	Interest, Transfers,Ot hers	Admin & General	Contributons	Interest, Transfers,Ot hers	ACTUAL	UNOBLIGATED
811	PROP 84			-	-	1,356	-	-	290,043	479	290,522	(290,522)
815	PROP 50			-	-	85,000	-	-	557,500	549	558,049	(558,049)
	PROP TOTAL			**-**	**-**	**86,356**	**-**	**-**	**847,543**	**1,029**	**848,572**	**(848,572)**
	Grand Total			**2,144,166**	**-**	**105,046**	**2,209**	**1,105**	**3,337,187**	**26,418**	**3,364,709**	**(1,220,543)**

BACWA Expense Detail Report as of February 28, 2017

EXPENSE TYPE	JOB	AMENDED BUDGET	CURRENT PERIOD ENC	CURRENT PERIOD PV	CURRENT PERIOD DA	CURRENT PERIOD JV	YEAR TO DATE ENC	YEAR TO DATE PV	YEAR TO DATE DA	YEAR TO DATE JV	OBLIGATED	UNOBLIGATED
LABOR												
AS-Executive Director	1011123	189,370	-	-	-	-	78,904	110,466	-	-	189,370	-
AS-Assistant Executive Directo	1011124	85,000	(6,985)	6,985	-	-	30,398	54,602	-	-	85,000	-
AS-Regulatory Program Manager	1011149	112,500	(8,550)	8,550	-	-	51,075	61,425	-	-	112,500	-
ADMINISTRATION												
AS-EBMUD Financial Services	1011125	40,000	-	-	-	-	16,772	23,228	3,666	(3,666)	40,000	-
AS-Audit Services	1014512	6,200	-	-	-	-	6,200	-	-	-	6,200	-
AS-BACWA Admin Expense	1011118	7,500	-	-	158	-	-	-	2,308	-	2,308	5,192
AS-Insurance	1011126	4,500	-	-	-	-	-	-	4,266	-	4,266	234
MEETINGS												
GBS-Meeting Support-Exec Bd	**1014513**	2,500	-	-	265	-	620	380	598	-	1,598	902
GBS-Meeting Support-Annual	**1014514**	7,000	-	-	-	-	-	-	7,127	-	7,127	(127)
GBS-Meeting Support-Pardee	**1014515**	6,000	-	-	-	-	-	-	4,421	-	4,421	1,579
GBS-Meeting Support-Misc	**1014516**	1,100	-	-	149	-	-	-	2,473	-	2,473	(1,373)
GBS- Meeting Support	1011122	-	-	-	-	-	-	-	-	-	-	-
COMMUNICATION												
CAR-BACWA Website Hosting	**1014517**	600	-	-	-	-	-	-	600	-	600	-
CAR-BACWA File Storage	**1014518**	750	-	-	-	-	-	-	720	-	720	30
CAR-BACWA IT Support	**1014519**	2,600	-	-	-	-	2,353	248	-	-	2,600	-
CAR-BACWA IT Software	**1014520**	800	-	-	74	-	-	-	642	-	642	158
CAR-BACWA Website Development/	1011116	1,200	-	-	-	-	-	-	-	-	-	1,200
LEGAL												
LS-Regulatory Support	1011107	2,500	-	-	-	-	2,150	350	-	-	2,500	-
LS-Executive Board Support	1011110	2,000	-	-	-	-	2,000	-	-	-	2,000	-
COMMITTEES												
AIR-Air Issues&Regulation Grp	1011109	-	-	-	-	-	-	-	-	-	-	-
AIR-Air Issues&Regulation Grp	1014253	50,000	(10,752)	10,752	-	-	25,496	24,504	501	-	50,501	(501)
BC-BAPPG	1011147	86,000	(5,045)	5,045	-	-	15,522	56,978	23,500	-	96,000	(10,000)
BC-Biosolids Committee	1011101	3,100	-	-	-	-	-	-	342	-	342	2,758
BC-Collections System	1011097	1,000	-	-	-	-	-	-	300	-	300	700
BC-InfoShare Groups	1011102	1,200	-	-	199	-	-	-	723	-	723	477
BC-Laboratory Committee	1011103	6,000	-	-	-	-	-	-	2,070	-	2,070	3,930
BC-Permit Committee	1011098	1,000	-	-	-	-	-	-	-	-	-	1,000
BC-Pretreatment Committee	1011146	7,000	-	-	-	-	-	-	84	-	84	6,916
BC-Water Recycling Committee	1011100	1,000	-	-	-	-	-	-	-	-	-	1,000
BC-Miscellaneous Committee Sup	1011104	35,000	25,956	-	-	-	25,956	-	-	-	25,956	9,044
COLLABORATIVES												
CAS-Arleen Navaret Award	1012201	-	-	-	-	-	-	-	-	-	-	-
CAS-FWQC	1012202	7,500	-	-	-	-	-	-	7,500	-	7,500	-
CAS-Stanford ERC	1011969	10,000	-	-	-	-	-	-	-	-	-	10,000
CAS-CWCCG	1011148	-	-	-	-	-	-	-	-	-	-	-
CAS-PSSEP	1011112	20,000	-	-	-	-	-	-	-	-	-	20,000
CAS-Misc Collaborative Sup	1014521	3,000	-	-	-	-	-	-	-	-	-	3,000
BDO-Contract Expenses (PHARM)												
BDO-Contract Expenses (PHARM)	1014551	-	-	-	-	-	67,650	-	-	-	67,650	(67,650)
BACWA TOTAL		**703,920**	**(5,375)**	**31,331**	**846**	**-**	**325,095**	**332,181**	**61,840**	**(3,666)**	**715,450**	**(11,530)**
TECH SUPPORT												
WQA-CE Addl Work Under Permit	1014254	50,000	-	-	-	-	57,000	12,367	5,000	-	74,367	(24,367)
WQA-CE-Technical Support	1011127	50,000	-	-	-	-	28,409	-	-	-	28,409	21,591
WQA-CE CASA Chem of Concern	1011128	15,000	-	-	-	-	-	2,500	-	-	2,500	12,500
WQA-CE Opt-Upgrade Studies	1014255	18,128	-	-	-	-	213,792	176,634	-	-	390,426	(372,298)
WQA-CE Risk Reduction	1014023	32,500	-	-	-	-	26,552	4,548	-	-	31,099	1,401
WQA-CE-Nutrient WS Permit Comm	1014021	880,000	-	-	-	-	-	-	880,000	-	880,000	-
WQA-CE-Program Mgmt	1011131	50,000	-	-	-	-	-	-	-	-	-	50,000
WQA-CE Voluntary Nutr Contrib	1014529	-	-	-	-	-	-	-	157,500	-	157,500	(157,500)
TECH SUPPORT (CBC) TOTAL		**1,095,628**	**-**	**-**	**-**	**-**	**325,753**	**196,049**	**1,042,500**	**-**	**1,564,301**	**(468,673)**
GRAND TOTAL		**1,799,548**	**(5,375)**	**31,331**	**846**	**-**	**650,848**	**528,230**	**1,104,340**	**(3,666)**	**2,279,751**	**(480,203)**
								Total	**1,628,904**			
WOT												
Administrative Support	1011142	-	-	-	-	-	-	-	-	-	-	-
BDO Contract Expenses	1011143	-	-	-	-	-	-	-	41,722	-	41,722	(41,722)
		-	**-**	**-**	**-**	**-**	**-**	**-**	**41,722**	**-**	**41,722**	**(41,722)**

Proposition Revenue Report as of February 28, 2017

DEPTID	DEPARTMENT	JOB	REVENUE TYPE	AMENDED BUDGET	CURRENT PERIOD			YEAR TO DATE				UNOBLIGATED
					Admin & General	Contributons	Interest, Transfers,Others	Admin & General	Contributons	Interest, Transfers,Others	ACTUAL	
811	Prop84BayAreaIntegRegnlWtrMgmt	1011117	BDO Interest Income	-	-	-	-	-	-	479	479	(479)
811	Prop84BayAreaIntegRegnlWtrMgmt	1011142	Administrative Support	-	-	-	-	-	30,000	-	30,000	(30,000)
811	Prop84BayAreaIntegRegnlWtrMgmt	1011705	Regional Green Infrastructure	-	-	-	-	-	36,691	-	36,691	(36,691)
811	Prop84BayAreaIntegRegnlWtrMgmt	1012212	High Efficiency Toilet & UR	-	-	-	-	-	86,919	-	86,919	(86,919)
811	Prop84BayAreaIntegRegnlWtrMgmt	1012213	High Efficiency Toilet & UI	-	-	-	-	-	43,200	-	43,200	(43,200)
811	Prop84BayAreaIntegRegnlWtrMgmt	1012215	Napa Co. Rainwater HP	-	-	-	-	-	6,806	-	6,806	(6,806)
811	Prop84BayAreaIntegRegnlWtrMgmt	1012216	Conservation Program Admin	-	-	1,356	-	-	14,773	-	14,773	(14,773)
811	Prop84BayAreaIntegRegnlWtrMgmt	1012219	Flood Infrastructure Mapping T	-	-	-	-	-	53,943	-	53,943	(53,943)
811	Prop84BayAreaIntegRegnlWtrMgmt	1012223	Restoration Guidance, San FC	-	-	-	-	-	8,069	-	8,069	(8,069)
811	Prop84BayAreaIntegRegnlWtrMgmt	1012224	SF Estuary Steelhead MP	-	-	-	-	-	6,941	-	6,941	(6,941)
811	Prop84BayAreaIntegRegnlWtrMgmt	1012225	Watershed Program Admnstrtn	-	-	-	-	-	2,701	-	2,701	(2,701)
	PROP 84 TOTAL			**-**	**-**	**1,356**	**-**	**-**	**290,043**	**479**	**290,522**	**(290,522)**
815	Prop50BayAreaIntegRegnlWtrMgmt	1011117	BDO Interest Income	-	-	-	-	-	-	549	549	(549)
	Prop50BayAreaIntegRegnlWtrMgmt	1011142	Administrative Support	-	-	23,753	-	-	23,753	-	23,753	(23,753)
	Prop50BayAreaIntegRegnlWtrMgmt	1011542	EBMUD Ca. Waterstar Initiative	-	-	52,500	-	-	525,000	-	525,000	(525,000)
815	Prop50BayAreaIntegRegnlWtrMgmt	1011543	EBMUD New Biz Guidebook	-	-	8,747	-	-	8,747	-	8,747	(8,747)
	PROP50 TOTAL			**-**	**-**	**85,000**	**-**	**-**	**557,500**	**549**	**558,049**	**(558,049)**
	GRAND TOTAL			**-**	**-**	**86,356**	**-**	**-**	**847,543**	**1,029**	**848,572**	**(848,572)**

Proposition Expense Detail Report as of February 28, 2017

DEPTID	DEPARTMENT	EXPENSE TYPE	AMENDED BUDGET	CURRENT PERIOD ENC	CURRENT PERIOD PV	CURRENT PERIOD DA	CURRENT PERIOD JV	YEAR TO DATE ENC	YEAR TO DATE PV	YEAR TO DATE DA	YEAR TO DATE JV	OBLIGATED	UNOBLIGATED
811	Prop84BayAreaIntegRegnlWtrMgmt	BDO Fund Transfers	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Administrative Support	-	-	-	-	-	-	-	53,033	-	53,033	(53,033)
811	Prop84BayAreaIntegRegnlWtrMgmt	BDO Contract Expenses	-	-	-	-	-	-	-	14	-	14	(14)
811	Prop84BayAreaIntegRegnlWtrMgmt	Regional Green Infrastructure	-	-	-	-	-	-	-	36,691	-	36,691	(36,691)
811	Prop84BayAreaIntegRegnlWtrMgmt	Water Efficient LRP	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Bay Friendly Landscape TP	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Weather Based Irrigation Cntrl	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	High Efficiency Toilet & UR	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	High Efficiency Toilet & UI	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	High Efficiency Clothes Washrs	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Napa Co. Rainwater HP	-	-	-	-	-	-	-	6,806	-	6,806	(6,806)
811	Prop84BayAreaIntegRegnlWtrMgmt	Conservation Program Admin	-	-	-	-	-	-	-	13,417	-	13,417	(13,417)
811	Prop84BayAreaIntegRegnlWtrMgmt	Flood Infrastructure Mapping T	-	-	-	-	-	-	-	53,943	-	53,943	(53,943)
811	Prop84BayAreaIntegRegnlWtrMgmt	Stormwater Improvements & PBP	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Richmond Shoreline & San PFP	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Pescadero Integrated FRAH	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Restoration Guidance, San FC	-	-	-	-	-	-	-	8,069	-	8,069	(8,069)
811	Prop84BayAreaIntegRegnlWtrMgmt	SF Estuary Steelhead MP	-	-	-	-	-	-	-	6,941	-	6,941	(6,941)
811	Prop84BayAreaIntegRegnlWtrMgmt	Watershed Program Admnstrtn	-	-	-	-	-	-	-	2,701	-	2,701	(2,701)
	PRP84 TOTAL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**181,615**	**-**	**181,615**	**(181,615)**
815	Prop50BayAreaIntegRegnlWtrMgmt	BDO Fund Transfers	-	-	-	-	-	-	-	-	-	-	-
815	Prop50BayAreaIntegRegnlWtrMgmt	Administrative Support	-	-	-	71	-	-	-	102	-	102	(102)
815	Prop50BayAreaIntegRegnlWtrMgmt	BDO Contract Expenses	-	-	-	-	-	-	-	14	-	14	(14)
815	Prop50BayAreaIntegRegnlWtrMgmt	EBMUD New Biz Guidebook	-	-	-	7,500	-	-	-	7,500	-	7,500	(7,500)
815	Prop50BayAreaIntegRegnlWtrMgmt	South Bay Advanced Regional RW	-	-	-	-	-	-	-	-	-	-	-
815	Prop50BayAreaIntegRegnlWtrMgmt	Pacifica RWP	-	-	-	-	-	-	-	-	-	-	-
815	Prop50BayAreaIntegRegnlWtrMgmt	Direct Install HET	-	-	-	-	-	-	-	-	-	-	-
815	Prop50BayAreaIntegRegnlWtrMgmt	Sonoma - Napa Marsh RWP	-	-	-	-	-	-	-	-	-	-	-
815	Prop50BayAreaIntegRegnlWtrMgmt	EBMUD Ca. Waterstar Initiative	-	-	-	52,500	-	-	-	525,000	-	525,000	(525,000)
	PRP50 TOTAL		**-**	**-**	**-**	**60,071**	**-**	**-**	**-**	**532,617**	**-**	**532,617**	**(532,617)**
GRAND TOTAL (PROP 84 & 50)			**-**	**-**	**-**	**60,071**	**-**	**-**	**-**	**714,232**	**-**	**714,232**	**(714,232)**

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 3
FILE NO.: 17-33
MEETING DATE: April 21, 2017

TITLE: Fiscal Year 2018 Budget & Workplan

☐**RECEIPT** ☐**DISCUSSION** ☐**RESOLUTION** ☒**APPROVAL**

RECOMMENDED ACTION

Approve the Budget and Workplan for the fiscal year covering July 1, 2017 through June 30, 2018

SUMMARY

The Joint Powers Agreement 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.

Draft versions of the budget were reviewed first with the Finance Committee and then at the February 17, 2017 and the March 17, 2017 Executive Board meetings. This final iteration incorporates all changes received from the Board to date and is ready to be approved.

FISCAL IMPACT

The final budget has revenues of $2,205.469 and expenses of $2,203,159 resulting in a favorable variance of revenues over expenses of $2,310 for FY 18.

ALTERNATIVES

Do not approve the Budget and Workplan: This is not recommended as the budget has been reviewed on two occasions and needs to be approved prior to July 1, 2017.

Attachments:
FY 2018 Budget and Workplan

Approved: _____ Date: _____
Laura Pagano,
Chair, BACWA Executive Board

BACWA FY18 BUDGET	Line Item Description	FY 2017 Budget	Actuals Feb 2017	Actual % of Budget Feb 2017	Variance	FY 2018 Budget	NOTES
REVENUES & FUNDING							
Dues	Principals' Contributions	$477,544	$477,545	100%	$1	$487,095	**FY18:** 2% increase.
	Associate & Affiliate Contributions	$175,072	$164,855	94%	-$10,217	$178,573	**FY18:** 2% increase.
Fees	Clean Bay Collaborative	$675,000	$659,582	98%	-$15,418	$675,000	Prin: $450,000; Assoc/Affil: $225,000
	Nutrient Surcharge	$800,000	$781,463	98%	-$18,537	$800,000	Prin: $533,335; Assoc/Affil: $266,673
	Voluntary Nutrient Contributions	$0	$187,500		$187,500	$30,000	**FY17:** Palo Alto ($30k); Sunnyvale ($60k) CCCSD ($97.5k, $97.5k anticipated) **FY18:** Palo Alto ($30k)
Other Receipts	Other Receipts	$0	$67,650		$67,650	$0	**FY17:** Passthrough for Pharmaceutical Study
	AIR Non-Member	$6,350	$6,350	100%	$0	$6,477	2% increase.
	BAPPG Non-Members	$3,700	$3,699	100%	-$1	$3,774	2% increase.
	Other	$0	$13,698		$13,698	$0	**FY17:** Not included in Total Revenue: Transfer of Funds from AIR Fund to BACWA Fund
Fund Transfer	Special Program Admin Fees	$2,500	$0	0%	-$2,500	$2,550	**FY18:** 2% increase (WOT only)
Interest Income	LAIF	$4,000	$11,477	287%	$7,477	$12,000	BACWA, Legal, & CBC Funds invested in LAIF
	Higher Yield Investments	$0	$1,105		$1,105	$10,000	Alternative Investment Interest
	Total Revenue	**$2,144,166**	**$2,361,226**	110%	$217,060	**$2,205,469**	

BACWA FY18 BUDGET	Line Item Description	FY 2017 Budget	Actuals Feb 2017	Actual % of Budget Feb 2017	Variance	FY 2018 Budget	NOTES
EXPENSES							
Labor							
	Executive Director	$189,370	$110,466	58%	-$78,904	$195,998	3.5% CPI (SF/Oakland/San Jose Metro Area Dec 2016)
	Assistant Executive Director	$85,000	$54,602	64%	-$30,398	$87,975	3.5% CPI (SF/Oakland/San Jose Metro Area Dec 2016)
	Regulatory Program Manager	$112,500	$61,425	55%	-$51,075	$116,438	3.5% CPI (SF/Oakland/San Jose Metro Area Dec 2016)
	Total	**$386,870**	**$226,493**	59%	-$160,377	**$400,411**	
Administration							
	EBMUD Financial Services	$40,000	$26,894	67%	-$13,106	$40,000	
	Auditing Services (Maze)	$6,200	-$3,666	-59%	-$9,866	$6,300	FY18 Contract is $6,233; contract expires @ end of FY18
	Administrative Expenses	$7,500	$2,308	31%	-$5,192	$7,500	Travel, Supplies, Parking, Mileage, Tolls, Misc.
	Insurance	$4,500	$4,266	95%	-$234	$4,500	
	Total	**$58,200**	**$29,802**	51%	-$28,398	**$58,300**	
Meetings							
	EB Meetings	$2,500	$978	39%	-$1,522	$2,500	Catering, Venue, other expenses
	Annual Meeting	$7,000	$7,127	102%	$127	$10,000	Catering, Venue, other expenses.
	Pardee	$6,000	$4,421	74%	-$1,579	$6,000	Catering, Venue, other expenses
	Misc. Meetings	$1,100	$2,473	225%	$1,373	$5,000	Holiday Lunch, Committee Chair Lunch, Staff Mtgs, Summit Partners, CASA, NACWA
	Total	**$16,600**	**$14,999**	90%	-$1,601	**$23,500**	
Communication							
	Website Hosting (Computer Courage)	$600	$600	100%	$0	$600	
	File Storage (Box.net)	$750	$720	96%	-$30	$750	
	Website Development/Maintenance	$1,200	$0	0%	-$1,200	$1,200	Domains, website changes
	IT Support (As Needed)	$2,600	$248	10%	-$2,352	$2,600	
	Other Communication (MS, SM & Code42)	$800	$642	80%	-$158	$1,100	MS Exchange, Survey Monkey, CrashPlanPro (2)
	Total	**$5,950**	**$2,210**	37%	-$3,740	**$6,250**	

EXPENSES							
Legal							
	Regulatory Support	$2,500	$350	14%	-$2,150	$2,550	2% increase.
	Executive Board Support	$2,000	$0	0%	-$2,000	$2,050	2% increase.
	Total	**$4,500**	**$350**	8%	-$4,150	**$4,600**	
Committees							
	AIR	$50,000	$25,005	50%	-$24,995	$50,000	
	BAPPG	$86,000	$80,478	94%	-$5,522	$100,000	Includes CPSC @ $10,000 and Pest. Reg Spt. @ $15,000
	Biosolids Committee	$3,100	$342	11%	-$2,758	$3,100	Includes WEF Conf
	Collections System	$1,000	$300	30%	-$700	$1,000	
	InfoShare Groups	$1,200	$723	60%	-$477	$1,200	funds for 2 workgroups (Asset Mgmt & O&M)
	Laboratory Committee	$6,000	$2,070	35%	-$3,930	$6,000	Includes Tech Conf & Training
	Permit Committee	$1,000	$0	0%	-$1,000	$1,000	
	Pretreatment	$7,000	$84	1%	-$6,916	$7,000	Includes Training & Factsheet
	Recycled Water Committee	$1,000	$0	0%	-$1,000	$1,000	
	Misc Committee Support	$35,000	$0	0%	-$35,000	$35,000	
	Manager's Roundtable	$0	$0	$0	$0	$1,000	New line item in FY18
	Total	**$191,300**	**$109,002**	57%	**-$82,298**	**$206,300**	
Collaboratives							
	Collaboratives						
	State of the Estuary (biennial)	$20,000	$0	0%	-$20,000	$0	Bienniel in Odd Years. (Paid bienniely in odd years for even year conference)
	Arleen Navarret Award	$0	$0		$0	$1,000	Bienniel in Even Years
	FWQC (Fred Andes)	$7,500	$7,500	100%	$0	$7,500	
	Stanford ERC (ReNUWIt)	$10,000	$0	0%	-$10,000	$10,000	
	CWCCG	$0	$0		$0		
	Misc	$3,000	$0	0%	-$3,000	$3,000	
	Total	**$40,500**	**$7,500**	19%	-$33,000	**$21,500**	
Tech Support	**Technical Support**						
	Nutrients						
	Watershed	$880,000	$880,000	100%	$0	$880,000	
	Additional work under permit	$50,000	$17,367	35%	-$32,633	$100,000	**FY18:** Increased at Board's request
	Opt/Upgrade/Annual Reporting Studies	$18,128	$176,634	974%	$158,506	$372,298	**FY18:** balance remaining on agreement at end of FY16 less FY17 budgeted amount
	Nutrient Program Coordination	$50,000	$0	0%	-$50,000	$50,000	
	Voluntary Nutrient Contributions	$0	$157,500		$157,500	$30,000	**FY17:** Palo Alto ($30k); Sunnyvale ($60k) CCCSD ($97.5k, $97.5 anticipated) **FY18:** Palo Alto ($30k)
	General Tech Support	$50,000	$0	0%	-$50,000	$50,000	
	Chemicals of Concern	$15,000	$2,500	17%	-$12,500	$0	Incorporated into BAPPG budget as pesticide regulatory support
	Risk Reduction	$32,500	$4,548	14%	-$27,952	$0	FY18: expected to complete contracts in FY17
	Total	**$1,095,628**	**$1,238,549**	113%	$142,921	**$1,482,298**	
	TOTAL EXPENSES	**$1,799,548**	**$1,628,905**	**91%**	**-$170,643**	**$2,203,159**	
	NET INCOME BEFORE TRANSFERS	**$344,618**	**$732,321**			**$2,310**	
	TRANSFERS FROM RESERVES	**$0**				**$0**	
	NET INCOME AFTER TRANSFERS	**$344,618**				**$2,310**	

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 4
FILE NO.: 17-34
MEETING DATE: April 21, 2017

TITLE: Agreement with ABAG to administer Proposition 84 Grant funds.

☐ **RECEIPT** ☐ **DISCUSSION** ☐ **RESOLUTION** ☒ **APPROVAL**

RECOMMENDED ACTION
Approve an agreement with ABAG to administer Proposition 84 Grant funds.

SUMMARY

Several years ago BACWA was awarded a Proposition 84 Grant on behalf of water and wastewater agencies around the Bay who were undertaking a variety of water resources related projects. EBMUD has provided all financial and project management services for administering the grant. Since of the EBMUD projects under the grant have been completed, EBMUD now desires to cease undertaking the administrative services needed and ABAG/SFEP has agreed to begin providing these same services. Beginning with this agreement ABAG/SFEP is to provide all financial and project management services previously provided by EBMUD and under the same terms and conditions. These services include, but are not limited to: coordinating with the Participating Agencies; organizing submittals to DWR; serving as a point of contact for DWR's grant manager; developing State Grant reimbursement requests; tracking State Grant reimbursements from DWR and distributions of the State Grant to the Participating Agencies; and providing other support tasks as necessary to assist BACWA as the Grantee.

FISCAL IMPACT
There will be no fiscal impact to BACWA associated with having ABAG/SFEP assume these administrative duties.

ALTERNATIVES
No alternatives were considered.

Attachments:
Agreement

Approved:

_____ Date: _____

Laura Pagano, Chair
BACWA

BAY AREA CLEAN WATER AGENCIES
PROFESSIONAL SERVICES AGREEMENT

This PROFESSIONAL SERVICES AGREEMENT, effective 4/21/2017, is between Bay Area Clean Water Agencies ("BACWA"), a joint powers agency which exists as a public entity separate and apart from its Member Agencies, created January 4, 1984 by a Joint Powers Agreement between Central Contra Costa Sanitary District, East Bay Dischargers Association, East Bay Municipal Utility District, the City and County of San Francisco and the City of San Jose, with a mailing address of P.O. Box 24055, MS 59, Oakland, CA 94623, and the Association of Bay Area Governments (ABAG), a joint powers agency acting on behalf of the San Francisco Estuary Partnership (SFEP) ("Consultant"), a Govt/Public Agency doing business at 375 Beale Street, Suite 700, San Francisco, CA 94105 for professional services as described in Exhibit A attached hereto.

In consideration of the mutual covenants, stipulations and agreements, the parties agree as follows:

Description and Standard of Services to be Performed

1. Consultant will perform the Services as described by and in accordance with Exhibit A in a manner acceptable to BACWA.
2. Consultant shall not contract with or otherwise use any subconsultants, subcontractors or other non-employee persons or entities ("Subconsultants") to perform the Services without the prior written approval of BACWA. If Consultant and BACWA agree that Subconsultants shall be used, Consultant shall ensure Subconsultants' compliance with all the terms and conditions of this agreement.
3. Consultant will exercise that degree of care in performing the Services in accordance with that prevailing among firms of comparable standing in the State of California ("Professional Standard"). Consultant will promptly correct or re-perform those Services not meeting the Professional Standard without additional compensation.
4. Consultant warrants that it is fully licensed, registered and otherwise fully authorized to perform the Services in the State of California to the extent applicable law requires such licensure, registration or authorization.
5. BACWA's review, approval, acceptance, use, or payment for all or any part of the Services hereunder will not alter the Consultant's obligations or BACWA's rights hereunder, and will not excuse or diminish Consultant's responsibility for performing all Services consistent with this Contract.

Payment for Services

6. The monetary value of the Consultant Services shall include only the actual costs of services provided by Consultant staff (including allocable overhead) and only to the extent that such costs are considered reimbursable under the State Agreement hereby made a part of this Agreement (Exhibit B).
7. Consultant will be reimbursed for the actual costs of the Consultant Services under the State Agreement and in accordance with the terms and provisions contained therein applicable to reimbursement of costs.
8. Consultant will provide documentation of the actual costs incurred for the Consultant Services to BACWA on a regular basis, not less frequently than quarterly, so that BACWA can include such costs with other administration and legal costs when requesting reimbursement thereof under the State Agreement. If the monetary value of the Consultant Services exceeds $100,000.00, Consultant may elect to continue to provide services described in Exhibit A on a non-reimbursable basis, or decline to do so and refer the matter to the Oversight and Coordination Committee (OCC) (see paragraph 63 of the Implementation Agreement hereby made a part of this Agreement (Exhibit B)) to determine the

appropriate manner by which the costs of additional Consultant services shall be collectively paid for by the Participating Agencies.

Document Ownership and Retention

9. Consultant will maintain all financial records relating to this Agreement in accordance with generally accepted accounting principles and for at least three years following termination of this Agreement. Consultant will grant BACWA and its representatives access upon request to all such records and all other books, documents, papers, drawings, and writings of Consultant that refer or relate to this Agreement.

10. All drawings, specifications, reports, programs, manuals, and other work product of Consultant that result from this Agreement ("Work Product") will be considered the exclusive property of BACWA. Consultant agrees that it will not use, disclose, communicate, publish or otherwise make available to third parties any products, analyses, data, compilations, studies, proposals, technical or business information, and any other information related to the Services provided to BACWA without BACWA's prior written approval.

Indemnification

11. To the fullest extent allowed by law, Consultant will indemnify, hold harmless, reimburse and defend BACWA, its Member Agencies, and each of their officers, directors, employees and agents from, for and against any and all claims, demands, damages, losses, expenses, liabilities and penalties, including but not limited to reasonable attorneys' and expert witnesses' fees, arising out of or relating to the Services but only to the extent caused by the negligent or other wrongful acts or omissions of Consultant or any person or entity for whose acts or omissions any of them are responsible, or by the failure of any such party to perform as required by this Agreement.

Insurance

12. Consultant will purchase and maintain, at Consultant's expense, the following types of insurance, covering Consultant, its employees and agents:

a. Workers' Compensation Insurance as required by law, subject to a waiver of subrogation in favor of BACWA;

b. Employers Liability Insurance with a per accident value at $1,000,000, Policy Limit of $1,000,000 and Each Employee of $1,000,000, subject to a waiver of subrogation in favor of BACWA.

c. Comprehensive General Liability Insurance covering personal injury and property damage with a combined single limit, or the equivalent, of not less than $1,000,000.00 each occurrence, $2,000,000.00 general aggregate, and naming BACWA as an additional insured.

d. Business Automobile Liability Insurance with combined single limit coverage of not less than $1,000,000.00 aggregate for each claim, incident, or occurrence; and naming BACWA as an additional insured.

Assignment

13. Consultant will not assign or transfer any of its interest in this Agreement, in whole or in part, without the prior written consent of BACWA. BACWA may assign this Agreement and any rights relating to this Agreement (including but not limited to its right to assert claims and defenses against Consultant) at BACWA's discretion.

Independent Contractor

14. Consultant will perform the Services as an independent contractor. Although Consultant will perform its Services for the benefit of BACWA, and although BACWA reserves the right to determine the schedule for the Services and to evaluate the quality of the completed performance, BACWA does not control the means or methods of Consultant's performance. Consultant is solely responsible for determining the appropriate means and methods of performing the Services, and Consultant's liability will not be diminished by any review, approval, acceptance, use or payment for the same by BACWA or any other party.

Termination of Agreement; Suspension of Services

15. This Agreement shall automatically terminate on December 31, 2019. Either party may also terminate this Agreement in whole or in part at any time for its convenience. For a termination for convenience, the termination will be effective thirty (30) days following receipt of a written notice of termination by one party from the other. BACWA may terminate this Agreement in whole or in part for cause, in which event the termination will be effective ten (10) days after Consultant's receipt of BACWA's written notice and Consultant's failure during that period to cure the default.

Dispute Resolution

16. Consultant will give prompt written notice to BACWA of any claim, dispute or other matter in question, but in no event will Consultant give such notice later than ten (10) days after Consultant's becoming aware of the event or circumstance giving rise to the claim, dispute or matter in question.

17. All claims, disputes and other matters in question between BACWA and Consultant arising out of or relating to this Agreement will be subject to alternative dispute resolution. If both parties agree to arbitration it will be conducted in accordance with the Commercial Arbitration Rules of the American Arbitration Association then in effect. Notice of the demand for arbitration will be filed in writing with the other party to this Agreement and with the American Arbitration Association. Any arbitration arising out of or relating to this Agreement will include, by consolidation, joinder or joint filing, any other person or entity not a party to this Agreement that is substantially involved in a common issue of law or fact and whose involvement in the consolidated arbitration is necessary to achieve a final resolution of a matter in controversy therein. This agreement to arbitrate will be specifically enforceable by any court with jurisdiction thereof.

18. A demand for dispute resolution by either party will be made within a reasonable time after the claim, dispute, or other matter in question has arisen, and in no event will it be made after the date when institution of court litigation based on such claim, dispute or other matter in question would be barred by the applicable period of limitations. For all claims by BACWA against Consultant, the applicable period of limitations will not commence to run, and any alleged cause of action will not be deemed to have accrued (whether such action is based on negligence, strict liability, indemnity, intentional tort or other tort, breach of contract, breach of implied or express warranty, or any other legal or equitable theory), unless and until BACWA is fully aware of all three of the following: (1) the identity of the party(ies) responsible, (2) the magnitude of the damage or injury and (3) the cause(s) of the damage or injury. The contractual limitations period and discovery rule provided herein applies in lieu of any otherwise applicable statute or related case law.

19. The failure of either party to enforce any provision of this Agreement will not constitute a waiver by that party of that or any other provision of this Agreement.

Severability

20. BACWA and Consultant agree that if any term or provision of this Agreement is determined to be illegal, in conflict with any law, void or otherwise unenforceable, and if the essential terms and provisions of this Agreement remain unaffected, then the validity of the remaining terms and provisions will not be affected and the offending provision will be given the fullest meaning and effect allowed by law.

Survival

21. All rights and obligations set out in this Agreement and arising hereunder will survive the termination of this Agreement (i) as to the parties' rights and obligations that arose prior to such termination and (ii) as is necessary to give effect to rights and obligations that arise after such termination but derive from a breach or performance failure that occurred prior to the termination.

This Agreement constitutes the entire, legally binding contract between the parties regarding its subject matter. No waiver, consent, modification or change of terms of this Agreement is binding unless in writing and signed by both parties.

The following documents are incorporated into and made a part of this Agreement. Any conflicts between these documents and this Agreement will be resolved in favor of this Agreement.

Exhibit A – Scope of Work
Exhibit B –Prop 84 LPS Implementation Agreement No. 12 SFEP-ABAG Signed (LINK)

CONSULTANT: **Association of Bay Area Governments**

375 Beale Street, Suite 700
Street Address

San Francisco, CA 94105
City, State, Zip Code

94-2832478
Tax Identification No.

Consultant Signature | *Date*

Brad Paul, Acting Executive Director
Name, Title

BACWA Signature | *Date*

Laura Pagano, BACWA Chair
Name, Title

EXHIBIT A

SCOPE OF WORK

Professional Services by ABAG/SFEP
Fiscal Year FY16-19

ABAG/SFEP will provide professional services to Bay Area Clean Water Agencies (BACWA) for the following activities, the costs of which are **not to exceed $100,000.**

ABAG/SFEP is to provide all financial and project management services associated with implementing each of the remaining Proposition 84 IRWM Implementation Agreements in accordance with the State Agreement, including, but not limited to: coordinating with the Participating Agencies; organizing submittals to DWR; serving as a point of contact for DWR's grant manager; developing State Grant reimbursement requests; tracking State Grant reimbursements from DWR and distributions of the State Grant to the Participating Agencies; and providing other support tasks as necessary to assist BACWA; provided, however, that ABAG/SFEP's obligation to provide such services will be terminated once ABAG/SFEP has submitted valid invoices that, in the aggregate, equal the maximum amount budgeted or available for these purposes, estimated to be $100,000.00.

Task 1. Project Management. This subtask consists of ongoing administration and management of grant accounting, preparing and finalizing each progress report, to be compiled largely from reports of each project participant. Reports will be prepared per the format specified in the DWR Grant Agreement and submitted electronically to DWR. Electronic records of reports will be retained at the Bay Area IRWM Plan website (bairwmp.org) or similarly suitable location.

Task 2. Invoices. Reimbursement requests (invoices) are to be submitted to DWR quarterly in accordance with the format specified by the DWR Grant Agreement. These requests (invoices) will be based on forms and records provided by the participants. Electronic records of invoices will be retained at the Bay Area IRWM Plan website (bairwmp.org) or similar location and participants will maintain records of supporting documents in hard copy format. Specific steps in the invoicing process are as follows:

1. Submit the draft invoice and all of the backup documentation to DWR electronically and get their approval.
2. Once DWR has approved the backup documentation, complete the final invoice and email it to BACWA for their records, and let BACWA know that you need the Executive Director's signature on the invoice. Print the invoice in color on 11x17 paper to make it more readable and arrange to get the document signed.
3. After receiving the signed copy of the invoice, make a pdf copy of it and send the original to DWR.
4. Send a pdf copy of the invoice and a coding sheet to BACWA accounting (EBMUD) who will provide details regarding the coding sheet.

5. When the DWR check is received by BACWA accounting, they'll match it up to the coding sheet and let Consultant know that the check was received.
6. Complete a BACWA Disbursement Authorization and forward that electronically to BACWA. BACWA will process it and send it to Accounting, and within two weeks the check will be mailed.

Task 3. Reimbursement Process. After BACWA receives reimbursement from the State, BACWA's accountant, EBMUD, will disburse funds to participating agencies after approval by the Executive Director and/or Board Chair, as applicable. ABAG/SFEP staff will maintain records in accordance with generally acceptable accounting principles and practices. ABAG/SFEP staff will track each disbursement and cumulative disbursements to date.

BACWA CHAIR AUTHORIZATION

AGENDA NO.: 5
FILE NO.: 17-35
MEETING DATE: April 21, 2017

TITLE: Request for Approval of Funding to Support a Targeted Biosolids Research Project.

☐ **RECEIPT** ☐ **DISCUSSION** ☐ **RESOLUTION** ☒ **APPROVAL**

RECOMMENDED ACTION

Approve $9,999.00 in BACWA funds to support a targeted biosolids research project conducted by the University of Hawaii and Lawrence Berkeley National Laboratories for the purpose of comparing biosolids amendments to traditional compost and synthetic fertilizer.

SUMMARY

In December of 2016, members of the Biosolids Committee and Dr. Gary Anderson of Lawrence Berkeley National Laboratories met with the Executive Board to ask that they consider contributing $20,000 toward the literature review component of a larger research project Dr. Anderson was collaborating on with Dr. Rebecca Ryals of University of Hawaii. The project would compare biosolids amendments to traditional amendments from a safety and efficacy standpoint. Of particular focus would be how soils near sensitive watersheds respond to slow-nutrient releasing biosolids amendments as compared with synthetic fertilizers. The resulting literature review report would be of value to many Bay Area biosolids programs. The Executive Board expressed interest in such research and invited the Dr. Anderson and the Biosolids Committee back to provide more detail on the project.

During the March 2017 Executive Board meeting, the Committee followed up with the Board providing the formal project proposal, attached, and stated that a BACWA letter of commitment to contribute to the research project would be welcomed. That commitment would go toward helping to match funding from a $500,000 grant proposal with the Foundation of Farming and Agriculture Research (FFAR). The Board took no action.

Under authority granted to the Chair, up to $9,999 can be approved for this research effort. Any funds approved by the Chair would only be provided to the research project if the FEAR grant were obtained.

FISCAL IMPACT

If approved by the Chair, funds for this research would come from the FY 17 BACWA approved budget line item for Miscellaneous Committee Support.

ALTERNATIVES
The request could be denied. However, given further restrictions on biosolids from pending regulations, efforts that would result in expanded beneficial use of biosolids seems to be a prudent investment.

Attachments:
Research Project Proposal

Approved:

Date: April 13, 2017

Laura Pagano, Chair
BACWA

BACWA
BAY AREA
CLEAN WATER
AGENCIES

April 13, 2017

Dear Foundation for Food and Agriculture Research Review Panel,

The Bay Area Clean Water Agencies (BACWA) is pleased to offer its support of the proposal entitled, *Enhancing Agricultural Soil Health Through Reuse Of Human Waste Nutrients*, to be submitted by Dr. Rebecca Ryals, Assistant Professor at the University of Hawaii. BACWA is a joint powers agency whose members are local clean water public agencies that provide sanitary sewer services to the more than seven million people living in the nine county San Francisco Bay Area. One of BACWA's goals is to assist agencies in carrying out mutually beneficial projects, and to facilitate the development of scientific, economic and other information that will be beneficial to our members as they work to protect the public health and the environment. More information about our organization can be found at www.bacwa.org.

BACWA supports research that improves our understanding of healthy soils and the role of the beneficial reuse of nutrients from treated human waste. BACWA is interested in being a supporting partner on this proposed research by Dr. Ryals and her co-Principal Investigators. There remain key questions about the technical and social aspects of land application of biosolids and composted human waste. We believe that the combined experience of the researchers on this proposal provide a unique collaboration of experts in biogeochemistry, agroecology, environmental engineering, and behavioral science that will further our understanding of the potential benefits of biosolids.

If this proposal is selected for funding by the FFAR, it is BACWA's intent to collaborate and commit funds for the research. Specifically, we will contribute to cost matching requirements by committing $9,999 to support project expenses.

Thank you for your consideration of this important proposal. Please don't hesitate to contact me at dwilliams@bacwa.org, (925) 765-9616 with any questions.

Sincerely,

David R. Williams

David Williams
Executive Director, Bay Area Clean Water Agencies

CC: BACWA Board of Directors

Research Proposal: *Exploring the Role of Biosolids in Healthy Soils and Carbon Cycle Stabilization*

Problem

Broken nutrient and carbon cycles in food systems produce vast quantities of unmanaged organic waste and contribute to climate change, food insecurity, and soil degradation. The capture and transformation of biosolids offers enormous untapped global potential to repair the broken agricultural nutrient cycles and mitigate climate change. In California, year-round use of biosolids is currently threatened by current and future landfill limitations, county ordinances regarding land application, and overall public perception. Land application is arguably the most sustainable means to utilize biosolids nutrients in a cost-effective manner, however further data, demonstrations, and scientific rigor are needed to support continued use and expansion of land application in California.

Background

The San Francisco Public Utilities Commission (SFPUC) in partnership with Fairfield Suisun and other interested agencies is pursuing partnership with a collaborative research team led by Dr. Rebecca Ryals (University of Hawaii at Manoa) and Dr. Gary Andersen (Lawrence Berkeley National Labs). The team is preparing a research proposal to be submitted to the Healthy Soils, Thriving Farms Challenge Area of the Foundation for Food and Agriculture Research (FFAR) which aims to provide a better understanding of the role that soil amendments derived from human waste can play in mitigating climate change and improving soil health, therefore furthering their recognition as a valued resource.

The broad goal of the project is to build upon decades of biosolids research, as well as research conducted by the Marin Carbon Project via UC Berkeley and the LBL Ecology Department, to advance the science and management of organic waste streams for climate change mitigation and agro-ecological resiliency. Field experiments will be conducted to test the fate of various soil amendments on carbon sequestration, nutrient cycling, and soil microbial health. These field trials would also allow for mechanistic research on the role soil microorganisms play in stabilizing nitrogen, and the potential impact of microbiological processes on ecosystem health.

Beneficial reuse of biosolids amendments offer benefits to agricultural soils such as greater water retention, higher nutrient availability, reduced inorganic fertilizer use, reductions in soil erosion, moderated soil temperatures, and reduced greenhouse gas emissions. However, experimental tests that quantify carbon sequestration benefits specifically are sparse. Further, little is known about potential tradeoffs such as soil nitrous oxide (a potent greenhouse gas) emissions or leaching of nitrate (a groundwater contaminant) in California soil. The conversion of organic nitrogen to either beneficial or harmful forms is controlled by soil microbial activity. The extent to which biosolids amendments impact these microbial processes in California soil needs to be thoroughly understood to optimize management practices to maximize soil health and minimize undesirable impacts on environmental and human health. This research aims to both provide better data on soil carbon and nutrient dynamics from application of biosolids based organic amendments and shed greater light on the microbial processes that govern these functions.

Research Objectives

1. Secure and expand land application practices in California through objective data regarding benefits and tradeoffs of different soil amendments

2. Develop demonstration-scale comparison plots that can be used as a tool for experiential learning with local stakeholders and inform setback requirements and wet-weather restrictions

3. Understand the opportunity to increase water holding capacity in soils through the addition of different soil amendments

4. Build relationships with scientists and researchers who can address public concerns objectively and based on data

Approach

The first phase of the project (Spring 2017) focuses on coordination between the lead scientists [(G. Andersen (LBNL) and R. Ryals (UH)] and utility partners under the California Carbon Project. The purpose of the coordination meetings is to refine the experimental design, identify field sites, and create a roadmap from project execution to completion.

The second phase of the project (Summer 2017 through Fall 2017) encompasses preliminary sampling and application of soil amendments. Field measurements will be conducted for two years (Fall 2017 through Summer 2019) and thereafter will serves as demonstration sites to observe long-term trends and to provide additional research opportunities.

Field experiments will compare biosolids amendments (Class A, Class B, liquid fertilizer and compost) to OMRI certified compost, synthetic fertilizer, and an unfertilized control (Figure 1). Each treatment and control will be replicated three times on farmland with uniform soil type and topographic conditions in two bioclimatic regions of California: Solano County and Los Angeles County. Plot sizes are yet to be determined and will be divided by a 10 m unamended buffer.

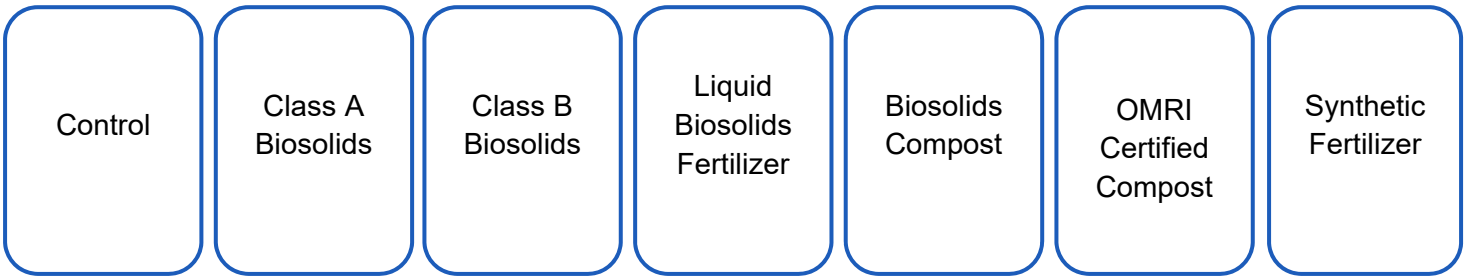

Figure 1. Each experimental block will consist of seven treatments plots (X m by Y m) separated by 5 m buffer strips. Three replicate blocks will be established in each of the study sites in Northern and Southern California. Application rates will be based on plant nitrogen demand and soil nitrogen pools and will be follow best management practices for biosolids application in each region.

In this phase of the study, plots will be monitored for two years to capture intra- and inter-annual seasonal dynamics. To assess and compare the climate benefits of these amendment types, changes in total soil carbon will be measured annually to a depth of 1 m. Physical fractionation of soil carbon will also be used as a means to detect management-induced changes over short timeframes, and chemical composition of soil fractions will provide a metric of soil carbon and nitrogen stability. Soil greenhouse gas emissions (carbon dioxide, nitrous oxide, and methane) and plant productivity will also be measured to evaluate the net benefit to the climate. Laboratory column experiments using soils collected from the study sites will further test carbon and nutrient cycling under a range of simulated rainfall regimes.

While there is no single indicator of soil health, we will measure diagnostics of soil health that are important to the structure and efficient functioning of grassland ecosystems. Soil health encompasses several biological, physical, and chemical properties that govern a soil's function and that may be affected by biosolids amendments. In this study, we will focus on several key soil health indicators, especially as they relate to carbon stabilization and nutrient dynamics (Table 1).

Table 1. Physical, chemical, and biological soil health indicators will be measured through the study period. The proposed controlled, replicated field experiment will allow us to test the mechanisms that drive changes to soil health following the application of biosolids amendments.

Soil Health Indicator	Measurements	Mechanisms
Physical		
Soil carbon content	Total soil carbon	amendments add a source of carbon and increase new C inputs by boosting plant production
Soil aggregation	Physical fractionation	increase in soil organic matter and exudates from roots and microbes improve soil's ability to form stable aggregates
Compaction	1. Bulk density 2. Water infiltration	higher soil organic matter content decrease bulk density and improve the ability of a soil to infiltrate and permeate water
Chemical		
Nutrient retention	1. Soil nitrate and ammonium pools 2. cation exchange capacity 3. soil pH 4. nitrate leaching	amendments add a source of nutrients and increases adsorption of nutrients which increases plant available nutrients and reduces unintended losses
Water retention	1. surface soil moisture 2. 1m deep soil water using tensiometers	SOM improves soil ability to hold water in surface soil and reduces leaching losses
Biological		
Plant productivity	1. Crop/forage yields and C & N content 2. Root biomass and C & N content 3. Net primary productivity	increase in nutrient and water availabilities in soil boost plant production
Nitrogen mineralization	net nitrogen mineralization incubation	compost amendments provide slow release of nutrients
Soil gas emissions	Soil nitrous oxide, methane, ammonia, and carbon dioxide fluxes	fluxes increase compared to unfertilized control because of larger pools of available nitrogen and labile carbon. Gaseous losses from composted amendments will be less relative to inorganic fertilizer and uncomposted amendments because nutrients slowly mineralize
Soil microbial communities	DNA extraction and 16s RNA sequencing	Improvements in physical, chemical, and biological soil properties will increase soil microbial diversity

Soil carbon plays a central role in soil health by altering many of the physical, chemical, and biological properties of soil. Microbial mechanisms that control carbon and nitrogen stability following soil amendment application will be determined. This mechanistic understanding is necessary to improve prediction and ultimately system-level management of soil carbon storage. Microbial measurements will include abundance and expression of key functional genes that control enzymes involved in organic matter degradation, nitrogen transformations and production of extracellular polymers that improve soil structure. A key question of this research will be the extent to which measurable characteristics of microbial communities are predictive of processes that control the fate of carbon and nitrogen over variable environmental conditions. High throughput DNA sequencing of 16S rRNA genes and targeted quantitative PCR (qPCR) measurements will be used to measure microbial community composition and abundance, respectively, in order to determine which microbial populations are associated with different soil amendments. Key functional genes involved in carbon and nitrogen cycling will be measured by qPCR of microbial DNA and RNA to quantify genetic potential and expression, respectively. Targeted carbon-cycling genes will include genes encoding enzymes for starch, hemi-cellulose, chitin and cellulose degradation including, but not restricted to, α*-Amylase, Xylanase, Acetylglucosaminidase,* and *Exoglucanase*. Targeted nitrogen-cycling functions encoded by the microbial community will include nitrogen fixation (*nifH)*, ammonification (*chiA)*, nitrification (*amoA*) and denitrification (*nirK*, *narG)*.

Biosolids amendments present an untapped source of nutrients and carbon that will likely improve the structure and function of soils. Increasing the beneficial reuse of these nutrients is an opportunity for California utilities to contribute to state initiatives, including the Healthy Soils Initiative and the AR32 climate goals. However, care must be taken to ensure an understanding of the benefits and to minimize the potential to adversely impact the climate, water quality, and plant communities.

Timeline

March 2017	Spring 2017	Summer 2017	Fall 2017 - Summer 2018
Submit proposal to Foundation for Food and Agriculture Research	Finalize experimental design	Conduct baseline samples and apply amendments	Field sampling Laboratory experiments Manuscript & report writing

Outcomes

Phase one of the project will result in an extensive literature review and experimental design, complete with site selection and planning. The literature review will gather peer-reviewed literature from scientific journals and reports available on California wastewater districts and State Agencies, and will focus on literature that addresses impacts of biosolids amendments on plant productivity, carbon and nutrient cycling, greenhouse gas emissions, leaching of nitrate and other contaminants of concern and fate of pharmaceuticals. Ultimately, the review will result in a summary report and bibliography. In addition, phase one of the project includes a final experiment design. Specific objectives will be identified based on critical knowledge gaps identified from both the literature and input from stakeholders. As the complete scope and layout of the experiment are defined, potential sites will be identified and stakeholders engaged to secure necessary permissions and develop the layout for experimental plots and logistics for equipment needed to conduct the research.

The research will demonstrate the value of biosolids amendments for promoting carbon sequestration and soil health. Successful demonstration results include: increased water retention, increased forage production and improved understanding of the role of microbiology in creating healthy soil. The functional analysis of microbial activity associated with biosolids application will provide the understanding of mechanisms that control soil carbon and nitrogen cycling responses to biosolids and other amendments.

This research will also provide information on potential undesirable effects of biosolids amendments that may offset soil carbon sequestration or present health risks. The measurements will include nitrous oxide and methane fluxes from soils to determine if amendments have a net benefit on overall greenhouse gas budgets. Impacts on soil nitrate will also be quantified to determine the potential for leaching into surface and groundwater.

This mechanistic understanding of soil carbon, the soil microbiome and its impact on water and nutrient dynamics following biosolids amendments will help agencies determine the overall feasibility of these amendments as a strategy to promote soil health. The findings from this study will ultimately enable development of predictive models that describe soil carbon dynamics in response to different soil amendments and management practices. These scientific advancements will provide important guidance for efforts to turn wastes into resources that improve soil quality.

AECOM Technical Services, Inc.
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aecom.com

To: David Williams, Executive Director
Bay Area Clean Water Agencies

From: Sheba Hafiz, AECOM

Date: February 27, 2017

Memo: Aerobic Granular Sludge (AGS) Nereda® Technology for Nutrient Removal.

Full Scale Demonstration Project

Bay Area regulations are expected to impose stringent effluent nitrogen and phosphorus limits in the future. We understand Bay Area POTWs are concerned about the impending costs of meeting stricter nutrient standards and are working in collaboration with other agencies in an effort to address the challenges of significant regulatory changes.

Nutrient removal requires a considerable expansion of treatment volume using conventional treatment approaches. Space at many Bay Area plants is at a premium and retrofits in this context may be prohibitively expensive. Nereda® AGS is an innovative treatment technology that can achieve nutrient removal in a small footprint with significant energy savings over conventional activated sludge processes. There are over 30 full scale installations of Nereda® worldwide that have successfully demonstrated meeting performance objectives for nutrient removal in sustained full scale operation. This technology was commercially developed in Europe, with installations now spanning the globe; however, as of now, there are no installations in the United States.

Aerobic Granular Sludge is an evolution of Conventional Activated Sludge technology (CAS) whereby microorganisms form large dense granules instead of fluffy flocs. These granules are stratified, surface-to-core, with layered biomass that enables respective roles of nitrification and denitrification, so that these processes occur in-situ and simultaneously, avoiding the need for dedicated reactor zones and recycle streams. Granules are formed by enforcing strict feast-famine feeding regimes in Sequencing Batch Reactors (SBRs) ensuring selection of phosphate-accumulating organisms (PAOs), thereby removing phosphorus as

well as nitrogen. These dense granules increase reactor capacity by increasing mixed liquor suspended solids (MLSS) concentrations to 6000-8000 mg/l, and by achieving rapid settling due to the high granule density and size.

Use of a sequencing batch approach negates the need for a secondary clarifier, further saving space and conserving energy. Nereda® has reportedly been shown to use approximately 30-40% less energy than conventional flow-through CAS, in part due to the absence of recycle pumping for Internal Mixed Liquor Recycle (IMLR) and Return Activated Sludge (RAS).

AECOM is proposing a full scale demonstration of this technology in the US. An important component of this demonstration is to show that a conventional flow-through, continuous CAS process can be cost-effectively adapted/retrofitted to a quasi-SBR (step-wise continuous) process. In the last two years, a retrofit of continuous, flow-through CAS has been successfully demonstrated at the Frielas wastewater treatment plant (WWTP) outside of Lisbon Portugal. A similar demonstration in the U.S. would not be a “first”; however, a retrofit of a Bay area CAS basin into an AGS quasi-SBR in a well-documented study would pave the way for acceptance by Bay area regulators. The study would provide evaluation and design criteria for Bay area consortium members and accelerate the adoption of this revolutionary wastewater treatment technology in the U.S.

AECOM has had an expression of interest from BACWA members, Fairfield-Suisun Sewer District (FSSD), to host a Nereda AGS demonstration at their 12 MGD wastewater treatment facility and from Central Conta Costa Sanitary District (CCCSD) to participate in the project. Our pre-proposal for research funding to support this project was accepted by the AWWA Water Research Foundation (WRF) which provides matching funds up to $100,000 for innovative technology demonstrations, through subscribing utilities. Our intent is to build a consortium that in aggregate will generate contributions matching the $100,000 grant from WRF.

A member of the prospective consortium would have the opportunity to participate in the design of the demonstration project, receive periodic progress reports, participate in workshops to review findings, and provide input to operations in order to create relevant findings that would inform their future nutrient removal decisions.

AECOM would appreciate an opportunity to present the details and benefits of this project to the BACWA Executive Board.

Sherry Hull

From: Sherry Hull
Sent: Tuesday, April 18, 2017 10:23 AM
To: Sherry Hull
Subject: agenda item #6.b.iii - Nutrient Workshops
Attachments: LSB_DO_Habitat_Description (2).pdf

From: David Senn [mailto:davids@sfei.org]
Sent: Thursday, April 6, 2017 9:16 AM
To: Nutrients Management Strategy Steering Committee <nms-sc@sfei.org>
Cc: Lissa MacVean <lissam@sfei.org>; Phil Trowbridge <philt@sfei.org>
Subject: upcoming NMS technical working meetings - DO-related habitat in Lower South Bay (4/27-4/28) ; HABs and toxins (May 31-Jun 1)

Dear Nutrient Management Strategy Steering Committee -

As we've discussed at our past couple meetings, we are holding two technical working meetings / workshops in the next two months...

- 4/27-4/28 DO-related habitat in Lower South Bay
- 5/31-6/1: HABs and toxins, evaluating current condition and informing future directions

The meetings will be technical working meetings, with regional and outside experts joining the meetings to contribute to the work. At a later date (early fall) we plan to have a report-out meeting on both topics with NMS stakeholders; and, if it would be beneficial, invite some of the experts to join that meeting.

In the meantime, we know that a number of NMS stakeholders are very interested in the technical side of these topics. We identified the approach below as a way to maintain the small technical meeting feel while also having interested stakeholders join the meeting

- NMS steering committee members, or someone they designate, are invited to attend the meeting.
- Most of the meeting time will be reserved for technical discussions among the experts, with some time built in for stakeholders to offer input or provide context.

If you are potentially interested in attending (or want to designate someone to attend on your behalf), please send me and Lissa (lissam@sfei.org) an email.

A description of the DO workshop goals is attached; we will provide more information on the workshops as they become available.

Regards,
Dave

ooo
David Senn, PhD
Senior Scientist
San Francisco Estuary Institute
4911 Central Avenue

Characterizing DO related habitat quality in LSB sloughs and open Bay

Collaborators: SFEI, SCCWRP, expert advisors

Goal

Develop, and begin implementing, a work plan to build the NMS' scientific basis for assessing DO-related habitat quality in sloughs, creeks, and open-Bay areas of Lower South Bay.

Background

The San Francisco Bay Basin Plan established dissolved oxygen criteria of 5 mg/L and a 3-month median of 80% saturation in all tidal regions. Historical monthly sampling in the SFB's deep channel indicates that conditions are generally well above this threshold. However high-frequency data collected over the past few years in sloughs and some open-Bay areas of Lower South Bay indicate that that DO frequently falls below the basin plan standard of 5 mg/L. In some cases, these departures below 5 mg/L are modest, infrequent, and/or short-lived (minutes to a couple hours). In other cases, concentrations commonly reach 2-3 mg/L for several hours per day.

Although the Basin Plan provides a specific numeric threshold for DO, it does not offer further guidance with regard to frequency, duration, or magnitude of excursions below 5 mg/L. Large uncertainties remain about DO spatio-temporal patterns, and about the relative importance of naturally-occurring low DO versus the effects of anthropogenic nutrients. Beyond those questions, there has been insufficient work to date in LSB related to identifying organisms utilizing these habitats and DO conditions that would be considered protective.

Approach and Progress to Date

The FY2017 output of this overall effort is a report that will inform work priorities to characterize habitat quality in the Lower South Bay with respect to DO.

The report will synthesize existing **data** and **literature** on the topics of:

1. The magnitude and variability of DO in the Lower South Bay :
    - What is the severity, extent (space), duration, and frequency of low DO in this region?
2. Habitat usage by pelagic and benthic species:
    - What are the key biota (e.g., fish, benthic invertebrates, microbial community) utilizing LSB habitats, and other key ecosystem functions (e.g., microbial transformations), and the DO levels needed to support these usages??
    - What were key biota in decades past, based on historical accounts?
3. The physiological and behavioral responses of animals to DO regimes
    - Meta-analysis of the implications of low DO for key functions of habitat of LSB species, including:

i. physiological and behavioral factors that determine organisms' DO requirements
ii. acute and chronic effects of low DO at both the individual and population levels
iii. and existing data on DO requirements for individual taxa or relevant surrogate species

The report will also outline studies to be conducted to resolve critical knowledge gaps.

To date, we have developed the near-term work plan, including specific and new data analyses to be performed before the workshop, assembled our panel of experts, and laid out a timeline.

This work will be accomplished by a team of experts and SFEI staff collaborating on the aggregation and analysis of existing data and literature, and input will be solicited from stakeholders, regulators, and the NMS Steering Committee. A workshop will be held in April 2017 to establish the current state of knowledge pertaining to items 1-3 above, and to devise studies to be performed over the subsequent 1-2 years.

Summary of Experts:

Discipline	**Contribution**	**Individual**	**Role**
Ecologist/ oceanographer specializing in hypoxia	Guidance on process; synthesis of available science	Jim Hagy (USEPA)	Adviser, workshop participant
Ecologist/fish biologist	Collection and analysis of data on LSB fishes	Jim Hobbs (UC Davis)	Co-author, workshop participant
Ecologist	Guidance on process; provide perspective on environmental characterization from other estuaries (e.g. Long Island Sound)	Paul Stacey (Great Bay NERR)	Adviser, reviewer
Biogeochemist	Project management, guidance on process and technical issues	Martha Sutula (SCCWRP)	Collaborator, co-author
Fisheries Scientist	Guidance on process; provide perspective on environmental characterization from other estuaries (e.g. Chesapeake Bay)	Peter Tango (USGS)	Adviser, workshop participant, reviewer
Benthic ecologist	Analyzer of fish population and DO data to help assemble a	Melissa Foley (USGS)	Workshop participant, reviewer

	holistic picture of LSB habitat		
Ecologist/biologist	Guidance on synthesizing data to assess habitat quality	Matt Ferner (NERR, RTC)	Workshop participant, reviewer
Ecologist/biologist	Guidance on species' responses to stressors, including low DO	Andy Chang (Smithsonian, RTC)	Reviewer
Benthic ecologist	Guidance on SF Bay benthos and responses to DO variability	Jan Thompson (USGS)	workshop participant

Schedule

April 2017: Workshop
May 2017: Draft report
June 2017: Final report

BACWA Membership Nutrient Workshop

June 7, 2017

Draft Agenda

A. Update on Optimization/Upgrade Studies

1. Nutrient Watershed Permit Background
2. Project Approach and Current Status
3. Purpose of Report
4. Common Assumptions
5. Case Study
    a) Case 1 (Oro Loma)
        a. Optimization
        b. Sidestream
        c. Level 2 Upgrades
        d. Level 3 Upgrades
6. Draft Findings, Cost and Load Reduction Results
    a) Optimization
    b) Sidestream
    c) Level 2
    d) Level 3
    e) No Net Load Increase
    f) Complete Summary of Initial Results
    g) Observations on Trends
7. Summary of Recycled Water and CIP Data Requests
8. Sea Level Rise
9. Other Items – For example, potential trading strategies based on EPA Grant work.
10. Group Annual Report
    a) Deadlines for 2017 report
11. Next Steps
12. Q/A

B. Update on 2nd Nutreinet Watershed Permit

1. Review of 1st Watershed Permit
2. Options for the 2nd Watershed Permit
    a. Key tenets
    b. Financial Impacts
3. Results of preliminary poll of the BACWA membership

To:	NMS Planning Subcommittee
From:	David Senn
Re:	Science Program Update, April 14, 2017

1. **Financial Update**
    a. Budget/spending to date:
        i. Generally all fine, nothing new or major to report since March 10 SC meeting, included below for reference (same numbers as 3/10)
            1. That summary was through 1/30
            2. Burn rates have increased February-present on several projects due to 3 new hires (1 modeling, 2 on biogeochem/phytoplankton)
        ii. Estimated reserve (June 30 2017) = $95k
    b. Funding for program coordination and management options nearly exhausted. See authorization request at end of this document.
2. **Science Program Management and Update**
    a. Staffing
        i. 2 new hires since January, all doing well.
        ii. 1 new hire begins on May 1, focused on modeling.
    b. Fundraising
        i. $95k project from DSP...Conceptual model -- hypothesized effects of Regional San treatment upgrade...goal → identify priority science and monitoring for baseline pre-upgrade and post-upgrade data collection.
        ii. Matching fund project with Deltares beginning in May/June…Deltares providing 1:1 $50k match to support Deltares staff. Important aspect will be Deltares staff visiting SFEI for periodic 2-3 week trips. Likely focus...collaboration on phytoplankton model calibration/validation, with particular emphasis on influence of light levels, and evaluating the importance tidal-time-scale variations in light levels
        iii. Recent conversation with colleague working in Puget Sound who works for an NGO. She wants to bring west coast estuary groups together to help firm up or increase funding for estuarine science and monitoring. Stay tuned.
        iv. SCCWRP (OPC, and foundation) modeling project exploring coastal hypoxia and ocean acidification
            1. Currently some limited funding for SFEI (20k)
            2. Major coordination/leveraging opportunity
            3. They are also beginning to also put effort toward SFB.f
    c. Delta-Suisun Workshop whitepaper
        i. Released April 11. See forwarded email
        ii. DS plans to share with SC, after reading and crafting email
        iii. DS plans to participate in RB5 STAG meeting next week by phone.
        iv. Recommendation...no major implications for FY18 science program activities.
    d. Outreach
        i. Presentation to Alameda County Special Districts Association 3/23

ii. Invited to give seminar at USC on April 18. Hoping to identify additional collaborators or external advisors, and perhaps try to bring other resources (students, postdocs) into our effort.

e. Nutrient Technical Workgroup meeting, May 4th at SFEI. Major topics
    i. Technical updates (modeling, DO, Rusty, maybe also on phyto/HABs/toxins)
    ii. FY18 priorities...Interested in PS input on how to best solicit input, and to provide ample background to inform discussion.
    iii. Possible...SCCWRP-led coastal modeling project, introducing it to stakeholders? Or is this better for NMS SC meeting in June?
f. Major science activities
    i. Modeling
        1. Overall going well
        2. New PhD level hire begins May 1, and will help work move forward along on multiple
        3. Projects funded by LSB dischargers and CCCSD spinning up, with substantial progress expected over next few months.
    ii. High-frequency mapping along shoals
        1. Very successful collaboration with USGS-Sac (Bergamaschi et al), using remaining funds from an earlier contract (funded by RMP, LSB mapping work).
        2. Mapping of South Bay eastern shoal on two occasions, separated by ~2 weeks. See example (provisional) figures at end of this document.
        3. As a pilot for potential FY18 project, deployed a mooring with multiple sensor, deployment late March 2017- late April 2017.
        4. High priority FY18 project.
    iii. DO-related work, mooring
        1. Great progress with Lissa over past few months.
        2. Appears to be high rates of DO consumption in Alviso Slough.
    iv. DO-habitat and HAB/toxin works scheduled for end of April and end of May

	FY2017 NMS Quarterly Budget - Through January 30, 2017						
Revenue		**Adopted Budget (Jun 2016)**				**Funder**	**Updated Budget**
	Source						
A	Nutrient Permit FY2017	$880,000				Nutrient Permit FY2017	$880,000
B	RMP CY2017	$500,000				RMP CY2017	$373,000
C	Alt Analysis & Stakeholder Engagement	$100,000				AA & Stakeholder	$100,000
D						SEP	$120,000
E						Palo Alto/Sunnyvale	$60,000
F						CCCSD	$97,500
G						DSC	$97,600
H						SWRCB	$300,000
	Total Revenue	**$1,480,000**					$2,028,100
		Adopted Budget (Jun 2016)	**YTD expended as of January 30 2017**	**YTD encumbrances**	**YTD % Expended + Encumbered**	**Unobligated**	**Updated Budget**
1	Core Program						
1.1	*Monitoring*						
	C1 Channel Monitoring	$146,800	$33,196	$85,500	81%	$28,104	$146,800
	C3 Moored Sensors Open Bay and Slough	$342,460	$187,982	$80,000	78%	$74,478	$342,460
1.2	*Modeling*						
SEP & Permit	C2 Biogeochemical Model Development	$286,500	$88,959	$50,000	49%	$147,541	$286,500
1.3	*Program coordination*						
	C5 Science Prog Coord	$258,125	$139,912	$0	54%	$118,213	$258,125
	C6 Program Mangement	$66,735	$25,835	$0	39%	$40,900	$66,735
	Program subtotal	*$1,100,620*	*$475,884*	*$215,500*	*63%*	*$409,236*	*$1,100,620*
2	*Projects*						
	P1 Monitoring Program Development	$107,702	$6,231	$0	6%	$101,471	$107,702
	P2 DO spatial variability in LSB Slough/cre	$91,600	$35,025	$1,852	40%	$54,723	$91,600
	P3 DO related habitat quality in LSB Slough	$135,438	$18,723	$53,000	53%	$63,715	$135,438
	P4 Algal Toxins in Bivalves	$76,300	$24,431	$30,000	71%	$21,869	$76,300
	P5 HAB/Toxin workshop	$62,975	$3,896	$27,000	49%	$32,079	$62,975
	P6 Data management	$0	$102	$0	0%	$71,141	$71,243
PA/Sunnyvale	P7 Modeling LSB Slough	$0	$0	$0	0%	$60,000	$60,000
SWRCB	P8 Modeling Scenarios	$0	2,341	$0	1%	$297,659	$300,000
DSC/CCCSD	P9 Modeling Suisun	$0	$0	$0	0%	$195,100	$195,100
	Alternatives Analysis	$27,000	$5,159	$20,000	93%	$1,841	$27,000
	NMS SC and Stakeholder Engagement	$73,000	$46,839	$15,746	86%	$10,415	$73,000
	Projects subtotal	*$574,015*	*$142,747*	*$147,598*	*51%*	*$910,013*	*$1,200,358*
	Total Expenses	**$1,674,635**	**$618,631**	**$363,098**	**43%**	**$1,319,249**	**$2,300,978**
	Surplus/(Deficit)	-$194,635					-$272,878
	Starting Reserves	355,000					$367,147
	Transfer from/to Reserves	-$194,635					-$272,878

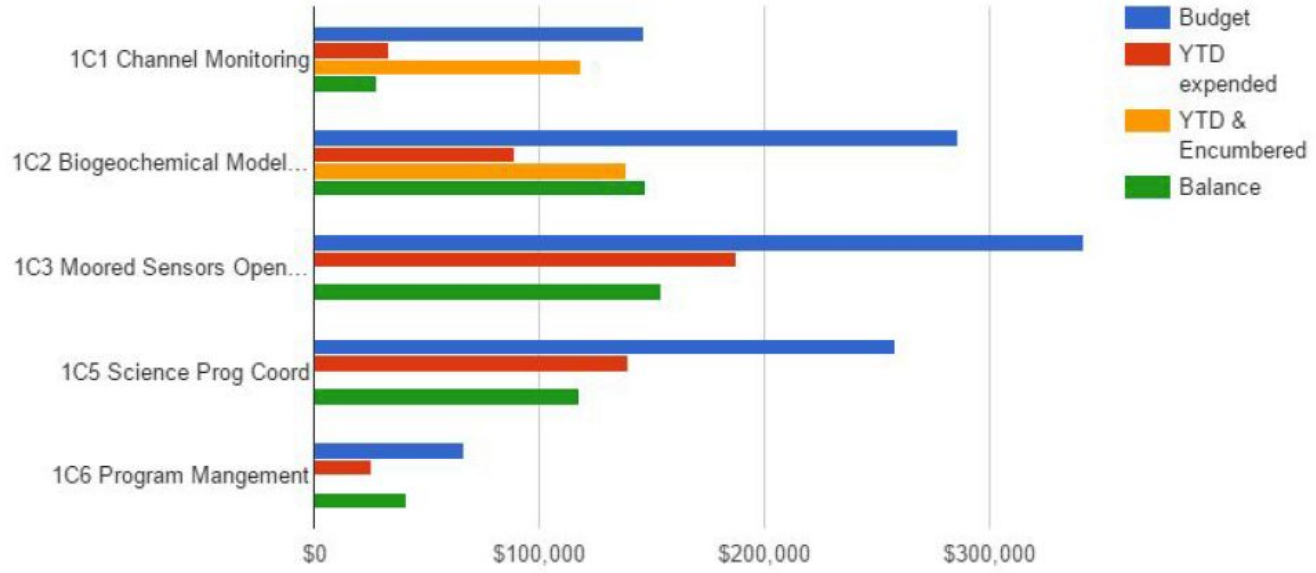


Figure 1. FY 17 core program budgets, year to date spending, year to date + encumbered spending, and budget balance for approved tasks

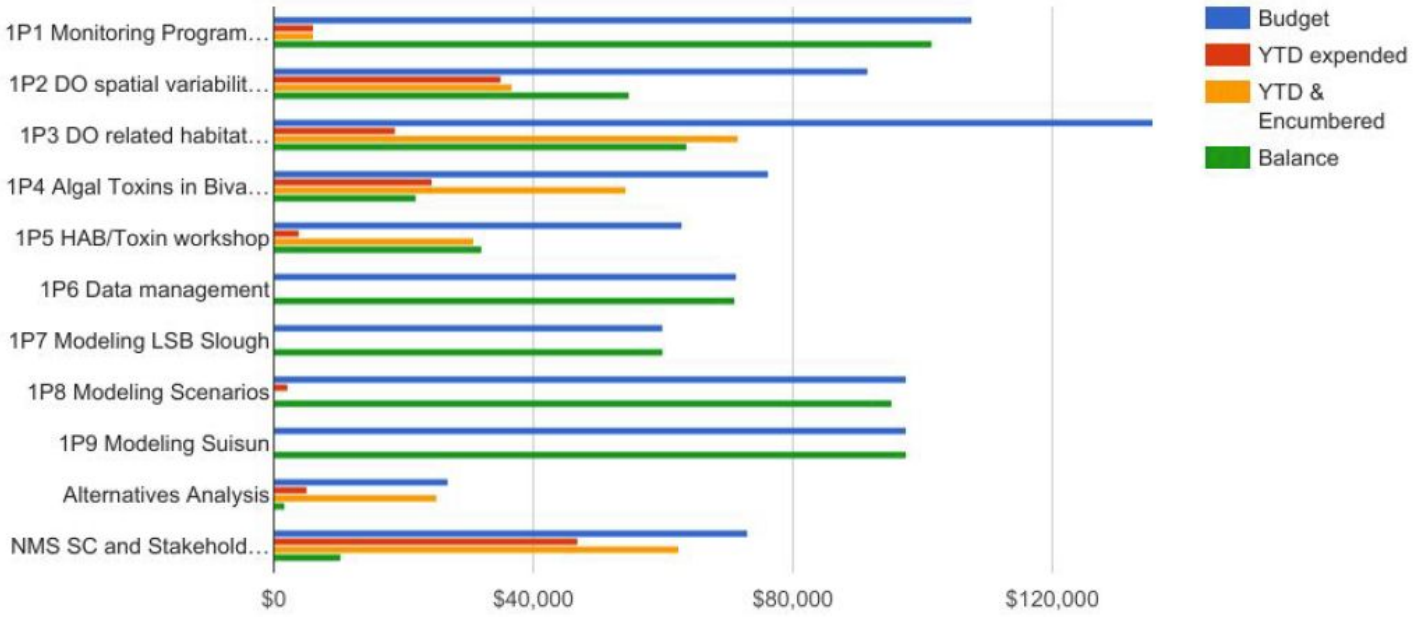
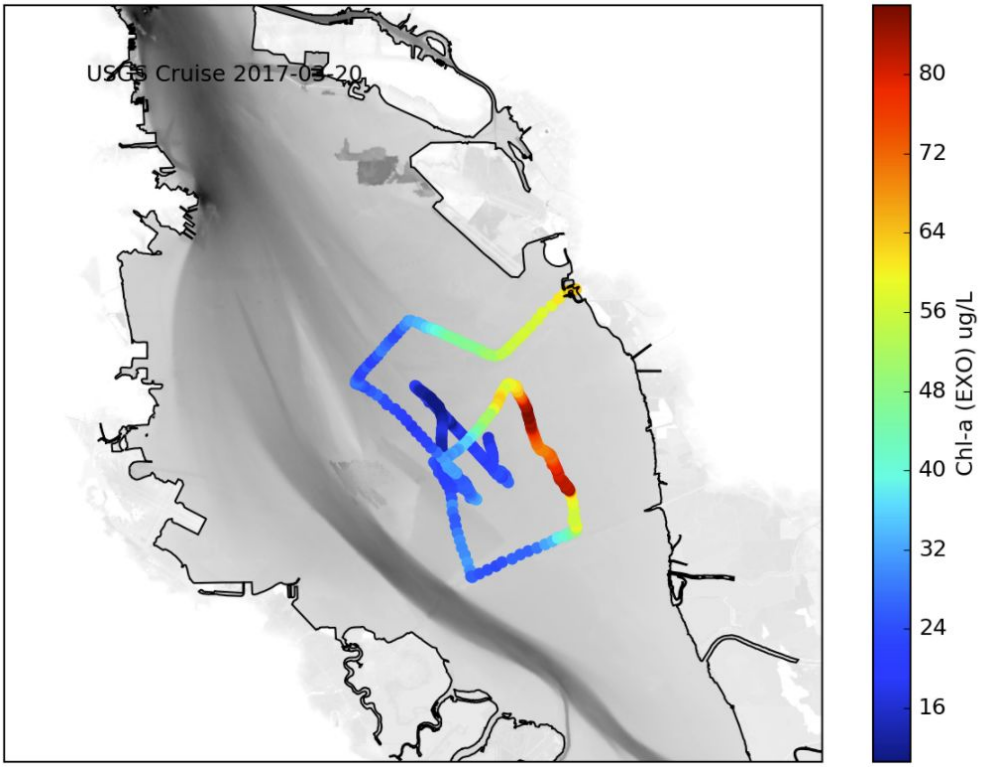
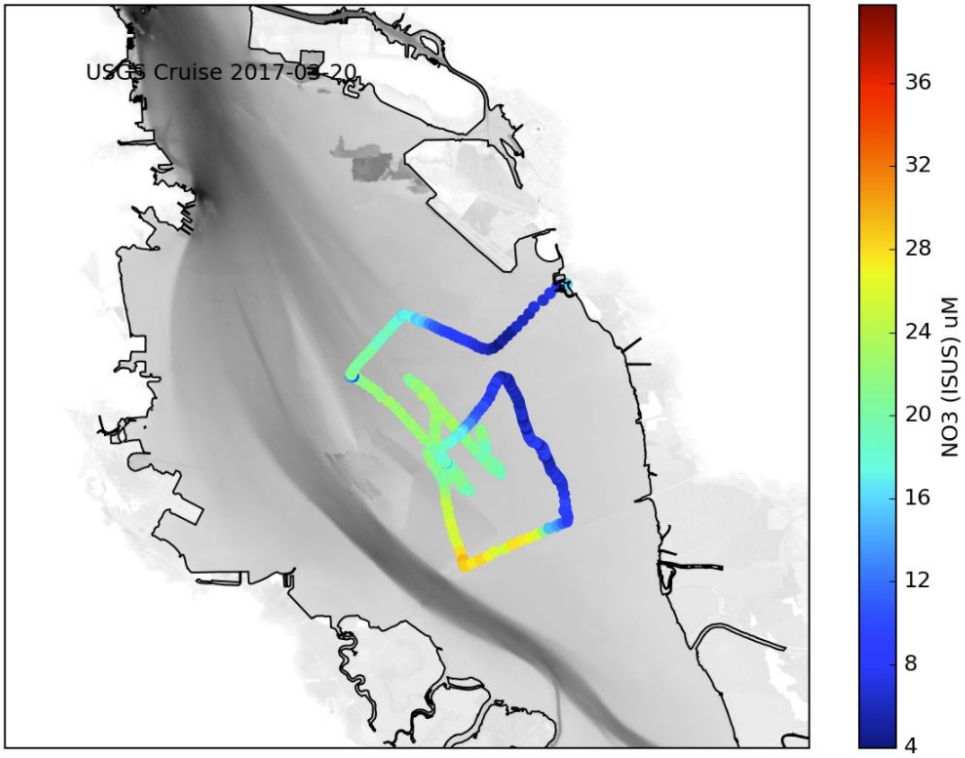


Figure 2. FY 17 project budgets, year to date spending, year to date + encumbered spending, and budget balance for approved tasks


USGS Cruise 2017-03-20
80
72
64
56
48
40
32
24
16
Chl-a (EXO) ug/L


USGS Cruise 2017-03-20
36
32
28
24
20
16
12
8
4
NO3 (ISUS) uM

Goals:
1. Inform the PS of need for near-term decision on continuation of work started under additional Program Coordination funding from BACWA
2. PS authorization of stop-gap funding (July-Dec 2017).

Funding from the AA/program coordination work (from BACWA) will be exhausted by the official start of FY18. A couple proposals are under development for submission in the next month. There is also the possibility that we will include a proposal in the FY18 Program Plan depending on funding situation; if so, and it is approved, the balance of any PS-authorized funds will be rolled over to the SC-approved effort.

Strawman Proposal
Authorization request: To support near-term continuation of this work, DS requests PS authorization to allocate $25k to support base level continuation of AA/program coordination work through Dec 2017. This is approximately half of what's needed for the full FY18 to support Ian Wren's continued involvement in a similar capacity as FY17.

Scope:
a. (50%) NMS process coordination - Support coordination of NMS activities related to SC and PS, and effort toward fundraising (can put more meat on the bones if needed)
b. (50%) Continue management options / alternative analysis work, including: i) Continued effort on finalizing wetland pilot project; ii) Developing multi-year plan, including stakeholder engagement; coordinate with ReNUWiT decision-analysis effort

	FY2017 NMS Quarterly Budget - Through January 30, 2017						
Revenue		**Adopted Budget (Jun 2016)**				**Funder**	**Updated Budget**
	Source						
A	Nutrient Permit FY2017	$880,000				Nutrient Permit FY2017	$880,000
B	RMP CY2017	$500,000				RMP CY2017	$373,000
C	Alt Analysis & Stakeholder Engagement	$100,000				AA & Stakeholder	$100,000
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	Alternatives Analysis	$27,000	$5,159	$20,000	93%	$1,841	$27,000
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	Projects subtotal	*$574,015*	*$142,747*	*$147,598*	*51%*	*$910,013*	*$1,200,358*
	Total Expenses	**$1,674,635**	**$618,631**	**$363,098**	**43%**	**$1,319,249**	**$2,300,978**
	Surplus/(Deficit)	-$194,635					-$272,878
	Starting Reserves	355,000					$367,147
	Transfer from/to Reserves	-$194,635					-$272,878

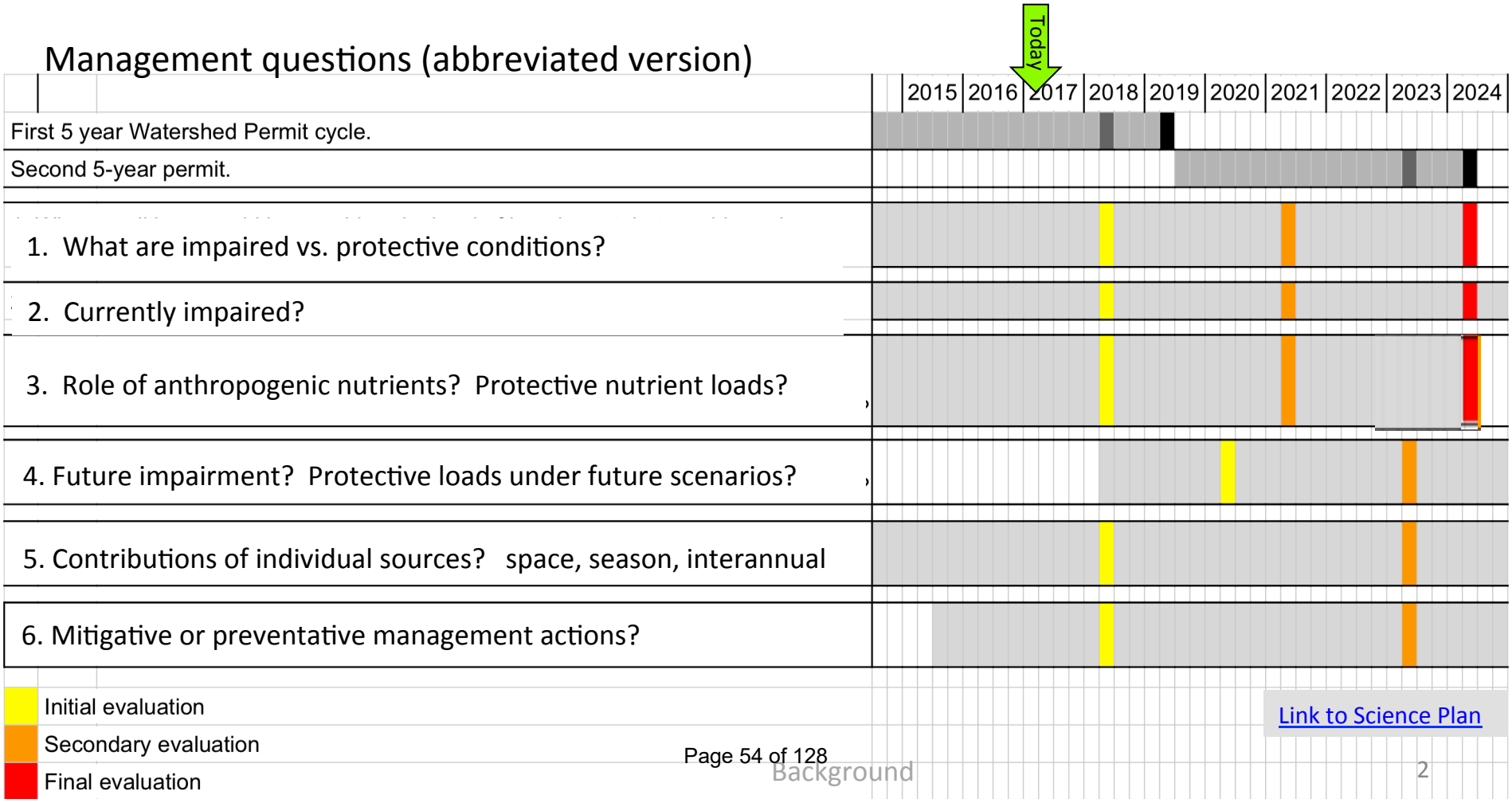
Item 6 NMS FY18 Funding Discussion

1. Background
   a. NMS Priority Management Questions, Science Plan
   b. Major Topics and Focus Areas
2. Strawman FY18 Program Plan and Budget
   a. Anticipated funding
   b. Core program
   c. Overview of Potential Projects for FY18
   d. Project blurbs
3. Discussion: As part of the discussion we plan to ask each SC member for their input on a couple questions.
   a. What do SC members see as high priority categories for projects, or specific projects for FY18?
   b. Which projects could you envision your agency being able to support in terms of in-kind contribution or directly funding?

Key Assumption for Science Plan v1.0: Water Board's goal of 'Standards by 2024'

Approximate Timeline for addressing major management questions, laid out in Science Plan (when plan development began ca. 2015)

- Realistic time for science and process, and realistic assessment of work that is needed.
- Assumes work proceeding in parallel on all fronts.
- 'Answers' are reached iteratively, with increasing level of confidence over time (yellow, orange, red below)
- Plan not constrained by budget – it aims to illustrate the work that's needed to answer questions within the available time-frame.
- As a result…There has been limit prioritization among proposed activities to fit within current budget.



Link to Science Plan

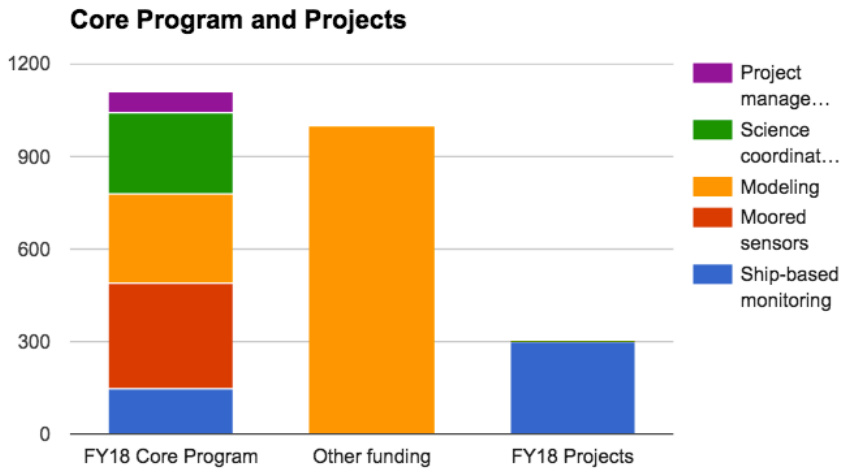
Table 2.1 Management questions targeted by the NMS Science Plan

1. What conditions in different SFB habitats would indicate that beneficial uses are being protected versus experiencing nutrient-related impairment?
2. In which subembayments or habitats are beneficial uses being supported? Which subembayments or habitats are experiencing nutrient-related impairment?
3.a To what extent is nutrient over-enrichment, versus other factors, responsible for current impairments? 3.b What management actions would be required to mitigate those impairments and protect beneficial uses?
4.a Under what future scenarios could nutrient-related impairments occur, and which of these scenarios warrant pre-emptive management actions? 4.b What management actions would be required to protect beneficial uses under those scenarios?
5. What nutrient sources contribute to elevated nutrient concentrations in SFB subembayments or habitats that are currently impaired, or would be impaired in the future, by nutrients?
6. When nutrients exit SFB through the Golden Gate, where are they transported and how do they influence water quality in the Gulf of Farallones or other coastal areas?
7. What specific management actions, including load reductions, are needed to mitigate or prevent current or future impairment?

Link to Science Plan

Strawman FY18 Program Plan

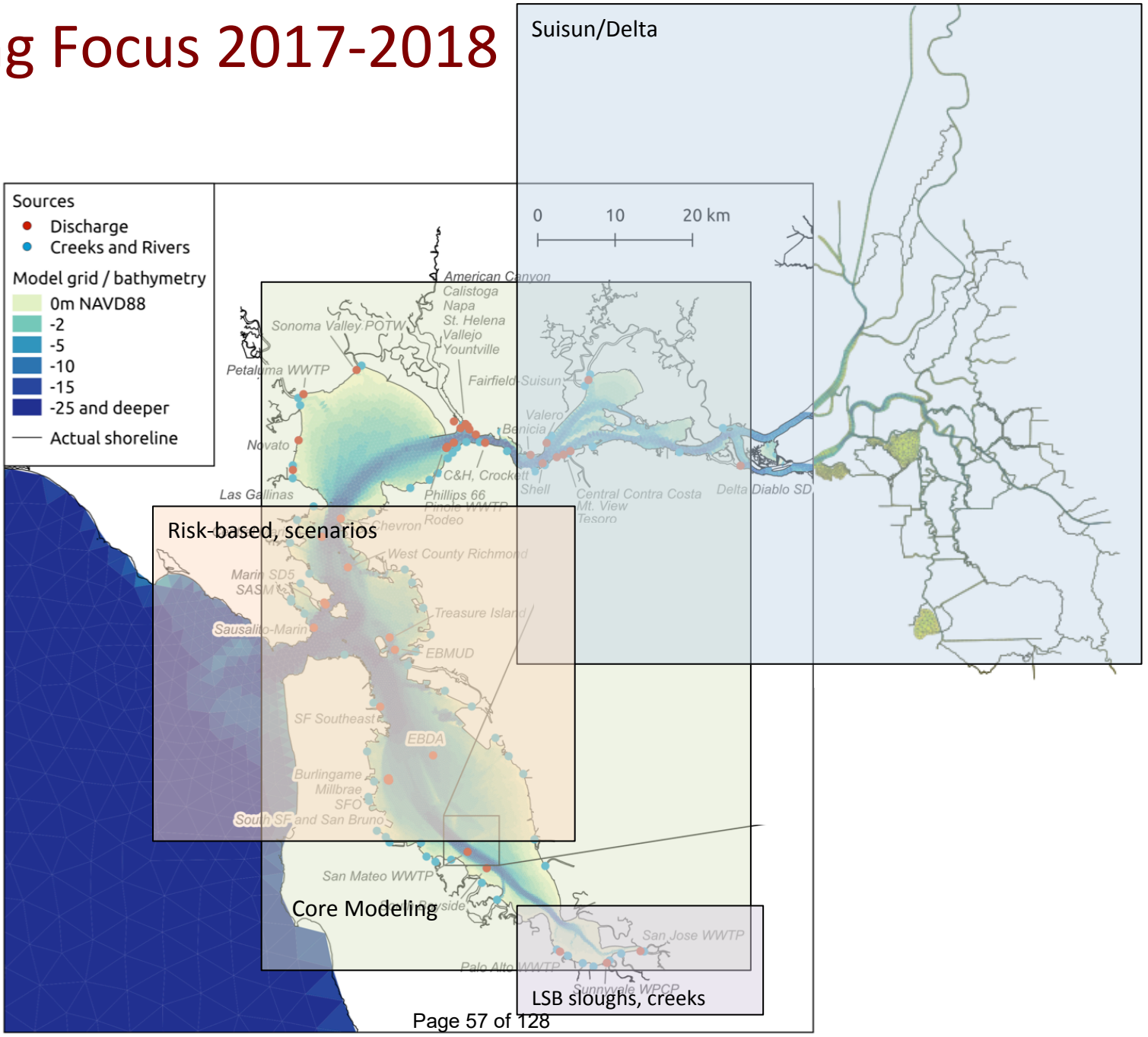
Anticipated Revenue ($1,000s)	
Nutrient Permit	880
RMP CY2018 *	500
Total Revenue	***1,380***
Costs ($1,000s)	
1. Core Program	
1.1 Monitoring	
Channel Monitoring	150
Moored sensors	340
1.2 Modeling **	
Core model development and application	290
1.3 Program Coordination	
Science Program coordination	260
Program Management	70
Subtotal - Core Program	***1,100***
2. Projects	
Potential funding available for FY18 Projects (including assumed reserve ~100k)	200-300



* Upper bound estimate

** Several new modeling projects, started in FY17 with additional funding, work underway but are considered FY17 projects and not included here.

Modeling Focus 2017-2018



Strawman FY18 Program Plan: Project Alternatives

		FY18 Estimated Cost		Program Area			Work Category and/or Type of Activity						
		Low	High	Nutrients	DO biomass	Phytos HABs	Monitoring: program expansion	Monitoring: Efficiency, Better Information	Mechanistic study, process, rates	biological indicators, beneficial uses	AF, protective conditions: synthesis, testing, refining	Modeling	Future scenarios
Monitoring	Toxins in mussels	$100,000	$150,000			X	X						
	Shoal mooring, South Bay	$100,000	$130,000	X	X	X	X						
	imaging flow cytobot, data interp.	$80,000	$80,000										
	in situ sensor calibration/validation	$50,000	$200,000	X	X	X		X					
	lateral sampling/monitoring, shoals	$50,000	$100,000										
	DNA based techiques, phytos	$20,000	$100,000			X	X	X					
Synthesis, incl. AF		$75,000	$150,000		X	X					X		
Data management		$40,000	$80,000	X	X	X							
HAB investigations		$50,000	$200,000			X			X		X		
Coastal export		$100,000	$200,000			X	X		X			X	
Biological indicators, DO		$50,000	$200,000		X					X	X		
Biogeochem field studies		$100,000	$300,000	X	X				X			X	
Expanded Program Coordination		$50,000	$100,000										
Exploring management alternatives		$50,000	$100,000										
	Projects subtotal	$915,000	$2,090,000										

Current anticipated for Projects in FY18: $200-300k

NOTE: Developing and implementing the NMS Observation Program (Monitoring) is among our highest priorities over the next several years.

See meeting materials from December 2016 meeting for description or access it at this Link . Also, see supplementary slides in this document

			FY18 Estimated Cost	
		Description	Low	High
Monitoring	Toxins in mussels	Continue current mussel sampling and toxin measurements. Possibly pilot the use of deployed mussels and SPATT to improve interpretability	$100,000	$150,000
	Shoal mooring, South Bay	Install a mooring on eastern shoal in South Bay. Pilot project being conducted in Mar/Apr 2017. High/Low Cost differences related to specific equipment installed and/or level of data interpretation included	$100,000	$130,000
	imaging flow cytobot, data interp.	An Imaging Flow Cytobot (IFCB) is now being used on USGS cruises. 2 instrument obtained through collaborative grant with UCSC and USGS, one for ship and one for mooring. NMS will inherit IFCBs. Funding would support a scientist to work with IFCB data and develop the program for the purposes of achieving NMS goals.	$80,000	$80,000
	in situ sensor calibration/validation	The Bay-Delta has numerous independent efforts using moorings/in situ sensors. If, through coordination and data-QA this data can be used by the NMS, it will be an enormous cost-savings. There is little to no coordination among the groups, no standard operation or interacalibration. This project would test the accuracy/precision of in situ sensors (experiments, discrete samples) and begin the development of protocols and partnerships.	$50,000	$200,000
	lateral sampling/monitoring, shoals	The broad shoals in South, Lower South Bay, San Pablo, and Suisun Bays are areas where conditions are expected to be much different than the deep channel; yet little or no observations take place there. This project will begin developing the NMS approach for shoal sampling. Low cost will focus only in South Bay and limited number of cruises; higher cost will have either more cruises or explore a second subembayment.	$50,000	$100,000
	DNA based techiques, phytos	Molecular/Genetic techniques (amplicon sequencing, qPCR) for phytoplankton analysis have the potential to achieve one or more of the following: provide more sensitive/precise measurements especially for HABs; augment the NMS phytoplankton/HAB monitoring; improve efficiency. This project will test molecular techniques alongside other current approaches (microscopy, IFCB, pigments). Low cost will involve mostly data collection; high cost will allow for comparison with other methods. If only low cost pursued in FY2018, interpretation could be funded in subsequent year budget.	$20,000	$100,000
Synthesis, incl. AF		Analyze and synthesize new or historic data collected through monitoring, including applying this to assessment framework testing, development, or refinement, specific topics to be determined. Low cost will support 0.5 FTE; high cost would support external collaborators/advisors and coordination with stakeholder process.	$75,000	$150,000
Data management		A data management plan, and initial implementation, is funded in FY17. This FY18 funding support on-going implementation of the data management plan. Low cost would support ~0.25 FTE, so base level. High cost would allow for bringing a shared staffer (0.5 FTE) on board who could be part of the long-term data management effort, and/or, for example, increased data accessibility (ability for stakeholders and external scientists to independently access and download data)	$40,000	$80,000
HAB investigations		To date, the NMS is not pursuing any studies (beyond monitoring) to understand the factors that control HABs or HAB risk in the Bay. Potential studies include those outlined in the FY17 program plan, none of which were funded.	$50,000	$200,000
Coastal export		A sizable proportion (e.g. 50% or more, depending on season) of the nutrients that enter SFB exit via the Golden Gate to the coast ocean. The fate of those nutrients, and their effects on the GoF and coastal habitats are poorly known. This project could be either a field investigation (e.g., installing a mooring in the GoF (monitoring), or a ship-based study), analysis of remote-sensed data, or modeling.	$100,000	$200,000
Biological indicators, DO		An extensive fish surveying effort has been underway in Lower South Bay, funded currently by San Jose and previously by the salt pond restoration program. The low cost project would allow for expanded interpretation of the fish data to explore DO-related questions (SFEI collaborating with UCDavis/Hobbs). The high cost project would allow include the expanded interpretation, and also allow for additional data collection, either targeted additional fish/benthos sampling, or collection of additional DO data to maximize the alignment between DO data spatial/temporal coverage and fish survey data.	$50,000	$200,000
Biogeochem field studies		To date little work has been done in the Bay to measure the rates of important processes (oxygen demond/respiration, denitrification, nitrificaiton, phytoplankton growth, etc.). This data is needed (eventually) both for mechanistic interpretations and for model calibration/validation. This project would be an initial step toward collecting some of the highest priority data, and would need to be part of a multi-year project	$100,000	$300,000
Expanded Program Coordination		Continue to support expanded stakeholder engagement, and support expanded strategic planning, fundraising, and coordination/cooperation with other agencies working in the Bay/Delta	$50,000	$100,000
Exploring management alternatives		Two major Work Elements of the Nutrient Management Strategy are Control Strategies (i.e., management alternatives) and Regulatory Approaches. Although this work is as important as the within-Bay science, they have received limited attention thus far. This project would continue some of the management alternatives work that began in FY17 (trading approaches, wetland treatment) and also develop a multi-year workplan that identifies the regulatory uncertainties and scenarios and an approach for exploring those issues to inform decisiosn.	$50,000	$100,000
	Projects subtotal		$915,000	$2,090,000

		Program Area			Work Category and/or Type of Activity						
		Nutrients	DO biomass	Phytos HABs	Monitoring: program expansion	Monitoring: Efficiency, Better Information	Mechanistic study, process, rates	biological indicators, beneficial uses	AF, protective conditions: synthesis, testing, refining	Modeling	Future scenarios
Monitoring	Toxins in mussels			X	X						
	Shoal mooring, South Bay	X	X	X	X						
	imaging flow cytobot, data interp.			X	X	X	X				
	in situ sensor calibration/validation	X	X	X		X					
	lateral sampling/monitoring, shoals	X	X	X			X				
	DNA based techiques, phytos			X	X	X					
Synthesis, incl. AF			X	X					X		
Data management		X	X	X							
HAB investigations				X			X		X		
Coastal export				X	X		X			X	
Biological indicators, DO			X					X	X		
Biogeochem field studies		X	X				X			X	
Expanded Program Coordination											
Exploring management alternatives											

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		Program Area			Work Category and/or Type of Activity						
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	lateral sampling/monitoring, shoals	X	X	X			X				
	DNA based techiques, phytos			X	X	X					
Synthesis, incl. AF			X	X					X		
Data management		X	X	X							
HAB investigations				X			X		X		
Coastal export				X	X		X			X	
Biological indicators, DO			X					X	X		
Biogeochem field studies		X	X				X			X	
Expanded Program Coordination											
Exploring management alternatives											

Install a mooring on eastern shoal in South Bay. Pilot project being conducted in Mar/Apr 2017. High/Low Cost differences related to specific equipment installed and/or level of data interpretation included

		Program Area			Work Category and/or Type of Activity						
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	lateral sampling/monitoring, shoals	X	X	X			X				
	DNA based techiques, phytos			X	X	X					
Synthesis, incl. AF			X	X					X		
Data management		X	X	X							
HAB investigations				X			X		X		
Coastal export				X	X		X			X	
Biological indicators, DO			X					X	X		
Biogeochem field studies		X	X				X			X	
Expanded Program Coordination											
Exploring management alternatives											

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Synthesis, incl. AF			X	X					X		
Data management		X	X	X							
HAB investigations				X			X		X		
Coastal export				X	X		X			X	
Biological indicators, DO			X					X	X		
Biogeochem field studies		X	X				X			X	
Expanded Program Coordination											
Exploring management alternatives											

Analyze and synthesize new or historic data collected through monitoring, including applying this to assessment framework testing, development, or refinement, specific topics to be determined. Low cost will support 0.5 FTE; high cost would support external collaborators/advisors and coordination with stakeholder process.

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	lateral sampling/monitoring, shoals	X	X	X			X				
	DNA based techiques, phytos			X	X	X					
Synthesis, incl. AF			X	X					X		
Data management		X	X	X							
HAB investigations				X			X		X		
Coastal export				X	X		X			X	
Biological indicators, DO			X					X	X		
Biogeochem field studies		X	X				X			X	
Expanded Program Coordination											
Exploring management alternatives											

A sizable proportion (e.g. 50% or more, depending on season) of the nutrients that enter SFB exit via the Golden Gate to the coast ocean. The fate of those nutrients, and their effects on the GoF and coastal habitats are poorly known. This project could be either a field investigation (e.g., installing a mooring in the GoF (monitoring), or a ship-based study), analysis of remote-sensed data, or modeling.

		Program Area			Work Category and/or Type of Activity						
		Nutrients	DO biomass	Phytos HABs	Monitoring: program expansion	Monitoring: Efficiency, Better Information	Mechanistic study, process, rates	biological indicators, beneficial uses	AF, protective conditions: synthesis, testing, refining	Modeling	Future scenarios
Monitoring	Toxins in mussels			X	X						
	Shoal mooring, South Bay	X	X	X	X						
	imaging flow cytobot, data interp.			X	X	X	X				
	in situ sensor calibration/validation	X	X	X		X					
	lateral sampling/monitoring, shoals	X	X	X			X				
	DNA based techiques, phytos			X	X	X					
Synthesis, incl. AF			X	X					X		
Data management		X	X	X							
HAB investigations				X			X		X		
Coastal export				X	X		X			X	
Biological indicators, DO			X					X	X		
Biogeochem field studies		X	X				X			X	
Expanded Program Coordination											
Exploring management alternatives											

An extensive fish surveying effort has been underway in Lower South Bay, funded currently by San Jose and previously by the salt pond restoration program. The low cost project would allow for expanded interpretation of the fish data to explore DO-related questions (SFEI collaborating with UCDavis/Hobbs). The high cost project would allow include the expanded interpretation, and also allow for additional data collection, either targeted additional fish/benthos sampling, or collection of additional DO data to maximize the alignment between DO data spatial/temporal coverage and fish survey data.

		Program Area			Work Category and/or Type of Activity						
		Nutrients	DO biomass	Phytos HABs	Monitoring: program expansion	Monitoring: Efficiency, Better Information	Mechanistic study, process, rates	biological indicators, beneficial uses	AF, protective conditions: synthesis, testing, refining	Modeling	Future scenarios
Monitoring	Toxins in mussels			X	X						
	Shoal mooring, South Bay	X	X	X	X						
	imaging flow cytobot, data interp.			X	X	X	X				
	in situ sensor calibration/validation	X	X	X		X					
	lateral sampling/monitoring, shoals	X	X	X			X				
	DNA based techiques, phytos			X	X	X					
Synthesis, incl. AF			X	X					X		
Data management		X	X	X							
HAB investigations				X			X		X		
Coastal export				X	X		X			X	
Biological indicators, DO			X					X	X		
Biogeochem field studies		X	X				X			X	
Expanded Program Coordination											
Exploring management alternatives											

To date little work has been done in the Bay to measure the rates of important processes (oxygen demond/respiration, denitrification, nitrificaiton, phytoplankton growth, etc.). This data is needed (eventually) both for mechanistic interpretations and for model calibration/validation. This project would be an initial step toward collecting some of the highest priority data, and would need to be part of a multi-year project

		Program Area			Work Category and/or Type of Activity						
		Nutrients	DO biomass	Phytos HABs	Monitoring: program expansion	Monitoring: Efficiency, Better Information	Mechanistic study, process, rates	biological indicators, beneficial uses	AF, protective conditions: synthesis, testing, refining	Modeling	Future scenarios
Monitoring	Toxins in mussels			X	X						
	Shoal mooring, South Bay	X	X	X	X						
	imaging flow cytobot, data interp.			X	X	X	X				
	in situ sensor calibration/validation	X	X	X		X					
	lateral sampling/monitoring, shoals	X	X	X			X				
	DNA based techiques, phytos			X	X	X					
Synthesis, incl. AF			X	X					X		
Data management		X	X	X							
HAB investigations				X			X		X		
Coastal export				X	X		X			X	
Biological indicators, DO			X					X	X		
Biogeochem field studies		X	X				X			X	
Expanded Program Coordination											
Exploring management alternatives											

Continue to support expanded stakeholder engagement, and support expanded strategic planning, fundraising, and coordination/cooperation with other agencies working in the Bay/Delta

March 13, 2017

Richard Looker
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

VIA EMAIL: rlooker@waterboards.ca.gov

Subject: BACWA comments on proposed revisions to the Clean Water Act Section 303(d) List of Impaired Water Bodies in the San Francisco Bay Basin

Dear Mr. Looker:

The Bay Area Clean Water Agencies (BACWA) appreciates the opportunity to comment on the proposed revisions to the Clean Water Act Section 303(d) List of Impaired Water bodies in the San Francisco Bay Region. BACWA is a joint powers agency whose members own and operate publicly-owned treatment works (POTWs) and sanitary sewer systems that collectively provide sanitary services to over 7.1 million people in the nine-county San Francisco Bay Area. BACWA. Members are public agencies, governed by elected officials and managed by professionals who protect the environment and public health. BACWA supports the 303(d) review process, and would like to thank the San Francisco Regional Water Quality Control Board (Regional Water Board) for delisting indicator bacteria for eight San Francisco Bay Area beaches.

BACWA understands that the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List does not include a provision for retiring data when considering which pollutants to add to the list. However, the data that are used to generate the new proposed 303(d) listings are generally at least ten years old. For example, the new heptachlor listing for the South San Francisco Bay is based on fish tissue and water column concentrations from a data set that ranges from 1993 to 2008. POTWs began their industrial pretreatment programs in 1989, and since then there has been a marked improvement in effluent quality. The general trend for priority pollutants, and especially industrial pollutants, in our Region has been decreasing, generally to below the limit of detection. Furthermore, a recent search of the Department of Pesticide Regulation database shows that heptachlor is not an active ingredient registered in any product at this time. Since the purpose of the 303(d) list is ostensibly to identify contaminants that will be targeted for management action, it would make sense to use data that is no older than a decade.

BACWA's primary concern with the proposed 303(d) List update is the new toxicity listing for each segment of the San Francisco Bay. Toxicity is an effect, rather than a pollutant, so it does not make sense to add it to a list that is used to identify pollutants for which Total Maximum Daily Loads are to be developed. Toxicity itself cannot be given a waste load allocation. The purpose of the toxicity test is to provide a diagnostic tool for the identification of a toxicant. For example, if further investigations show that pesticides are causing toxicity, then the pesticides themselves should be listed and controlled, not the toxic effect.

The Diazinon and Pesticide-Related Toxicity in San Francisco Bay Area Urban Creeks TMDL is an excellent example of how toxicity test results can be a first step in investigating and addressing the cause of an observed toxic effect. In the 1990s, high observed toxicity was linked to pesticides. The Stormwater Municipal Regional Permit (R2-2015-0049) includes a provision for addressing pesticide-related toxicity. Regional Water Board staff have worked with POTWs and Stormwater agencies through the Bay Area Pollution Prevention Group to develop outreach programs, educate the public about responsible pesticide use, and to urge regulators at the EPA and the California Department of Pesticide Regulation (DPR) to consider aquatic toxicity and paths to receiving waters when registering pesticides. The linkage of toxicity to pesticides has also spurred further investigations through the RMP, the Surface Water Ambient Monitoring Program, and the DPR. Without a direct linkage between observed toxicity and the toxicant, none of these actions would have been possible.

Observed toxicity effect may also be unrelated to the presence of a toxicant. The data used to generate the listings in each segment of the San Francisco Bay showed significant toxicity in sediments, but very little toxicity in the water column. The 10-day survival toxicity test with the amphipod *Eohaustorius estuarius* is the primary sediment test protocol used in the Regional Monitoring Program and the State Water Resources Control Board's Sediment Quality Objective (SQO) program. In 2014, the Regional Monitoring Program conducted a study[1] looking at the response of *E. estuarius* to kaolin clay particles in sentiment. The results of the study showed that clay concentrations in the sediment reduced the survival rates of this species, and the effect was particularly pronounced in larger organisms. Therefore, it is probable that at least part of the observed toxic effect observed was due to interference by clay particles in the sediment itself, rather than a chemical toxicant.

This example illustrates how toxicity itself is a problematic parameter to list. Without knowledge of the toxicant, or whether the observed toxic effect is in fact due to a toxic contaminant rather than interference such as kaolin clay, it is impossible to develop a control

[1] *The effects of kaolin clay on the amphipod* Eohaustorius estuaries*,* Brian Anderson, Bryn Phillips, and Jennifer Voorhees Department of Environmental Toxicology, University of California, Davis May 5, 2015 SFEI Report No.: 755, See http://www.sfei.org/sites/default/files/biblio_files/755_Anderson%20et%20al_Clay%20Effects_2015%20Final%20Report.pdf

strategy. Additionally, designating the entire San Francisco Bay as toxic has a significant impact on public perception, since it is difficult to communicate to the public the nuances and uncertainties of the toxicity test results. As such, BACWA strongly recommends dropping the toxicity listing for San Francisco Bay segments pending further investigation into the cause of the observed toxic effect.

Respectfully Submitted,

David R. Williams

David R. Williams
Executive Director
Bay Area Clean Water Agencies

cc: BACWA Board
Eric Dunlavey, BACWA Permits Committee Chair

February 27, 2017

Jessica Watkins
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

VIA EMAIL: jwatkins@waterboards.ca.gov

Subject: Comments on Tentative Order: NPDES Permit No. CA0038776, Regional Water Quality Control Board Order No. R2-2017-00XX for City of Pacifica Calera Creek Water Recycling Plant and its wastewater collection system

Dear Ms. Watkins:

The Bay Area Clean Water Agencies (BACWA) appreciates the opportunity to comment on the Tentative Order (TO) issued to the City of Pacifica Calera Creek Water Recycling Plant and its wastewater collection system (Pacifica). BACWA is a joint powers agency whose members own and operate publicly-owned treatment works (POTWs) and sanitary sewer systems that collectively provide sanitary services to over 7.1 million people in the nine-county San Francisco Bay Area. BACWA members are public agencies, governed by elected officials and managed by professionals who protect the environment and public health.

BACWA's comments pertain to the new numeric chronic whole effluent toxicity (WET) limits in Pacifica's Tentative Order. Pacifica's current permit contains narrative toxicity limits, and numeric triggers that if exceeded lead to accelerated monitoring as well as a toxicity investigation/reduction evaluation (TIE/TRE). BACWA is extremely concerned about the imposition of chronic toxicity limits in this TO, particularly since at 1.0 TUc as an average monthly effluent limit (AMEL), and 1.8 TUc as a maximum daily effluent limit (MDEL), these limits are within the natural variability of the test. Toxicity testing is best deployed as a monitoring tool to observe if there is toxicity due to an unknown contaminant that is not being monitored, rather than a metric that leads to a violation if exceeded, even before any investigations have been conducted.

Toxicity testing measures a biological response, rather than directly measuring the presence of a toxicant. While biological inhibition may occur in response to a toxicant, it can also occur due to problems with the organisms' food, or with the health of the organisms themselves. It is particularly difficult to investigate the cause of a toxicity result below approximately 2 TUc,

because the results are typically intermittent and can't be associated with any particular activity or discharge.

Because of the lower validity of WET data when measured at low levels, over the past seven years, several dischargers in the San Francisco Bay Region have exceeded their triggers and were required to conduct TREs (see Attachment 1). Of the six shallow water dischargers with low toxicity triggers who have conducted TREs in the past five years, only one has identified a probable toxicant. The other TREs were either inconclusive or showed pathogen interference was the cause of the observed toxic effect. Pacifica's test species, *Ceriodaphnia dubia*, in particular, has been problematic, as it is vulnerable to epibiont[1] pathogenicity for dischargers such as the San Jose/Santa Clara Regional Wastewater Facility, and the City of Palo Alto. The total cost of these TRE efforts has been upwards of $1.3 million for this seven-year period.

Besides problems with interference, there has been significant variability observed between laboratories measuring toxicity in the same effluent sample. Between August 2009 and May 2010, San Jose sent fifteen split samples to different labs for chronic toxicity testing using *Ceriodaphnia* (see Attachment 2). In four of these fifteen occasions, the results from the two labs were sufficiently different that one of the results would have contributed to a trigger exceedance and the other would not. In two cases, one lab showed relatively high levels of toxic effect (>5 TUc) while the other showed none.

This laboratory variability, particularly with *Ceriodaphnia*, was also observed by the Southern California Coastal Water Research Program in their recent interlaboratory study[2]. Results from this study are provided in Figure 1, below, where the *Ceriodaphnia* reproduction test reproducibility was poor, often showing high toxicity (high percent effect) in the blank samples, and low toxicity (low percent effect) in the copper spiked samples.

[1] See San Jose/Santa Clara RWF's Annual Report, pg. 21, see https://bacwa.org/document/san-jose-annual-report-2016/

[2] Stormwater Monitoring Coalition: Toxicity Testing Laboratory Guidance Document, Southern California Coastal Water Research Program.
http://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/956_StrmWtrMonitCoalitToxTestingLabGuid.pdf

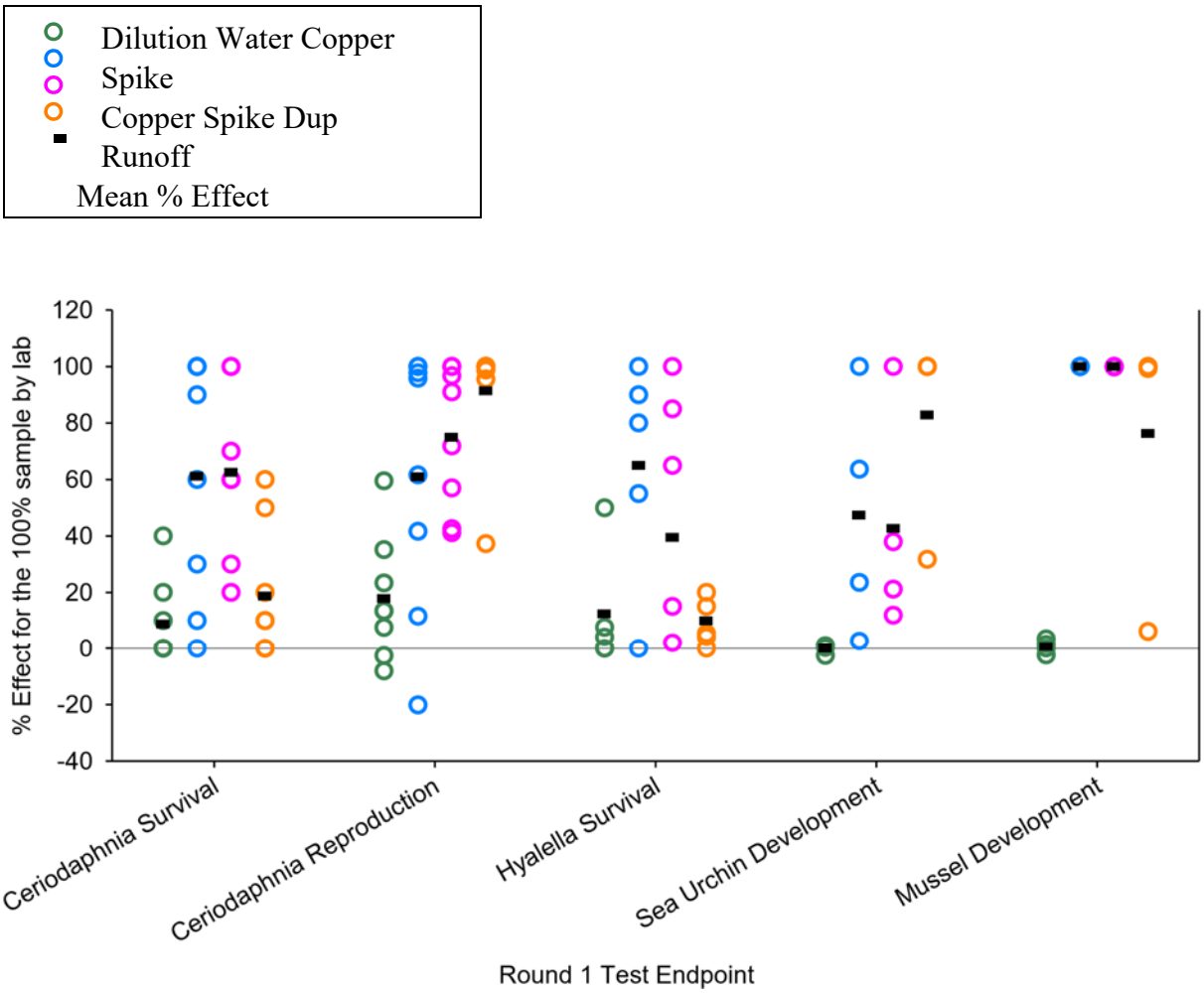


Figure 1. Toxicity test response (% effect) of the various endpoints to full strength (no dilution or 100%) samples during Round 1 of the SMC intercalibration study. Each symbol represents the result from a single laboratory[2]

In light of these known issues with the chronic WET test, and with the *Ceriodaphnia dubia* test species specifically, BACWA's recommendations for implementing toxicity limits in Pacifica's TO are below.

1. **BACWA recommends that the Regional Water Board consider alternatives to effluent limits for investigating low levels of toxicity**

The Central Valley Regional Water Board has allowed dischargers under its jurisdiction to initiate a study of low level toxicity. Dischargers may participate in this study in lieu of pursuing a TRE after observing such low-level toxicity. From the Central Valley Regional Water Board's 2017/18 Priorities:

> *Over the past five years staff has noticed an overall decrease in the magnitude of toxicity reported and a potential increase in reoccurring but intermittent low level toxicity. As a result of the toxicity being intermittent and occurring at low levels, several Dischargers have conducted multiple year studies, accruing heavy costs and in many cases not identifying the cause. In FY 17/18 staff would continue working with stakeholders to better understand chronic toxicity with a focus on low level chronic toxicity. In addition, staff will work with industry experts and the State Water Board to develop a chronic toxicity guidance document.*

Rather than imposing low toxicity limits, BACWA recommends that the San Francisco Bay Regional Water Board consider working with its counterpart in the Central Valley to develop guidance for investigating low level toxicity.

2. **If effluent limits are necessary, the Regional Water Board should establish a minimum level for chronic toxicity. Results below laboratory reporting levels should not be deemed as violations.**

The AMEL of 1.0 TUc is equal to the Method Detection Limit (MDL) of the WET test, since lower toxicity cannot be measured. The variability in WET test results increases as the toxicity approaches the MDL. In contrast to chemical effluent limits, there are no Minimum Levels (MLs) that have been established for chronic toxicity. If there were, results in the 1.0 to 1.8 TUc range would probably be below a likely ML/Reporting Level (RL), making them Detected Not Quantified (DNQ) values, and not suitable for compliance evaluation purposes. The Regional Water Board or EPA should establish chronic toxicity MLs before imposing numeric chronic toxicity effluent limits, particularly a limit set equal to the MDL. Additionally, laboratories should be given guidance for establishing RLs for the WET test.

Once these analytical measures are in place, compliance determination for chronic toxicity limits should be consistent with that for other permitted constituents. Specifically, reporting and enforcement requirements for toxicity should be equivalent with those listed in Attachment E, Section VIII.B.6:

> *For purposes of reporting and administrative enforcement by the Regional Water Board and State Water Board, the Discharger shall be deemed out of compliance with effluent*

limitations if the concentration in the monitoring sample is greater than the effluent limitation and greater than or equal to the RL.

3. BACWA recommends that the maximum daily effluent limit of 1.8 TUc be removed

Due to the variability inherent in toxicity testing, declaring a violation based on a single test result without confirmation sampling is unwarranted. Single sample exceedances that are not part of a pattern of toxicity should be viewed with suspicion, as they may be due to transient causes unrelated to chronic toxicity, especially when they are below 2 TUc. The appropriate response to a WET test indicating the presence of toxicity is to investigate the cause, starting with follow up testing to confirm the initial result.

Exceedance of the effects level identified in the proposed MDEL will trigger accelerated monitoring whether or not it is an enforceable limit. This response is the result that the Regional Water Board and EPA want to encourage, so there is no additional benefit from making it a violation, while Pacifica would potentially suffer an enforcement action or a citizen lawsuit for an event over which it has no control.

4. BACWA recommends that Pacifica be given a choice of test species

On page F-26, the TO states:

The Discharger's August 2016 chronic toxicity screening report found green algae (Selenastrum capricornutum) to be the most sensitive species (2 TUc); however, tests conducted in May and June 2015 using the water flea (Ceriodaphnia dubia) exhibited more chronic toxicity (10.6 and 4.3 TUc). Thus, this Order retains the requirement to use the water flea (Ceriodaphnia dubia) for chronic toxicity tests because it is the most sensitive species.

This reasoning does not make sense. It is unknown whether *Selenastrum* would have exhibited toxicity during the May and June toxicity events, since this alternative test was not run at that time. Furthermore, Pacifica did a TIE which concluded that biological contamination in the UV channel was the likely cause of the observed toxic effect, which may not have impacted *Selenastrum* as it did *Ceriodaphnia*. If Pacifica were given a choice of test species between *Selenastrum* and *Ceriodaphnia*, it could determine which test had less variability in its effluent, yielded consistent, actionable results, and avoid spurious violations.

5. Violations should not continue to accrue during Toxicity Identification Evaluations/Toxicity Reduction Evaluations

If Pacifica can demonstrate to the Regional Water Board that it is engaged in a good-faith effort to investigate the cause of any apparent toxicity, the permit should protect them from accruing any additional violations that would result from exceedance of permit limits during accelerated monitoring. Not providing this protection leaves the discharger vulnerable to citizen lawsuits, even as it is doing all that it can to address the cause of the violation.

6. Language about episodic toxicity and enforcement should be reinstated.

The current permit includes the following requirement (Attachment E, Section V.B.3.h.i):

> *The Regional Water Board recognizes that chronic toxicity may be episodic and identification of causes of and reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement by the Regional Water Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.*

This section is no less applicable with effluent limits than with triggers, and should be restored.

BACWA appreciates the opportunity to comment on this Tentative Order and thanks you for considering our concerns.

Respectfully Submitted,

David R. Williams

David R. Williams
Executive Director
Bay Area Clean Water Agencies

cc: BACWA Board
Pedro Mendoza, City of Pacifica
Denise Conners, Larry Walker and Associates
Eric Dunlavey, BACWA Permits Committee Chair

Summary of Chronic TREs by Region 2 Dischargers

Shallow Dischargers

Discharger	Timeframe	Number of Samples	Number between 1 and 2 Tuc	Percentage between 1 and 2 Tuc	Number ≥ 2 Tuc	Percentage ≥ 2 Tuc	TRE Notes
Palo Alto	June 2009 - December 2014	72	5	7%	10	14%	TRE Feb-Jul 2012, concluded cause was pathogen interference. Cost approximately **$100K**.
San Jose	July 2009 - December 2016	127	15	12%	12	9%	TRE/TIEs Oct 2009 - June 2010, and June 2013- August 2014, both inconclusive. Investigations in 2016 confirmed presence of epibionts. Total cost above **$260K**.
Sunnyvale	January 2010 - December 2014	85	4 (survival) 14 (Growth)	5% (survival) 16% (growth)	2 (survival) 12 (Growth)	2% (survival) 14% (growth)	Three successive TREs, all inconclusive - ammonia, unidentified organic and polymer, respectively, were suspected. Total cost approximately **$750K**.
Novato	October 2010 - October 2014	25	2	8%	13	52%	TRE Feb 2011 - May 2012, found pathogen interference. Total cost approximately **$100K.**
Sonoma	March 2006 - January 2015	53	6	11%	9	17%	Ongoing TIE indicates that zinc may be toxicant. Total cost **$73K.**
Las Gallinas	April 2009 - December 2014	32	19 (survival) 20 (Growth)	59% (survival) 62% (growth)	1 (survival) 2 (Growth)	3% (survival) 6% (growth)	TIE work since 2011 is inconclusive, but pyrethroids are suspected. Total cost approximately **$50K**.

Deep Water Discharger

Discharger	Timeframe	Number of Samples	Number between 10 and 20 Tuc	Percentage between 10 and 20 Tuc	Number ≥ 20 Tuc	Percentage ≥ 20 Tuc	TRE Notes
Vallejo	January 2016-June 2016	7	3	43%	0	0%	Addition of zeolite showed toxicity caused by ammonia. District received permission to conduct toxicity testing with zeolite in future. Total cost approximately **$60K**.

San Jose-Santa Clara Regional Wastewater Facility

Chronic Toxicity Test Results 2009-Dec 2014 **Test Species: *Ceriodaphnia dubia (May 2009- October 2014 Permit)***

Start Date	NOEC (Survival)	TUc (Reproduction)	NOEC % (Reproduction)	EC or IC 25 (Reproduction)	TST (Reproduction)
7/18/09	100%	33.5	<32% effluent	2.99% effluent	Fail 67.7%
8/1/09	100%	<1	100% effluent	>100% effluent	Pass
8/17/2009 (TSI)	100%	1.17	100% effluent	85.4% effluent	Fail 25%
8/19/2009 (PERL)	100%	2.49	56% effluent	40.2% effluent	Fail 36%
9/14/2009 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
9/15/2009 (ESD)	100%	<1	100% effluent	>100% effluent	Pass
10/4/2009 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
10/4/2009 (ESD)	100%	<1	100% effluent	>100% effluent	Pass
11/7/2009 (ESD)	100%	<1	100% effluent	>100% effluent	Pass
11/28/2009 (TSI)	100%	<1	100% effluent	>100% effluent	Pass
11/29/2009 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
12/18/2009 (ESD)	100%	5.78	<32% effluent	17.3% effluent	Fail 41.9%
12/20/2009 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
1/9/2010 (TSI)	100%	<1	100% effluent	>100% effluent	Pass
1/10/2010 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
1/20/2010 (TSI)	100%	<1	100% effluent	>100% effluent	Pass
1/21/2010 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
1/30/2010 (ESD)	100%	<1	100% effluent	>100% effluent	Pass
1/31/2010 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
2/8/2010 (AS)	75%	5.2	<32% effluent	19.1% effluent	Fail 75.5%
2/8/2010 (ESD)	100%	8.5	<32% effluent	11.8% effluent	Fail 40.3%
2/26/2010 (AS)	100%	<1*	100% effluent	>100% effluent	Pass
2/27/2010 (ESD)	100%	7.5	<32% effluent	13.3% effluent	Fail 70.7%
3/13/2010 (AS)	100%	<1	100% effluent	>100% effluent	Pass
3/13/2010 (ESD)	100%	<1	100% effluent	>100% effluent	Pass
3/27/2010 (ESD)	100%	<1	100% effluent	>100% effluent	Pass
3/28/2010 (AS)	100%	<1	100% effluent	>100% effluent	Pass
4/17/2010 (ESD)	100%	<1	100% effluent	>100% effluent	Fail 16.9%
4/17/2010 (AS)	100%	No Result**	NA	NA	NA
5/1/2010 (ESD)	100%	<1	100% effluent	>100% effluent	Pass

October 2009-June 2010: SJSC conducted TRE/TIE investigations. TIE costs estimated ~ $200,000 - 250,000. Toxicity Identification Evaluation (TIE) manipulations were performed on samples from two confirmed toxic events in February with support from Aqua-Science Laboratories in Davis, CA. The TIE studies could only confirm that toxicity was present, was only slightly ameliorated by EDTA (not a metal or only slight effect from a metal), was more ameliorated by Solid Phase Extraction (SPE) columns (likely organic), was substantially ameliorated by Organophosphate (OP) enzyme and piperonyl butoxide (PBO) (indicating possibility of an OP pesticide or some organic compound that behaves similarly), was exacerbated by filtration (not particle-bound) and was exacerbated by sodium thiosulfate (STS) (not an oxidizer). Unfortunately, attempts to elute and recover the toxicity captured on SPE columns were unsuccessful. For this reason, the TIE investigations were of limited value.

5/2/2010 (AS)	100%	1.8	42% effluent	55.6% effluent	Fail 24%
5/2/2010 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
5/21/2010 (ESD)	100%	<1	100% effluent	>100% effluent	Pass
5/21/2010 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
6/14/10	100%	<1	100% effluent	>100% effluent	Pass
6/26/10	100%	<1	100% effluent	>100% effluent	Pass
7/17/10	100%	<1	100% effluent	>100% effluent	Pass
8/13/10	100%	<1	100% effluent	>100% effluent	Pass
9/19/10	100%	10.4	6.25% effluent	9.63% effluent	Fail 84.8%
10/4/10	100%	<1	100% effluent	>100% effluent	Pass
10/24/10	100%	<1	100% effluent	>100% effluent	Pass
11/13/10	100%	<1	100% effluent	>100% effluent	Pass
12/11/10	100%	No Result**	100% effluent	>100% effluent	Pass
12/19/2010 (TSI)	100%	<1	100% effluent	>100% effluent	Pass
1/10/11	100%	<1	100% effluent	>100% effluent	Pass
2/21/11	100%	<1	100% effluent	>100% effluent	Pass
3/7/11	100%	<1	100% effluent	>100% effluent	Pass
4/21/11	100%	<1	100% effluent	>100% effluent	Pass
5/10/11	100%	5.46	25% effluent	18.3% effluent	Fail 51.8%
6/9/11	100%	<1	100% effluent	>100% effluent	Pass
6/21/11	100%	1.4	50% effluent	71% effluent	Fail 34.6%
7/23/11	100%	<1	100% effluent	>100% effluent	Pass
8/8/11	100%	<1	100% effluent	>100% effluent	Pass
8/22/11	100%	1.7	25% effluent	58.9% effluent	Fail 62.9%
9/13/11	100%	<1	100% effluent	>100% effluent	Pass
10/3/11	100%	<1	100% effluent	>100% effluent	Pass
11/2/11	100%	<1	100% effluent	>100% effluent	Pass
12/5/11	100%	<1	100% effluent	>100% effluent	Pass
1/10/12	100%	1.6	50% effluent	61.7% effluent	Fail 40.8%
2/6/12	100%	<1	100% effluent	>100% effluent	Pass
3/5/12	100%	<1	100% effluent	>100% effluent	Pass
4/16/12	100%	<1	100% effluent	>100% effluent	Pass
5/7/12	100%	<1	100% effluent	>100% effluent	Pass

6/11/12	100%	<1	100% effluent	>100% effluent	Pass
7/16/12	100%	<1	100% effluent	>100% effluent	Pass
8/13/12	100%	<1	100% effluent	>100% effluent	Pass
9/11/12	100%	<1	100% effluent	>100% effluent	Pass
10/16/12	100%	4.1	12.5% effluent	24.5% effluent	Fail 24.5%
11/2/12	100%	<1	100% effluent	>100% effluent	Pass
11/8/12	100%	<1	100% effluent	>100% effluent	Pass
12/3/12	100%	<1	100% effluent	>100% effluent	Pass
1/19/13	100%	1.7	25% effluent	58.1% effluent	Fail 63.3%
2/4/13	100%	<1	100% effluent	>100% effluent	Pass
3/4/13	100%	10.1	6.25% effluent	9.88% effluent	Fail 44.2%
4/2/13	100%	<1	100% effluent	>100% effluent	Pass
4/12/13	100%	1.2	100% effluent	84.5% effluent	Fail 27%
5/6/13	100%	2.3	50 % effluent	42.7% effluent	Fail 67.6%
6/10/13	100%	<1	100% effluent	>100% effluent	Pass
7/12/13	100%	<1	100% effluent	>100% effluent	Pass
8/1/13	100%	1.1	50% effluent	90.7% effluent	Fail 27.1%
8/5/13	100%	<1	100% effluent	>100% effluent	Pass
9/12/13	100%	2.9	25% effluent	34.6% effluent	Fail
10/4/13	100%	<1	100% effluent	>100% effluent	Pass
11/19/13	100%	1.2	50% effluent	86.1% effluent	Fail
12/9/13	100%	<1	100% effluent	>100% effluent	Pass
1/10/14	100%	<1	100% effluent	>100% effluent	Pass
2/3/14	100%	1.6	100% effluent	>100% effluent	Fail
3/3/14	100%	<1	100% effluent	>100% effluent	Pass
4/8/14	100%	<1	100% effluent	>100% effluent	Pass
5/5/14	100%	<1	100% effluent	>100% effluent	Pass
6/9/14	100%	<1	100% effluent	>100% effluent	Pass
7/14/14	100%	<1	100% effluent	>100% effluent	Pass
8/11/14	100%	<1	100% effluent	>100% effluent	Pass
9/12/14	100%	<1	100% effluent	>100% effluent	Pass
10/3/14	100%	<1	100% effluent	>100% effluent	Pass
11/3/14	100%	<1	100% effluent	>100% effluent	Pass
12/8/14	100%	<1	100% effluent	>100% effluent	Pass

June 2013-August 2014: TRE/TIE initiated in response to permit triggers being exceeded. TIE studies were unsuccessful in confirming toxicity or identifying potential toxicants. The frequency and magnitude of the observed paralysis (a sub-chronic effect) in RWF effluent have also declined.

Note: SJSC uses a TRE/TIE trigger of 2 TUc calculated as 100/EC50 or IC50 or three sample median of >1 as recommended in the 2009 TRE Workplan submitted to Regional Water Board

* <1 - This result was rejected due to an anomolous dose response inversion.

** Test Failed Quality Control

Summary of Proposed Toxicity Provisions

April 2017

Introduction

The State Water Resources Control Board (State Water Board) is proposing a statewide plan to establish aquatic toxicity water quality objectives and a statistical approach for assessing the toxicity of effluents and receiving waters (proposed Provisions). The proposed Provisions will be included in the statewide Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries (ISWEBE). The proposed Provisions include specific requirements for toxicity monitoring, assessment, and control.

Current Toxicity Policy

Existing statewide toxicity control provisions are found within chapter four of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP). The SIP establishes the minimum chronic toxicity control requirements for implementing the narrative toxicity objectives for aquatic life protection in the Regional Water Quality Control Board (Regional Water Board) Basin Plans. Currently, the SIP lacks implementation provisions for toxicity control for National Pollutant Discharge Elimination System (NPDES) permits. Most critically, the appropriate form and implementation of toxicity limits are not clearly defined. As a result, Regional Water Boards have not established toxicity limits in permits consistently

Purpose of the Proposed Provisions

The proposed Provisions include a consistent statewide program for monitoring and assessing toxicity in both effluent and surface waters.

Applicability & Interaction with the Basin Plans

The proposed Provisions apply to all waters designated to protect aquatic life beneficial uses, including but are not limited to, warm freshwater habitat (WARM), cold freshwater habitat (COLD), wildlife habitat (WILD), estuarine habitat (EST), commercial and sport fishing (COMM), marine habitat (MAR), inland saline water habitat (SAL), and wetland habitat (WET).

The implementation requirement contained within the proposed Provisions will apply to all Publicly Owned Treatment Works (POTWs) and all other Non-Storm water NPDES Dischargers (e.g. traditional point sources, such as refineries). In addition, if Regional or State Water Board permits require storm water or nonpoint source dischargers to monitor for toxicity with test methods described in the proposed Provisions, then those dischargers will be required to analyze the toxicity test data using the Test of Significant Toxicity (TST).

The proposed Provisions would supersede the Basin Plans regarding the methods of assessing compliance with toxicity water quality objectives and interpretation of toxicity test results.

The proposed Provisions do not supersede narrative toxicity water quality objectives, chemical specific limits, or site-specific water quality objectives in the Basin Plans.

Proposed Objectives

The toxicity water quality objectives are stated in the form of a null hypothesis. Attainment of the water quality objective is demonstrated by rejecting the null hypothesis.

In general terms, the null hypothesis is the following statement: the ambient receiving water is toxic because the test organism adverse response in the ambient receiving water sample is significantly different from the test organism response in the control water sample.

Specifically, for chronic toxicity the difference between the organism response in the test water must be greater than or equal to 25 percent compared to the test organism response in the control water. For acute toxicity, the difference between the organism response in the test water must be greater than or equal to 20 percent compared to the test organism response in the control water.

Test of Significant Toxicity (TST)

The TST is a statistical approach for analyzing toxicity test data and assessing whether an effluent or site water is truly toxic. The proposed Provisions require that toxicity test results be analyzed using the TST method to determine compliance with the objectives. U.S. EPA supports the TST approach as a statistical option for permitting authorities to use when analyzing toxicity test data. The TST approach was developed using extensive data and research, incorporates the latest statistical understanding, and has been subjected to extensive external scientific peer review. It does not alter existing toxicity testing methods. The TST approach can be consistently applied in a cost effective manner across a variety of California regulatory programs and will be implemented in accordance with the U.S. EPA National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (June 2010), which can be found at:
https://www3.epa.gov/npdes/pubs/wet_final_tst_implementation2010.pdf

Acceptable Toxicity Test Methods

For assessing compliance with the water quality objectives, dischargers are required to use U.S. EPA approved methods and species. Species must be suitable for TST analysis.

Implementation for Non-storm water NPDES Dischargers

A. Species Sensitivity Screening

Species sensitivity screening includes four sets of tests conducted within one year. For chronic toxicity, each set of tests must consist of at least one vertebrate, one invertebrate and one aquatic plant. For acute toxicity, each set of tests must consist of at least one vertebrate and one invertebrate.

In general, the permitting authority should select the species exhibiting the highest percent effect at the instream waste concentration (IWC) as the most sensitive species.

B. Reasonable Potential

POTWs that are permitted to discharge at or above 5 million gallons per day (MGD) are not required to perform a reasonable potential analysis for chronic toxicity. POTWs of this size must conduct routine monitoring for chronic toxicity.

All other non-storm water NPDES dischargers must conduct reasonable potential analysis for chronic toxicity

POTWs do not need to conduct a reasonable potential analysis for acute toxicity, unless the Permitting Authority in its discretion requires the analysis. . . All other NPDES dischargers must conduct a reasonable potential analysis for acute toxicity.

C. Reasonable Potential Analysis

A discharge has reasonable potential to cause or contribute to an excursion above the chronic or acute toxicity water quality objectives, if any of the chronic toxicity tests results in a "fail" at the IWC, or if any of the toxicity tests have a percent effect at the IWC greater than 10 percent.

Furthermore, other information or data, including, but not limited to, fish die off observation, lack of available dilution, or existing data on toxic pollutants, may be used by the permitting authority to determine there is reasonable potential.

D. Routing Monitoring

For chronic toxicity testing, all Non-Storm water NPDES dischargers that have reasonable potential and are authorized to discharge at or greater than 5 MGD, and all POTWS authorized to discharge at or greater than 5 MGD must conduct monthly routine monitoring for any month having at least 15 days of continuous discharge.

For chronic toxicity testing, Non-Storm water NPDES dischargers that demonstrate reasonable potential and are authorized to discharge at a rate less than 5 MGD must conduct quarterly routine monitoring for any quarter having at least 15 days of continuous discharge.

If a discharger has a routine monitoring frequency of less than monthly and a single violation occurs within any month, the discharger is required to conduct an additional routine monitoring test in the following month.

The proposed Provisions do allow the Permitting Authority to increase or decrease the routine monitoring frequencies under certain conditions.

For acute toxicity testing, the Permitting Authority will determine the monitoring frequency, which shall be no less than annual.

E. Effluent Limitations

Only toxicity tests that use the most sensitive species and analyze the IWC using the TST shall be used to determine compliance with the Maximum Daily Effluent Limitations (MDEL) and Median Monthly Effluent Limitations (MMEL).

F. MDEL

For chronic toxicity, a violation of the MDEL occurs when the toxicity test results in a "fail" and the percent effect for the survival endpoint is greater than or equal to 50 percent at the IWC.

If there is no survival endpoint for the species tested (e.g. plant species), then a "fail" with a 50 percent or greater effect for any endpoint at the IWC results in a MDEL violation.

If the test species is *Ceriodaphnia dubia*, a 50 percent or greater effect in the survival endpoint at the IWC results in a MDEL violation.

For acute toxicity, a violation of the MDEL occurs when the toxicity test results in a "fail" and the percent effect for the survival endpoint is greater than or equal to 50 percent at the IWC.

G. MMEL

For both chronic and acute toxicity, if any test results in a "fail" at the IWC, then the discharger must initiate two additional toxicity tests within the same calendar month. If either of these additional tests results in a "fail" at the IWC then there is a violation of the MMEL.

H. Toxicity Reduction Evaluation

A TRE shall be initiated when there are two or more violations within the same month or in consecutive months. The combination of violations may be acute and/or chronic and may be any combination of two or more MDEL or MMEL violations.

Storm water and Nonpoint NPDES Dischargers

Storm water and nonpoint source dischargers with existing toxicity requirements with test methods described in the Provisions will be required to use the TST statistical approach. The Permitting Authority will be required to send letters to all affected storm water and nonpoint dischargers to notify them that they must use the TST statistical analysis within one year of receipt of the letter. In addition, any storm water or nonpoint source dischargers that are required to conduct toxicity testing in the future with test methods described in the proposed Provisions will need to use the TST.

Small Disadvantaged Communities and Insignificant Discharges

The Permitting Authority may make a finding that a POTW serving a small disadvantaged community or an insignificant Non-Storm water NPDES discharger has no reasonable potential to cause or contribute to an exceedance of the toxicity water quality objective. If the Permitting Authority makes this finding they may exempt the discharger from some of the requirements in the Provisions.

Schedule for the Proposed Provisions

Task Name	Target Date
Outreach	April 11, 12, 24th, 2017
Public Comment Period	June 6 – July 21, 2017
Workshop	June 15, 2017
Hearing	July 5, 2017
Board Consideration	October 17, 2017

BACWA Toxicity Workshop

Draft Agenda

1. Toxicity 101
    a. How are toxicity tests conducted?
    b. How is toxicity evaluated using the test result data?
        i. Point Estimates
        ii. TST
    c. How to conduct a TRE
    d. Species screening

2. Draft State Toxicity Provisions
    a. Numeric Limits – MDEL and MMEL
    b. Reasonable Potential
    c. Monitoring Frequency

3. Tips and Tricks for conducting toxicity testing (Panel Discussion).
   Example topics:
    a. How to choose a lab
    b. How to negotiate a permit
    c. Cost vs. data quality tradeoffs
    d. What can go wrong and how to avoid it

DRAFT BACWA - BAAQMD Workshop Summary: Impact of Proposed Rule 11-18 on Bay Area Wastewater Treatment Facilities

Date: March 23, 2017

Time: 2 - 3 PM

Location: BAAQMD Office - 375 Beale Street, San Francisco, CA 94105

Attendees: Jack Broadbent (Executive Officer), Jaime Williams, and Eric Stevenson (BAAQMD) Dave Williams and Lorien Fono (BACWA); Laura Pagano and Nohemy Revilla (SFPUC); Alicia Chakrabarti (EBMUD); Lori Schectel, Randy Schmidt, and Rita Cheng (CCCSD); Courtney Mizutani (Mizutani Environmental), Sarah Deslauriers (Carollo) Via phone conference: Ken Davies and Jason Nettleton (San Jose), Stephanie Smallwood (Sunnyvale), and Amanda Roa (Delta Diablo)

1) BACWA was introduced as representing 46 Publicly Owned Treatment Works (POTW) member agencies across the Bay Area. All are public agencies dedicated to protecting public health and the environment.

2) Discussed that the BAAQMD database emissions factors do not reflect current POTW influent concentrations or influent flow. BACWA recommended POTWs provide current information to BAAQMD in order to develop more accurate estimates of emissions. BAAQMD offered to push facilities currently in Phase 1, into Phase 2 of the implementation schedule, to provide enough time to update the emission factors for POTWs and ensure accuracy. BACWA will work and meet directly with BAAQMD staff to do so (to begin the updates for facilities that are currently assigned to Phase 1 first). BACWA offered to develop a proposal over the next two months in support of working together with BAAQMD staff to update the emission factors for toxic air contaminants (TACs) from POTW sources, to also address the approach for sampling sources and the overall timeline for the effort. BAAQMD staff will develop and deliver a letter to BACWA documenting this agreement to update the model inputs and build into the implementation schedule the opportunity to work collaboratively to update emissions factors.

3) Cost impacts to ratepayers were discussed, as well as timing of implementation. BAAQMD staff recognized that as public agencies, POTWs are responsible to public boards and ratepayers, and that cost-effectiveness of TBARCT implementation must be considered. SFPUC described their 30-year Master Planning process and their status for implementation of the resulting capital improvement program. The cost-effectiveness of TBARCT implementation is a key concern since POTWs expend public funds and must satisfy multiple regulatory responsibilities. BAAQMD staff offered to consider cost-effectiveness of TBARCT by allowing additional time for implementation to accommodate public funding considerations to cover costs associated with the proposed rule.

4) With respect to greenhouse gas emission reduction targets, BAAQMD staff acknowledged the goals of AB 32 and the BAAQMD Draft 2017 Clean Air Plan, and noted BAAQMD supports renewable methane production, but does not want to increase risk from TACs. BAAQMD recognizes that identifying the risk associated with the different sources is important. BAAQMD staff acknowledged the need to reconcile these competing goals and to that end, that BACWA should provide more information to assist staff in determining how to incorporate flexibility into the proposed rule.

5) BAAQMD staff noted there needs to be recognition that while risk might be above acceptable levels, public agencies need enough time to respond to the regulation.

6) Rule 11-18 may be brought to the Board for consideration in July (rather than May) to accommodate the adoption of Rule 12-16.

7) Summary of **priority action items**:

   a) BAAQMD to deliver a letter to BACWA indicating that Phase 1 POTWs will move to Phase 2 implementation, to allow for BACWA to develop a proposal and work with BAAQMD staff on efforts to update/develop emission factors for targeted POTW sources, as well as update the influent flow and concentration information for the POTWs currently assigned to Phase 1 POTWs as a first measure of updating their emissions calculations.

   b) BACWA will provide a letter report to BAAQMD providing information on the POTW master planning process and the frequency of updates to those planning efforts, addressing regulatory considerations, cross media issues, rate payer impacts, Prop 218 considerations, CIP implementation schedule development and transparency, and the POTW Board process.

   c) BAAQMD staff and BACWA members will meet within the next two months to discuss detailed issues/data related to Rule 11-18, including HRA modeling, identifying sources which may pose the highest risk, and appropriate TBARCT.

April 4, 2017

Mr. Jack Broadbent
Executive Officer
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105
Submitted via email to: jbroadbent@baaqmd.gov

SUBJECT: LETTER REPORT SUMMARIZING THE POTW PLANNING AND PROJECT IMPLEMENTATION PROCESS WITH REGARD TO PROPOSED RULE 11-18

Dear Mr. Broadbent:

The Bay Area Clean Water Agencies Air Issues and Regulations Committee (BACWA AIR) appreciates the opportunity to provide the Bay Area Air Quality Management District (BAAQMD) a summary of the planning and implementation process wastewater agencies must undertake when investing in projects, particularly with regard to the schedule and special factors public agencies must consider to satisfy stakeholders, ratepayers, and their elected (or appointed) Board or Council members. BACWA is a joint powers agency whose 46 members own and operate publicly-owned wastewater treatment works (POTWs) that collectively provide sanitary services to over 7.1 million people in the nine-county San Francisco Bay (SF Bay) Area. BACWA members are public agencies, governed by elected or appointed officials and managed by professionals who protect the environment and public health. The AIR Committee is a coalition of SF Bay Area POTWs working cooperatively to address air quality and climate change issues, under the direction of BACWA.

POTW Planning and Implementation Process

POTWs need at least six years to plan, design, and construct capital improvement projects. Figure 1 provides a summary of the POTW planning and project implementation process, and also highlights environmental review and financial considerations. The steps provided in Figure 1 are briefly described in this section.

The planning process begins with a Facility/Master Plan (Plan). This plan develops a long-term (i.e., 20-, 30-, sometimes 50-year) financing forecast to ensure reliable public service that protects public health and the environment. The result of a Facility/Master Plan (which typically takes one year or more to complete) is a Capital Improvement Program (CIP). The CIP provides a schedule of needed repairs and rehabilitation projects, as well as new capital investments that

are to be funded over the next 10 to 20 years to achieve the objectives set out in the Plan. These CIP projects are developed with several key factors in mind: projected growth in service area, existing and potential future regulations, aging infrastructure, and new local, state, or federal policies in development (e.g., climate related goals). The CIP is typically reviewed and updated annually, as capital and operations budgets are developed each fiscal year for approval by each agency's publicly elected or appointed Board/Council.

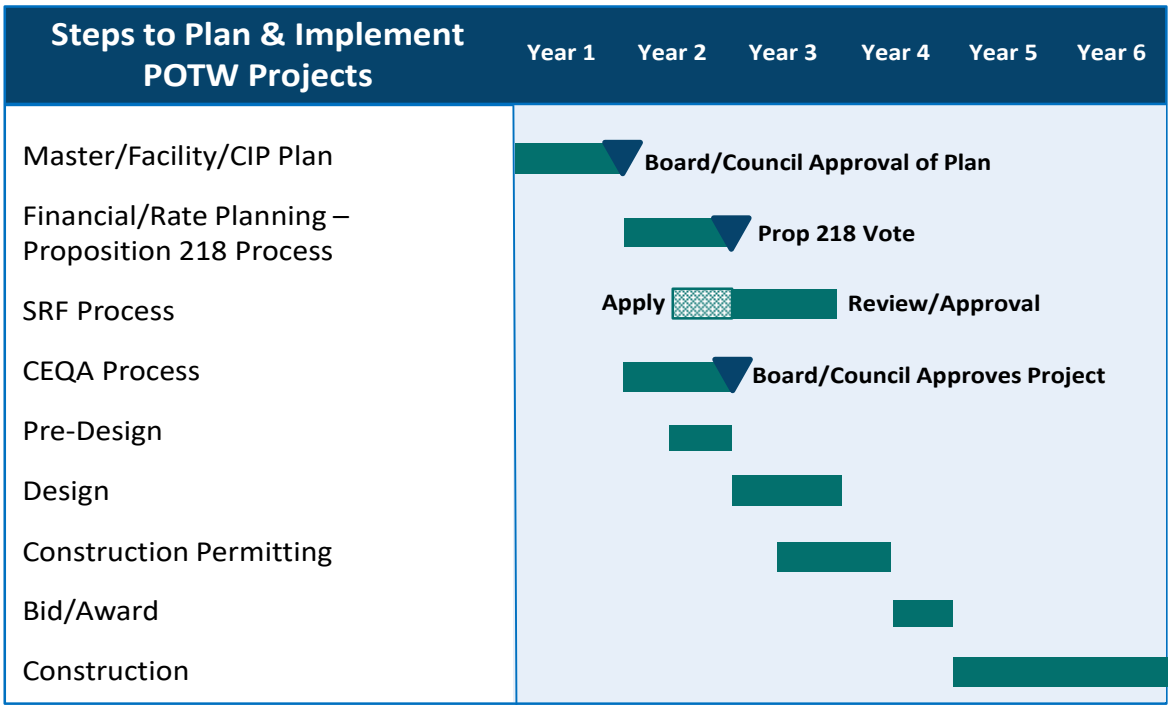


Figure 1. Timeline and Steps Necessary for Planning and Implementing POTW Projects.

Following approval of the Plan, POTWs begin financial planning to determine if and when to increase customer rates to support the CIP schedule. The financial planning process can take a year to complete and includes rate projections for funding the identified CIP projects. If there are any new charges and/or increases to existing charges/rates, then tax (rate) payers must be given the opportunity to vote to approve the rate increases as required by Proposition 218.

The environmental review process required by the California Environmental Quality Act (CEQA) can be performed concurrently with the financial planning process and typically requires up to a year to complete (may require additional time depending on the project elements). The environmental review process requires some pre-design work to provide specific information required for CEQA-Plus analysis. The pre-design work requires approximately six months and is typically undertaken toward the end of the CEQA-Plus process.

Following Board/Council approval of the Plan (within the last half of the CEQA-Plus environmental review process and concurrent with pre-design work), agencies begin the State Revolving Fund (SRF) application process. The SRF application process takes approximately six months to complete and requires CEQA-Plus documentation to be complete for submission. Once the application is submitted, the review and approval process begins and requires up to 12

months. Many POTWs apply for SRF to fund CIP projects. However, there is limited funding available through the SRF program at this time, resulting in more pressure on ratepayers to directly fund projects.

Following Board/Council approval of a project, POTWs begin the design process (approximately one year). About half way into the design, the construction permitting procedures begin (requiring up to one year depending on the project). Once the construction permitting activities are complete, the project can be opened for bid and awarded to a contractor - this process can take up to six months. Finally, project construction can begin and typically lasts approximately two years (including start-up procedures).

As Figure 1 shows, the entire process for planning and implementation of typical POTW projects takes a minimum of six years, assuming a project receives the necessary approvals at the various stages. More complex projects or controversial projects dealing with growth or environmental issues can take even longer. The implementation schedule for the Proposed Rule 11-18 is three years, with the potential to extend up to three more years. While this provides POTWs with a potential for six years for implementation, it leaves no flexibility for POTWs in the event there are issues with receiving Board/Council approval for the Plan, rate payer approval for rate increases, and Board/Council approval for the project, and assumes there are no delays with the environmental review or permitting processes.

Costs to Implement TBARCT

The draft cost estimates BAAQMD provided for the "Sewage Treatment Operations" Toxic Best Available Retrofit Control Technologies (TBARCT) are underestimating the true cost of TBARCT implementation costs (both capital and operating costs). Several BACWA member agencies have already estimated TBARCT costs for their POTW and those estimates are 2 to 10 times greater than BAAQMD estimates. BACWA members are willing to provide more detail on their cost estimates to ensure the accuracy of the costs considered by BAAQMD for satisfying TBARCT under Rule 11-18. It is important that these costs are accurate as they will be used to estimate the socio-economic impact of projects and determine the overall cost-benefit of projects. This information may reveal that projects to reduce TACs at POTWs are not as cost effective as initially estimated by BAAQMD staff.

Balancing Water Quality and Air Quality Objectives

The Regional Water Board is working to reduce nutrient loads in POTW effluent to receiving waters (specifically, the San Francisco Bay). One of the methods being considered at POTWs includes increasing aeration rates in secondary treatment to achieve additional nitrogen removal. While this process may effectively remove nitrogen to address a water quality objective, it may increase release of TACs and will increase energy demand. The BAAQMD staff should evaluate these types of competing regulatory objectives that may require additional flexibility to be built into Rule 11-18, and acknowledge existing regulatory requirements that POTWs have already taken into account in their CIP and regulatory compliance strategy.

Balancing TAC and GHG Reductions

While the intent of the proposed Rule 11-18 is to reduce TAC emissions from existing sources to protect the public, there is an urgent need to harmonize this rule with regulations targeting GHG reductions. Rule 11-18 may discourage beneficial use of renewable natural gas (biogas) for renewable energy production and result in a wasted (flared) resource. Additionally, the Draft 2017 Clean Air Plan proposes 100 percent diversion of organic waste from landfills by 2035 and promotes the increase in renewable natural gas production and use. As part of this effort, POTWs have been encouraged to accept the organic waste (specifically, food waste) to co-digest it with wastewater solids to increase generation and use of renewable natural gas and biosolids (as a soil amendment). Many facilities combust the renewable natural gas onsite to generate electricity, offsetting purchased fossil fuel based electricity and the associated GHG emissions. However, formaldehyde is released during the combustion of the renewable natural gas which may trigger noncompliance with the proposed Rule 11-18. Implementing additional controls may cause these resource recovery projects to be cost prohibitive or result in changes to existing permits (e.g., with regard to biogas production) that make it difficult to support resource recovery projects.

This type of barrier to GHG reducing projects and practices already exists. For example, there is a pilot project being considered at one of BACWA's member facilities that is partially funded by a state agency grant to receive food waste for co-digestion in their existing anaerobic digesters. The project is in direct response to, and supports, recent legislative mandates established in AB 32, SB 32, AB 341, AB 876, AB 1826, and SB 1383. The mandates require the diversion of organics from landfills to reduce methane emissions and anaerobic digestion of organics to generate renewable natural gas, and support the Governor's push to produce at least 50 percent of our energy needs from renewable sources and reduce the carbon content of transportation fuel, to mitigate climate change.

The project is also consistent with the 2017 Draft Clean Air Plan, the ARB 2030 Target Scoping Plan January Draft, and the Revised Proposed Short-Lived Climate Pollutant (SLCP) Reduction Strategy. Each document explicitly supports using existing infrastructure such as digesters at POTWs as part of the overall solution to mitigate climate change. However, the project is at a standstill while BAAQMD re-evaluates the permit limits initially recommended.

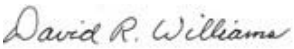
An example practice that may be at risk under the proposed Rule 11-18 is landfill gas use at Central Contra Costa Sanitary District (Central San). Central San treats an average of 32 million gallons of wastewater per day for discharge into Suisun Bay, and serves nearly 482,000 residents and 3,000 businesses in central Contra Costa County. Currently, Central San uses landfill gas from the nearby Acme Landfill to supplement the combustion of sewage sludge and generate steam through heat recovery. The steam drives the aeration turbine that supplies air to support the secondary wastewater treatment process. This practice minimizes the treatment plant’s dependence on fossil fuels, in turn reducing the resulting anthropogenic GHG emissions from combustion. The proposed Rule 11-18 may restrict landfill gas (renewable natural gas) combustion since it may contribute additional TAC emissions, potentially forcing Central San to condition the landfill gas to pipeline quality before use, or abandon landfill gas use completely (flaring a renewable resource), and resort to using natural gas in the sewage sludge combustion

process. Unfortunately, the use of natural gas contributes to anthropogenic GHG emissions and is in direct contradiction with the Governor's climate goals for 2020, 2030, and beyond. Without the use of landfill gas to supplement sewage sludge combustion, Central San will be required to participate in the Cap-and-Trade Program and incur a minimum annual cost of $250,000 in Cap-and-Trade allowances. Projects like these, which contribute toward achieving state and Bay Area climate goals, need flexibility built into Rule 11-18.

Additionally, because implementation of a rule like Rule 11-18 may discourage projects and practices that mitigate GHG emissions, staff must ensure the calculations of TAC emissions (used to estimate the prioritization scores) are based on realistic assumptions using current data. Gathering these data may take time, but is a critical step to ensure the balance between GHG and TAC reductions.

Thank you for the opportunity to provide information on POTWs that is crucial to the successful implementation of Rule 11-18. BACWA supports BAAQMD's goal to protect the Bay Area's air quality, and asks staff to work in conjunction with BACWA to address the stated concerns. We would be happy to discuss any questions regarding these comments. Nohemy Revilla and Randy Schmidt, BACWA AIR Committee Co-Chairs, can be reached at NRevilla@sfwater.org and RSchmidt@centralsan.org, respectively.

Sincerely,



David R. Williams
BACWA Executive Director

Cc: Victor Douglas, BAAQMD
Greg Nudd, BAAQMD
Jaime Williams, BAAQMD
Eric Stevenson, BAAQMD
BACWA Executive Board
Lorien Fono, BACWA Regulatory Program Manager
Nohemy Revilla, BACWA AIR Committee Co-Chair
Randy Schmidt, BACWA AIR Committee Co-Chair
Courtney Mizutani, BACWA AIR Committee Project Manager
Sarah Deslauriers, BACWA AIR Committee Project Manager

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 8
FILE NO.: 17-36
MEETING DATE: April 21, 2017

TITLE: Approve Change of Scope for Contract - Estimate the Economic Impact of the Proposed Bay Area Air Quality Management District (BAAQMD) Regulation 11, Rule 18 (Rule 11-18) on BACWA Members

☐ **RECEIPT** ☐ **DISCUSSION** ☐ **RESOLUTION** ☒ **APPROVAL**

RECOMMENDED ACTION

Authorize Change of Scope for existing agreement with Carollo Engineers to provide support for BACWA's response to proposed BAAQMD Rule 11-18.

SUMMARY

The Draft Regulation 11, Rule 18: Reduction of Risk from Air Toxic Emissions at Existing Facilities (Draft Rule, Rule 11-18) is the Bay Area Air Quality Management District's (BAAQMD's) effort to protect public health from toxic air pollution from existing facilities. The Draft Rule will affect publicly owned treatment works (POTWs), as well as hundreds of other facilities with air permits through the Bay Area. On February 17, 2017, BACWA executed a contract with Carollo Engineers to look at the cost impacts of the Rule on BACWA member agencies. The focus of the contract was on diesel emissions, which were initially identified by BAAQMD staff as the major cost driver associated with compliance with Rule 11-18 for POTWs. After the execution of that contract, BACWA met with BAAQMD staff on March 9 and March 23, and they have deemphasized the importance of diesel for POTW compliance. Based on discussions with BAAQMD staff, BACWA is taking steps to communicate the challenges public wastewater agencies will have in complying with Rule 11-18. BACWA will also develop a proposal to work with BAAQMD staff to undergo a Regional POTW effort to update emissions factors associated with Toxic Air Contaminants to make sure they are accurate.

The change in scope for the existing contract reflects this change in focus, and proposes to provide support for these new initiatives, while also continuing to develop information about the cost impacts of the proposed Rule. BACWA's Contracting Policy requires Board approval of changes in the scope of work that impact more than 20% of the contract amount.

FISCAL IMPACT

There is no fiscal impact. The change in scope does not change the level of funding associated with the existing contract.

ALTERNATIVES

1. Terminate the contract – This alternative is not recommended, since BACWA has been invited by BAAQMD to work with their staff to update emissions factors, and look for other ways to enable POTWs

to comply with Rule 11-18. BACWA needs consultant support to continue moving this effort forward.

2. Hire another consultant to do this work – This alternative is not recommended due to the short time frame in which this information will be needed, relative to BAAQMD's adoption schedule. Additionally, the consultant team has already undergone a competitive selection process to provide support to BACWA's AIR committee, and this contract is included as a non-budgeted item in their scope of work for Committee support.

Attachments:

Contract
Updated SOW – Letter Proposal
Budget

Approved:

_____ Date: _____

Laura Pagano, Chair
BACWA

carollo
Engineers...Working Wonders With Water™

April 18, 2017

Mr. David Williams
Executive Director
Bay Area Clean Water Agencies (BACWA)
P.O. Box 24055, MS 59
Oakland, CA 94623

Subject: Proposal to Estimate the Economic Impact of the Proposed Bay Area Air Quality Management District (BAAQMD) Regulation 11, Rule 18 (Rule 11-18) on BACWA Members

Dear Mr. Williams:

Thank you for requesting our proposal to estimate the economic impact of the proposed BAAQMD Rule 11-18 on BACWA members. We are submitting the following revised proposed scope of services based on direction provided by the BACWA Executive Board, as well as information received from BAAQMD staff during two meetings held in March to discuss the primary source of toxic risk at wastewater treatment plants and how BACWA can work in conjunction with BAAQMD staff to estimate the economic impact of Rule 11-18 on publicly owned (wastewater) treatment works (POTW) rate payers.

SCOPE OF SERVICES

In order to estimate the economic impact of the proposed BAAQMD Rule 11-18 on BACWA member facilities in conjunction with BAAQMD staff, we recommend completing the following tasks:

Task 1. Identify BACWA Member Facilities Listed in Phase 1 of the Implementation Schedule.
The purpose of this task is to identify and list those facilities assigned to Phase 1 of the implementation schedule for targeted POTW sources of toxic air contaminants (TACs)(treatment plants, wet weather facilities, pump stations, etc.). The base list of impacted facilities will be created from the BAAQMD's Draft Rule 11-18 Mailer Distribution List. We will also survey member agencies for additional information related to each facility (e.g., the type and size of facility). The list and additional information collected will be documented in a spreadsheet.

Task 2. Determine Potential TBARCT to Comply with the Proposed Rule 11-18.
The purpose of this task is to identify and list the Toxic Best Available Retrofit Control Technologies (TBARCT) that may be required by BAAQMD to comply with the proposed Rule 11-18. The BAAQMD provided a draft list of retrofit technologies that qualify as TBARCT, which will serve as a starting point for this task. This task may also include direct communication with BAAQMD staff and review of available state and local air district databases for potential TBARCT options. The list of potential TBARCT will be documented in the same spreadsheet referenced in Task 1.

2700 YGNACIO VALLEY ROAD, SUITE 300 • WALNUT CREEK, CALIFORNIA 94598 • (925) 932-1710 • FAX (925) 930-0208

Task 3. Update Model Inputs for Phase 1 BACWA Facilities.
The BAAQMD database emissions factors used to estimate draft prioritization scores do not reflect current POTW influent flow or concentrations. BACWA will collect current information for Phase 1 facilities and will work and meet directly with BAAQMD staff (in person meeting May 3rd) to update the data inputs in their model to develop more accurate estimates of emissions. .

Task 4. Prepare Draft and Final Letter Report Summarizing the POTW Planning Process
BACWA will draft a letter report for BAAQMD providing a summary of the POTW master planning process and the frequency of updates to those planning efforts, addressing regulatory and environmental documentation considerations, cross media issues, rate payer impacts, funding and Proposition 218 considerations, capital improvement program (CIP) implementation schedule development and transparency, and the POTW Board process.

A draft letter report will be provided for review by the BACWA Air Issues and Regulatory (BACWA AIR) Committee and Executive Board. All edits and comments received on the draft letter report will be addressed and a final draft letter report will be submitted to the BACWA AIR Committee and the BACWA Executive Board. Final edits and comments will be addressed and a final letter report will be submitted to the BACWA AIR Committee, the BACWA Executive Board, and BAAQMD staff.

Task 5. Prepare Draft and Final Proposal to Work with BAAQMD to Update POTW Emission Factors and TBARCT Cost Estimates.
The BAAQMD has offered to push facilities currently in Phase 1, into Phase 2 of the implementation schedule, to provide enough time to propose on and select an approach to update the emission factors for POTWs and ensure accurate prioritization scores. Under this task, BACWA will develop a proposal in support of working together with BAAQMD staff to: 1) update the emission factors for toxic air contaminants (TACs) from POTW sources and 2) develop a range of planning level costs that Phase 1 facilities will need to consider if they need to implement TBARCT to comply with the Proposed Rule 11-18 (assuming the Rule is adopted). The proposal will address the approach for sampling sources, cost estimating, and the overall timeline for the effort.

A draft proposal will be provided for review by the BACWA Air Issues and Regulatory (BACWA AIR) Committee and BAAQMD staff. All edits and comments received on the draft proposal will be addressed and a final draft proposal will be submitted to the BACWA AIR Committee, the BACWA Executive Board, and BAAQMD staff for review. Final edits and comments will be addressed and a final proposal will be submitted to the BACWA AIR Committee, the BACWA Executive Board, and BAAQMD staff.

PROPOSED ENGINEERING COST/SCHEDULE

Our proposed engineering fee to perform the scope of services is approximately $26,000 (the fee per task is provided in the attached table of labor hours). We will commence work upon notice to proceed and complete this work by June 30, 2017.

We appreciate your consideration on this project and look forward to working with you and your staff. Please do not hesitate to contact us if you have any questions or require additional information on this

proposal. You can reach us at sdeslauriers@carollo.com (925-932-1710) and cmizutani@sbcglobal.net (925-686-5533) if you have any questions.

Sincerely,

CAROLLO ENGINEERS, P.C.

Sarah A. Deslauriers, P.E.

MIZUTANI ENVIRONMENTAL

Courtney Mizutani, P.E.

Carollo Engineers
LABOR AND COST ESTIMATE

BAY AREA CLEAN WATER AGENCIES EXECUTIVE BOARD

ESTIMATE THE ECONOMIC IMPACT OF THE PROPOSED BAY AREA AIR QUALITY MANAGEMENT DISTRICT REGULATION 11, RULE 18 (RULE 11-18) ON BACWA MEMBERS
April 18, 2017

A. Labor Hours

Task	Task Description	SD	CM	TM	Support	Total Hours	Labor Cost
		$182	$175	$259	$109	Hours	Cost
1	Identify BACWA Member Facilities Listed in Phase 1 of the Implementation Schedule	4	12	0	0	16	$ 2,828
2	Determine Potential TBARCT to Comply with the Proposed Rule 11-18	4	16	2	0	22	$ 4,046
3	Update Model Inputs for Phase 1 BACWA Facilities (assumes 1 in person meeting with BAAQMD)	20	24	0	0	44	$ 7,840
4	Prepare Draft and Final Letter Report Summarizing the POTW Planning Process	8	4	0	0	12	$ 2,156
5	Prepare Draft and Final Proposal to Work with BAAQMD	24	24	0	4	52	$ 9,004
	Labor SUBTOTAL	60	80	2	4	146	**$ 25,874**
						Total	**$ 25,874**

Legend:

SD	Sarah Deslauriers
CM	Courtney Mizutani
TM	Tom Mossinger (Technical Review)
Support	Word Processing Support Staff

BAY AREA CLEAN WATER AGENCIES
PROFESSIONAL SERVICES CONTRACT

This PROFESSIONAL SERVICES CONTRACT, effective February 17, 2017, is between Bay Area Clean Water Agencies ("BACWA"), a joint powers agency which exists as a public entity separate and apart from its Member Agencies, created January 4, 1984 by a Joint Powers Agreement between Central Contra Costa Sanitary District, East Bay Dischargers Association, East Bay Municipal Utility District, the City and County of San Francisco and the City of San Jose, with a mailing address of P.O. Box 24055, MS 59, Oakland, CA 94623, and Carollo Engineers, Inc. ("Consultant"), a private corporation doing business at 2700 Ygnacio Valley Road, Suite 300, Walnut Creek, CA 94598 for professional services as described in any Exhibit A attached hereto.

In consideration of the mutual covenants, stipulations and agreements, the parties agree as follows:

Description and Standard of Services to be Performed

1. Consultant will perform the Services as described by and in accordance with Exhibit A in a manner acceptable to BACWA.
2. Consultant shall not contract with or otherwise use any subconsultants, subcontractors or other non-employee persons or entities ("Subconsultants") to perform the Services without the prior written approval of BACWA. If Consultant and BACWA agree that Subconsultants shall be used, Consultant shall ensure Subsconsultants' compliance with all the terms and conditions of this agreement.
3. Consultant will exercise that degree of care in performing the Services in accordance with that prevailing among firms of comparable standing in the State of California ("Professional Standard"). Consultant will promptly correct or re-perform those Services not meeting the Professional Standard without additional compensation.
4. Consultant warrants that it is fully licensed, registered and otherwise fully authorized to perform the Services in the State of California to the extent applicable law requires such licensure, registration or authorization.
5. BACWA's review, approval, acceptance, use, or payment for all or any part of the Services hereunder will not alter the Consultant's obligations or BACWA's rights hereunder, and will not excuse or diminish Consultant's responsibility for performing all Services consistent with this Contract.

Payment for Services

6. The contract will begin Feb. BACWA will pay Consultant based on the rates in Exhibit B, up to a maximum amount payable of $25,956.00. The term of this agreement shall not extend beyond June 30, 2017 but may be extended for additional one year terms at BACWA's discretion for an additional two years, ending June 30, 2019. If, upon reaching the end of the term of the contract, the Board elects to extend the contract, the amount of the extended contract will be negotiated at the time the contract is extended.
7. Consultant shall submit invoices monthly via email to Sherry Hull, Assistant Executive Director, at shull@bacwa.org with a copy to Lorien Fono, Regulatory Program Manager, at lfono@bacwa.org. Invoices shall include the hours charged by each employee, a brief description of the work performed, and a description of costs for which Consultant seeks reimbursement and which are specified in Exhibit B.
8. Payments under this Contract will be due thirty (30) days after BACWA's receipt of invoices. BACWA may withhold from any progress or final payment any damages, backcharges or claims incurred or anticipated by BACWA to the extent caused by Consultant.

Document Ownership and Retention

9. Consultant will maintain all financial records relating to this Contract in accordance with generally accepted accounting principles and for at least three years following termination of this Contract. Consultant will grant BACWA and its representatives access upon request to all such records and all other books, documents, papers, drawings, and writings of Consultant that refer or relate to this Contract.

10. All drawings, specifications, reports, programs, manuals, and other work product of Consultant that result from this Contract ("Work Product") will be considered the exclusive property of BACWA. Consultant agrees that it will not use, disclose, communicate, publish or otherwise make available to third parties any products, analyses, data, compilations, studies, proposals, technical or business information, and any other information related to the Services provided to BACWA without BACWA's prior written approval.

Indemnification

11. To the fullest extent allowed by law, Consultant will indemnify, hold harmless, reimburse and defend BACWA, its Member Agencies, and each of their officers, directors, employees and agents from, for and against any and all claims, demands, damages, losses, expenses, liabilities and penalties, including but not limited to reasonable attorneys' and expert witnesses' fees, arising out of or relating to the Services but only to the extent caused by the negligent or other wrongful acts or omissions of Consultant or any person or entity for whose acts or omissions any of them are responsible, or by the failure of any such party to perform as required by this Contract.

Insurance

12. Consultant will purchase and maintain, at Consultant's expense, the following types of insurance, covering Consultant, its employees and agents:

    a. Workers' Compensation Insurance as required by law, subject to a waiver of subrogation in favor of BACWA;

    b. Employers Liability Insurance with a per accident value at $1,000,000, Policy Limit of $1,000,000 and Each Employee of $1,000,000, subject to a waiver of subrogation in favor of BACWA.

    c. Comprehensive General Liability Insurance covering personal injury and property damage with a combined single limit, or the equivalent, of not less than $1,000,000.00 each occurrence, $2,000,000.00 general aggregate, and naming BACWA as an additional insured.

    d. Business Automobile Liability Insurance with combined single limit coverage of not less than $1,000,000.00 aggregate for each claim, incident, or occurrence; and naming BACWA as an additional insured.

Assignment

13. Consultant will not assign or transfer any of its interest in this Contract, in whole or in part, without the prior written consent of BACWA. BACWA may assign this Contract and any rights relating to this Contract (including but not limited to its right to assert claims and defenses against Consultant) at BACWA's discretion.

Independent Contractor

14. Consultant will perform the Services as an independent contractor. Although Consultant will perform its Services for the benefit of BACWA, and although BACWA reserves the right to determine the schedule for the Services and to evaluate the quality of the completed performance, BACWA does not control the means or methods of Consultant's performance. Consultant is solely responsible for determining the appropriate means and methods of performing the Services, and Consultant's liability will not be diminished by any review, approval, acceptance, use or payment for the same by BACWA or any other party.

Termination of Contract; Suspension of Services

15. This contract shall automatically terminate on June 30, 2017. Either party may also terminate this Contract in whole or in part at any time for its convenience. For a termination for convenience, the termination will be effective thirty (30) days following receipt of a written notice of termination by one party from the other. BACWA may terminate this Contract in whole or in part for cause, in which event the termination will be effective ten (10) days after Consultant's receipt of BACWA's written notice and Consultant's failure during that period to cure the default.

Dispute Resolution

16. Consultant will give prompt written notice to BACWA of any claim, dispute or other matter in question, but in no event will Consultant give such notice later than ten (10) days after Consultant's becoming aware of the event or circumstance giving rise to the claim, dispute or matter in question.

17. All claims, disputes and other matters in question between BACWA and Consultant arising out of or relating to this Contract will be subject to alternative dispute resolution. If both parties agree to arbitration it will be conducted in accordance with the Commercial Arbitration Rules of the American Arbitration Association then in effect. Notice of the demand for arbitration will be filed in writing with the other party to this Contract and with the American Arbitration Association. Any arbitration arising out of or relating to this Contract will include, by consolidation, joinder or joint filing, any other person or entity not a party to this Contract that is substantially involved in a common issue of law or fact and whose involvement in the consolidated arbitration is necessary to achieve a final resolution of a matter in controversy therein. This agreement to arbitrate will be specifically enforceable by any court with jurisdiction thereof.

18. A demand for dispute resolution by either party will be made within a reasonable time after the claim, dispute, or other matter in question has arisen, and in no event will it be made after the date when institution of court litigation based on such claim, dispute or other matter in question would be barred by the applicable period of limitations. For all claims by BACWA against Consultant, the applicable period of limitations will not commence to run, and any alleged cause of action will not be deemed to have accrued (whether such action is based on negligence, strict liability, indemnity, intentional tort or other tort, breach of contract, breach of implied or express warranty, or any other legal or equitable theory), unless and until BACWA is fully aware of all three of the following: (1) the identity of the party(ies) responsible, (2) the magnitude of the damage or injury and (3) the cause(s) of the damage or injury. The contractual limitations period and discovery rule provided herein applies in lieu of any otherwise applicable statute or related case law.

19. The failure of either party to enforce any provision of this Contract will not constitute a waiver by that party of that or any other provision of this Contract.

Severability

20. BACWA and Consultant agree that if any term or provision of this Contract is determined to be illegal, in conflict with any law, void or otherwise unenforceable, and if the essential terms and provisions of this Contract remain unaffected, then the validity of the remaining terms and provisions will not be affected and the offending provision will be given the fullest meaning and effect allowed by law.

Survival

21. All rights and obligations set out in this Contract and arising hereunder will survive the termination of this Contract (i) as to the parties' rights and obligations that arose prior to such termination and (ii) as is necessary to give effect to rights and obligations that arise after such termination but derive from a breach or performance failure that occurred prior to the termination.

This Contract constitutes the entire, legally binding contract between the parties regarding its subject matter. No waiver, consent, modification or change of terms of this Contract is binding unless in writing and signed by both parties.

The following documents are incorporated into and made a part of this Contract. Any conflicts between these documents and this Contract will be resolved in favor of this Contract.

Exhibit A – Scope of Work & Schedule
Exhibit B – Hourly Rates/Reimbursable Expenses

CONSULTANT: **CAROLLO ENGINEERS, INC.**

2700 Ygnacio Valley Road, Suite 300
Street Address

Walnut Creek, CA 94598
City, State, Zip Code

86-0899222
Tax Identification No.

Lydia Holmes 2/22/17
Consultant Signature *Date*

Lydia Holmes, Vice President
Name, Title

2/17/17
BACWA Signature *Date*

Laura Pagano, BACWA Chair
Name, Title

EXHIBIT A

SCOPE OF SERVICES

Estimation of the economic impact of the proposed BAAQMD Rule 11-18 on BACWA member facilities as it relates to diesel generators will include the following tasks:

Task 1. Identify Impacted BACWA Member Facilities.
The purpose of this task is to identify and list the facilities impacted (treatment plants, wet weather facilities, pump stations, etc.) and the number and size of diesel generators at those facilities. The base list of impacted facilities will be created from the BAAQMD's Draft Rule 11-18 Mailer Distribution List. We will then survey member agencies for additional information related to each facility (e.g., the type of facility, number, and size of diesel generators, etc.). The list and additional information collected will be documented in a spreadsheet, which will serve as the basis for determining the potential economic impact of the proposed Rule 11-18.

Task 2. Determine Potential TBARCT to Comply with the Proposed Rule 11-18.
The purpose of this task is to identify and list the Toxic Best Available Retrofit Control Technologies (TBARCT) that may be required by BAAQMD to comply with the proposed Rule 11-18. At this point in time, it is not clear what would be considered TBARCT under this Rule. The BAAQMD stated they will release a list of technologies in February 2017 that would qualify as TBARCT, which will serve as a starting point for this task. This task may also include direct communication with BAAQMD staff and review of available state and local air district databases for potential TBARCT. The list of potential TBARCT will be documented in the same spreadsheet referenced in Task 1.

Task 3. Develop Cost Estimate to Implement TBARCT at BACWA Facilities.
The purpose of this task is to estimate a range of planning level costs for BACWA member facilities that may need to implement TBARCT to comply with the Proposed Rule 11-18, in the event it were to be adopted. The cost estimates will be performed in the same spreadsheet referenced in Task 1 by facility.

Task 4. Prepare Draft and Final Summary Letter Report.
The information collected in Tasks 1 through 3, the cost estimating methodology, and the cost estimates developed for BACWA facilities will be summarized and presented in a draft letter report for review by the BACWA Air Issues and Regulatory (BACWA AIR) Committee. All edits and comments received from the BACWA AIR Committee on the draft letter report will be addressed and a final draft letter report will be submitted to the BACWA Executive Board for their review. Final edits and comments will be addressed and a final letter report will be submitted to both the BACWA AIR Committee and the BACWA Executive Board.

SCHEDULE

Work will commence upon notice to proceed and Carollo will complete this work by April 30, 2017.

EXHIBIT B

HOURLY RATES/REIMBURSABLE EXPENSES

Sarah Deslauriers	$182
Courtney Mizutani	$175

Carollo Engineers
LABOR AND COST ESTIMATE

BAY AREA CLEAN WATER AGENCIES EXECUTIVE BOARD

ESTIMATE THE ECONOMIC IMPACT OF THE PROPOSED BAY AREA AIR QUALITY MANAGEMENT DISTRICT REGULATION 11, RULE 18 (RULE 11-18) ON BACWA MEMBERS
January 13, 2017

A. Labor Hours

Task	Task Description	SD	CM	TM	Total Hours	Labor Cost
		$182	$175	$259	Hours	Cost
1	Identify Impacted BACWA Member Facilities	24	24	0	48	$ 8,568
2	Determine Potential TBARCT to Comply with the Proposed Rule 11-18	4	16	2	22	$ 4,046
3	Develop Cost Estimate to Implement TBARCT at BACWA Facilities	16	24	2	42	$ 7,630
4	Prepare Draft and Final Summary Letter Report	16	16	0	32	$ 5,712
	Labor SUBTOTAL	60	80	4	144	**$ 25,956**
					Total	**$ 25,956**

Legend:
SD Sarah Deslauriers
CM Courtney Mizutani
TM Tom Mossinger (Technical Review)

Sherry Hull

From: Sherry Hull
Sent: Sunday, April 16, 2017 3:59 PM
To: Sherry Hull
Subject: agenda item #9 - Mercury Objectives

From: lyris@swrcb18.waterboards.ca.gov [mailto:lyris@swrcb18.waterboards.ca.gov]
Sent: Friday, April 14, 2017 11:25 AM
To: David Williams <dwilliams@bacwa.org>
Subject: Public Meeting to consider Adoption of Mercury Provisions

This is a message from the State Water Resources Control Board.

The State Water Board will hold a public meeting on **May 2, 2017** to consider (1) adoption of the proposed Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California" Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions (referred to as the proposed Final Provisions) and (2) approval of the Final Staff Report, including the Substitute Environmental Documentation (SED). The proposed Final Provisions and Final Staff Report will be released to the public no later than April 22, 2017. The State Water Board will not provide a written comment period for the revisions made to the January 2017 Draft Provisions and Draft Staff Report that will be reflected in the proposed Final Provisions and Final Staff Report; therefore written comments will not be considered. Interested persons may provide oral comments at the public meeting.

The complete Notice, including time and location of the meeting, are available at **this link**.

More information on the Mercury Provisions is available at: http://www.waterboards.ca.gov/water_issues/programs/mercury/

Zane Poulson

State Water Resources Control Board

Division of Water Quality **mercury_statewide_provisions**

Objective for Effluent Monitoring for Microplastic

The goal of this element is to characterize microplastic in treated wastewater. In 2015, a limited screening study was undertaken to evaluate microplastic in effluent from eight wastewater treatment facilities, representing approximately 60% of the effluent flow into San Francisco Bay (Sutton et al. 2016). The facilities were geographically distributed, varied in capacity from 2.3 million gallons per day (MGD) to 310 MGD, and employed a range of secondary and tertiary treatments. Microparticles were identified in all of the effluent samples; 80% of the particles were characterized as fibers, followed by fragments at 17%. The remaining portion was characterized as film or foam. Visual identification was used to characterize the particles; spectroscopic polymer identification was not available. Therefore, it is possible a portion of the effluent-derived particles were not plastic. Additional work suggests that a variety of nonplastic materials are present in Bay Area effluent (Dyachenko et al. 2016).

On average, approximately 0.33 particles per gallon were discharged to the Bay. The levels in effluent are higher than those found in effluent from the Midwestern and Northeastern U.S. using identical methods (Mason et al. 2016). This difference may be in part attributed to the water conservation efforts employed at the time in California to mitigate the impacts of a drought. Nevertheless, the presence of fibers is consistent with other studies that have identified this particle type as common in effluent (Browne et al. 2011; Mason et al. 2016). A recent study of outdoor garments estimated that between 0 to 2 grams of microfibers (representing 0.3% of the mass of the garment) may be shed during washing (Hartline et al. 2016). In a separate study, it was estimated that a single garment can release more than 1,900 microfibers per washing cycle (Browne et al. 2011).

As noted above, the 2015 Bay screening study employed visual inspection to identify microplastic; no secondary confirmation using spectroscopy was conducted. Although fibers are more reliably identified through visual inspection as plastic than fragments (Lenz et al. 2015), there is concern that not all of the fibers identified in the screening study were plastic. Another study has indicated that some of the microfibers ingested by invertebrates were not actually plastic but rather an artificial cellulose material, viscose or rayon (Remy et al. 2015). Follow-up work by the Bay Area Clean Water Association (BACWA) laboratories found that fats, oils, and natural fibers like cotton could persist after sample processing using the NOAA method (Masura et al. 2015; Dyachenko et al. 2016). To address this issue, this project will use Raman spectroscopy to chemically confirm the composition of the particles.

This element will occur in Fall 2017.

Relevant Management Questions

The RMP Microplastic Monitoring and Science Strategy has articulated five management questions for San Francisco Bay (Sutton and Sedlak 2017). This element, monitoring microplastic in wastewater, addresses the following three questions:

- MQ1. How much microplastic pollution is there in the Bay?
- MQ3. What are the sources, pathways, loadings and processes leading to microplastic in the Bay?
- MQ5. Which management actions may be effective in reducing microplastic pollution?

This project aims to determine microplastic pollution concentrations in samples taken directly from eight wastewater treatment facilities that discharge into San out to one more facility. There are approximately 35 wastewater facilities in the Bay Area; four of these are identified as discharging into the Pacific Ocean.

Field Sample Collection Methods

Effluent from eight wastewater treatment facilities will be collected over a 24-hour period to obtain a more representative sample relative to the 2015 RMP study, which sampled over 2 hours during peak flow (Sutton et al. 2016). Additional work by BACWA has confirmed that collection of 24-hour composites is possible and preferable (Dyanchenko et al. 2016). Two samples will be collected from each facility; samples will be collected Tuesday through Friday, to avoid the potential influence of different consumer behaviors over the weekend.

Wastewater flow can vary throughout the day and throughout the seasons. To mitigate the impacts from increased flows during wet weather, the wastewater samples will be collected in the dry season.

Final treated effluent will be collected from a sampling port prior to the effluent being discharged. The effluent will be passed through 8-in. diameter stacked Tyler sieves with 355 micron and 125 micron stainless steel mesh. The 125 micron mesh has been found to be particularly useful for retention of microbeads discharged to the sewer via use of personal care products (Napper et al. 2015; Carr et al. 2016). To prevent the sieves from clogging, we may include two additional sieves (5 mm and 1 mm) per the method developed by BACWA (Dyanchenko et al. 2016).

Rate of flow at the point of collection must be measured to calculate of number of particles per volume of treated wastewater. Previous, 2-hour monitoring efforts involved measurement of flow before and after each sample (Sutton et al. 2016). However, given the length of time for this sampling effort (24 hours), it may be necessary to measure flow more frequently, or to use a flow monitor employed at the sampling point. In addition, the 24-hour discharge flow rate for the plant on the day of sampling will be obtained, to allow for estimation of the number of particles discharged per day. Sieves will be processed in the laboratory and, if needed, preserved with alcohol prior to shipping. Microplastic collected in the sieves will be gently washed using distilled water into glass sample bottles prior to shipping to University of Toronto for analyses.

AIR Committee – Report to BACWA Board

AIR Committee Meeting on: 3/15/17
Executive Board Meeting Date: 4/21/17
Committee Co-Chairs: Nohemy Revilla and Randy Schmidt

Committee Request for Board Action: None

13 attendees (incl. 2 on phone) representing 7 member agencies

Sarah Deslauriers and Courtney Mizutani provided the regulatory update presentation. Key topics from the meeting and since are below:

BAAQMD Updates

Fees – BAAQMD is proposing increasing fee revenue to recover costs for implementing and enforcing regulatory programs for stationary sources:

- Approximately 7% increase in fees overall for FY 17-18
- New Risk Assessment Fee for health risk assessment (HRA) under Rule 11-18 (maximum fee $100,000 per facility)
- For more than 3 HRA scenarios, applicants to pay additional fees
- New Fees for Risk Reduction Plan (under Rule 11-18) $1,500 - $32,000 depending on number of sources

Regulation 6, Rule 1 - Proposed draft amendments to Rule 6-1 address particulate matter emissions from dirt and other solid materials that are tracked out onto roadways, from roofing asphalt, and from storage and handling of bulk materials. The Air District has also drafted a new umbrella regulation for particulate matter rules to provide a consistent set of general provisions, definitions, and test methods. The proposed revisions to Rule 6-1 are tentatively scheduled for Board Adoption in October of 2017. Two years after adoption, revisions to 6-1 to reduce the allowable Total Suspended Particulate (TSP) concentration and mass emission rate limits take effect.

Proposed Regulation 11, Rule 18 - Proposed Rule 11-18, Risk Reduction of Air Toxic Emissions at Existing Facilities, was discussed at length. The proposed rule includes a HRA, development of a risk reduction plan, and implementation of risk reduction measures for existing sources of TACs. Phased implementation of the rule would take place based on each facility's cancer prioritization score.

Committee members met with BAAQMD staff on March 9 to outline POTWs' concerns with the proposed rule. The committee will deliver a letter outlining specific challenges that POTW would have to comply with the rule due to budgeting and planning constraints related to being public agencies.

The committee reviewed the data that is used to developed emission factors. One agency provided an example of their actual emissions versus emissions estimated by the BAAQMD to illustrate the database is very out-of-date. The committee will request that BAAQMD allow the POTW community to develop a proposal to update emissions factors for POTWs regionally.

Climate Change Update

- BACWA provided a comment letter on BAAQMD's Draft Clean Air Plan.
- For the AB32 Scoping Plan update, BACWA will support CASA's letter.
- CARB conducted a methane "hot spot" flyover survey, and found that POTWs are generally low sources of methane, especially compared to natural gas facilities. (See aerial photo in slides).

Tour: Committee members were invited to participate in a tour of the new Lystek facility that converts biosolids to liquid fertilizer.

Next Meeting: The next meeting is tentatively scheduled for June 21 at BAAQMD offices.

Meeting Date: April 5, 2017
Executive Board Meeting Date: April 21, 2017
Prepared By: Lorien Fono, BACWA RPM
BAPPG Chair: Robert Wilson

19 attendees representing 13 member agencies.
Committee Notes are available online.
Committee Updates from BAPPG's General Committee Meeting on April 5, 2017:

Regional Water Board Update
New Regional Water Board staffperson Patrick Karinja will be participating in BAPPG. Regional Water Board staff have not yet reviewed agencies P2 reports, but have requested that in the future, agencies summarize changes to their pollution prevention reports in their cover letters.

Steering Committee Update
The BAPPG FY17 Budget is 91.5% spent. The Steering Committee recommended that any remaining outreach funds be allocated for either pesticide support or website upgrades.

Pesticides Update
The Pesticides team had a call with EPA Office of Pesticides to see how the POTW community can help them recognize the water quality impacts of pesticide use, rather than being solely focused on human health impacts. The barriers are institutional: FIFRA does not require Clean Water Act implementation, and there is no Clean Water Act consideration built into the risk assessment framework. EPA staff reported that they wanted to hear from other parts of the country as well as the Bay Area, but urged BAPPG to continue to comment on pesticide risk assessments.

Committee Succession
In July 2017, BAPPG proposes that Doug Dattawalker, USD, take over as committee chair. Simret Yigzaw, San Jose, will be budget vice-chair, and Joanne Le, City of Richmond, will be reporting vice-chair.

Presentations on School Outreach Programs
Doug Dattawalker gave a presentation on USD's long-running school outreach program. He outlined the need to bring focused, age-appropriate messaging, as well as to tie in the lesson to the State's Next Generation Science Standards. He also discussed how best to approach school districts and teachers about providing the presentations.

Jackie Davidson and Sara Cefalu provided a presentation on the City of Sunnyvale's outreach program. They focus on 5th grade and kindergarten, but have materials for all elementary grades. They are on track to reach More than 2,000 students this year. They performed a "fish bowl" demonstration that they use to show how pollution spreads in the Bay. Their outreach program links education and advocacy.

Julie Weiss, of the City of Palo Alto, and Claire Elliott, of Grassroots Ecology, provided a video on Palo Alto's treatment system that that they show to schoolgroups, and a presentation on how their program meshes with curriculum in each grade.

Date of Next BAPPG Meeting

BAPPG General Meeting
June 7, 2017: 10:00am-12:00pm
1515 Clay Street, Second Floor, Room 12
Oakland, CA

Collection Systems Committee Meeting on: 3/23/17
Executive Board Meeting Date: 4/21/17
Committee Chairs: Justin Waples and Erin Smith

Committee Request for Board Action: None

31 attendees representing 15 member agencies

Regional Water Board Report-out

Bill Johnson, new NPDES Division Chief at the Regional Water Board gave a summary of collection systems activities in his division. Key points were:

- Enforcement actions are infrequent since the "problem" collection systems are already under CDOs. Setting fines are not a current priority.
- They are continuing to do SSMP audits. Agencies should make sure that SSMPs are posted, which is one of the most frequent causes of noncompliance with the WDR.
- The Regional Water Board is considering language encouraging asset management – Mary Boyd can provide proposed language from EPA.
- The State Water Board does not plan to reopen the SSS WDR this year, and will likely issue a 13267 letter if reporting requirements need to be changed.
- New language in Attachment D of NPDES permits has been introduced to comply with EPA's electronic reporting rule, and is not intended to conflict with reporting guidelines in the SSS WDR. By 2020, NPDES permittees will be doing electronic reporting, but it is uncertain how this will be implemented.

There was some concern that Regional Water Board staff are requiring reporting that exceeds the requirements of the WDR. The committee will raise this issue at the next meeting with Regional Water Board staff.

"Fear and Loathing Your Forcemains" Presentation

Ron Hipkiss gave a presentation about how FSSD addressed a ruptured force main on their property. FSSD owns approximately 12 miles of forcemains. Due to various technical and financial reasons, these pipelines haven't been inspected in detail since installation in 1976. In the summer of 2013, a 36" forcemain ruptured, spilling 800,000 gallons of sewage. This incident started FSSD down the path to assess the condition of its forcemains. The hired a consultant to work with them on an ongoing basis as they developed a plan to inspect and repair the system. Among other techniques, they used acoustic testing to locate buried pipes. Inspections showed that the main had been leaking for some time. This issue was a small element in FSSD's planned rate increase, but the agency is working to build up a maintenance reserve.

Committee Business

The Committee will be meeting from 10am to 11:30am on the fourth Thursday of each month at the City of Alameda Public Works offices. The committee recently made the switch to Google Groups as its email distribution list.

Next Collection System Committee Meeting

Our next committee meeting will be held on May 25 at the Alameda Public Works offices. Michael Chee and Mary Boyd from the Regional Water Board will be in attendance.

NOTICE OF OPPORTUNITY FOR PUBLIC COMMENT AND NOTICE OF PUBLIC WORKSHOP

ASSESSMENT OF PROGRESS AND FINAL RECOMMENDATIONS BY THE EXPERT REVIEW PANEL FOR THE STATE OF CALIFORNIA'S ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM – YEAR 2 FINAL REPORT

NOTICE IS HEREBY GIVEN that the State Water Resources Control Board (State Water Board) will receive public comments on the assessment of progress and final recommendations in the Year 2 Final Report by the Expert Review Panel for the State of California's Environmental Laboratory Accreditation Program (ELAP).

NOTICE IS ADDITIONALLY HEREBY GIVEN that the State Water Board will hold a public workshop to provide information and answer questions on the report.

The workshop is an opportunity for interested persons to provide oral comments to the State Water Board Members. A quorum of the State Water Board Members may attend this workshop. This will be an informational workshop only and the State Water Board will not take any formal action at this meeting. Details of the workshop are provided below.

WEDNESDAY, MAY 3, 2017 – 9:00 A.M.
Joe Serna Jr. – CalEPA Headquarters Building
Coastal Hearing Room
1001 I Street, Second Floor
Sacramento, CA 95814

BACKGROUND

An Expert Review Panel (the Panel) was convened in 2015 to conduct an external examination of the State of California's Environmental Laboratory Accreditation Program (ELAP or program). During its initial review, which was presented to the California State Water Resources Control Board (State Water Board) in November 2015, the Panel identified a number of fundamental weaknesses that hindered the program's ability to achieve its mission of ensuring the State has high-quality data for use in environmental decision-making. The Panel made a series of recommendations to help ELAP reestablish itself as a respected accreditation program. Over the course of a year, the Panel followed ELAP's progress during quarterly public webinars, then reconvened in January 2017 to conduct a second year review of the program to assess whether the program had successfully implemented those recommendations and improved as a result.

During the follow-up review, the Panel found that ELAP made significant progress in implementing the majority of the Panel's recommendations. The Panel believes ELAP is regaining credibility with clients and the laboratory community; is working toward an accreditation process with State and stakeholders support; and has created proficiency testing and enforcement units to help ensure the competency of laboratories producing environmental data. With the extensive programmatic improvements ELAP implemented in the last year, the Panel has confidence ELAP's leadership understands its organizational charge and is well-positioned to accomplish the final Panel recommendations outlined in this report.

While the Panel applauds ELAP's progress during the past year, the program is still not meeting its programmatic goals. Specifically, the Panel notes that ELAP still lacks adequate staff to properly perform onsite assessments of applicant laboratories, which has resulted in a significant programmatic backlog, and an accreditation standard has not been adopted, which hinders the investments the State Water Board has made for staff training. The Panel has identified supplementary recommendations that should help resolve the remaining programmatic shortcomings:

- Adopt an accreditation standard

  In its initial review, the Panel urged ELAP to immediately adopt an accreditation standard. The process took considerable time, but the Panel congratulates ELAP for working well with its stakeholder communities to vet options and reach a decision to adopt The NELAC Institute (TNI) 2016 Standard with 58 modifications proposed by the stakeholder community. The Panel recommends ELAP now move quickly to adopt that standard and develop an implementation process that facilitates laboratory participation. The Panel also recommends ELAP address the 58 modifications "through clarifying comments and implementation guidance that provides examples of compliance techniques," rather than as modifications to the underlying standard. Adopting a modified standard would isolate California from invaluable training resources available from the national program.

- Expand resources

  During its initial review, the Panel found that ELAP was not able to carry out its mission because the program lacked the proper tools, as well as the broad expertise needed among its assessor staff, to conduct all required laboratory assessments. The Panel recommended that ELAP consider using third-party, private-sector assessors to help clear a programmatic backlog. Instead, ELAP pursued expansion and reorganization of in-house capabilities and resources, and has yet to attract or fully retain the in-house staffing it needs. The Panel strongly urges ELAP to immediately begin accepting third party assessments. The Panel also recommends that ELAP acquire software tools and external training resources to help meet workload demands and to ensure consistency when processing laboratory accreditation applications.

Panel Facilitator Dr. Stephen Weisberg of Southern California Coastal Water Research Project (SCCWRP) and Lara Phelps, United States Environmental Protection Agency, Office of the Science Advisor, Senior Advisor for Measurement, Monitoring, and Modeling, and Chair of the Panel, will present the report to the public and attending Board Members. Two members of the commercial and municipal laboratory community will present their perspective and the Division of Drinking Water Deputy Director, Darrin Polhemus, and ELAP Chief, Christine Sotelo, will also make presentations on management perspective and program plans.

DOCUMENT AVAILABILITY
To access the Expert Review Panel report, visit http://www.sccwrp.org/ELAP.

SUBMISSION OF WRITTEN COMMENTS
The Panel report is final; however, the public may submit comments to the Board and is encouraged to submit comments electronically. Comment letters must be received by 12:00 Noon on Monday, May 1, 2017. Comment letters received after that deadline will not be accepted unless the State Water Board determines otherwise. Send comments to Jeanine Townsend, Clerk to the State Water Board, by email at commentletters@waterboards.ca.gov **(must be no more than 15 megabytes)**; fax at (916) 341-5620; or mail or hand delivery at:

Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
P.O. Box 100, Sacramento, CA 95812-2000 (mail)
1001 I Street, 24th Floor, Sacramento, CA 95814 (hand delivery)

Please indicate in the subject line, **"Comment Letter – ELAP Year 2 ERP Report."**

PROCEDURAL MATTERS
While a quorum of the State Water Board may be present at the workshop, the Board will not take formal action. The State Water Board and its staff may ask clarifying questions. To ensure a productive and efficient meeting in which all participants have an opportunity to participate, oral comments or presentations at the workshops may be time-limited. For other presentation recommendations, please go to the State Water Board's website at: www.waterboards.ca.gov/board_info/meetings/board_presentations.shtml.

WORKSHOP LOCATION, PARKING AND ACCESSIBILITY
For directions to the Joe Serna, Jr. (CalEPA) Building and public parking information, please refer to the map on the State Water Board web site at: http://www.calepa.ca.gov/headquarters-sacramento/location/. The CalEPA Building is accessible to persons with disabilities. Individuals requiring special accommodations are requested to call (916) 341-5880 at least five working days prior to the meeting. Telecommunications Device for the Deaf (TDD) users may contact the California Relay Service at (800) 735-2929 or voice line at (800) 735-2922. An audio broadcast of the meeting will be available via the Internet and can be accessed at: https://video.calepa.ca.gov/. All visitors to the CalEPA Building are required to sign in and obtain a badge at the Visitor Services Center located just inside the main entrance (10th Street entrance). Valid picture identification may be required. Please allow up to 15 minutes for receiving security clearance.

FUTURE NOTICES RELATED TO THESE WORKSHOPS
The State Water Board will hold the public workshops at the time and place noted above. Change in the date, time, and place of these public workshops will be posted to the State Water Board main web page at http://www.waterboards.ca.gov/drinking_water/programs/index.shtml under "Announcements".

CONTACT INFORMATION
Please direct any questions about this notice to Christine Sotelo, Chief, Environmental Laboratory Accreditation Program, State Water Resources Control Board, at (916) 341-5175 or Christine.Sotelo@waterboards.ca.gov.

April 19, 2017
Date

Jeanine Townsend
Clerk to the Board

Permits Committee – Report to BACWA Board

Permits Committee Meetings on: 4/11/17
Executive Board Meeting Date: 4/21/17
Committee Chair: Eric Dunlavey

Committee Request for Board Action: None

Regional Water Board Staff in attendance
22 Participants representing 15 member agencies

Regional Water Board Report-out
The NPDES division is now fully staffed. Patrick Karinja is working with James Parrish, and may take over the Pollution Prevention case load.

Upcoming Permits
April – *American Canyon* – no issues.
Pacifica – The City of Pacifica was recently issued a **tentative order** including toxicity limits of 1.0 TUc as an average monthly effluent limit (AMEL), and 1.8 TUc as a maximum daily effluent limit (MDEL). Their discharge enters an effluent-dominated wetland. Their test species is *Ceriodaphnia dubia*, which has been demonstrated both by BACWA member agencies and by a **SCCRWP study** to exhibit high variability (high false-positive rate). Pacifica's sensitive species screening tests indicated that *Selenastrum capricornutum* was the most sensitive species when evaluated using the NOEC method, but their Tentative Order still retains *C. dubia*, citing past high toxicity results with *C. dubia* during regular testing. BACWA submitted a **comment letter** recommending that they be allowed to choose either of the two test species, that there should not be a maximum daily limit in light of the known variability in the test, and that they should be exempt from accruing additional violations when they are investigating toxicity. The Regional Water Board did not incorporate any of the recommendations submitted by BACWA or the City.
CCCSD – BACWA **commented** on the nutrient provisions in the permit, and the benefit of moving nutrient management to the watershed permit.
May – EBDA – EBDA's permit allows them to discontinue acute toxicity testing since their chronic test has a survival endpoint. Both **EBDA** and **BACWA** submitted letters requesting a higher chlorine residual limit at the point of compliance than the 0.0 mg/L limit in the Basin Plan. EBDA also developed a **memo** outlining regulatory options for a higher allowable residual. Regional Water Board staff pointed out that the limit of 0.0mg/L actually is equivalent to 0.04 due to rounding. Additionally, agencies have the latitude to propose a reporting limit as long as it is below 0.1 mg/L.
DSRSD and Livermore – no issues.

BACWA Rule 11-18
BACWA representatives attended meetings with BAAQMD staff on March 9 and March 23 to communicate the special challenges that public agencies would have to comply with Rule 11-18 as currently proposed. BACWA submitted a **letter** to BAAQMD staff outlining the planning and project implementation process for POTWs that would impact their ability to comply with the Rule. BAAQMD staff were open to the idea of moving POTWs that are currently identified in Phase 1 to Phase 2 of the implementation schedule, to provide enough time to update the emission factors for POTWs and ensure accuracy. BACWA offered to develop a proposal over the next two months to provide a scope for working with BAAQMD staff to update the emission factors for toxic air contaminants (TACs) from POTW sources, and to also address the approach for sampling sources and the overall timeline for the effort. BAAQMD reports that the rule will be adopted in June or July now instead of May.

Water Quality Enforcement Updates Adopted
CASA, BACWA, SCAP, CVCWA, and ACWA had multiple meetings with Enforcement staff and Water Board members over the last several months, and made some progress on some of the key issues including:

- Language providing that violations prioritized for enforcement have a nexus with water quality impact,
- Inclusion of potable water as an eligible discharge for high volume adjustments,
- Keeping some reduction factor for degree of culpability (it ended up at 0.75 which is a smaller discount factor than in the existing policy of 0.5 but an improvement on the proposed revision of 1.0), and
- Some boundaries on the history of violations (e.g., suggested relevant timeframe of 5 years)

However, we were unsuccessful in making changes to the Enforcement Division's proposed new language for high volume discharges. The 2010 Enforcement Policy set the initial starting point for high volume discharges at $2.00/gallon, with discretion provided to regulators to go higher (up to $10/gallon) should the situation warrant it. The new language sets the starting point at a range of between $2.00 and $10.00/gallon. While the State Water Board members agreed, this change had the potential to raise fines, they seemed persuaded by the Enforcement Division's assertion that it was important to state the range of the discretion up front and that the new language was very

important to the Regional Boards. The only mitigating measure they were open to was a willingness to take a look down the road to make sure that the policy changes were not resulting in unwarranted increases.

Nutrient Updates

a. Nutrient Technical Workgroup (NTW) meeting on May 4 at SFEI. These meetings take place about once per year and are an opportunity to give technical feedback to the researchers.
b. Focused technical workshops planned for DO in Lower South Bay Habitats (April 27-28) and HABs and HAB toxins (May 31-June 1). While these are open meetings, the leads would like to keep the group small for the sake of efficiency and ideally limited to the Science Advisory Panel and members of the NMS Steering Committee.
c. Update on optimization/upgrade studies progress – Workshop scheduled for June 7. Invitations will be sent to points of contact soon.
d. EBMUD sidestream study and trading overview wrapping up. The study looked at pilot studies involving different sidestream technologies, the potential load reductions, and impacts on the SF Bay. They also looked at what it might take to develop a nutrient trading scheme. Documents related to this effort will be available at the end of April.

303(d) list update

The San Francisco Regional Water Board has posted **proposed revisions** to the San Francisco Bay Basin's 303(d) list, which will be the first update to the list since 2010. Some of the changes are substantial, such as the new toxicity listing for each segment of the San Francisco Bay. BACWA submitted a **comment letter** recommending that the Regional Water Board drop the proposed Bay-wide toxicity listing, as well as stating they should only use newer data when considering which constituents to list. The Water Board dropped the proposed listing of heptachlor in the Lower South Bay in response to BACWA's comments. The hearing for this item is on April 12.

Toxicity

The State Water Board has proposed an updated Toxicity Plan, now called the **Toxicity Provisions for the SIP**. They conducted a stakeholder meeting for POTWs on April 11 to answer questions, and provided an **Outreach Document** summarizing the Provisions. The key tenets of the new provisions are as follows:

- Toxicity tests will be evaluated using the TST.
- Species sensitivity screening includes four sets of tests conducted within one year. Screening must be done at least every ten years.
- RP is assumed for POTWs greater than 5mgd. Smaller facilities will do an RPA with an effect level threshold of 0.10 for RP.
- Regional Water Boards are given discretion on whether to require RPAs for acute toxicity.
- For chronic toxicity, a violation occurs when the toxicity test results in a "fail" and the percent effect for the survival endpoint is greater than or equal to 50 percent at the IWC. If there is no survival endpoint for the species, then a "fail" with a 50 percent or greater effect for any endpoint at the IWC results in a MDEL violation. If the test species is *Ceriodaphia dubia*, a 50 percent or greater effect in the survival endpoint at the IWC results in a MDEL violation.
- If any test results in a "fail" at the IWC then the discharger must initiate two additional toxicity tests within the same calendar month. If either of these additional tests results in a "fail" at the IWC, then there is a violation of the MMEL.
- A TRE shall be initiated when there are two or more violations within the same month or in consecutive months. The combination of violations may be acute and/or chronic and may be any combination of two or more MDEL or MMEL violations.

The State Water Board plans to hold the public comment period over the summer of 2017, with adoption by the end of the year.

Announcements

a. State Water Board to release updated Beneficial Uses and Mercury Objectives by April 22, ahead of May 2 adoption. They will not take written comments.
b. SFEI looking for one more POTW volunteer for microplastics study.
c. Permits Committee leadership succession planning – Robert Wilson of Petaluma volunteered as Permits committee vice-chair beginning in July. Chris Dembiczak to take over the chair position from Eric Dunlavey.
d. Committee schedule – The committee will continue joint meetings with CASA RWG. The next joint meeting will be in December 2017.

Next BACWA Permits Committee Meeting: Tuesday May 9, EBMUD.

Executive Director's March 2017 Report

NUTRIENTS:

Completed a variety of tasks and activities associated with BACWA's interests on nutrients and collaborating with the Water Board including:
- Attended and participated in the 12th meeting of the NMS Steering Committee and provided BACWA in-kind services by serving as scribe. Following the meeting prepared detailed meeting minutes and summary of action items.
-Participated in a conference call of the NMS Planning Subcommittee.
-Coordinated with the OP/Upgrade consulting team on administrative issues.
-Provided updates to the WB staff on the progress on reaching consensus on an approach to the 2nd Watershed Permit.
-Coordinated with the NMS Science Manager on presentations, meetings, and key issues on nutrients.

BACWA BOARD MEETING AND CONFERENCES:

-Worked with staff in preparing for the March BACWA Board meeting including reviewing the agenda with the Board Chair.
-Organized and attended the bi-monthly Joint Meeting with the Water Board for March.
-Continuing to track all action items to completion.
-Planned for and attended the March monthly Board Meeting.

ASC/SFEI:

-As a member of the Executive Committee, coordinated with SFEI Executive Director on Board activities.

FINANCE:

-Reviewed the monthly BACWA financial reports with the AED.
-Continued coordinating with the AED in tracking the revenues coming in from the BACWA FY 17 member invoices.
-Worked with the AED to finalize the BACWA FY 18 budget and 5 Year Plan.
-Presented the final draft of the FY 18 budget and 5 Year Plan at the March Board meeting.

PERMIT COMMITTEE:

-Coordinated with the RPM for items to agendize for the Permit Committee review.
-Participated in strategy sessions on approaches to the SWRCB proposal on more stringent mercury water quality objectives for tribes and subsistence fishing.
-Submitted a comment letter on the Water Board's proposal for new listings under 303 (d).
-Submitted a comment letter to the Water Board in support of the new permit for CCCSD.

COLLECTION COMMITTEE:

-Attended the monthly meeting of the Collection Committee and engaged with Water Board staff on key issues of the Committee

COLLABORATIONS:

-Serving as a member of the CASA Nomination Committee for new Board members.
-Coordinated with the Summit Partners in preparation of a comment letter on the SWRCB's proposed beneficial uses for tribal fishing.
-Attended the CASA DC conference but not representing BACWA. Participated in conference call to debrief on the DC meeting.

AIR COMMITTEE:

-Coordinated with the AIR Committee leadership on responding to proposed regulations on health risk assessments.
-Participated in a workshop with BAAQMD staff on Rule 11-18 and a follow-on meeting with executive management of BAAQMD to develop an approach on Rule 11-18 that was workable for the BACWA membership
-Submitted a comment letter to BAAQMD on the new Clean Air Plan.

WOT

-Participated in conference calls to help the BACWWE group reorganize after the departure of the chair of WOT.

ADMINISTRATION:

-Held the monthly BACWA staff meeting to coordinate and prioritize activities.
-Signed off on invoices, reviewed correspondence, prepared for upcoming Board meeting, responded to inquiries on BACWA efforts, oversaw updating of web page and provided general direction to BACWA staff.
-Worked with the RPM in the preparation of the monthly BACWA bulletin.
-Coordinated with the AED to plan activities and review duties, schedules, and priorities.
-Developed and responded to numerous emails and phone calls as part of the conduct of BACWA business on a day-to-day basis.

MISCELLANEOUS MEETINGS/CALLS:

-Paul Gilbert Snyder on Prop 84
-BACWA Chair and Committee Chairs on items that arose during the month
-Water Board staff on coordinating the nutrient activities
-other misc calls and inquiries regarding BACWA activities
-participated in coordination calls with the HDR project manager
-responded to Board members requests for information

BACWA BOARD CALENDAR

May 2017 to April 2018

DATE	AGENDA
5/19/2017	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 5/12	Monthly Financial Report
Pagano; Ervin; Connor; Horenstein; Schectel	**Authorizations & Approvals**
Williams; Fono; Hull	Approval: FY18 Consulting Amendments/Agreements
	Approval: Officers: Chair & Vice-Chair
	Approval: BACWA Reps to ASC/SFEI Governing Board
	Authorization: Legal Support Amendments
	Other Business - POLICY/STRATEGIC
	Discussion: Water Board Jt Mtg Debrief
	Discussion: Pesticides Update (Kelly Moran)
	Other Business - OPERATIONAL
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports
5/?/2017	
Joint Meeting - Water Board	**Other Business: Discussions**
Items due:	
Pagano; Ervin; Connor; Horenstein; Schectel	
Williams; Fono	
6/7/2017	
Nutrient Optimization/Upgrade Workshop #2	
Pagano; Ervin; Connor; Horenstein; Schectel	Optimization/Upgrade Studies
Williams; Fono	Water Board
6/16/2017	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 6/?	Monthly Financial Report
Pagano; Ervin; Connor; Horenstein; Schectel	**Authorizations & Approvals**
Williams; Fono; Hull	Approval: FY18 Agreements
	Other Business - POLICY/STRATEGIC
	Discussion: Draft Agenda WB Joint Meeting
	Other Business - OPERATIONAL
	Reports

	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

7/?/2017	
Joint Meeting - Water Board	**Other Business: Discussions**
Items due:	
Pagano; Ervin; Connor; Horenstein; Schectel	
Williams; Fono	

7/21/2017	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 7/14	Monthly Financial Report
Pagano; Ervin; Connor; Horenstein; Schectel	**Authorizations & Approvals**
Williams; Fono; Hull	Approval: Annual Nutrient WS Payment
	Approval: FY18 Agreements
	Other Business - POLICY/STRATEGIC
	Discussion: Draft Agenda Pre-Pardee Technical Seminar
	Discussion: Risk Reduction Update
	Discussion: Water Board Jt Mtg Debrief
	Other Business - OPERATIONAL
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

8/18/2017	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 8/11	Monthly Financial Report
Pagano; Ervin; Connor; Horenstein; Schectel	**Authorizations & Approvals**
Williams; Fono; Hull	
	Other Business - POLICY/STRATEGIC
	Discussion: HDR Quarterly Update on Optimization/ Upgrade studies
	Discussion: Draft Agenda & Schedule Pre & Pardee Technical Seminar
	Discussion: Draft Agenda WB Joint Meeting
	Discussion: RMP & NMS Update (Phil Trowbridge/David Senn)
	Discussion: Risk Reduction Update
	Other Business - OPERATIONAL
	Discussion: FY18 Arleen Navarret Award
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)

	RPM Report (RPM) Other BACWA Representative Reports

9/15/2017	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 9/8	Monthly Financial Report
Pagano; Ervin; Connor; Horenstein; Schectel	**Authorizations & Approvals**
Williams; Fono; Hull	Approval:
	Other Business - POLICY/STRATEGIC
	Discussion: Draft Agenda Pardee Technical Seminar
	Discussion: Annual Meeting Planning
	Other Business - OPERATIONAL
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

9/15/2017	**Tentative**
Pre-Pardee Mtg	
Pagano; Ervin; Connor; Horenstein; Schectel	
Williams; Fono; Hull	

10/26-27/2017	
Pardee Technical Seminar	
Pagano; Ervin; Connor; Horenstein; Schectel	
Williams; Fono; Hull	

11/17/2017	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 11/10	Monthly Financial Report
Pagano; Ervin; Connor; Horenstein; Schectel	**Authorizations & Approvals**
Williams; Fono; Hull	Approval: Adoption of FY16 Annual Reports
	Approval: Finalize next Calendar Year meeting dates
	Other Business - POLICY/STRATEGIC
	Discussion: Pardee Debrief & Survey
	Other Business - OPERATIONAL
	Discussion: Annual Meeting Planning
	Discussion: Biannual Update on CASA Climate Change Prog (SDeslauriers)
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

12/15/2017	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 12/8	Monthly Financial Report
Pagano; Ervin; Connor; Horenstein; Schectel	**Authorizations & Approvals**
Williams; Fono; Hull	**Other Business - POLICY/STRATEGIC**
HOLIDAY LUNCH	Discussion: Draft Agenda Joint Meeting with WB
	Other Business - OPERATIONAL
	Discussion: Annual Meeting Agenda
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

12/?/2017	
Joint Meeting - Water Board	**Other Business: Discussions**
Items due:	SNMP
Pagano; Ervin; Connor; Horenstein; Schectel	
Williams; Fono	

1/?/2018	
Annual Members Mtg	
Pagano; Ervin; Connor; Horenstein; Schectel	RMP & NMS Update (Phil Trowbridge/David Senn)
Williams; Fono; Hull	

2/?/2018	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 2/10/15	Monthly Financial Report
Pagano; Ervin; Connor; Horenstein; Schectel	**Authorizations & Approvals**
Williams; Fono; Hull	Approval:
	Other Business - POLICY/STRATEGIC
	Discussion: WB Joint Meeting Debrief
	Other Business - OPERATIONAL
	Discussion: FY2019 Budget Planning
	Discussion: Annual Meeting Debrief
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

3/?/2017	
Joint Meeting	**Other Business: Discussions**
Items due:	
Pagano; Ervin; Connor; Horenstein; Schectel	

Page 4

Williams; Fono	

3/?/2017	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 3/10	Monthly Financial Report
Pagano; Ervin; Connor; Horenstein; Schectel	**Authorizations & Approvals**
Williams; Fono; Hull	**Other Business - POLICY/STRATEGIC**
	Discussion: WB Joint Meeting Debrief
	Presentation: CPSC Update (Heidi Sanborn)
	Other Business - OPERATIONAL
	Discussion: Second Draft of FY19 Budget
	Discussion: Update on BARR Taskforce
	Discussion: Update on regional and statewide biosolids issues
	Discussion: Biannual Update on CWCCG (SDeslauriers)
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

4/?/2017	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 4/?	Monthly Financial Report
Pagano; Ervin; Connor; Horenstein; Schectel	**Authorizations & Approvals**
Williams; Fono; Hull	Approval: FY19 Budget
	Other Business - POLICY/STRATEGIC
	Discussion:
	Other Business - OPERATIONAL
	Discussion: Update on BAAQMD Regulations
	Discussion: Update on regional and statewide biosolids issues
	Discussion: CASA Climate Change Program
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

CURRENTLY	* BACWA Membership Engagement Opportunities
UNSCHEDULED	* Tech Seminar/Workshop: CCCSD Cogen explosion need to schedule
& SIGNIFICANT	* SFPUC force main leak and repair, need to schedule
	* Chlorine Residual Analyzer Investigation
	* Suggestions for Monthly Meeting Guest Speakers/Presenters: i.e. Jim McGrath, State Water Board

BACWA BAY AREA CLEAN WATER AGENCIES

BACWA ACTION ITEMS

Number	Subject	Task	Deadline	Status
	Action Items from March 17, 2017 BACWA Executive Board Meeting			
2107.3-53	Biosolids Committee	Letter of Commitment to FFAR for $9,999 in matching funds by 3/29/17 (RPM)	3/24/2017	completed
2017.3-52	Pardee Dates	Send confirmation of dates to Pardee & Outlook invitation to Board members (AED)	3/20/2017	completed
2107.3-51	Pacifica Permit	BACWA testimony at adoption hearing (ED/RPM)	4/12/2017	completed
2017.3-50	EBDA permit	BACWA letter on chlorine residual (ED/RPM)	4/3/2017	completed
2017.3-49	303(d) list	BACWA testimony at hearing (ED/RPM)	4/12/2017	completed
2017.3-48	Layperson's Guide to the Nutrient WS Permit	Add updates suggested by Board (ED)	3/31/2017	completed
2017.3-47	Nereda Technology	Add funding question to April EB Agenda (ED)	3/31/2017	completed
2017.3-46	Emergent technology opportunities	Include info in Bulletin (RPM)	3/28/2017	completed
	Action Items Remaining from Previous BACWA Executive Board Meetings			
2017.2-42	Toxicity	Organize a toxicity workshop (Permit/Lab/EPA) (RPM)	4/30/2017	pending
2017.2-40	Codiga Resource Recovery Center	Incorporate into W/S Permit negotiations (ED)	6/30/2017	pending
2017.2-38	Science Funding	Continue to contact members to get input (ED)	4/30/2017	pending
2016.3-61	Membership Policy	Develop policy for out of region agency membership (ED)	4/30/2017	pending

FY17: *50 of 53 Action Items completed.*
FY 16: *96 of 97 Action Items completed.*
FY 15: *90 of 90 Action Items completed.*
FY 14: *128 of 128 Action Items completed.*
FY 13: *67 of 67 Action Items completed.*

Regulatory Program Manager's Report to the Board

March 2017

NUTRIENT SUPPORT: Contacted agencies that had not yet responded to the Recycled Water and CIP surveys. Attended final meeting for EBMUD's EPA sidestream treatment grant.

BACWA BULLETIN: Completed and distributed March Bulletin. Drafted April Bulletin.

CECs: Worked with AXYS to distribute data from SFEI-coordinated voluntary CECs study. Participated in conference call hosted by SFEI on proposed microplastics study.

BENEFICIAL USES: Discussed tribal position on beneficial uses with CIEA Executive Director. Discussed next steps with a coalition of POTWs from around the State.

303(d) LIST: Reviewed proposed revisions to 303(d) list for San Francisco Bay Basin. Drafted comment letter recommending dropping toxicity listing and using newer data for listings.

BAAQMD RULE 11-18: Attended meeting with senior BAAQMD staff to discuss policy options for POTWs within the Rule. Reviewed letter to BAAQMD on POTW implementation challenges.

MEMBER TENTATIVE ORDERS: Drafted comments in support of the Nutrient Watershed Permit for CCCSD's TO. Drafted comment letter on chlorine residual requirements for EBDA's TO.

CASA REGULATORY WORKGROUP: Attended meeting (joint with Permits Committee) and gave Regional Association update for BACWA.

STATE WATER BOARD CLIMATE CHANGE RESOLUTION: Drafted comment letter on recycled water reporting requirements in State Water Board Climate Change Resolution.

COMMITTEE SUPPORT:
AIR – Attended meeting and posted meeting materials. Reviewed Draft Clean Air Plan Comment Letter.
BAPPG – Drafted meeting notes. Drafted CAR to fund baywise.org upgrade and worked with Computer Courage to develop contract for this work.
Collection Systems - Drafted agenda and attended meeting.
O&M Infoshare – Discussed scheduling next meeting with Chair.
Permits – Attended joint meeting with CASA Regulatory Group and drafted Board Report.
Recycled Water – Attended meeting, Drafted meeting notes and Board Report. Participated in conference call on transition to State General Order from 96-011.
Executive Board – Drafted agenda and meeting summary for 3/9 Joint meeting with RWB staff. Assisted in preparing agenda and packet, and attended Executive Board meeting.
Staff Meeting – Discussed BACWA administration and planned Executive Board meeting.

MEETINGS ATTENDED: Recycled Water (3/1), CASA call on Enforcement Policy (3/1), Recycled Water Call on Transition to State General Order (3/2), Microplastics Study Call (3/7), Staff meeting call-in (3/8), CASA RWG (3/9), Joint meeting with RWB (3/9), CASA Call on Mercury/Beneficial Use Next steps (3/14), AIR Committee (3/15), Executive Board meeting (3/17) FWQC Call on Selenium Guidance (3/22); Collection Systems Committee (3/23); Meeting with BAAQMD Staff (3/23); EBMUD sidestream meeting (3/28).