BACWA
BAY AREA
CLEAN WATER
AGENCIES

Executive Board Meeting
AGENDA
Friday, March 16, 2018, 9:00 a.m. – 12:30 p.m.
EBMUD HQ, 2nd Floor Large Training Room
375 11th Street, Oakland, 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 February 16, 2018, BACWA Executive Board Meeting Minutes			**3-10**
2 January 2018 Treasurer's Reports			**11-21**
APPROVALS & AUTHORIZATIONS		**9:06 AM**	
3 Approval: None			
OTHER BUSINESS - POLICY/STRATEGIC			
4 Discussion: Nutrients		**9:10 AM**	
a. Regulatory			
i. NST meeting report-out			
ii. Update on Optimization/Upgrade Studies Progress			**22-23**
b. Technical Work			
i. NMS Science Program Update			
c. Governance Structure			
i. Nutrient Strategy Steering Committee Meeting #16 Debrief	Materials		**24-31**
5 Discussion: March 2018 WB Joint Meeting Debrief			**32-34**
6 Discussion: Lab Committee Report on TNI & BACWA Role			
7 Discussion: Update on Chlorine Residual Basin Plan			
8 Discussion: H2S Limit Comment Letter			**35-41**
9 Discussion: CEC Panel Draft Report Comment Letter			**42-45**
10 Discussion: Pyriproxyfen Risk Assessment Comment Letter			**46-59**
11 Discussion: SSSWDR Comment Letter			
12 Discussion: CMSA Permit Petition	Permit		**60-61**
OTHER BUSINESS - OPERATIONAL		**10:45 AM**	
13 Discussion: Second Draft of FY19 Budget			**62-64**
14 Discussion: Biannual Update on CASA Climate Change Program			
15 Discussion: NBWA Conf Sponsorship - Complimentary Tickets (2)			**65-66**
16 Discussion: Report from Lab Committee Chair on Recent Training			**67-71**
17 Discussion: Website Mobile Layer Update			
18 Discussion: BAPPG RFQ Results	RFQ's		
19 Discussion: Update on Wastewater Operator Training Certification Program			**72-73**
20 Discussion: Risk Reduction Options	Permit		**74**
21 Discussion: RMP CEC Workgroup Meeting 4/12-13/18	Meeting		
22 Discussion: Microplastics Workgroup Meeting 5/15/18	Meeting		

REPORTS				**12:10 PM**	
23	Committee Reports				**75-82**
24	Member Highlights				
25	Executive Director Report				**83-91**
26	Regulatory Program Manager Report				**92**
27	Other BACWA Representative Reports				**93**
	a. RMP TRC	Mary Lou Esparza			
	b. RMP Steering Committee	Karin North; Leah Walker; Eric Dunlavey			
	c. Summit Partners	Dave Williams; Lori Schectel			
	d. ASC/SFEI	Laura Pagano; Dave Williams; Amit Mutsuddy; Karin North			
	e. Nutrient Governance Steering Committee	Eric Dunlavey; Eileen White; Bhavani Yerrapotu; Lori Schectel			
	e.i Nutrient Planning Subgroup	Eric Dunlavey			
	e.ii NMS Technical Workgroup	Eric Dunlavey			
	f. SWRCB Nutrient SAG	Dave Williams			
	g. SWRCB Focus Group – Mercury Amendments to the State Plan	Tim Potter; Laura Pagano; David Williams			
	h. NACWA Taskforce on Dental Amalgam	Tim Potter			
	i. BAIRWMP	Cheryl Munoz; Linda Hu; Dave Williams			
	j. NACWA Emerging Contaminants	Karin North; Melody LaBella			
	k. CASA State Legislative Committee	Lori Schectel			
	l. CASA Regulatory Workgroup	Lorien Fono			
	m. ReNUWIt	Jackie Zipkin; Karin North			
	n. RMP Microplastics Liaison	Nirmela Arsem			
	o. AWT Certification Committee	Maura Bonnarens,			
	p. Bay Area Regional Reliability Project	Eileen White			
	q. WateReuse Working Group	Cheryl Munoz;			
	r. San Francisco Estuary Partnership	Eileen White; Dave Williams	Materials		**94**
	s. CPSC Policy Education Advisory Committee	Doug Dattawalker			
	t. California Ocean Protection Council	Lorien Fono	Guidance		
28	**SUGGESTIONS FOR FUTURE AGENDA ITEMS**			**12:27 PM**	
NEXT MEETING				**12:28 PM**	
The next regular meeting of the Board is scheduled for April 20, 2018 from 9:00 am to 12:30 pm at SFPUC, 13th Floor, Hetch Hetchy Room, 525 Golden Gate Ave, San Francisco, CA.					
ADJOURNMENT				**12:30 PM**	

Executive Board Meeting Minutes

February 16, 2018

ROLL CALL AND INTRODUCTIONS

Executive Board Representatives: Jim Ervin (San Jose); Lori Schectel (Central Contra Costa Sanitary District); Laura Pagano (SFPUC); Mike Connor (East Bay Dischargers Authority); Eileen White (East Bay Municipal Utility District).

The Executive Director opened the meeting with a moment of silence in honor of Rod Miller, SFPUC Lab Director and long-time participant in BACWA, who passed away suddenly this month. Rod was the BACWA representative on the RMP Technical Review Committee. We are very saddened by this news and our thoughts and prayers go out to his family.

Other Attendees:

Name	Agency/Company
Amanda Roa	Delta Diablo
Bhavani Yerrapotu	City of Sunnyvale
Dave Richardson	RMC
Eric Dunlavey	San Jose
Holly Kennedy	HDR
Karin North	City of Palo Alto
Tom Hall	EOA, Inc.
Edgar Castor	DHS
Carl Morrison	Morrison Associates
Jason Warner	Oro Loma
Amy Chastain	SFPUC
Amit Mutsuddy	San Jose
Roger Bailey	CCCSD
Jackie Zipkin	EBMUD
Denise Conner	LWA
Jenny Pang	SFPUC
Dave Turner	NOAA Research Boulder
Lynn Johnson	NOAA Earth System Research Lab
Allen White	NOAA Research Boulder
Greg Pratt	NOAA Earth System Research Lab
Rob Cifelli	NOAA Earth System Research Lab
Jennifer Krebs	AQPI
David Williams	BACWA
Lorien Fono	BACWA
Sherry Hull	BACWA

PUBLIC COMMENT
None.

CONSIDERATION TO TAKE AGENDA ITEMS OUT OF ORDER – The AQPI, the DHS RRAP, and the Optimization/Upgrade Update Presentations were taken out of order.

CONSENT CALENDAR
1. December 15, 2017, BACWA Executive Board Meeting Minutes – The approved minutes will be posted on the BACWA website.

2. November and December, 2017 Treasurer's Reports and Financial Summary – A Financial Summary Report was included in the Packet. A copy of the FY17 Budget as of December 31, 2017, (50% 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. The Executive Director noted that the Funds Report includes a report on the Alternative Investments and, because those investments are less liquid than previous investments, a report on BACWA liquidity in also provided.

Consent Calendar items 1 and 2: *A motion to approve was made by Mike Connor and seconded by Lori Schectel. The motion was approved unanimously.*

APPROVALS & AUTHORIZATIONS
3. Approval: Chair & Vice-Chair Nomination and Election (Interim) – With the mid-year retirement of the current Chair, a new Chair and, depending on who is selected as the Chair, possibly Vice-Chair will need to be chosen by the Executive Board for the remainder of FY18. A Board Authorization Request was included in the Packet. The Executive Director gave an overview and requested nominations from the Executive Board.

Items 3*: In a motion made by Jim Ervin and seconded by Eileen White, Lori Schectel was nominated to serve as Chair for the remainder of the FY18 term. The motion carried unanimously.*

In a motion made by Laura Pagano and seconded by Eileen White, Amit Mutsuddy was nominated to serve as Vice-Chair for the remainder of the FY18 term. The motion carried unanimously.

4. Approval: BACWA Representatives Review – A Board Action Request and a list of current organizations with BACWA Representatives and two new organizations were included in the Packet. The Executive Director asked the Board to recommend representatives where changes are needed. The Board provided recommendations. The Executive Director will contact those recommended and report to the Board.

The Board also wishes to thank those who have served BACWA as Representatives, especially those whose efforts have concluded: Jim Ervin, Mike Connor, Amy Chastain, Melody LaBella, Lorien Fono, and Roger Bailey.

5. Approval: BACWA Requests for Support of North Bay Watershed Association, Non-Flushables Study and Toxicity Study – A Board Action Request and supporting documents were included in the Packet. The Executive Director asked the Board to determine the amount of support, if any, for each item.

Items 5:
In a motion made by Laura Pagano and seconded by Eileen White, the Board approved funds in the amount of $1,500.00 for sponsorship of the ***North Bay Watershed Association*** *conference in FY18. The motion carried unanimously. The Board directed that funds would come from the FY18 Miscellaneous Collaborative Support BACWA Budget line item.*

In a motion made by Lori Schectel and seconded by Eileen White, and amended so that providing the funds for the non-flushables study was contingent upon the Executive Director gaining concurrence from the BACWA BAPPG Committee to provide the funds for the study, the Board approved funds in the amount of $3,000.00 for support of the ***Non-Flushables Study*** *in FY18. The motion carried unanimously. The Board directed that funds would come from the FY18 Miscellaneous Committee Support BACWA Budget line item.*

In a motion made by Jim Ervin and seconded by Mike Connor, contingent on feedback from the State and SCCWRP and review of the level of participation by other entities, the Board approved funds in the amount of $15,000.00 for support of the ***Toxicity Study*** *in FY18. The motion carried unanimously. The Board directed that funds would come from the FY18 Miscellaneous Committee Support BACWA Budget line item.*

6. Approval: BACWA Request for Board Approval of Dates for BACWA Board Meetings in Calendar Year 2019.

Items 6*: A motion to approve, contingent on the correction of the January Annual Meeting date to January 25, 2019, was made by Lori Schectel and seconded by Laura Pagano. The motion was approved unanimously.*

OTHER BUSINESS-POLICY/STRATEGIC

Agenda **Item 7 –** Discussion: Nutrients

a. Regulatory
    i. Advance Science Funding Proposal – A proposal from SFEI was included in the Packet. The Executive Director gave an overview of the proposal which requests

advanced funding of FY20 funds in FY19, with no overall increase in science funding commitments under the 2nd Watershed Permit. The Board suggested that the item be added to the agenda for the Joint Meeting with the Water Board.

ii. Optimization/Upgrade Update – A Sea Level Rise Assessment Memo from HDR was included in the Packet. Member agency Points of Contact have been asked to review the memo, and to send HDR any pertinent information about infrastructure such as FEMA-certified levies that would impact their agency's risk as noted on the memo's sea level rise map. HDR will include additional information submitted by agencies in the report. HDR gave a quick update on the status of the Optimization/Upgrade studies and it was noted that Sign-Off Letters are being collected by BACWA and will be forwarded to HDR for inclusion in the final report. HDR is asking that managers return the letter within three weeks of receipt of their reports. HDR then responded to a Board member's request that instead of only including a map of sea level rise risks on the most conservative curve, the memo should also include the probability data connected with all three risk curves.

iii. Annual Science Plan Update Letter – The cover email and a LINK to the Science Plan Update that was submitted to the Regional Water Board was included in the Packet.

iv. Oro Loma Tentative Order – A LINK to the Tentative Order was included in the Packet. Oro Loma was granted a shallow water discharge prohibition exception for peak flows in exchange for a performance-based effluent limit for ammonia. They will need to achieve 70% ammonia removal, calculated on an annual basis based on monthly influent/effluent measurements. They will do nitrification year-round and denitrification seasonally. They performed a shellfish survey to verify that the discharge zone does not host shellfish, which influences the effluent coliform limits. They were granted 4:1 dilution for calculated the effluent coliform limits. The permit approval is on the March 2018 Agenda for the Water Board.

b. Technical Work -

i. NMS FY2017 Annual Report – A LINK to the Annual Report was included in the Packet.

c. Governance Structure –

i. Planning Subcommittee Meeting #30 Debrief – The Minutes from the February 2, 2018 meeting was included in the Packet. The Executive Director gave an overview of the discussion including a key discussion of the progress on the model and the importance of running the model as early as possible to help inform the high priority work needed for the Science Plan. The goal is to have a robust calibrated model with a well-developed Assessment Framework that will help inform any management actions needed during the term of the 3rd Watershed Permit in 2024.

ii. Measure AA Proposals – A list of the round 1 grant proposals received by the San Francisco Bay Restoration Authority was included in the Packet. The Executive Director gave an overview.

Agenda **Item 8 –** Discussion: Draft Agenda Water Board Joint Meeting on 3/2/18 – A Draft

Agenda was included in the Packet. The Executive Director gave and overview of the Agenda. Board members suggested adding PFOA/PFOSs management actions under the CEC discussion, a discussion of permitting of horizontal levies, automated compliance monitoring as part of the TNI discussion and increased staff at the WB to deal with cannabis grows.

Agenda **Item 9 –** Discussion: CMSA Permit Adoption Debrief – The Executive Director gave a brief presentation on the issues raised by the CMSA Permit and presented thoughts on key issues which will present themselves when the Board is attempting to balance BACWA, Principal, Associate, and Collection System members' needs. A discussion ensued and the Board gave feedback.

Agenda **Item 10 –** Discussion: Sanitary Sewer System Waste Discharge Requirements – An introduction and a LINK to the Update were included in the Packet. The 2006 WDR and the 2013 MRP are being revised this year. The Collection systems Committee has started a workgroup to respond to the State Water Board's request for areas that should be changed. Members wishing to participate in the workgroup should contact the Regulatory Program Manager.

OTHER BUSINESS-OPERATIONAL

Agenda **Item 11 –** Discussion: Advanced Quantitative Precipitation Information (AQPI) Presentation – Representatives from Morrison Associates, NOAA Research Boulder, and NOAA Earth System Research gave a presentation on work being done on extreme events precipitation and flooding models for Bay Area stakeholders. The model includes both precipitation forecasting and hydrology to estimate runoff levels. There was a discussion about the degree to which the precision of the forecasts will improve and result in actionable data for Bay Area wastewater agencies. The team leads are interested in how BACWA members would like to receive the forecast data.

Agenda **Item 12 –** Discussion: Update on Regional and Statewide Biosolids Issues – Cancelled.

Agenda **Item 13 –** Discussion: DHS RRAP Presentation – A Protective Security Advisor from the San Francisco office of the Department of Homeland Security gave a presentation on their Regional Resiliency Assessment Program. DHS has been asked by the Bay Area Metro (BAM-formerly ABAG and MTC) and California Office of Emergency Services (CalOES) to enhance regional collaboration; improve regional resilience in water, wastewater and energy; guide investment in lifeline utilities; and leverage Bay Area Measure AA and/or State Proposition 1. There was a discussion about the security of information gathered as part of this effort. A **LINK** to the presentation can be found on the BACWA website. DHS requested that BACWA facilitate the completion of a questionnaire that will be provided to BACWA members.

Agenda **Item 14 –** Discussion: First Draft of FY19 Budget – The first draft of the FY19 BACWA Budget was included in the Packet. The Executive Director gave an overview of the Budget. The Board suggested some additions and changes to line items on the Budget including adding a line item for a Nutrient Workshop and an increase to the Miscellaneous Committee line item. Staff will make those changes and bring an updated Draft Budget back to the Board at the March 2018 Executive Board Meeting.

Agenda **Item 15 –** Discussion: Annual Meeting Debrief – The Annual Members' Meeting Survey results were included in the Packet.

Agenda **Item 16** – Discussion: Poll Everywhere Debrief – A report showing the results of the Poll Everywhere questions that were asked at the BACWA Annual Meeting was included in the Packet.

Agenda **Item 17** – Discussion: BAPPG RFQ Update – The final RFQ's that were sent out were included in the Packet. The Regulatory Program Manager gave an overview of the process and noted that only one RFQ was submitted for each of Pesticides Support and for Professional Training. There were three RFQ submitted for Public Outreach and they will be provided to the Selection Committee for review.

Agenda **Item 18** – Discussion: Annual NPDES Compliance Letter – A copy of the Annual NPDES Compliance letter sent to the Regional Water Board was included in the Packet.

Agenda **Item 19** – Discussion: Membership Satisfaction Survey Update - The latest update of the BACWA Membership Satisfaction Survey was included in the Packet.

REPORTS

Agenda **Item 20** – Committee Reports – BACWA Committee Reports were included in the Packet.
AIR Committee: No meeting.
BAPPG Committee: A Report from the February 7, 2018 meeting was included in the Packet.
Biosolids Committee: A Report from the December 14, 2017 meeting was included in the Packet.
Collections Committee: A Report from the February 1, 2018 meeting was included in the Packet.
InfoShare - Asset Management: No meeting.
InfoShare – Operations & Maintenance: No meeting.
Lab Committee: No meeting. The Board discussed the TNI issues and suggested that the issue be added to the Agenda for the Joint Meeting with the Water Board.

Permits Committee: Reports from the January 9, 2018 and the February 13, 2018 meetings were included in the Packet.
Pretreatment Committee: No meeting.
Recycled Water Committee: A Report from the January 16, 2018 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: The new General Manager, Jackie Zipkin was welcomed. The current General Manager will be staying on until June, 2018.
EBMUD: Congratulated Jackie Zipkin on her new position at EBDA. They will be conducting a search for a new Environmental Services Manager later in the year.
Central Contra Costa: Recently provided an annual report to their Board on Collection Systems. Of note is that there were only 2.5 overflows/100 miles.
San Francisco: Negotiating with the Regional Board on test species. Looking at a range of species not affected by ammonia, including giant kelp. A Board member suggested they look at fathead minnows.
San Jose: Recently found an endangered species of long-fin smelt at their effluent outfall. There is still a lot of construction going on and there will be a groundbreaking on March 2, 2018 to split ATC into two stages. An air permit is pending for their generators.
Sunnyvale: Have had a lot of air activity recently. Has a concern over BAAQMD understanding of systems, and long lag for permitting. Will be doing three months of continuous monitoring.
Delta Diablo: Will be hiring an Engineering Services Director. The City of Antioch received a $10 million grant for desalinization of river water, and they want to send the RO concentrate to Delta Diablo.

Agenda **Item 22** - The **Executive Director's (ED) Reports** for December 2017 and January 2018, along with the Board Calendar, and BACWA Action Items, were included in the Packet. It was noted that 37 of 37 action items from FY18 have been completed. The Executive Director also noted the inclusion of a BACWA Comment Letter on Changes to Proposed Regulations Prohibiting Wasteful Water Use Practice sent to the State Water Resources Control Board after the Agenda was posted.

Agenda **Item 23** - The **Regulatory Program Manager (RPM) Reports** for December 2017 and January 2018 were 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 – The Executive Director announced the sad news that Rod Miller, the SFPUC Lab Director and a long-time participant in BACWA, passed away suddenly. We are very saddened by this news and our thought and prayers go out to his family.
b. RMP Steering Committee: Karin North; Leah Walker; Jim Ervin – A LINK to the December 13, 2017 RMP Report was included in the Packet.
c. Summit Partners: Dave Williams; Laura Pagano **–** No report.
d. ASC/SFEI: Laura Pagano; Dave Williams; Karin North –
e. Nutrient Governance Steering Committee: Jim Ervin; Mike Connor – 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; Dave Williams; Laura Pagano – 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 – No report.
o. CASA Regulatory Workgroup – Lorien Fono - No report.
p. RMP Microplastics Liaison: Nirmela Arsem – No report.
q. ReNUWIt: Mike Connor; Karin North – 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**.

ANNOUNCEMENTS:
The next regular meeting of the Board is scheduled for **March 16, 2018 from 9:00 am – 12:30 pm** at the **EBMUD Headquarters, 375 11th St, 2nd Floor Training Room, Oakland, CA.**

The Board would like to acknowledge the long-term services of Jim Ervin to the BACWA Board.

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 12:55 pm. Laura Pagano asked that the meeting be adjourned in honor of Rod Miller and the Board agreed.

Fund Balances

In FY 18 BACWA has three operating funds (BACWA, Legal, and CBC) and two pass-through funds for which BACWA provides only contract administration services (WOT & Prop 84).

BACWA Fund: This fund provides the resources for BACWA staff, its committees, and other administrative needs. The ending fund balance on January 31, 2018 was $1,452,685 which is significantly higher than the target reserve of $160,000 which is intended to cover 3 months of normal operating expenses. $315,739 of the ending fund balance is shown on the January Fund & Investments Balance Report as 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 (including $31,082 that was carried forward into FY18). This leaves an actual unobligated excess fund balance of $1,136,946 as of January 31, 2018. As the details of what regulatory requirements will be included in the next Nutrient Watershed Permit, these excess funds may be transferred to the CBC fund and used to offset potential Nutrient Surcharge 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 January 31, 2018 was $1,896,359 which is significantly higher than the target reserve of $400,000. $240,896 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. This leaves an actual unobligated excess fund balance of $1,655,464 as of January 31, 2018. Total Disbursements for FY18 from the CBC Fund include the annual payment of $880,000 to SFEI for the Nutrient Watershed Permit commitment plus the additional $200,000 approved by the Board. 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 Nutrient Surcharge 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 January 31, 2018 (58% of the FY) are at 100%. The FY18 BACWA invoices were sent at the end of July 2017 and the end of August 2017, and 100 of the invoices have been paid before the end of December. The interest revenue reported through January, 2018 includes $5,788 interest from the investment of Funds in LAIF for the 4th quarter of FY17.

Overall Expenses as of January 31, 2018 (58% of the FY) are at 68% due primarily to timing of the Watershed Permit Commitment payment. Those needing additional explanation are:

Administration: This category is 30% expended at 58% of the FY due primarily to timing of invoices.

Legal: This category is 13% expended at 58% of the FY due primarily to no need for regulatory legal support.

Collaboratives: This category is 28% expended at 58% of the FY due primarily to timing of invoices.

Tech Support: This category is 76% expended at 58% of the FY due to timing of payment of the Watershed Permit Commitment, and to the timing of invoices for the Optimization/Upgrade obligations.

BACWA BAY AREA CLEAN WATER AGENCIES

BACWA FY18 BUDGET	Line Item Description	FY 2018 Budget	Actuals Jan 2018	58% of Budget Actual % of Budget Jan 2018	Variance	NOTES
REVENUES & FUNDING						
Dues	Principals' Contributions	$487,095	$487,095	100%	$0	**FY18:** 2% increase.
	Associate & Affiliate Contributions	$178,573	$177,015	99%	-$1,558	**FY18:** 2% increase. Assoc: $8,090; Affiliate: $1,600 ($197 over budget)
Fees	Clean Bay Collaborative	$675,000	$674,250	100%	-$750	Prin: $450,000; Assoc/Affil: $225,000
	Nutrient Surcharge	$800,000	$800,008	100%	$8	Prin: $533,335; Assoc/Affil: $266,673
	Voluntary Nutrient Contributions	$30,000	$30,000	100%	$0	**FY18:** Palo Alto ($30k)
Other Receipts	Other Receipts	$0	$0		$0	Carry forward of Passthrough funds for Pharm Study into FY18
	AIR Non-Member	$6,477	$6,477	100%	$0	2% increase.
	BAPPG Non-Members	$3,774	$3,774	100%	$0	2% increase.
	Other	$0	$0		$0	
Fund Transfer	Special Program Admin Fees	$2,550	$0	0%	-$2,550	**FY18:** 2% increase (WOT only)
Interest Income	LAIF	$12,000	$18,786	157%	$6,786	BACWA, Legal, & CBC Funds invested in LAIF
	Higher Yield Investments	$10,000	$5,763	58%	-$4,237	Alternative Investment Interest
	Total Revenue	**$2,205,469**	**$2,203,168**	100%	-$2,301	

BACWA FY18 BUDGET	Line Item Description	FY 2018 Budget	ActualsJan 2018	Actual % of BudgetJan 2018	Variance	NOTES
EXPENSES						
Labor						
	Executive Director	$195,998	$97,999	50%	-$97,999	3.5% CPI (SF/Oakland/San Jose Metro Area Dec 2016)
	Assistant Executive Director	$87,975	$49,999	57%	-$37,976	3.5% CPI (SF/Oakland/San Jose Metro Area Dec 2016)
	Regulatory Program Manager	$116,438	$53,235	46%	-$63,203	3.5% CPI (SF/Oakland/San Jose Metro Area Dec 2016)
	Total	**$400,411**	**$201,233**	50%	-$199,178	
Administration						
	EBMUD Financial Services	$40,000	$9,946	25%	-$30,054	
	Auditing Services (Maze)	$6,300	-$59	-1%	-$6,359	FY18: $6,200 Accrued from FY17 to FY18, less $1,832 paid for FY17 in July 2017.
	Administrative Expenses	$7,500	$3,302	44%	-$4,198	Travel, Supplies, Parking, Mileage, Tolls, Misc.
	Insurance	$4,500	$4,278	95%	-$222	
	Total	**$58,300**	**$17,467**	30%	-$40,833	
Meetings						
	EB Meetings	$2,500	$897	36%	-$1,603	Catering, Venue, other expenses
	Annual Meeting	$10,000	$5,117	51%	-$4,883	Catering, Venue, other expenses. (Deposit to hold venue + deposit to hold caterer)
	Pardee	$6,000	$5,323	89%	-$677	Catering, Venue, other expenses
	Misc. Meetings	$5,000	$2,832	57%	-$2,168	Holiday Lunch, Committee Chair Lunch, Staff Mtgs, Finance Comm, Summit Partners, CASA, NACWA, Toxicity WS
	Total	**$23,500**	**$14,169**	60%	-$9,331	
Communication						
	Website Hosting (Computer Courage)	$600	$600	100%	$0	
	File Storage (Box.net)	$750	$720	96%	-$30	
	Website Development/Maintenance	$1,200	$557	46%	-$643	Domains, website changes
	IT Support (As Needed)	$2,600	$203	8%	-$2,397	
	Other Commun (MS, SM, Code42, PollEv)	$1,100	$910	83%	-$190	MS Exchange, Survey Monkey, CrashPlanPro (2)
	Total	**$6,250**	**$2,990**	48%	-$3,260	

EXPENSES						
Legal						
	Regulatory Support	$2,550	$76	3%	-$2,474	2% increase.
	Executive Board Support	$2,050	$510	25%	-$1,540	2% increase.
	Total	**$4,600**	**$586**	13%	-$4,014	
Committees						
	AIR	$50,000	$20,581	41%	-$29,419	**FY18:** Agrmt with Carollo for $50,000. RPM lunches will also be included, but not in budget.
	BAPPG	$100,000	$69,766	70%	-$30,234	**FY18:** Includes CPSC @ $10,000 and Pest. Reg Spt. @ $15,000
	Biosolids Committee	$3,100	$265	9%	-$2,835	Includes WEF Conf
	Collections System	$1,000	$0	0%	-$1,000	
	InfoShare Groups	$1,200	$299	25%	-$901	Funds for 2 workgroups (Asset Mgmt & O&M)
	Laboratory Committee	$6,000	$1,434	24%	-$4,566	Includes Tech Conf & Training
	Permits Committee	$1,000	$0	0%	-$1,000	
	Pretreatment	$7,000	$707	10%	-$6,293	Includes Training & Factsheet
	Recycled Water Committee	$1,000	$0	0%	-$1,000	
	Misc Committee Support	$35,000	$12,514	36%	-$22,486	Carollo Rule 11-18
	Manager's Roundtable	$1,000	$433	$0	-$567	New line item in FY18
	Total	**$206,300**	**$105,999**	51%	**-$100,301**	
Collaboratives						
	Collaboratives					
	State of the Estuary (biennial)	$0	$0		$0	Bienniel in Odd Years. (Paid bienniely in odd years for even year conference)
	Arleen Navarret Award	$1,000	$1,000		$0	Bienniel in Even Years (Both 2014 and 2018 may be paid in FY18)
	FWQC (Fred Andes)	$7,500	$0	0%	-$7,500	
	Stanford ERC (ReNUWIt)	$10,000	$0	0%	-$10,000	
	CWCCG	$0	$0		$0	
	Misc	$3,000	$5,000	167%	$2,000	**FY18:** Includes $5,000 to PPIC approved by Board Sept, 2017
	Total	**$21,500**	**$6,000**	28%	-$15,500	
Other	**Unbudgeted Items**					
	Passthrough	$0	$23,100		-$23,100	Passthrough for Pharm Study; bal at end of FY17: $23,100
	Other	$0	$0		$0	Misc Expense Items Not Budgeted
		$0	**$23,100**		**$0**	
Tech Support	**Technical Support**					
	Nutrients					
	Watershed	$880,000	$880,000	100%	$0	
	NMS Voluntary Contributions	$0	$200,000		$200,000	**FY18:** $200,000 add'l funds approved by Board August 2017
	Additional work under permit	$100,000	$4,156	4%	-$95,844	**FY18:** Increased at Board's request (EOA ChlResidBPA)
	Opt/Upgrade/Annual Reporting Studies	$372,298	$26,304	7%	-$345,994	**FY18:** Balance remaining on agreement at end of FY16 less FY17 budgeted amount
	Nutrient Program Coordination	$50,000	$0	0%	-$50,000	
	Voluntary Nutrient Contributions	$30,000	$0	0%	-$30,000	**FY18:** Palo Alto ($30k)
	General Tech Support	$50,000	$9,942	20%	-$40,058	
	Risk Reduction	$0	$7,975		$7,975	**FY18:** CIEA extended to 9/30/17 - $9,853.69 remaining at 7/1/17
	Total	**$1,482,298**	**$1,128,377**	76%	-$353,921	
	TOTAL EXPENSES	**$2,203,159**	**$1,499,921**	**68%**	**-$703,238**	
	NET INCOME BEFORE TRANSFERS	**$2,310**	**$703,247**			
	TRANSFERS FROM RESERVES	**$0**				
	NET INCOME AFTER TRANSFERS	**$2,310**				

CHECK ON BACWA LIQUIDITY THRESHHOLD

	Feb	Mar	Apr	May	June	FY19 July	Aug	Sept	Oct	Nov	Dec	Jan	BUDGET Totals FY 18	EST BUDGET Totals FY19
BEGINNING UNOBLIGATED FUND BALANCE	$3,649,045	$3,555,448	$3,461,851	$3,368,254	$3,274,657	$3,181,060	$3,103,193	$3,573,596	$2,963,999	$3,434,403	$3,904,806	$3,826,939		
Average Monthly Revenues	$0	$0	$0	$0	$0	$0	$548,270	$548,270	$548,271	$548,270	$0	$0	$2,205,469	$2,193,081
Average Monthly Expenditures (Less Large one time Expenses)	($93,597)	($93,597)	($93,597)	($93,597)	($93,597)	($77,867)	($77,867)	($77,867)	($77,867)	($77,867)	($77,867)	($77,867)	$1,123,159	$934,401
Less Large Expenditures	$0	$0	$0	$0	$0	$0	$0	($1,080,000)	$0	$0	$0	$0		
NET AVAILABLE FOR INVESTMENT	$3,555,448	$3,461,851	$3,368,254	$3,274,657	$3,181,060	$3,103,193	$3,573,596	$2,963,999	$3,434,403	$3,904,806	$3,826,939	$3,749,072		
NEW INVESTMENTS														
Higher Yield (non-liquid)	($905,000)	($905,000)	($905,000)	($905,000)	($905,000)	($905,000)	($905,000)	($905,000)	($905,000)	($905,000)	($905,000)	($905,000)		
MATURITIES/Called														
Higher Yield (non-liquid)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		
AVAILABLE LIQUID FUNDS	$2,650,448	$2,556,851	$2,463,254	$2,369,657	$2,276,060	$2,198,193	$2,668,596	$2,058,999	$2,529,403	$2,999,806	$2,921,939	$2,844,072		
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		

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

February 27, 2018

MEMO TO: Bay Area Clean Water Agencies Executive Board
MEMO FROM: D. Scott Klein, Controller, East Bay Municipal Utility District
SUBJECT: Seventh Month FY 2018 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, 2017 through January 31, 2018** (seven months of Fiscal Year 2018). 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)

BACWA Fund Report as of January 31, 2018

BACWA FUND BALANCES - DATA PROVIDED 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	1,140,008	684,222	371,544	1,452,685	315,739	1,136,946
804	LEGAL RSRV	300,000	-	-	300,000	-	300,000
805	CBC	1,505,790	1,518,946	1,128,377	1,896,359	240,896	1,655,464
	SUBTOTAL 1	*2,945,799*	*2,203,168*	*1,499,921*	*3,649,045*	*556,635*	*3,092,409*
810	WOT	109,916	135,000	23,470	221,446	-	221,446
	SUBTOTAL 2	*109,916*	*135,000*	*23,470*	*221,446*	-	*221,446*
811	PRP84	117,907	2,055,741	2,103,152	70,495	-	70,495
	SUBTOTAL 3	117,907	2,055,741	2,103,152	70,495	-	70,495
	GRAND TOTAL	**3,173,622**	**4,393,909**	**3,626,544**	**3,940,986**	**556,635**	**3,384,350**

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 non-liquid investments

BACWA INVESTMENTS BALANCES - DATA PROVIDED 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 IDENTIFIERS	ALTERNATIVE INVESTMENT INSTRUCTIONS AND NOTES
800	BACWA	1,140,008	684,222	371,544	1,452,685	30,368	1,483,054	511,813	971,241	43%	-	n/a	priority # 3 for allocation
804	LEGAL RSRV	300,000	-	-	300,000	-	300,000	-	-	0%	300,000	AR5	priority # 1 for allocation
805	CBC	1,505,790	1,518,946	1,128,377	1,896,359		1,896,359	-	1,291,359	57%	605,000	6F5,G64, ME2	priority # 2 for allocation
	SUBTOTAL 1	2,945,799	2,203,168	1,499,921	3,649,045	30,368	3,679,413	511,813	2,262,600	100%	905,000		
810	WOT	109,916	135,000	23,470	221,446		221,446	221,446		0%	-		pass-through funds, no allocation
	SUBTOTAL 2	109,916	135,000	23,470	221,446	-	221,446	221,446	-	0%	-		
811	PRP84	117,907	2,055,741	2,103,152	70,495	47,411	117,906	117,906	-	0%	-		pass-through funds, no allocation
815	PRP50	-	-	-	-		-	-	-	0%	-		pass-through funds, no allocation
	SUBTOTAL 3	117,907	2,055,741	2,103,152	70,495	47,411	117,906	117,906	-	0%	-		
	GRAND TOTAL	**3,173,622**	**4,393,909**	**3,626,544**	**3,940,986**	**77,779**	**4,018,765**	**851,165**	**2,262,600**		**905,000**		
						verification	-	-	-		-		

To be used to cover Reconciliation to Financial Statements ($0)

Reconciliation to Trial Balance - accrual basis

Per Report above:

General		2,203,168
WOT		135,000
PROP		2,055,741
subtotal		**4,393,909**

Billings-Pending Receipts

4686	Mem Contrib	8,250
4687	Transfer	-
4690	Assoc Contrib	1,611
4696	Other	-
4731	State Grant	9,698
4732	Grant Retention	229,493
subtotal		**249,052**

Trial Balance Revenue Accounts

4411	Interest	(24,549)
4686	Mem Contrib	(1,304,595)
4687	Transfer	-
4690	Assoc Contrib	(178,626)
4696	Other	(840,259)
4731	State Grant	(2,065,439)
4732	Grant Retention	(229,493)
subtotal		**(4,642,961)**
Difference		**(0)**

BACWA Revenue Report as of January 31, 2018

FUND #	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	
800	BACWA	1011099	Principal's Contributions	487,095	-	-	-	-	487,095	-	487,095	-
800	BACWA	1011133	Assoc.& Affiliate Contr	178,573	-	1,611	-	-	177,015	-	177,015	1,558
800	BACWA	0408511	Administrative & General	-	-	-	-	-	-	-	-	-
800	BACWA	1014251	Non-Member Contributions (BAPPG)	3,774	-	-	-	-	3,774	-	3,774	-
800	BACWA	1011109	Fund Transfers	2,550	-	-	-	-	-	-	-	2,550
800	BACWA	1011117	BDO- Interest Income from LAIF	12,000	-	-	3,047	-	-	8,061	8,061	3,939
800	BACWA	1011108	BDO Other Receipts	-	-	-	-	-	-	-	-	-
800	BACWA	1014252	BDO Non-Member Contr AIR	6,477	-	-	-	-	6,477	-	6,477	-
800	BACWA	1014511	BDO-Alternative Investment Inc	10,000	-	-	-	1,800	-	-	1,800	8,200
800	BACWA	1014550	BDO-Other Receipts (PHARM)	-	-	-	-	-	-	-	-	-
	BACWA TOTAL			**700,469**	**-**	**1,611**	**3,047**	**1,800**	**674,361**	**8,060**	**684,222**	**16,247**
805	WQA-CBC	1011099	BDO Member Contributions	675,000	-	750	(30,000)	-	674,250	-	674,250	750
805	WQA-CBC	1011108	BDO Other Receipts	800,000	-	-	-	-	800,008	-	800,008	(8)
805	WQA-CBC	1011117	BDO- Interest Income from LAIF	-	-	-	3,826	-	-	10,725	10,725	(10,725)
805	WQA-CBC	1011511	BDO-Alternative Investment Inc	-	-	-	-	3,963	-	-	3,963	(3,963)
805	WQA-CBC	1014528	BDO-Voluntary Nutrient Contrib	30,000	-	-	30,000	-	30,000	-	30,000	-
	WQA CBC TOTAL			**1,505,000**	**-**	**750**	**3,826**	**3,963**	**1,504,258**	**10,726**	**1,518,946**	**(13,947)**
	TOTAL			**2,205,469**	**-**	**2,361**	**6,872**	**5,763**	**2,178,619**	**18,786**	**2,203,168**	**2,300**

	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	
810	WOT	1011099	BDO Member Contributions	-	-	-	-	-	135,000	-	135,000	(135,000)
810	WOT	1011108	BDO Other Receipts	-	-	-	-	-	-	-	-	-
810	WOT	1011117	BDO- Interest Income from LAIF	-	-	-	-	-	-	-	-	-
	WOT TOTAL			**-**	**-**	**-**	**-**	**-**	**135,000**	**-**	**135,000**	**(135,000)**

	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	PROP 84			-	-	-	-	-	2,055,741	-	2,055,741	(2,055,741)
	PROP TOTAL			**-**	**-**	**-**	**-**	**-**	**2,055,741**	**-**	**2,055,741**	**(2,055,741)**
	Grand Total			**2,205,469**	**-**	**2,361**	**6,872**	**5,763**	**4,369,360**	**18,786**	**4,393,909**	**(2,188,441)**

BACWA Expense Detail Report as of January 31, 2018

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	195,998	-	-	-	-	97,999	97,999	-	-	195,998	-
AS-Assistant Executive Directo	1011124	87,975	(7,595)	7,595	-	-	37,976	49,999	-	-	87,975	-
AS-Regulatory Program Manager	1011149	116,438	(6,707)	6,707	-	-	63,203	53,235	-	-	116,438	-
ADMINISTRATION												
AS-EBMUD Financial Services	1011125	40,000	-	-	-	-	30,054	9,946	-	-	40,000	-
AS-Audit Services	1014512	6,300	-	-	-	-	6,300	1,842	4,299	(6,200)	6,241	59
AS-BACWA Admin Expense	1011118	7,500	-	-	269	-	-	-	3,302	-	3,302	4,198
AS-Insurance	1011126	4,500	-	-	-	-	-	-	4,278	-	4,278	222
MEETINGS												
GBS-Meeting Support-Exec Bd	1014513	2,500	-	-	-	-	625	376	522	-	1,522	978
GBS-Meeting Support-Annual	1014514	10,000	-	-	330	-	-	-	5,117	-	5,117	4,883
GBS-Meeting Support-Pardee	1014515	6,000	-	-	-	-	-	-	5,323	-	5,323	677
GBS-Meeting Support-Misc	1014516	5,000	-	-	37	-	-	-	2,832	-	2,832	2,168
GBS- Meeting Support	1011122	-	-	-	-	-	-	-	-	-	-	-
COMMUNICATION												
CAR-BACWA Website Hosting	1014517	750	-	-	-	-	-	-	600	-	600	150
CAR-BACWA File Storage	1014518	1,200	-	-	-	-	-	-	720	-	720	480
CAR-BACWA IT Support	1014519	2,600	(135)	135	-	-	2,398	203	-	-	2,600	-
CAR-BACWA IT Software	1014520	1,100	-	-	131	-	-	-	910	-	910	190
CAR-BACWA Website Dev/Maint	1011116	600	-	-	-	-	-	-	557	-	557	43
LEGAL												
LS-Regulatory Support	1011107	2,550	(76)	76	-	-	2,474	76	-	-	2,550	-
LS-Executive Board Support	1011110	2,050	-	-	-	-	1,540	510	-	-	2,050	-
COMMITTEES												
AIR-Air Issues&Regulation Grp	1014253	50,000	(1,183)	1,183	-	-	29,912	20,088	493	-	50,493	(493)
BC-BAPPG	1011147	100,000	(15,555)	15,555	-	-	27,168	48,832	20,934	-	96,934	3,066
BC-Biosolids Committee	1011101	3,100	-	-	-	-	-	-	265	-	265	2,835
BC-Collections System	1011097	1,000	-	-	-	-	-	-	-	-	-	1,000
BC-InfoShare Groups	1011102	1,200	-	-	-	-	-	-	299	-	299	901
BC-Laboratory Committee	1011103	6,000	-	-	1,434	-	-	-	1,434	-	1,434	4,566
BC-Permit Committee	1011098	1,000	-	-	-	-	-	-	-	-	-	1,000
BC-Pretreatment Committee	1011146	7,000	-	-	93	-	-	-	707	-	707	6,293
BC-Water Recycling Committee	1011100	1,000	-	-	-	-	-	-	-	-	-	1,000
BC-Manager's Roundtable	1014777	1,000	-	-	242	-	-	-	433	-	433	567
BC-Miscellaneous Committee Sup	1011104	35,000	-	-	-	-	16,092	12,514	-	-	28,606	6,394
COLLABORATIVES												
CAS-Arleen Navaret Award	1012201	1,000	-	-	1,000	-	-	-	1,000	-	1,000	-
CAS-FWQC	1012202	7,500	-	-	-	-	-	-	-	-	-	7,500
CAS-Stanford ERC	1011969	10,000	-	-	-	-	-	-	-	-	-	10,000
CAS-CWCCG	1011148	-	-	-	-	-	-	-	-	-	-	-
CAS-PSSEP	1011112	-	-	-	-	-	-	-	-	-	-	-
CAS-Misc Collaborative Sup	1014521	3,000	-	-	-	-	-	-	5,000	-	5,000	(2,000)
BDO-Contract Expenses (PHARM)												
BDO-Contract Expenses (PHARM)	1014551	-	-	-	-	-	-	23,100	-	-	23,100	(23,100)
BACWA TOTAL		**720,861**	**(31,251)**	**31,251**	**3,535**	**-**	**315,739**	**318,720**	**59,024**	**(6,200)**	**687,284**	**33,577**
TECH SUPPORT												
WQA-CE Addl Work Under Permit	1014254	100,000	(99,500)	4,156	-	-	57,000	4,156	-	-	61,156	38,844
WQA-CE-Technical Support	1011127	50,000	95,344	-	-	-	95,344	-	9,942	-	105,286	(55,286)
WQA-CE CASA Chem of Concern	1011128	-	-	-	-	-	-	-	-	-	-	-
WQA-CE Opt-Upgrade Studies	1014255	372,298	-	-	-	-	88,552	26,304	-	-	114,856	257,442
WQA-CE Risk Reduction	1014023	-	-	-	-	-	-	-	7,975	-	7,975	(7,975)
WQA-CE-Nutrient WS Permit Comm	1014021	880,000	-	-	-	-	-	-	1,080,000	-	1,080,000	(200,000)
WQA-CE-Program Mgmt	1011131	50,000	-	-	-	-	-	-	-	-	-	50,000
WQA-CE Voluntary Nutr Contrib	1014529	30,000	-	-	-	-	-	-	-	-	-	30,000
TECH SUPPORT (CBC) TOTAL		**1,482,298**	**(4,156)**	**4,156**	**-**	**-**	**240,896**	**30,460**	**1,097,917**	**-**	**1,369,273**	**113,025**
GRAND TOTAL		**2,203,159**	**(35,407)**	**35,407**	**3,535**	**-**	**556,635**	**349,180**	**1,156,941**	**(6,200)**	**2,056,556**	**146,603**
								TOTAL	**1,499,921**			
WOT												
Administrative Support	1011142	-	-	-	-	-	-	-	-	-	-	-
BDO Contract Expenses	1011143	-	-	-	109	-	-	-	23,470	-	23,470	(23,470)
		-	**-**	**-**	**109**	**-**	**-**	**-**	**23,470**	**-**	**23,470**	**(23,470)**
GRAND TOTAL (BDO, CBC, WOT)		**2,203,159**	**(35,407)**	**35,407**	**3,645**	**-**	**556,635**	**349,180**	**1,180,411**	**(6,200)**	**2,080,026**	**123,133**

Proposition 84 Revenue Report as of January 31, 2018

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 from LAIF	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1011142	Administrative Support	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1011691	Water Efficient Landscape Reba	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1011705	Regional Green Infrastructure	-	-	-	-	-	157,589	-	157,589	(157,589)
811	Prop84BayAreaIntegRegnlWtrMgmt	1011706	Hacienda Ave Green St Improvem	-	-	-	-	-	1,746,693	-	1,746,693	(1,746,693)
811	Prop84BayAreaIntegRegnlWtrMgmt	1012209	Water Efficient LRP	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1012210	Bay Friendly Landscape TP	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1012211	Weather Based Irrigation Cntrl	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1012212	High Efficiency Toilet & UR	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1012213	High Efficiency Toilet & UI	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1012214	High Efficiency Clothes Washrs	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1012215	Napa Co. Rainwater HP	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1012216	Conservation Program Admin	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1012219	Flood Infrastructure Mapping T	-	-	-	-	-	30,239	-	30,239	(30,239)
811	Prop84BayAreaIntegRegnlWtrMgmt	1012220	Stormwater Improvements & PBP	-	-	-	-	-	8,010	-	8,010	(8,010)
811	Prop84BayAreaIntegRegnlWtrMgmt	1012221	Richmond Shoreline & San PFP	-	-	-	-	-	21,114	-	21,114	(21,114)
811	Prop84BayAreaIntegRegnlWtrMgmt	1012222	Pescadero Integrated FRAH	-	-	-	-	-	45,905	-	45,905	(45,905)
811	Prop84BayAreaIntegRegnlWtrMgmt	1012223	Restoration Guidance, San FC	-	-	-	-	-	7,308	-	7,308	(7,308)
811	Prop84BayAreaIntegRegnlWtrMgmt	1012224	SF Estuary Steelhead MP	-	-	-	-	-	28,355	-	28,355	(28,355)
811	Prop84BayAreaIntegRegnlWtrMgmt	1012225	Watershed Program Admnstrtn	-	-	-	-	-	10,528	-	10,528	(10,528)
	PROP 84 TOTAL			**-**	**-**	**-**	**-**	**-**	**2,055,741**	**-**	**2,055,741**	**(2,055,741)**

Proposition 84 Expense Detail Report as of January 31, 2018

DEPTID	DEPARTMENT	EXPENSE TYPE	AMENDED BUDGET	CURRENT PERIOD				YEAR TO DATE				OBLIGATED	UNOBLIGATED
				ENC	PV	DA	JV	ENC	PV	DA	JV		
811	Prop84BayAreaIntegRegnlWtrMgmt	BDO Fund Transfers	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Administrative Support	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	BDO Contract Expenses	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Regional Green Infrastructure	-	-	-	-	-	-	-	157,589	-	157,589	(157,589)
811	Prop84BayAreaIntegRegnlWtrMgmt	Hacienda Ave Green St Improvem	-	-	-	-	-	-	-	1,746,693	-	1,746,693	(1,746,693)
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	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Conservation Program Admin	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Flood Infrastructure Mapping T	-	-	-	-	-	-	-	30,239	-	30,239	(30,239)
811	Prop84BayAreaIntegRegnlWtrMgmt	Stormwater Improvements & PBP	-	-	-	-	-	-	-	8,010	-	8,010	(8,010)
811	Prop84BayAreaIntegRegnlWtrMgmt	Richmond Shoreline & San PFP	-	-	-	-	-	-	-	21,114	-	21,114	(21,114)
811	Prop84BayAreaIntegRegnlWtrMgmt	Pescadero Integrated FRAH	-	-	-	13,695	-	-	-	59,599	-	59,599	(59,599)
811	Prop84BayAreaIntegRegnlWtrMgmt	Restoration Guidance, San FC	-	-	-	-	-	-	-	7,308	-	7,308	(7,308)
811	Prop84BayAreaIntegRegnlWtrMgmt	SF Estuary Steelhead MP	-	-	-	23,178	-	-	-	51,533	-	51,533	(51,533)
811	Prop84BayAreaIntegRegnlWtrMgmt	Stream Restoration in North BD	-	-	-	10,538	-	-	-	10,538	-	10,538	(10,538)
811	Prop84BayAreaIntegRegnlWtrMgmt	Watershed Program Admnstrtn	-	-	-	-	-	-	-	10,528	-	10,528	(10,528)
	PRP84 TOTAL		**-**	**-**	**-**	**47,411**	**-**	**-**	**-**	**2,103,152**	**-**	**2,103,152**	**(2,103,152)**

Sherry Hull

From: Sherry Hull
Sent: Thursday, March 8, 2018 8:47 AM
To: 'Amy J. Chastain (AChastain@sfwater.org)'; 'Bhavani Yerrapotu (Byerrapotu@ci.sunnyvale.ca.us)'; 'Dave Williams'; 'Greg Baatrup (gbaatrup@fssd.com)'; Jacqueline Zipkin; 'Jason Warner (jwarner@oroloma.org)'; 'Jean-Marc Petit'; 'Lori Schectel'; 'Lorien Fono (lfono@bacwa.org)'; 'Mike Connor (mconnor@ebda.org)'; Nitin Goel; 'Roa, Amanda'; 'Shang, Yuyun'; Susan Jocovic; 'Teresa Herrera'
Cc: Kennedy, Holly
Subject: CMG Call Friday

CMG,

The main focus of the consulting team continues to be to get the final reports out to all the agencies. So as not to distract from that effort, we are cancelling the CMG call for this Friday morning. Hopefully you can make good use of the two hours you just had freed up on your calendars. Below is a brief update from Holly on the progress on the distribution of the reports and associated feedback. In general things are going well with not a lot of comments coming in on the final reports or the acceptance letters. I have followed up with a few folks who had not been as close to the process as all of you to address concerns they had and will continue to do so. Let me know if you have any questions. Our next call is scheduled for April 13th.

Update:

1. *Plant Reports:*
    a. *11 plant reports are confirmed sent.*
    b. *3 additional reports are going out this week*
    c. *~10 should go out next week*
    d. *The remainder will be delivered over the following two weeks.*
2. *Agency Acceptance Letters:*
    a. *We've had a few plants (e.g., CMSA and Rodeo) raise concerns about the acceptance letters. Those concerns have been referred to Dave Williams [Dave, thank you!!!]*
    b. *At least one plant (CCCSD) has indicated needing to take the report and letter to their board prior to execution of the letter. There could be others. We are trying to track that so we know when to expect them.*
3. *Sea Level Rise:*
    a. *We've received comments from San Jose (Jim Ervin), EBDA (Mike Conner), and Richmond (Aaron Winer) in response to Sherry's email to POCs dated 2/13.*
    b. *I anticipated something from Teresa Herrera after our last CMG call, but I don't think I've received anything.*
        i. *Note that I did circle back with Libby (HDR) regarding Silicon Valley and she confirmed that we used the Effective Flood Insurance Rate Maps for our analysis. We did note that Silicon Valley is showing out of the flood plain in the Preliminary FIRMs (more recently released, but not yet official – the levees are still going through accreditation.), but that is why we were hoping they'd send over some info about whether the levees have been certified yet or not.*
    c. *I thought I understood that EBMUD would be providing comments, but have not received any.*
    d. *If there are other responses, please forward them to us for incorporation.*

4. *Main Report:*
    a. *In progress.*

Please let me know if I've missed anything or if you have any questions.

Thank you!

Holly Kennedy, PE
Senior Vice President | Water Business Group Manager

HDR
100 Pringle Ave., Suite 400
Walnut Creek, CA 94596
***D** 925.974.2617 **M** 925.209.0696*
holly.kennedy@hdrinc.com

hdrinc.com/follow-us

David R. Williams
Executive Director
Bay Area Clean Water Agencies (BACWA)
Cell: 925-765-9616
Email: dwilliams@bacwa.org

San Francisco Bay Nutrient Management Strategy (NMS) Steering Committee Meeting

Date/Time: March 9, 2017, 9:00 AM to 3:00 PM

Location: San Francisco Estuary Institute (BART Pickup Available)
4911 Central Ave, Richmond, CA

Facilitator: Phil Trowbridge

Remote Access: 1.415.594.5500, Access Code: 943-326-397#, https://join.me/sfei-conf-cw1

AGENDA

	Agenda Item	Lead	Time
1	**Welcome, Introductions and Agenda Review**	PT	9:00-9:05
2	**Decision Item: Approve Prior SC Meeting Summaries** *Materials*: • December 8, 2017 meeting summary	DW	9:05-9:10
3	**Action items** • Update on action items from previous meetings *Materials*: • Action Items Table	DW	9:10-9:15
4	**Program Update:** • Science Program and Financials update • Planning Subcommittee update *Materials*: • Quarterly Financial Report and Program Report • See Work Product Summary and links	IW DS	9:15-9:45
5	**Technical Update - Science Program** • Delta/Suisun Hydrodynamic Modeling (Zhenlin Zhang) • Dissolved Oxygen (Phil Trowbridge) *Materials* • TBD *Desired Outcome:* • Update SC, feedback/discussion of direction	RH/ZZ/ PT	9:45-10:45

	Break		10:45-11:00
6	**Technical Update - Science Program (continue)** ● HABs (Dave) ● Trends/AF (Dave) *Desired Outcome:* ● Update SC, feedback/discussion of direction	DS	11:00-12:00
	LUNCH		12:00-12:30
7	**Discussion Item: Revising Science Plan and Strategic Planning for FY19 Science Program** The SC will approve the FY19 Budget and Program Plan in June. That plan needs to be aligned with the evolving Science Plan (being revised). High-level direction from the SC is sought now to ensure that the projects proposed are strategic and aligned with long-term objectives. *Materials*: ● FY19 Program Plan summary (will be distributed Mar 5) *Desired Outcome:* ● Update SC on Science Plan revision approach ● SC feedback on FY19 priorities	DS	12:30-1:45
8	**Other Business** ● Updates from other activities (Delta focus) ○ Region 5 / Delta Nutrient Research Plan ○ Delta RMP Nutrient Project Proposals ○ Operation Baseline Update ○ Introduction to the Bay-Delta Science Enterprise (R. Hoenicke) ● Roundtable summary of SC funding and nutrient-related activities from SC members	PT	1:45-2:45
9	**Action Items, Deliverables Update, and Wrap-up** Poll for dates for Nutrient Technical Workgroup meeting in May Confirm next meeting date: June 8, 2018 @ SFEI Following meeting September 14, 2018 @ SFEI	PT	2:45-3:00
	Adjourn		3:00

Item 7 NMS FY19 Funding Discussion

1. Background
   a. NMS Priority Management Questions, Science Plan
   b. Major Topics and Focus Areas
2. Draft FY19 Program Plan and Budget
   a. Anticipated funding
   b. Core program
   c. Overview of Potential Projects for FY19
   d. Project blurbs
3. Discussion: As part of the discussion we plan to ask SC members for their input on a couple questions -- What do SC members see as high priority categories for projects, or specific projects for FY19?

Note: We'll aim to send a bit more project description info Wednesday or Thursday.

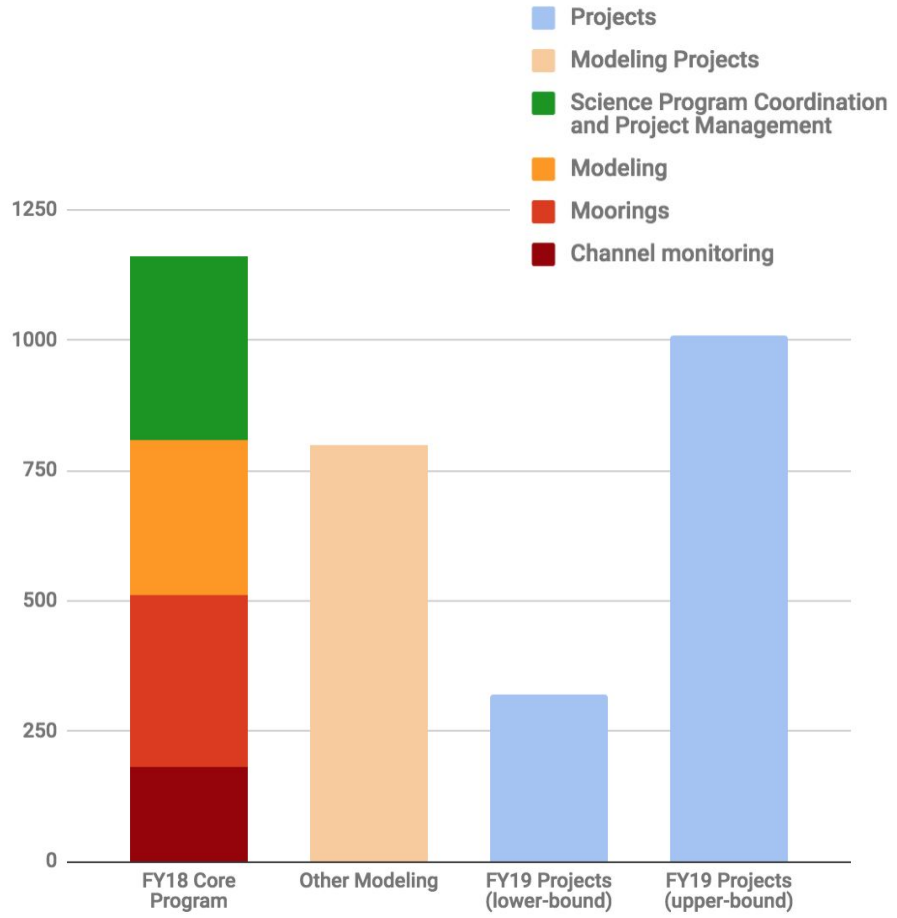
Overview of DRAFT FY19 Program Program

Anticipated Revenue ($1,000s)	Lower	Upper
Nutrient Permit	880	880
Permit supplement (BACWA)	200	200
RMP CY2018 *	400	500
Possible advance funding (Permit)		600
Total Revenue	*1,480*	*2,180*

*

Costs ($1,000s)	
1. Core Program	
1.1 Monitoring	
Channel Monitoring	180
Moored sensors **	330
1.2 Modeling: Core model development and application	300
1.3 Science Program Coordination and Project Management	350
Subtotal - Core Program	*1,160*

2. Projects (funds available)	Lower	Upper
Potential funding available for FY19 Projects	320	1,020



*Channel monitoring cost does not include in-kind USGS contribution for ship-based monitoring (est. 900k)

** Science Program Coordination and Project Management includes financial management, NMS SC management, stakeholder engagement, project management, and lead scientist effort across all projects.

*** Other Modeling includes estimated funds remaining (~Jul 1) on NMS-led modeling projects with funds from other sources. Most of this work is Suisun-Delta, with some LSB.

The difference in the FY19 lower- and upper-bound estimates primarily reflects the possibility of an advance on funds from FY20 becoming available in FY19.

Management Questions for Aligning Projects with Management Priorities

1. What conditions would be considered adverse impacts or impairments that would require regulation / management / mitigation?		
	1.1	DO / chl in deep subtidals
	1.2	DO in shallow margin habitats
	1.3	HAB abundance, toxin abundance, Phytoplankton assemblage
	1.4	Coastal ocean
2. Monitoring and condition assessment: Are adverse impacts impacts or impairment currently occurring?		
	2.1	DO / chl in deep subtidals
	2.2	DO in shallow margin habitats
	2.3	HAB abundance, toxin abundance, Phytoplankton assemblage
	2.4	Coastal ocean
3. How do SFB habitats respond to nutrient inputs -- dose:response? Are nutrients causing or contributing to current impacts or impairment? What conditions (e.g., nutrient loads or nutrient concentrations) would mitigate impacts or impairment?		
	3.1	DO / chl in deep subtidals
	3.2	DO in shallow margin habitats
	3.3	HAB abundance, toxin abundance, Phytoplankton assemblage
	3.4	Coastal ocean
4.a What potential future impacts or impairments warrant pre-emptive management actions? 4.b What conditions (e.g., nutrient loads or nutrient concentrations) would mitigate impairment?		
5. What are the contributions of individual nutrient sources to nutrient levels throughout SFB (f(space, time))?		
	5.1	Current magnitudes (± variability) of individual nutrient loads at their point of entry to SFB?
	5.2	Anticipated load changes: environmental change, flow diversion, population, land-use, management
	5.3	Magnitudes of nutrient transformations and losses within SFB, space/time variability?
	5.4	Contributions of individual nutrient sources to loads/concentrations in "subregions"?
6. What management actions or load reductions are needed to prevent or mitigate current or future impairment?		
	6.1	What "local" reductions/changes are needed in subregions to mitigate current impairments (3.1-3.4)?
	6.2	What external load reductions or other management actions can achieve the "local" effect(s)?
	6.3	What are plausible options for achieving the local effects?

As part of revising the Science Plan, we plan to develop an approach or structure that allows projects' alignment with management questions to be conveyed at a glance.

Our proposed approach is to begin identifying the management questions that projects or core program activities are most aligned with. The projects summarized on p.4 point back to these management questions.

These questions are slightly revised from those in the Science Plan v1.0

See Management Questions on prior page.

					Management Questions Targeted																		
			FY18 Estimated Cost		1				2				3				4	5				6		
			Low	High	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4		5.1	5.2	5.3	5.4	6.1	6.2	6.3
P.1	Monitoring																							
	1.1	Toxins in mussels	$160	$160							X				X									
	1.2	Moorings: Expand mooring nextwork to new locations; a) South Bay shoal; b) one other location	$100	$200					X	X			X	X										
	1.3	Imaging flow cytobot, data interpretation, capacity build	$50	$100							X													
	1.4	DNA-based techiques for phytoplankton and HABs	$50	$100							X													
	1.5	Expand instrument capacity at current mooring stations (e.g., NO3-SUNA, aquadop, Seabird)	$50	$150									X	X						X	X			
P.2	Coordinated chlorophyll sensor project with Delta Regional Monitoring Program		$25	$25					X	X			X	X										
P.3	Continued zooplankton sampling		$100	$150									X											
P.4	Interpretation / Synthesis of Existing Data		$100	$200																				
P.5	Data management		$75	$100																				
P.6	HAB investigations (central bay IFCB station, mechanistic studies)		$75	$200							X				X									
P.7	Coastal nutrient export and effects		$75	$200				X				X				X								
P.8	Biological indicators, DO, focus in LSB		$100	$300	X	X			X	X														
P.9	Biogeochem field studies (multi-year study, LSB)		$100	$300									X	X	X					X	X			
P.10	Biogeochem field studies (Suisun)		$100	$200									X		X					X	X			
P.11	Field investigation, salt ponds (N,C,DO, exchange)		$100	$300									X	X	X					X	X			
P.12	Biogeochemical studies, water (N trans,productivity,BOD)		$75	$200									X	X						X	X			
P.13	Assessment Framework development, cont'd		$75	$150	X	X	X																	
P.14	Modeling program expansion; capacity building, outsourcing		$150	$300									X	X	X					X	X			

			Brief Description
P.1	Monitoring		
	1.1	Toxins in mussels	Continue current mussel sampling and toxin measurements. Possibly pilot the use of deployed mussels and SPATT to improve interpretability
	1.2	Shoal monitoring -- Moorings and/or biogeochem mapping: Expand mooring nextwork to two new locations: a) South Bay shoal; b) one other location. Possibly include shoal mapping	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 install a mooring on South Bay's eastern shoal, and possibly one other station. A pilot deployment was successfully carried out in Mar-Apr 2017. High/low cost diferences are related to: specific equipment installed and/or level of data interpretation included within budget; whether one or two stations are deployed; or amount of mapping work
	1.3	Imaging flow cytobot, data interpretation, capacity build	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.
	1.4	DNA-based techiques for phytoplankton and HABs	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). Low cost will involve mostly data collection; high cost will allow for comparison with other methods and advanced interpretations. If only low cost pursued in FY2019, interpretation could be funded in subsequent year budget. This would continue pilot work begun in FY18
	1.5	Expand instrument capacity at current mooring stations (e.g., NO3-SUNA, aquadop, Seabird)	With a reasonable investment is possible to equip several of our current mooring stations with additional sensors for measuring nitrate, velocity, and other parameters that will allow for improved understanding of nutrient cycling and model calibration
P.2	Coordinated chlorophyll sensor project with Delta Regional Monitoring Program		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. In general, there is little coordination among the groups, no standard operation or interacalibration. In FY18, we launched a project, jointly funded with the Delta RMP, to begin coordinating with DWR and USGS scientists on instrument intercomparibility and eventually intercalibration, and begin identifying best-practive protocols and partnerships. This project would continue work begun in FY18 (discussed during Agenda Item 8), again with cost-sharing with Delta RMP
P.3	Continued zooplankton sampling		In Spring 2018, we are beginning zooplankton sampling in priority regions of SFB, in particular those that currently have no zooplankton sampling (Central, South, Lower South. Current funding is allowing us to get started with sampling and archiving. This funding will support the taxonomy and counting, and some experimental work including feeding rates or growth rates, which is important data for model calibration.
P.4	Interpretation / Synthesis of Existing Data		Analyze and synthesize new or historic data collected through monitoring. Exact topics still to be determined, but could include: Interpretation of moored sensor chl-a data to estimate productivity, and precision of measurements (relative to calibration samples); continued interpretation of mooring DO data to estimate oxygen demand and quantitative explanations for the apparently elevated DO demand; continued interpretation of harmful algae and toxin data. Low cost will support 2 x 0.5 FTE scientists over the course of 1 year; high cost would in addition support external collaborators/advisors and coordination with stakeholder process.
P.5	Data management		Funds from FY17 supported initial work on developing data management protocols and initial implementation. Low cost would support baseline data management. The higher 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)
P.6	HAB investigations (central bay IFCB station, mechanistic studies)		To date, the NMS has not pursued much mechanistic-related HAB work to understand where/when HAs are growing, and whether conditions in SFB (including nutrients support their growth. This overarching project would support such mechanistic work, potentially drawing from several projects proposed (but unfunded) over the past couple years, including: A. Continuous deployment of the Imaging Flow CytoBot (IFCB) in Central Bay: building moored capacity and establishing a coastal end-member signal. B. Identify major sources of microcystins to SFB (Measure microcystins at, and estimated microcystin fluxes from, suspected watersheds in the Bay Area.; Measure microcystins in clam samples from Suisun Bay and Delta; measure for microcystin-producing organisms living/growing within SFB). C. Determine whether SFB hosts internal sources of Alexandrium in the form of cysts in sediments. D. Determine if coastal P-N isolates can grow in SFB, or face obstacles beyond low-light and strong-mixing. E. Identify the species and/or strains of Pseudo-nitzchia and possibly other HAB-forming organisms that occur in SFB.
P.7	Coastal nutrient export and effects		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.

P.8	Biological indicators, DO, focus in LSB	An extensive fish surveying effort has been underway in Lower South Bay, funded currently by San Jose (UC Davis Hobbs), and previously by the salt pond restoration program. Over the past year SFEI staff have worked with UC Davis on interpreting NMS mooring data and UCDavis fish data. 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 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.
P.9	Biogeochem field studies (multi-year study, LSB)	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. These projects would be initial steps toward collecting some of the highest priority data, and would need to be part of a multi-year effort.
P.10	Biogeochem field studies (Suisun)	
P.11	Biogeochemical studies, water (N trans,productivity,BOD)	While biogeochemical investigations in LSB/South Bay and Suisun will likely involve major investments in sediment exchange processes, in other areas (e.g., Central Bay, or deep channel in South Bay), transformations in the water column will be important and relatively easy to measure (nitrification rates, BOD, phytoplankton growth rates). These
P.12	Field investigation, salt ponds (N,C,DO, exchange)	Evidence from NMS studies suggests that salt pond <--> slough/Bay exchange has a major local, and potentially whole-subembayment, level effect on N, C and DO cycles in LSB. Observational data is needed to inform model calibration so the magnitude of these processes can be quantified.
P.13	Assessment Framework development, cont'd	Continue work related to developing trend indicators, evaluating/testing AF criteria and thresholds, etc. For example, this project could be a continuation of the FY17 HAB workshop, pursuing next steps based on more complete datasets.
P.14	Modeling program expansion; capacity building, community model	Coupled hydrodynamic/biogeochemical models are essential tools for the NMS. This project could go a few different directions: i) expanding capacity by developing strong partnerships with other modeling groups and working with/through them to complete essential work in a quality-controlled manner; ii) bringing on board a highly-skilled additional staff member who can manage the model input/output data, model versioning, and prepare the model for broader use (by collaborator).

Joint BACWA/Regional Water Board staff Meeting Summary

March 2, 2018, 10am-12pm

Attendees:

Eileen White, EBMUD
Amit Mutsuddy, San Jose
David Williams, BACWA
Lorien Fono, BACWA
Laura Pagano, SFPUC
Lori Schectel, CCCSD
Eric Dunlavey, San Jose
Jackie Zipkin, EBDA
Jason Warner, Oro Loma
Naomi Feger, Regional Water Board
Robert Schlipf, Regional Water Board
Tom Mumley, Regional Water Board
Bruce Wolfe, Regional Water Board
Bill Johnson, Regional Water Board

1. **Introductions**

2. **Nutrients**
   a. **Optimization/Upgrade Studies** – The consultant team is sending out the final Facility Reports to agencies, who will then have 3 weeks to sign the certification letter. In general, there has not been any resistance from agencies, since BACWA has been very active in communication and outreach, although some agencies have been surprised at the "on penalty of perjury" language in the certification letter.
   b. **Sea level Rise Planning –** BACWA circulated a memo prepared by the consultant that identifies, based on current Army Corp of Engineers and FEMA projections, those agencies that may be impacted by sea level rise. This will be included in the final Optimization/Upgrade studies report. The Water Board appreciates having this information in one place and will help them address concerns from Sacramento.
   c. **Support for Scientific Studies -** The science program manager has requested an advance of funds in support of scientific studies prior to adoption of the second watershed permit. This will help them hire staff for their projects in time to manage the science plan in a timely manner. BACWA has tentatively approved this advance, contingent upon the response of Regional Water Board members once the key tenets of the second watershed permit are presented to them in July 2018.
   d. **Management Actions –** The Water Board would like to engage with BACWA on how management steps would be implemented once the third watershed permit is being considered. They would like a working agreement on how they should credit capital improvements to reduce nutrients, since some agencies are moving ahead with early actions on the assumption that these will be credited. BACWA will have a Nutrient Strategy team meeting on March 15 that, among other issues, will consider the question of how early actions should be credited. This is an extremely complicated topic and will need time to resolve to all parties' satisfaction, although a simple approach is probably best to start with until the science program assigns relative weight to impacts from difference discharge sources. The Water Board asked whether BACWA had reviewed information on how nutrient credits were given for restoration projects in the Chesapeake Bay region. They also noted that where numeric nutrient endpoints are not

established, EPA is considering a requirement of reduction of nutrient loading by 50%, although it is not clear what the baseline would be for that calculation.

3. **Near shore discharge permitting**
   Oro Loma is getting an exception to the shallow discharge prohibition in exchange for ammonia removal performance-based limits to demonstrate equivalent protection. BACWA asked the Water board about their plans for permitting near shore discharges, marsh projects, and horizontal levies. The Water board does not have specific plans, but is committed to helping projects go forward on a case by case basis. BACWA discussed how this feeds into the Regional Study on non-greyscape alternatives for nutrient removal – that agencies may consider wetlands and horizontal levies under some circumstances if they can get credit for early action. Oro Loma is considering an additional mile of horizontal levy to the south of the existing system. The Water Board specified that a horizontal levy would require an NPDES permit rather than a WDR since it would be directly connected hydrologically to the Bay. They would consider granting a discharge permits, and would need to develop performance standards for these systems to demonstrate equivalent protection. They do not feel that the "net environmental benefit" would be a successful permitting approach for the levies. The Water Board has a draft report on updating the wetlands policy, which they will share with BACWA. They requested feedback within two or three weeks.

4. **Blending Agencies Permits**
   BACWA submitted comments to the Water board on CMSA's Tentative Order that incorporated its satellites for the first time. Ross Valley, a BACWA member, asked BACWA to join a petition to the State Water Board asking that they remand the permit. BACWA discussed the issue with its member agencies who blend, and decided not to join the petition due to lack of consensus among its members. BACWA may join CASA in a comment letter asking the State Water Board to take up the petition. For the next blending agency permits, the Regional Water Board will not incorporate satellites in Burlingame's or Sausalito's permits, as these agencies rarely blend. San Mateo has not asked for permission to blend in the next permit term. SASM's permit will come up later this month and the Water Board has not yet decided on an approach.

5. **SSS WDR Update**

   The State Water Board plans to reopen the SSS WDR this year. BACWA has convened a workgroup to respond to the State Water Board's request for input. The BACWA position on key issues are as follows:

- In favor of new proposed new audit schedule, 6 months before SSMP recertification
- There should be a new category for *de minimis* reporting
- Neutral on private systems, but if implemented, then requirements should be phased in over time. There should not be any new reporting or enforcement requirements imposed on public agencies
- Climate change reporting should be discussed into System Evaluation and Capacity Assurance Plans
- Clarity is needed on 5-year records retention requirement
- Development of QA/QC assurance protocol needed for CIWQS data

Water Board Staff commented that they do not take any action on small spill that do not reach surface waters and would not have a problem with a *de minimis* reporting category.

6. **Recycled Water Policy**

   When the State Water Board adopted its General Order for Recycled Water, BACWA's Recycled Water committee formed a subgroup to make recommendations on how to best transition 96-011 permittees. However, when the Regional Water Board said they had no resources to transition permittees en masse, the subgroup stopped moving forward. The State Water Board is developing a framework for the transition as part of its Recycled Water Policy update. The Regional Water Board would like to be allowed to do a blanket transition, but may not be allowed to, since they would need to collect more information on engineering reports for permittees. They are not considering updating 96-011.

7. **Joint meeting with Regional Water Board and Air District**.
   To address "regulatory silos" BACWA is developing an agenda for a joint meeting with the Water Board and Air district to discuss important cross media issues. BACWA will be in touch with the Water Board once they have developed a draft agenda.

8. **CECS**
   BACWA will develop a policy on POTW participation in the RMP's CEC studies. The State Water Board is still aiming to develop a Statewide Program, but is more sensitive to Regional Concerns. There was a discussion about PFOS and PFOA which are of moderate concern. BACWA will look into national response to fluorinated compound pollution and get back to the Water Board on the wastewater nexus.

9. **EPAP Update**
   Allowing analyses by online field instrumentation is a way to mitigate the burden of the additional documentation required by the transition to TNI. There is new language on online field sensor being introduced into permits, however, its purpose is to clarify which online analyses are already permitted by the Water Code. BACWA is continuing to look for ways to assist its members in the TNI transition, which is seen as a fait accompli.

10. **Cannabis Grow Permitting**
    The Redwood Empire of CWEA held a training on cannabis grow pretreatment, and the take-home message was that we don't expect to see significant issues. EBMUD is proceeding with issuing industrial discharge permits. New Region 2 staff will mostly deal with outdoor grows.

11. **Items for next meeting**
    For the next joint meeting, Water Board staff requested the following topics be added to the agenda:
    - The future of the SRF program – The program is currently overextended, and the State Water Board is developing a systematic framework for prioritizing projects for funding
    - Measure AA funding for local projects

ADJOURNMENT

December 8, 2017

Dr. Garrett Keating, Staff Toxicologist
Division of Occupational Safety and Health
1515 Clay Street, Suite 1901
Oakland, CA 94612

Re: DOSH Documentation for Hydrogen Sulfide (H_2S)

Dear Dr. Keating:

The above-named organizations (collectively named the Coalition) represent businesses with employees that have potential exposure to H_2S. We are greatly concerned about the proposal to reduce the H_2S Permissible Exposure Limit ("PEL") from 10 ppm to 1 ppm (an 8-hour time-weighted-average intended to prevent material health impairment caused by chronic exposure). Some of the working environments of these industries have background levels possibly exceeding 1 ppm. A PEL lowered to that extreme must protect against a real threat based on sound science. The proposed PEL of 1 ppm does not meet this test.

As you know, H_2S is a byproduct in the natural degradation of organic matter. As such, exposures to H_2S have been common and unavoidable throughout history. For the coalition members, H_2S is not an ingredient or process chemical purchased for use. The widely recognized concerns are paralysis of the central nervous system (CNS) leading to loss of breathing resulting from concentrations of H_2S above 100 ppm as well as eye

damage occurring in the 50 to 100 ppm range from relatively high short-term exposures. Consequently, CNS and eye damage outcomes are addressed in California by a Ceiling Limit of 50 ppm. The irritation endpoint is addressed by a Short Term Exposure Limit ("STEL") of 15 ppm. The health endpoints noted in the DOSH documentation (discernible fatigue and discomfort) and assumed to justify lowering the PEL are not specifically observed in our industries, despite the fact such health effects would be evident on a daily basis should they exist. These endpoints are denoted by changes in the following: oxygen uptake, blood lactate, muscle lactate, lactate dehydrogenase, cytochrome oxidase, and citrate synthase. Note that in the relevant studies, there was an occasional increase or decrease in these endpoints. However, the majority of comparisons were not statistically significant. The DOSH H_2S documentation states, "Extended to 8 hours, these changes could result in discernible fatigue and discomfort…" This statement is linked to the working hypothesis for the toxic mode of action (MOA) of H_2S is the impairment of mitochondrial respiration by inhibition of cytochrome oxidase, thereby reducing energy production. However, it is clear in this set of studies and is stated in the documentation that "the putative enzyme associated with H_2S toxicity, was **not** significantly different between exposed men and women and controls." This lack of association and the fact that the subjects were not subject to a decrease in power output during exposure results in a conclusion that reducing the PEL to 1 ppm is not substantiated and does not meet the hurdle of material impairment.

The proposal to decrease the H_2S PEL from 10 ppm to 1 ppm is based largely on the studies of Bhambhani, Jappinen and Fiedler. DOSH has over interpreted the utility of these studies for generating an appropriate PEL. The available data in the scientific literature support maintaining the existing PEL. Importantly, the studies relied upon by DOSH do not meet the threshold of material impairment of health or functional capacity, as required by Labor Code Section 144.6:

> "In promulgating standards dealing with toxic materials or harmful physical agents, the board shall adopt that standard which most adequately assures, to the extent feasible, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to a hazard regulated by such standard for the period of his working life. Development of standards under this section shall be based upon research, demonstrations, experiments, and such other information as may be appropriate. In addition to the attainment of the highest degree of health and safety protection for the employee, other considerations shall be the latest available scientific data in the field, the reasonableness of the standards, and experience gained under this and other health and safety laws. Whenever practicable, the standard promulgated shall be expressed in terms of objective criteria and of the performance desired."

The Science Supports the Existing PEL of 10 ppm

The PEL rationale drafted by DOSH for the Health Experts Advisory Committee ("HEAC") relies on human studies rather than animal studies in determining the PEL. We agree with this preference and note it is consistent with past work by DOSH and the HEAC. In that vein, the body of our comments on the science are focused on the relevant human studies. As a footnote, we believe that the animal studies also support the existing PEL of 10 ppm[1].

There are many human studies in the literature that either point to or support the existing PEL of 10 ppm. They show that the most sensitive endpoint that may be considered a "material impairment" from chronic exposure is eye irritation. The effect is manifested at concentrations greater than 10 ppm. Of course, there is a continuum of this effect with mild irritation appearing around 10 ppm while eye damage are noted by several investigators to occur at 50 ppm and above. A short summary of these studies is presented below.

Barthelmey (1939) – Typical concentrations of 9 to18 ppm H_2S were not associated with eye complaints

Bhambhani et al. (1991, 1994, 1996, 1996, and 1997): Studies with exercising healthy volunteers have shown that inhalation at a concentration of 10 ppm resulted in no effects in men or women on FVC, FEV_1, peak expiratory flow rate, forced expiratory flow rate, or maximal ventilation volume

Jappinen (1990) – In pulp mill workers, no change in FVC, FEV_1, and FEF at a mean concentration of 4.5 ppm, range 1-11 ppm

Nesswetha (1969) – The first symptoms of eye irritation after 6-7 h of exposure to 11 ppm H_2S and "eye diseases" (likely increasing irritation) developed after 4-5 h at 14 ppm. On the basis of the data, the NRC, 2009, noted that it is unlikely that eye irritation worsens with time

Vanhoorne (1990) – NOEL >5ppm H_2S; >90 ppm carbonyl sulfide for eye complaints in rayon workers

The National Academy of Sciences (2008) has reviewed these data on H_2S and states in their review of Bhambhani et al., 1991, 1994, 1996, 1997, and Fiedler et al, 2008 that the results of those studies do <u>not</u> indicate changes in healthy adults that signal the

[1] With regard to animal studies, we believe that studies showing nasal lesions in rodents at high concentrations show a lack of relevance at the lower concentrations that are important in generating a PEL. In contrast, maintaining the PEL at 10 ppm is further supported by studies at CIIT where rats and mice exposed to 10.1 and 30.5 ppm, 6 hours per day, 5 days per week for 90 days did not show ocular toxicity (1983).)1

initiation of a toxic response to H_2S at exposures up to 10 ppm. In this regard, toxic response and material impairment have similar attributes. “The magnitude of the few exposure-related changes that were observed, the sporadic occurrence of the changes, and the lack of a functional change in the cardiorespiratory system are not consistent with a conclusion that the effects constituted a toxic response.” With regard to Bhambhani, Table 1 provides a summary of the four studies that provide information on metabolic endpoints. While any one study may provide information on a statistically significant biomarker of exposure, when using a weight of the evidence evaluation we find that these studies provide little information on data consistency or dose response that would indicate material impairment (Table 1).

Table 1: Summary of Bhambhani, 1997, 1994, 1996, and 1991 reporting metabolic changes as reported in Bhambhani (1999)

	BIOCHEMICAL MARKERS SHOWING METABOLIC CHANGES (NOT MATERIAL HEALTH EFFECTS)					
3 Studies	$V0_2$	La	MLa	LDH	CyOx	CS
1997 10 ppm 15 Men 13 Women	↓	↑	↔	↔	↔	↔
1994, 1996 5 ppm 13 Men 12 Women	↔	↔	↔	↔	↔	↓ Men
1991 5 ppm 16 Men	↑	↑				

VO_2 = oxygen uptake
La = blood lactate
MLa = muscle lactate
LDH = lactate dehydrogenase
Cy0x = cytochrome oxidase
CS = citrate synthase

↔Indicates no statistically significant change

The Scientific Literature Must Uphold the Proposed Mode of Action

The DOSH documentation for H_2S notes that the toxic mode of action is considered to be the impairment of mitochondrial respiration by inhibition of cytochrome oxidase, thereby reducing energy production. However, neither inhibition of cytochrome oxidase nor the reduction of energy production have been observed in the Bhambhani studies with

any statistical relevance. Bhambhani (1991) notes that on the basis of the biological mode of action of H_2S that has been reported, it was hypothesized that inhalation of sufficient quantities would result in a significant increase in the blood lactate concentration at a given work rate, which would result in a reduction in the physical work capacity. While Bhambhani reports a significant increase in blood lactate concentrations (at least in some cases) he stated that "this could not be considered to be indicative of an increase in intramuscular lactate production." In addition he states that the results do not support the link between blood lactate accumulation and muscular fatigue. In the documentation, this admission is clearly noted in the statement, "Multiple measures of markers of energy metabolism determined by enzymatic activity of the muscle tissues obtained during exposure/exercise were mostly not significant." Finally, it is notable that the documentation states that "cytochrome oxidase activity, the putative enzyme associated with H_2S toxicity, was not significantly different between exposed men and women and controls."

The NAS review committee clearly embraced this important question on mode of action and stated that the results suggested that anaerobic metabolism is increased by the presence of the sulfide, but whether that is due to inhibition of cytochrome oxidase cannot be determined from the results. The fact that the critical enzyme in this mode of action is not statistically inhibited matched with no effect on power output challenge the assumption that this mode of action is operating at these low concentrations. Maintaining that blood lactate levels could somehow be associated with discernible fatigue without additional supporting data is speculative.

Regarding Fiedler, human volunteers were exposed to H_2S and evaluated for several endpoints including anxiety level, performance in sensory and cognitive tests, odor ratings, general symptoms, and environmental quality ratings. Both odor ratings and anxiety level increased with dose, with anxiety symptom severity being significantly different at 5 ppm only. However, as the authors note, the overall magnitude in increased anxiety symptom severity was 2 points on a scale of 100. All other neurological endpoints evaluated in this study were unaffected by exposure.

Also, the anxiety measurements were likely due to the odor of H_2S gas and not to irritation as was noted in the DOSH statement. Many studies that have attempted to maintain a separation of outcomes related to olfaction (first cranial nerve) and irritation (fifth cranial nerve) have failed unless an adequate experimental design was incorporated to overcome the confounding nature of olfaction. Generally, this employs using either nose clips and mouth-only breathing or an odorant gas such as phenyl ethyl alcohol that because it does not produce sensory irritation is used as a negative control. Also, these type of studies have reported a false positive rate of up to 30% of subjects exposed simply to filtered air (Golden, 2011). Based on these findings, Fiedler et al. (2008) concluded that the increase in anxiety symptom severity, "cannot be regarded as clinically significant."

Therefore, this study does not demonstrate an adverse effect on the central nervous system, and as such should not be used in deriving an occupational exposure limit for H_2S.

Jappinen et al. (1990) was not sufficiently conducted to conclude "serious respiratory effects"

DOSH also finds support for a lower PEL in a Jappinen study that showed changes in airway resistance (Raw) and specific airway resistance (sRaw) that were greater than 30% in two of ten individuals with asthma following exposure to H_2S at 2 ppm for 30 minutes. However, use of this study in support of the proposed PEL is unwarranted for two reasons: significant methodological limitations of the study and considerable uncertainties in the clinical relevance of the parameters measured (*i.e*., Raw and sRaw).

The most critical methodological limitation of is that the authors did not include an appropriate control (a filtered air exposure for comparison) in the study. Modern controlled human exposure studies generally use a randomized, crossover design with filtered air exposure as the control, which allows a direct estimation of effects from the exposure of interest while controlling for independent effects from the experimental procedures (Utell and Frampton, 2000; National Academies of Sciences, Engineering, and Medicine, 2017). Without comparing to effects after exposure to filtered air, it is difficult, at best, to determine whether the observed changes in Raw and sRaw in the two individuals were due to the exposure of H_2S or to artifacts from the testing procedure that were not related to the H_2S exposure. For example, the study participants should have avoided certain activities, such as smoking, consuming alcohol, performing vigorous exercise, eating a large meal, and wearing tight-fitting clothing, immediately before participating the study (Miller *et al*., 2005). If any of the volunteers in this study had engaged in any of the above activities, the observed responses following their exposures to H_2S could have been compromised. Despite the critical importance of these details, the Jappinen *et al.* (1990) study did not report on the preparation of study participants. Also, Jappinen did not provide details on the laboratory protocol, such as whether the study participants were exercising while being exposed to H_2S or were in a sedentary position, which could have impacted the observed effects following exposures.

Setting aside the methodological issues of Jappinen *et al*. (1990), there are considerable uncertainties regarding the clinical relevance of observed changes in Raw and sRaw (Robinson *et al*., 2015).

Jappinen indicated that two study participants had greater than 30% changes in Raw and sRaw, and that this suggests bronchial obstruction. However, the study did not compare numeric values of Raw and sRaw in these two subjects to the normative values for Raw and sRaw in adults (Goldman *et al*., 2005; Piatti *et al*., 2012). If the post-exposure values of Raw and sRaw in these two subjects were within the normal range, the observed changes should not be considered as an adverse effect.

Despite widespread use of these two measures for airway resistance in respiratory function laboratories, there are no formal standardization guidelines, and methodology varies greatly across laboratories with regard to commercial equipment, the reference equation to calculate the percentage predicted values, and testing protocols (Robinson *et al*., 2015).

There is also no consensus regarding the magnitude of changes in Raw and sRaw in pulmonary function testing that constitutes an indicator of airway responsiveness. In a joint statement by the American Thoracic Society (ATS) and the European Respiratory Society (ERS), the use of a 40% increase in sRaw to define a positive response has been proposed for bronchial challenge tests in children (Beydon *et al*., 2007). Using this 40% cutoff, the changes in Raw and sRaw in the two study participants in Jappinen would not be considered as a positive response.

In comparison, a method of categorizing the severity of lung function impairment based on the FEV_1 predicted is provided in Table 2 (Pellegrino et al., 2005). It is similar to several previous documents prepared by the American Thoracic Society (1986, 1991) and the American Medical Association. The number of categories and the exact cut points are not considered bright lines.

Table 2: Severity of any spirometric abnormality based on the forced expiratory volume in one second (FEV_1)

Degree of severity	FEV_1 % predicted
Mild	70
Moderate	60-69
Moderately severe	50-59
Severe	35-49
Very severe	35

Finally, there is a lack of consistency in the Jappinen results. The DOSH summary notes that Jappinen found no significant changes in mean FVC, FEV_1, and FEF values after exposure to H_2S in subjects with asthma.

In conclusion, the studies that DOSH relies upon to lower the PEL for H_2S do not meet the definition of “material impairment.” DOSH should reconsider the evidence for changing this legal benchmark. Please direct any correspondence on this matter to Dan Leacox at 916-832-5677 or dan@leacox.net.

Respectfully submitted,

Stewart E. Holm, Chief Scientist
American Forest & Paper Association

March 1, 2018

Keith Maruya
Southern California Coastal
Water Research Project Authority
3535 Harbor Blvd. Suite 110
Costa Mesa, CA 92626

(sent via email – Keithm@sccwrp.org)

Dear Mr. Maruya:

On behalf of WateReuse California (WRCA), the California Association of Sanitation Agencies (CASA), Bay Area Clean Water Agencies (BACWA) and the Association of California Water Agencies (ACWA) we thank you for the opportunity to provide comments on the draft report -- "Monitoring Strategies for Constituents of Emerging Concern (CECs) in Recycled Water" (Report). The 2018 Science Panel's charge was significantly expanded from the scope of the 2010 review. This broader charge included updating its risk-based framework, examining the need for CEC monitoring for all non-potable recycled water uses, evaluating the relationship of antibiotic resistance to the use of recycled water and providing recommendations for additional research. We fully support this expanded charge as a critical step in the ongoing development of the Water Board's CEC monitoring program for recycled water.

Support for the Risk-Based Framework
We strongly agree that the risk-based screening framework, as developed in 2010 by the Panel and proposed to be updated in 2018, should continue to be the primary approach for developing CEC monitoring programs in the state. Appropriately, this framework incorporates a very large margin of safety, which is built into each step of the overall human health CEC screening process. This flexible framework allows for the addition of new compounds to the monitoring list, as well as the removal of CECs previously recommended for monitoring, based on updated occurrence data. This risk-based framework should continue to be applied to update the CEC monitoring list in the future.

Voluntary Bioassays and Removal of Monitoring Trigger Levels
For potable reuse projects the Panel proposed the use of two bioassays (ER and AhR) conducted quarterly to evaluate more comprehensively the gamut of potential exposures to

CECs. While bioassays potentially hold promise for the detection of a wide spectrum of unmonitored CECs, we are concerned about the availability, standardization, and reliability of the methods. We request that utilities be allowed to conduct these two bioassays on a ***voluntary*** basis as a data collection process to inform the Water Board, the Expert Panel, and the Phase 2 Bioanalytical Toolbox Development project. These data will help the Water Board assess the development and appropriateness of different testing methods and the standards for verifying commercial laboratory capability. If the testing is mandatory, we recommend that only potable reuse facilities above a certain size (e.g., 10 MGD) be required to participate due to the methodological complexity and significant cost burden of the required bioassay monitoring.

As written, the report is unclear as to whether the data collected during this period will be subject to the actions described in the Panel's screening approach (Figure 7-1). That approach requires positive bioactivity results to trigger additional investigatory steps—including both targeted and non-targeted analysis—to further identify the constituents causing this activity. We do not believe that it is the Panel's intention to implement this framework now, but rather to collect the data to inform future decisions about the needs and benefits of using bioassays as part of the state's CEC monitoring program for recycled water.

As such, we would like the Panel (Final Report) to state that the results obtained during the voluntary data collection period will neither (a) trigger additional actions (e.g., additional investigation via targeted and non-targeted analysis, as described in Figure 7-1 and Appendix F), nor will it (b) be subject to the trigger-based action levels described in Section 7.5.3.

We strongly recommend that the trigger levels for bioassays (e.g., pg. 78) be removed from the monitoring requirement during the data collection period. In Section 7.5.3 on decision-making logic for interpretation of bioassay results, the potential monitoring trigger levels are also referred to as PNECs or action levels (ALs). While these trigger levels were not intended for regulatory action per earlier parts of the Report, the Report is inconsistent since it later suggests halting a project if a monitoring trigger level is exceeded consistently at a certain level (Section 7.5.3). This would, in effect, transform the trigger levels into a regulatory standard for compliance, which is not consistent with the Panel's stated purpose. Similarly, the term "non-compliance" (Section 2.3) is inconsistent with the Report's statements that the bioassays are used as screening tools, and should be removed. Furthermore, the lack of established trigger levels may lead to inconsistent interpretation of results around the state.

Finally, we recommend that the Water Board's Environmental Laboratory Accreditation Program develop approved methods and certify laboratories for conducting the recommended bioassays to ensure the reliability of the bioassay data. The Water Board should provide a list of approved laboratories to agencies conducting the monitoring.

Support for Title 22 Non-Potable Use Findings

We support the overall finding of the Panel that no CEC monitoring is necessary for non-potable Title 22 uses of recycled water based on the very low potential for exposure and risk associated with CECs. Given the extraordinary time it would have taken to quantify the potential exposure and risks for all possible CECs in over 40 non-potable exposure scenarios, the Panel instead developed an approach for evaluating exposure to CECs that compares non-potable recycled water exposure to groundwater recharge via surface spreading by analysis of the water quality at the point of application. This is an appropriate and conservative approach as water quality at the point of application for groundwater recharge via spreading is very similar to most non-potable uses. The comparison revealed that total exposure associated with non-potable use scenarios is less than 10% of potable use ingestion and is likely to be less than 1% for most CECs.

Recommendations for Improving the Water Board's CEC Monitoring Program

While not specifically the charge of the Panel, the report recommends a number of potential improvements to the Water Board's CEC monitoring program. We agree with the overall assessment that in order to improve the state's CEC monitoring program a standardized method for data compiling and analysis is needed. As many potable reuse projects are planned in the near future, it is the appropriate time to develop a standard reporting method for utilities and processes for compiling and assessing that information at the Water Board. However, it is important that reporting requirements are not duplicative. Utilities should only have to report a data set once. The data analysis should be conducted by the Water Board staff and made available to the Panel before they next meet.

While we agree that the Water Board should develop a standard method for data collection, the report proposes creation of a database using information that is currently not required from existing potable reuse facilities. For example, high frequency data is not required information, is voluminous in nature and does not appear to be of great use to regulators. Before a database is created we urge the Water Board to carefully assess what information will be truly needed from future potable reuse projects and appropriate levels of confidentiality. We look forward to working with the Water Board on the development of a data management program and the other recommendations on page 10 through 13.

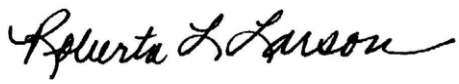
Finally, we strongly support the Panel's recommendation on page 10 that the Division of Drinking Water (DDW) should permit all potable reuse projects that produce a raw water source or finished water rather than the Regional Boards. This is appropriate given that DDW has the authority to regulate drinking water and the Regional Boards have the authority to regulate waste. The regulation of concentrate waste streams from potable reuse projects should continue to be regulated by the Regional Boards as recommended by the Panel.

Conclusion

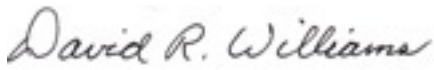
Again, we thank the Panel for its hard work in completing the Report in a short time frame. In general, with the exception of the recommendation to require bioanalytical testing, we are very pleased with the conclusions in the Report and believe the Panel's work will further strengthen public confidence in the safety of recycled water and potable reuse and provide guidance and direction for the Water Board on ways to continuously improve CEC monitoring for the protection of human health.

Sincerely,

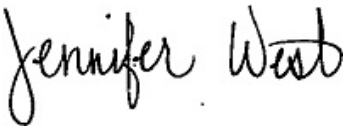
Adam Borchard
Regulatory Advocate
Association of California Water Agencies



Roberta Larson
Executive Director
California Association of Sanitation Agencies



David R. Williams
Executive Director
Bay Area Clean Water Agencies



Jennifer West
Managing Director
WateReuse California

March 15, 2018

Steven Snyderman
Office of Pesticide Programs (OPP)
Regulatory Public Docket Center (28221T)
U.S. Environmental Protection Agency (EPA)
1200 Pennsylvania Ave., NW.
Washington, DC 20460–0001

Subject: Pyriproxyfen – Preliminary Ecological Risk Assessment (EPA-HQ-OPP-2011-0677)

Dear Mr. Snyderman:

On behalf of the Bay Area Clean Water Agencies (BACWA), we thank you for the opportunity to comment on the Preliminary Ecological Risk Assessment (ERA) for pyriproxyfen. BACWA's members include 55 publicly owned wastewater treatment facilities ("POTWs") and collection system agencies serving 7.1 million San Francisco Bay Area residents. We take our responsibilities for safeguarding receiving waters seriously. BACWA is especially interested in pesticides that are used in manners that have transport pathways to the sanitary sewer, as even the most sophisticated wastewater treatment plants cannot fully remove complex chemicals like pesticides.

Every day, BACWA members treat millions of gallons of wastewater that is then discharged to fresh or salt water bodies, including local creeks and rivers, bays, and the Pacific Ocean. These waterways provide crucial habitat to a wide array of aquatic species and waterfowl. In some cases, waters receiving POTW discharges ("receiving waters") may be effluent-dominated in that there is little to no dilution, either because the receiving water is small or there is a lack of mixing at certain times due to thermal or saline stratification.

BACWA has a strong interest in pyriproxyfen due to its high toxicity to aquatic invertebrates. The primary purpose of this letter is to request that (1) the ERA invertebrate toxicity analysis adequately represents POTW toxicity test screening and (2) the ERA be expanded to include an evaluation of sewer discharges from pet flea control products and other indoor pyriproxyfen uses. Several studies, including a recent study involving several of our member agencies, suggest that pet flea control products have a direct pathway, via sewer collection systems, to municipal wastewater treatment plants.

BACWA appreciates that OPP has started to conduct evaluation of risks associated with pesticide discharges to the sewer system ("down the drain" risk assessments). OPP's pyriproxyfen risk assessment did not include a down-the-drain assessment. Omitting evaluation of the sewer discharge environmental exposure pathway can be harmful to the environment and prove costly for POTWs, as detailed below.

In almost every US state – including California – state law precludes any local regulation of pesticide sales or use. As we have no local option to control use of pesticides consumer products, it is essential to us that OPP's Registration Review adequately evaluates potential impacts to wastewater quality, and results in mitigation measures ensuring that impacts to the beneficial uses of the receiving water are *prevented*.

For these reasons, it is of utmost importance to BACWA that pet flea control products and all other pyriproxyfen -containing products with pathways to the sewer be carefully and thoroughly evaluated.

In addition to commenting on the preliminary ecological risk assessment, we are also taking this opportunity to provide input on possible mitigation strategies for EPA to discuss with pyriproxyfen registrants. We are providing this input at this time because mitigation measures may be necessary and we understand that the next opportunity for public comment will be after such discussions and after EPA has prepared its proposed decision.

Thank you for this opportunity to present our input on each of these topics.

Background – Pesticide discharges to the sewer can harm the environment and be costly

Pesticide discharges to the sewer system can prove costly for POTWs, due to the potential for pesticides to cause or contribute to wastewater treatment process interference, NPDES permit compliance issues, adverse impacts to receiving waters, degradation of recycled water quality and/or ability to reuse biosolids, in addition to exposing POTWs to the potential for third party lawsuits under the Federal Clean Water Act (CWA).

Of particular concern is the ability of a specific pesticide to cause exceedance of a POTW's effluent toxicity limits. One universal water quality standard in the U.S., which stems directly from the CWA, is that surface waters cannot be toxic to aquatic life. NPDES permits require POTWs to demonstrate that they meet this standard by evaluating acute and chronic toxicity using EPA standard methods (set forth in 40 CFR Part 136). To evaluate toxicity, every POTW must (1) conduct toxicity screening tests with a range of species, (2) select the most sensitive species, and (3) perform routine monitoring (typically monthly or quarterly). These monitoring data are used to determine whether the discharger has a *reasonable potential* to cause or contribute to toxicity in the receiving water. If it does, the CWA requires that numeric effluent limits be imposed, otherwise POTWs may be given numeric effluent triggers for further action. In the event that routine monitoring *does exceed* a toxicity limit or trigger, the POTW must perform accelerated monitoring (e.g., monthly); and if there is still evidence of consistent toxicity, the discharger must do a Toxicity Reduction Evaluation (TRE) to get back into compliance. The TRE requires dischargers to evaluate options to optimize their treatment plants and conduct a Toxicity Identification Evaluation (TIE), the cost of which can vary from $10,000 to well over $100,000 depending on complexity and persistence of the toxicant. The goal of the TIE is to identify the substance or combination of substances causing the observed toxicity. If a POTW's effluent is toxic because of a pesticide, it may not have any practical means to comply with CWA-mandated toxicity permit limits.

Once identified, the cost to treat or remove the toxicity causing compound(s) can vary dramatically. Often, there are few ways for a discharger to mitigate the problem other than extremely costly treatment plant upgrades. Upgrading treatment plants is often ineffective for

organic chemicals like pesticides that appear at sub microgram per liter concentrations, largely because sewage is a complex mixture of natural organic compounds. Regardless of this, the discharger must comply with its CWA permit limits. If a discharger violates a toxicity limit, it can be subject to significant penalties (in California up to $10/gallon or $10,000 per day).

In addition, when surface water bodies become impaired by pesticides, wastewater facilities may be subject to additional requirements established as part of Total Maximum Daily Loads (TMDLs) set for the water bodies by EPA and state water quality regulatory agencies. A number of pesticide-related TMDLs have been adopted or are in preparation in California. The cost to wastewater facilities and other dischargers to comply with TMDLs can be up to millions of dollars per water body per pollutant. This process will continue as long as pesticides are approved for uses that result in water quality impacts; it is therefore imperative that EPA conducts a Registration Review focusing on water quality impacts and for EPA to take action to ensure that any impacts are prevented or fully mitigated.

BACWA seeks to ensure that the ERA's freshwater invertebrate toxicity analysis adequately represents POTW toxicity screening

To evaluate POTW effluent acute and chronic freshwater toxicity, many agencies are required to use *Ceriodaphnia dubia* (*C. dubia*) as their test species based on US EPA Office of Water toxicity testing guidance cited in Federal regulations implementing the NDPES permit program.[1] The ERA provided toxicity data for *Daphnia magna* (*D. magna*), which was the most sensitive species tested. *C. dubia* toxicity data do not appear to be available. These two invertebrates are known to have different sensitivities to persistent organic pollutants. If *C. dubia* is more sensitive, it is possible that the results in the ERA could underestimate risks of POTW toxicity testing failures.

BACWA requests that EPA seek to obtain chronic toxicity data for *C. dubia* and incorporate the findings in the proposed decision in order to ensure that any associated mitigation measures are sufficient to prevent POTW effluent toxicity. Chronic toxicity data are recommended for two reasons:

1) POTWs continuously discharge to surface waters.
2) Use of acute toxicity data and the common default assumption that the acute-to-chronic toxicity ratio is 10 might significantly underestimate chronic toxicity for pyriproxifen. based on the data in the ERA, the *D. magna* lowest acute toxicity value (LC50) is 80 ug/L while the chronic values are 0.015 (NOAEC) and 0.031 ug/L (LOAEC) – more than 1,000-fold lower concentrations.

BACWA requests that the ERA be expanded to include an evaluation of sewer discharges from pet flea control treatments and other indoor Pyriproxyfen uses

BACWA is concerned that risks associated with indoor pyriproxyfen use were not examined in the ERA and respectfully asks the EPA to include this analysis (a "down the drain" risk assessment) in the revised assessment. EPA has POTW predictive modeling tools which are

[1] See US EPA Office of Water (2002). *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*. EPA-821-R-02-013. This manual describes chronic toxicity tests used to determine compliance with NPDES permit toxicity limits. The methods included in this manual are referenced in Table IA, 40 CFR Part 136 regulations.

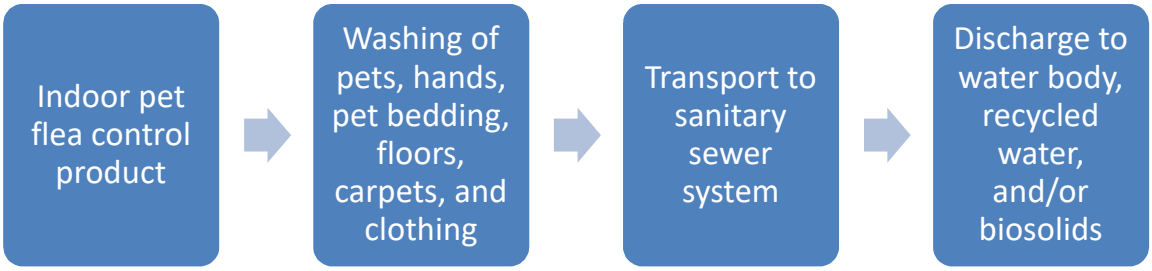
suitable for conducting this assessment and has conducted similar assessments for many other pesticides.

We request that EPA specifically analyze sewer discharge sources such as:

- Pet spot-ons, collars, and topical drops
- Pet shampoos
- Carpet and upholstery sprays, powders, and foams
- Home treatment aerosols, sprays and foggers

As explained in Appendix 1, pet flea control products contribute to POTW influent pesticides loads. Pet flea control chemicals are transported within a home to an indoor drain that flows to a POTW via the pathways illustrated in Figure 1.

Figure 1. Pyriproxyfen Pathway: From Pet Treatments to Wastewater Discharge



Scientific studies detailed in Appendix 1 examined the pathways that transport active ingredients from pet flea control products to the sewer system, both directly (through dog washing) and indirectly (such as after transfer onto human hands, socks, or clothing that are subsequently washed).

Based on the data from these studies and pet population data, it is clear that pet flea control products are significant sources of pesticides to POTWs that should be accounted for in the ERA. Monitoring data for pet flea control chemicals in POTW influents and effluents show higher concentrations in northern California POTWs (Sadaria et al 2017).[2] These data likely reflect real differences between these communities and those monitored in the nationwide study. The Sadaria et al. 2017 northern California study was conducted during a severe drought that triggered water use restrictions throughout the study area and significant reductions in POTW influent flows. Its September timing coincides with what may be the peak pet flea control season in the study area. According to Sadaria et al 2017:

> "Higher overall concentrations and detection frequencies in effluent from northern California may reflect regional, seasonal, and/or climate-related differences from other sampled facilities, such as lower dilution caused by drought-related water use reductions, presence of pests during all seasons because of the mild coastal climate, and pesticide use

[2] Sadaria, A.M., Sutton, R., Moran, K.D., Teerlink, J., Brown, J.V., Halden, R.U., 2017. Passage of fiproles and imidacloprid from urban pest control uses through wastewater treatment plants in northern California, USA. Environ. Toxicol. Chem. 36:6 1473-1482.

responding to regional pest pressures (e.g., high flea populations in California coastal areas)."

BACWA requests that EPA pyriproxyfen modeling and mitigation approaches account for these factors. Please see Appendix 2 of BACWA's comments on the Preliminary Ecological Risk Assessment for the Pyrethroid Insecticides (enclosed), where we detail potential approaches for addressing these factors within EPA's current POTW model. BACWA has developed an approach for evaluating both acute and chronic toxicity of pet flea control treatments in the face of limited sales volume data, based on treatment frequency, per capita pet ownership, concentration of active ingredient, and estimated POTW removal efficiency (see BACWA's Revised Appendix 4 of the Comments on the Preliminary Ecological Risk Assessment for the Pyrethroid Insecticides, October 20, 2017, attached).

BACWA requests that EPA consider risk mitigation for pyriproxyfen

Given findings for other pet flea control products, the "down-the-drain" risk assessment for pyriproxyfen may conclude that risk mitigation is warranted to reduce POTW pyriproxyfen discharges and associated invertebrate toxicity. Because 100% of POTWs must comply with the Federal Clean Water Act 100% of the time, whenever EPA identifies significant risks from pesticides discharged to POTWs, BACWA believes that a robust exploration of risk mitigation is imperative.

In response to the finding that pet flea control products are major sources of pesticides to POTWs, BACWA completed an assessment of pet flea control alternatives. This assessment, which is summarized in Appendix 2, identified multiple practical, effective, non-pesticide alternatives.

In light of these findings, BACWA requests that OPP conduct its risk-benefit evaluation for pet flea control products as a group (i.e. considering pyrethroids, imidacloprid, indoxacarb, and fipronil, which are also undergoing Registration Review) and in the context of the broad range of available non-pesticide alternatives, including FDA-approved oral medications and mechanical controls (e.g., vacuuming, washing of pet bedding).

While we agree that pet flea and tick control has societal benefits, our review of control options detailed in Appendix 2 identified many alternatives that are likely far less environmentally problematic than on-pet or indoor pesticide treatments. For example, the new generation of FDA-approved orals seems to be more convenient, equally or more effective, and well accepted by pet owners and veterinarians. Mechanical controls (vacuuming, washing of pet bedding) offer lower cost and greater long-term control, as these are the sole option that addresses all life cycle stages of fleas. Finally, we emphasize that we do <u>not</u> believe that fipronil, imidacloprid, indoxacarb, or pyrethroids are acceptable alternatives to pyriproxyfen.

BACWA suggests that EPA consider the following additional risk mitigation strategies for indoor pyriproxyfen products:

- Determine the minimum application rate necessary to achieve pest control for indoor uses like pet flea control. This would eliminate unnecessary overuse and minimize POTW discharge quantities.
- Consider adding wastewater-protective use restrictions to product labels—such as dissuading pet owners from washing their pets for two weeks after applying

treatments.

Thank you for the opportunity to provide this feedback regarding both the risk assessment and subsequent mitigation strategies. We ask that OPP evaluate pyriproxyfen discharges to POTWs and the subsequent potential impacts to effluent toxicity, and explore mitigation options, particularly for pet flea control products. BACWA requests that EPA coordinate with the California Department of Pesticide Regulation (CDPR) (which has extensive relevant information and expertise), veterinarians, and registrants; and bring in the latest scientific information – including CDPR scientific studies and modeling that are currently underway.

If you have any questions, please contact BACWA's Project Managers:

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Respectfully Submitted,

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Enclosures:

1. Sadaria, A.M. et al. 2017. Passage of Fiproles and Imidacloprid from Urban Pest Control Uses Through Wastewater Treatment Plants in Northern California. *Environmental Toxicology and Chemistry*. 36 (6), 1473-1482.
2. Bigelow Dyk, M. et al. (2012). Fate and distribution of fipronil on companion animals and in their indoor residences following spot-on flea treatments, *Journal of Environmental Science and Health, Part B: Pesticides, Food Contaminants, and Agricultural Wastes*, 47(10): 913-924
3. Halos, L. et al. 2014. Flea Control Failure? Myths and Realities. *Trends in Parasitology*, 30:5 228-233.
4. Blagburn, B., and Dryden, M., Biology, Treatment, and Control of Flea and Tick Infestations, *Vet Clin Small Anim*, 2009, Vol 39, pp 1173-1200.
5. Litchfield et al., Safety Evaluation of Permethrin and Indoxacarb in Dogs Topically Exposed to Activyl® Tick Plus, *J Veterinar Sci Technology* 2015, 6:2.
6. Teerlink, J., J. Hernandez, R Budd. 2017. Fipronil washoff to municipal wastewater from dogs treated with spot-on products. Sci Total Environ 599-600: 960-966.
7. Bay Area Clean Water Agencies (BACWA). July 7, 2017. Appendix 2 - Comment Letter on EPA Preliminary Ecological Risk Assessment for the Pyrethroid Insecticides.
8. BACWA. October 20, 2017. Revised Appendix 4 – Comment Letter on the Preliminary Ecological Risk Assessment for the Pyrethroid Insecticides.

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Appendix 1

Pet Flea Treatments:
Evidence for the Pathway to the Sewer

Part I – Evidence for the Pathway to the Sewer

There is mounting evidence that pesticides from on-pet flea control products (spot-ons and collars) and indoor foggers and sprays have exposure pathways to the sewer. The research summary below is organized first by the consumer use, followed by specific studies throughout a sewage collection system and at POTWs.

Topical Pet Flea Control Products - Background

Pet topical treatments are designed to impact one or more stages of the flea cycle through direct contact with the pesticide (rather than an adult flea biting the pet and obtaining the pesticide systemically with the consumed blood). Therefore, pesticides in topicals are not meant to enter the pet's bloodstream but rather are meant to stay on the pet's fur in order to be effective.

Pet Washing Discharge Pathway

Pet washing is likely a major discharge pathway for pet flea control products. A study by California Department of Pesticide Regulation (CDPR) (Teerlink et al. 2017; enclosed)[3] measured the washoff of fipronil spot-on products when bathing treated dogs. Fipronil was detected in all samples – even those collected 28 days post-application. According to the authors of the study:

> "Results confirm a direct pathway of pesticides to municipal wastewater through the use of spot-on products on dogs and subsequent bathing by either professional groomers or by pet owners in the home. Comparisons of mass loading calculated using California sales data and recent wastewater monitoring results suggest fipronil-containing spot-on products are a potentially important source of fipronil to wastewater treatment systems in California. This study highlights the potential for other active ingredients (i.e., bifenthrin, permethrin, etofenprox, imidacloprid) contained in spot-on and other pet products (i.e., shampoos, sprays) to enter wastewater catchments through bathing activities, posing a potential risk to the aquatic organisms downstream of wastewater discharge."[4]

Indirect Sewer Discharge Pathways

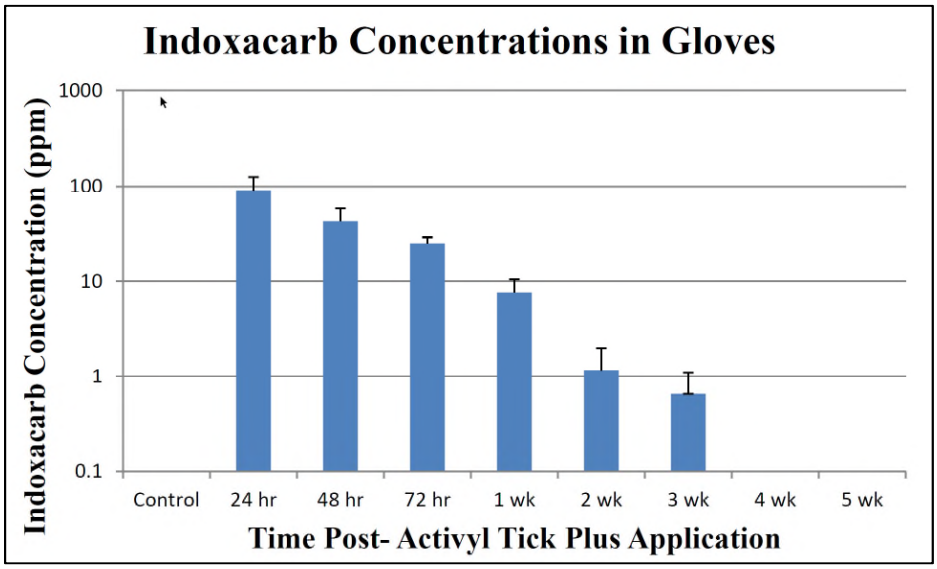
Several scientific studies have examined the transport of active ingredients from pet flea control products onto surfaces, such as human hands, that are subsequently washed, completing a transfer pathway to the sewer system.

- *Spot-on treatment product to glove (hands) pathway*: A 2015 study by Litchfield et al. evaluated the transfer of permethrin and indoxacarb from a topical pet flea control treatment to people's hands.[5] In the study, the topical treatment was applied to dogs that

[3] Teerlink, J., J Hernandez, R Budd. 2017. Fipronil washoff to municipal wastewater from dogs treated with spot-on products. Sci Total Environ 599-600: 960-966.
[4] Teerlink, J., J Hernandez, R Budd. 2017. Fipronil washoff to municipal wastewater from dogs treated with spot-on products. Sci Total Environ 599-600: 960-966.
[5] Litchfield et al., "Safety Evaluation of Permethrin and Indoxacarb in Dogs Topically Exposed to Activyl® Tick Plus," J Veterinar Sci Technology 2015, 6:2 http://dx.doi.org/10.4172/2157-7579.1000218. (enclosed)

had not received a topical treatment for at least two months. To simulate human exposure to the pesticides, "Glove sampling included the wipe sampling technique, which consisted of petting the dog forward and back along its back and sides, while avoiding the application site, for five minutes while wearing a 100% cotton glove." The cotton glove samples were collected at days 0, 1, 2, 3, 7, 14, 21, 28, and 35. While the results showed that the largest mass of indoxacarb was transported within the first week, there continued to be measurable transfer to the gloves, even at day 21. The study did not measure indoxacarb degradates, which likely formed during the study period.

Figure 2. (from Litchfield et. al. 2015) Indoxacarb concentrations in gloves after petting dogs who had application of indoxacarb ("Activyl Tick Plus") spot-on flea control (µg/L)



- *Spot-on treatment product to glove (hands) pathway:* A 2012 study by Bigelow Dyk et al. presents additional evidence of transport of a pet flea control products onto human hands and through homes.[6] In the study, researchers monitored transfer of fipronil (from a commercially available spot-on product) onto pet owners' hands and within their homes over a four-week period following spot treatment application. Participants used cotton gloves to pet their dog or cat for 2 minutes at a time at specific intervals after the application (24 hours, 1 week, 2 weeks, 3 weeks, and 4 weeks). Participants also wore cotton socks for 2 hours a night for 7 nights in a row, for four consecutive weeks following application. The gloves, socks, and brushed pet hair were subsequently analyzed for fipronil and its degradates. Bigelow Dyk and colleagues also incorporated a fluorescent dye into the spot treatment to provide photographic evidence of spot-on pesticide transfer. The photographic results shown in the paper illustrate the transfer from the application location to other areas of the pet's fur and onto the pet owners' hands.

- *In-house fogger and spray pathway*: A UC Riverside study from 2010 sought to better understand the human health consequences of indoor insecticidal treatments, comparing a

[6] Bigelow Dyk, M., et al. (2012) Fate and distribution of fipronil on companion animals and in their indoor residences following spot-on flea treatments, Journal of Environmental Science and Health, Part B: Pesticides, Food Contaminants, and Agricultural Wastes, **47**(10): 913-924

fogger, a perimeter spray, and both crack-and-crevice sprays, and spot sprays.[7] Researchers selected registered commercial products and applied per label instructions in rooms of unoccupied homes. They then evaluated the deposition of active ingredients, which included permethrin, chlorpyrifos, cyfluthrin, cypermethrin, and deltamethrin. They found that:

> *"Each application type produced a surface residue, but the residues differed sharply in deposition and distribution. Relative to the general distribution of residue following fogger applications, perimeter, crack-and-crevice, and spot applications resulted in less total chemical residue and limited distribution to within 0–40 cm of the wall."*
>
> *"…fogger applications differ from all other methods of application that rely on directed sprays examined in this paper. This supports our proposal that deposition and spatial distribution are principally determined by the type of pesticide application (i.e. fogger vs. crack-and-crevice) and the actions of the applicator (i.e. heavy vs. light applications)."*

In 1990, the California Department of Food and Agriculture published a dermal contact study presenting findings regarding the transfer of residue to people and their clothing following a chlorpyrifos/allethrin fogger treatment in carpeted rooms.[8] The rooms were all located in a new hotel so as to eliminate background pesticide residue and to provide repeatability from room to room. The foggers were set up per label instructions and were activated for two hours followed by ventilation of the room. Male and female participants later conducted a standardized exercise routine in specific locations in the room. Shirts, tights, gloves and socks were subsequently collected for analysis. Both allethrin and chlorpyrifos were detected in all exposed samples exceeding the minimum detection limits. Had these garments been placed in the laundry, this would have resulted in discharge to the sewer. Similarly, when the volunteer participants showered, the residue on their heads and other bare skin transferred to the sewer.

Based on the data from these studies characterizing topical flea control active ingredient transfer to owners' hands and the transfer of fogger active ingredients to room occupants, it appears that washing of hands, clothing, carpets and floors could be significant sources of pesticides to POTWs.

<u>Evidence from Collection Systems</u>

CDPR is in the process of completing a collection system ("sewershed") study within the City of Palo Alto's Regional Water Quality Control Plant.[9] The study involved twenty-four hour time weighted composite samples (influent, effluent, and ten sites in the collection system). Samples were collected from several discharge-specific sites with potential for relatively large mass flux of pesticides (i.e., discharges from pet grooming operation, pest control operator, and a

[7] Keenan, James J., John H. Ross, Vincent Sell, Helen M. Vega, Robert I. Krieger, "Deposition and spatial distribution of insecticides following fogger, perimeter sprays, spot sprays, and crack-and-crevice applications for treatment and control of indoor pests," Regulatory Toxicology and Pharmacology 58 (2010) 189–195.
[8] Ross, J., T. Thongsinthusak, H.R. Fong, S. Margetich, R. Krieger, California Department of Food and Agriculture, "Measuring Potential Dermal Transfer of Surface Pesticide Residue Generated from Indoor Fogger Use: An Interim Report," Chemosphere, Vol.20, Nos.3/4, pp 349-360, 1990.
[9] See http://www.cdpr.ca.gov/docs/emon/surfwtr/presentations/presentation_130_targeted.pdf

laundromat). The samples were analyzed for a suite of pesticides. Preliminary results from the pet-grooming site provide evidence that pet washing is a pathway for pesticide discharges to sewer systems.

We encourage OPP to obtain the final results of this study, which should be available within the timeframe of OPP's exploration of mitigation strategies for pyriproxyfen.

POTW Influent and Effluent

Lastly, further insights regarding transport of indoor flea control products to POTWs comes from a study of fipronil and imidacloprid at eight POTWs that was recently conducted by the San Francisco Bay Regional Monitoring Program in collaboration with BACWA, CDPR and Arizona State University.[10] The study monitored imidacloprid and fipronil, as well as its degradates, in the influent and effluent of eight urban California POTWs. The results indicated that fipronil, its degradates, and imidacloprid were ubiquitous in the influent sewage and final treated effluent of all eight participating POTWs, and – based on a detailed analysis of the sewer discharge sources of these two chemicals, which have relatively little indoor use other than pet flea control – provide compelling evidence that pet flea control products may be the primary source of both chemicals in wastewater.

[10] Sadaria, A.M., Sutton, R., Moran, K.D., Teerlink, J., Brown, J.V., Halden, R.U., 2017. Passage of fiproles and imidacloprid from urban pest control uses through wastewater treatment plants in northern California, USA. Environ. Toxicol. Chem. 36:6 1473-1482.

Appendix 2

Pet Flea Control Products:
Alternatives Analysis

Alternatives and Mitigation

BACWA requests that EPA, in coordination with CDPR (which has extensive relevant information and expertise), veterinarians, and registrants, develop mitigation strategies for pet flea control products, including spot-ons and collars. Two specific topics are discussed below, as an effort to provide insight regarding mitigation options for flea control:

- Alternatives: oral medications and integrated pest management appear effective
- Optimization of application rates of pet flea control products

Alternatives: Integrated Pest Management and Oral Medications

Mechanical controls (e.g., vacuuming) appear to be key to avoiding a flea infestation in a home. Further, since the previous registration, there is now an opportunity provided by oral treatments that have come on the market in recent years (available for both dogs and cats) that could avoid the on-pet use of not only pyriproxyfen, but also alternatives that are problematic from the water quality perspective (e.g., fipronil, pyrethroids, indoxacarb, and imidacloprid).

The fleas found on a pet are estimated to represent only 1-5% of the flea cycle in a home; the other 95% are found as eggs, larvae, pupae, and adult fleas throughout the home and surrounding environment.[11] It takes about 18 days for a flea egg to grow into an adult flea, but in cool weather immature fleas can lay dormant in a pupal cocoon for up to 1 year. Adult fleas can live on a pet for 30 to 40 days. Fleas lay 20 to 50 eggs each day; consequently flea problems in residential settings can get out of control quickly.

Therefore, to avoid repeat infestations, one must address all stages of this flea cycle including flea eggs, larvae and pupae.[12] One way to do so is via non-pesticide mechanical controls, including frequent indoor vacuuming, washing of pet bedding, and use of a pet flea comb.[13] In particular, vacuuming needs to be both thorough and frequent. It should include the pet sleeping area, floors, furniture and all upholstered or carpeted surfaces, including under cushions, furniture and in other hard to reach places. Regarding frequency, it turns out that during the pupal stage, the flea is encased in a shell that is not penetrated by pesticides. The act of vacuuming can speed up the process. Specific guidance from one study notes the following:

> *"The vibration also stimulates adult fleas to emerge from their cocoons so that they can be collected in the vacuum machine. Therefore frequent vacuuming, during a flea infestation, can reduce the overall flea burden in the home. It should be ensured that vacuum bags are disposed of properly, to prevent recolonization of the home with flea stages previously removed by vacuuming."* [14]

[11] Halos, L., et al. (2014). Flea Control Failure? Myths and Realities. Trends in Parasitology, 30:5 228-233.
[12] Ibid, 228-233.(enclosed)
[13] American Veterinary Medical Association (2009). External Parasites.
[14] "Biology, Treatment, and Control of Flea and Tick Infestations," Blagburn, B., and Dryden, M., Vet Clin Small Anim, 2009, Vol 39, pp 1173-1200. (enclosed)

Although spot-on pet flea control products currently dominate the pet flea control market, new oral medications have recently become available. The table on the following page summarizes the current state of available oral medications for pets. The new pills, which are registered by U.S. FDA rather than EPA, appear to eliminate aquatic (and human) exposure pathways and should be equally or more convenient for pet owners, once they have obtained a prescription from a veterinarian. The involvement of the veterinarian has the added benefit of providing pet-specific guidance on flea control approach and safe dosage. Some studies indicate that oral medications may be more effective than topical spot treatments possibly because there is less reliance on proper application by the owner.[15]

Optimization of Application Rates of Pet Flea Control Products

Another consideration for pet flea control products is that of application rate. Given that these household and pet flea control products have a transport pathway to the sewer, it would be of great interest to understand whether manufacturers have optimized the amounts applied. While spot-ons come in different doses based on pet weight, it is unclear whether that optimization was based solely on pet health or whether that is also the minimum dosage for effective insecticidal activity.

[15] "Flea blood feeding patterns in cats treated with oral nitenpyram and the topical insecticides imidacloprid, fipronil and selamectin," McCoy, c., et al., Veterinary Parasitology, Vol. 156, pp 293-301, 2008.

List of Currently Available Oral Pet Treatments for Fleas (Alphabetical)

Active Ingredient	Example Product Names and Manufacturers	Dogs, Cats or Both?	Flea, Tick, Both	Dose Schedule	Adulticide?	Insect Growth Regulator?	Chemical Family	Year Registered
Afoxolaner	Nexgard (Merial)	Dogs only	Both	1 month	X	No	Isoxazoline[16]	2013
Fluralaner	Bravecto (Merck)	Dogs only	Both	2-3 months	X	No	Isoxazoline	2014
Lufenuron	Program (Novartis) and Sentinel (that also includes a heartworm pharma)	Both	Flea eggs, as well as hookworms, roundworms	1 month	No	X	Benzoylurea	1995 (for dogs)
Nitenpyram	Capstar (Novartis), Capguard (Sentry)	Both	Flea	A few hours only (meant for immediate infestation control)	X	No	Neonicotinoid	2000
Sarolaner	Simparica (Zoetis, a subsidiary of Pfizer)	Dogs only	Both	1 month	X	No	Isoxazoline	2016
Spinosad	Comfortis and Trifexis (Elanco)	Both	Flea	1 month	X	No	Spinosyn, macrocyclic lactone	2007 (approx)

[16] Flea products from the isoxazoline chemical family are new to the marketplace; therefore pet health insights are largely limited to the studies conducted by the manufacturers and the packaging text required by the FDA. There appears to be no published information about health and safety beyond the manufacturer guidance in the MSDS. Due to the application method (pill), human exposure is likely small, though no data are available to verify this assumption.

March 20, 2018

Submitted via electronic mail to _____

Subject: Request for Review and Resolution of Issues Raised in Petition (File No._____)

Dear _____:

The California Association of Sanitation Agencies (CASA) and Bay Area Clean Water Agencies (BACWA) request that the State Water Resources Control Board accept for review the petition of the Ross Valley Sanitary District, et. al. (*In the Matter of the Petition of Ross Valley Sanitary District, San Rafael Sanitation District and Southern California Alliance of POTWs for Review of Action and Failure to Act by the California Regional Water Quality Control Board, San Francisco Bay Region, in Adopting Order No. R2-2018-0003 for the Central Marin Sanitary Agency, File No _____.*)

CASA and BACWA previously commented on the permit that is the subject of this Petition, No. R2-2018-0003 NPDES, No. CA0038628 for Central Marin Sanitation Agency, San Rafael Sanitation District, Sanitary District No. 1 of Marin County, and Sanitary District No. 2 of Marin County Marin County. The order was adopted on January 10, 2018 without the changes urged by CASA and BACWA in our comments on the Tentative Order. The State Water Board should take up the Petition and address the issues raised by the Petitioners for the following reasons:

The NPDES Permit was not the Appropriate Vehicle for Imposing Requirements on the Satellite Agencies

In our comments on the Tentative Order, we noted our concern about the inclusion of the satellite collection systems in the NPDES permit. Under the circumstances presented, we suggested it would be more appropriate to approach the requirements placed on the satellite agencies as a blueprint for collection system improvements over the next five years, not as provisions within the regional treatment agency's NPDES permit. We also suggested that there were other adequate mechanisms available to regulate the satellites' activities pertaining to inflow and infiltration (I/I) reduction, including those already available under the Sanitary Sewer Systems Waste Discharge Requirements (SSS WDR) or a supplemental non-NPDES WDR. None of these alternatives were adequately considered or pursued by the Regional Water Board. We cannot identify any benefit to stakeholders or the environment from pursuing this approach in this case, other than it being the Regional Board staff's preference for administrative convenience.

The "Blending" Provisions of the Permit Do Not Justify Including Satellite Agencies

One stated reason for inclusion of the collection system agencies in the Permit was to address "blending" at the treatment facility. For the reasons set forth by Petitioners, this is inappropriate. Federal courts have ruled that blending is not an illegal bypass subject to the United States Environmental Protection Agency's bypass prohibitions and rules. By including the collection system agencies in the permit, with the justification of reducing I/I and blending, the Regional Water Board is essentially regulating upstream and internal waste streams, and controlling the operation of the treatment works by imposing requirements prior to discharge. The State Water Board should take up Petition _____ in order to clarify that addressing blending is not a sufficient justification for inclusion of satellite collection system agencies in an NPDES permit. The issues related to bypass are of interest to the municipal wastewater industry as a whole and should be taken up even if other issues in this Petition are ultimately resolved.

The Prescribed List of "Tasks", and Level of Specificity in Requirements and Timetables for Satellite Agency Actions, is not Appropriate in an NPDES Permit

The NPDES Permit includes 38 individual tasks for the three collection system agencies. For the reasons set forth in the Petition, this is inappropriate. All of these very specific tasks are on rigid time schedules established in the permit. Because they are part of an NPDES permit, none can be modified without formal notice, comment and hearing. These lists micromanage the activities of the collection system agencies in an unreasonable manner that is neither necessary nor authorized by law. The specific "checklist" nature of these requirements is inappropriate for an NPDES permit, and the State Water Board should take up Petition _____ to address this issue.

Feel free to contact me at alink@casaweb.org or (916) 446-0388 with any follow-up questions or concerns.

Sincerely,

Adam D. Link
Director of Government Affairs, CASA

David R. Williams
Executive Director, BACWA

cc: Roberta Larson, Executive Director
Melissa Thorme, Downey Brand LLC
David Williams, BACWA Executive Director

BACWA BAY AREA CLEAN WATER AGENCIES

				58%			
BACWA FY18 BUDGET	***Line Item Description***	**FY 2018 Budget**	**Actuals Jan 2018**	**Actual % of Budget Jan 2018**	**Variance**	**FY 2019 Budget DRAFT**	**NOTES**
REVENUES & FUNDING							
Dues	Principals' Contributions	$487,095	$487,095	100%	$0	$496,837	**FY19:** 2% increase.
	Associate & Affiliate Contributions	$178,573	$177,015	99%	-$1,558	$182,144	**FY19:** 2% increase. Assoc: $8,090; Affiliate: $1,600 ($197 over budget)
Fees	Clean Bay Collaborative	$675,000	$674,250	100%	-$750	$675,000	Prin: $450,000; Assoc/Affil: $225,000
	Nutrient Surcharge	$800,000	$800,008	100%	$8	$800,000	Prin: $533,335; Assoc/Affil: $266,673
	Voluntary Nutrient Contributions	$30,000	$30,000	100%	$0	$0	**FY18:** Palo Alto ($30k)
Other Receipts	Other Receipts	$0	$0		$0	$0	Carry forward of Passthrough funds for Pharm Study into FY18 (Remove)
	AIR Non-Member	$6,477	$6,477	100%	$0	$6,800	5% increase (Santa Rosa)
	BAPPG Non-Members	$3,774	$3,774	100%	$0	$3,800	2% increase (Sta Rosa, Sac Reg'l, Vacaville)
	Other	$0	$0		$0	$0	
Fund Transfer	Special Program Admin Fees	$2,550	$0	0%	-$2,550	$5,000	**FY19:** BACWWE increase in FY19 , may include Prop 84 Admin Fees for FY16, FY17 and FY18 if closed out
Interest Income	LAIF	$12,000	$18,786	157%	$6,786	$20,000	BACWA, Legal, & CBC Funds invested in LAIF
	Higher Yield Investments	$10,000	$5,763	58%	-$4,237	$9,000	Alternative Investment Interest (Legal & CBC Funds invested in AltInv)
	Total Revenue	**$2,205,469**	**$2,203,168**	100%	-$2,301	**$2,198,581**	
BACWA FY18 BUDGET	***Line Item Description***	**FY 2018 Budget**	**Actuals Jan 2018**	**Actual % of Budget Jan 2018**	**Variance**		**NOTES**
EXPENSES							
Labor							
	Executive Director	$195,998	$97,999	50%	-$97,999	$201,682	2.9% CPI (SF/Oakland/San Jose Metro Area Dec 2017)
	Assistant Executive Director	$87,975	$49,999	57%	-$37,976	$90,526	2.9% CPI (SF/Oakland/San Jose Metro Area Dec 2017)
	Regulatory Program Manager	$116,438	$53,235	46%	-$63,203	$119,815	2.9% CPI (SF/Oakland/San Jose Metro Area Dec 2017)
	Total	**$400,411**	**$201,233**	50%	-$199,178	**$412,023**	
Administration							
	EBMUD Financial Services	$40,000	$9,946	25%	-$30,054	$40,800	2% increase
	Auditing Services (Maze)	$6,300	-$59	-1%	-$6,359	$6,426	FY19: $6,300 Accrued from FY18 to FY19, less $? paid for FY18 in July 2018. New Agrmt with Maze in FY19
	Administrative Expenses	$7,500	$3,302	44%	-$4,198	$7,650	Travel, Supplies, Parking, Mileage, Tolls, Misc.
	Insurance	$4,500	$4,278	95%	-$222	$4,590	2% increase
	Total	**$58,300**	**$17,467**	30%	-$40,833	**$59,466**	
Meetings							
	EB Meetings	$2,500	$897	36%	-$1,603	$2,550	2% increase. Catering, Venue, other expenses
	Annual Meeting	$10,000	$5,117	51%	-$4,883	$10,200	2% increase. Catering, Venue, other expenses. (Deposit to hold venue + deposit to hold caterer)
	Pardee	$6,000	$5,323	89%	-$677	$6,120	2% increase. Catering, Venue, other expenses
	Misc. Meetings	$5,000	$2,832	57%	-$2,168	$5,100	2% increase. Holiday & Committee Chair Lunch, Staff Mtgs, Finance Comm, Summit Partners, CASA, NACWA Tech WS
	Total	**$23,500**	**$14,169**	60%	-$9,331	**$23,970**	
Communication							
	Website Hosting (Computer Courage)	$600	$600	100%	$0	$600	No increase predicted
	File Storage (Box.net)	$750	$720	96%	-$30	$750	
	Website Development/Maintenance	$1,200	$557	46%	-$643	$1,500	Domains, website changes (will be over budget by about $800 in FY18)
	IT Support (As Needed)	$2,600	$203	8%	-$2,397	$2,600	
	Other Commun (MS, SM, Code42, PollEv)	$1,100	$910	83%	-$190	$1,500	MS Exchange, Survey Monkey, Backup Software (2), PollEv, Doodle
	Total	**$6,250**	**$2,990**	48%	-$3,260	**$6,950**	

EXPENSES							
Legal							
	Regulatory Support	$2,550	$76	3%	-$2,474	$2,601	2% increase
	Executive Board Support	$2,050	$510	25%	-$1,540	$2,091	2% increase
	Total	**$4,600**	**$586**	13%	-$4,014	**$4,692**	
Committees							All Committee Budgets ae Tentative: have requested confirmation from Committee Leaders
	AIR	$50,000	$20,581	41%	-$29,419	$51,000	**FY18:** Agrmt with Carollo for $50,000. RPM lunches included, but not in budget. **FY19:** Lunches included
	BAPPG	$100,000	$69,766	70%	-$30,234	$100,000	Includes CPSC @ $10,000 and Pest. Reg Spt. @ $15,000
	Biosolids Committee	$3,100	$265	9%	-$2,835	$3,100	Includes WEF Conf
	Collections System	$1,000	$0	0%	-$1,000	$1,000	
	InfoShare Groups	$1,200	$299	25%	-$901	$1,200	Funds for 2 workgroups (Asset Mgmt & O&M)
	Laboratory Committee	$6,000	$1,434	24%	-$4,566	$6,100	Includes Tech Conf. & training funds
	Permits Committee	$1,000	$0	0%	-$1,000	$1,000	
	Pretreatment	$7,000	$707	10%	-$6,293	$7,500	Request for training funds & Factsheet not expended in FY18
	Recycled Water Committee	$1,000	$0	0%	-$1,000	$1,000	
	Misc Committee Support	$35,000	$12,514	36%	-$22,486	$45,000	Carollo Rule 11-18 work paid from here
	Manager's Roundtable	$1,000	$433	$0	-$567	$1,000	New line item in FY18
	Total	**$206,300**	**$105,999**	51%	**-$100,301**	**$217,900**	
Collaboratives							
	Collaboratives						
	State of the Estuary (SFEP-biennial)	$0	$0		$0	$20,000	Bienniel in Odd Years. (Paid bienniely in odd years for even year conference)
	Arleen Navarret Award	$1,000	$1,000		$0	$0	Bienniel in Even Years
	FWQC (Fred Andes)	$7,500	$0	0%	-$7,500	$7,500	Dues unchanged in FY19
	Stanford ERC (ReNUWIt)	$10,000	$0	0%	-$10,000	$10,000	
	Misc	$3,000	$5,000	167%	$2,000	$5,000	**FY18 Actuals:** Includes $5,000 to PPIC approved by Board Sept, 2017
	Total	**$21,500**	**$6,000**	28%	-$15,500	**$42,500**	
Other							
	Unbudgeted Items						
	Passthrough	$0	$23,100		-$23,100	$0	**FY18:** Passthrough for Pharm Study; **REMOVE IN FY19**
	Other	$0	$0		$0	$0	Misc Expense Items Not Budgeted (Placehoder for Actuals)
		$0	**$23,100**		**$0**	**$0**	
Tech Support							
	Technical Support						
	Nutrients						
	Watershed	$880,000	$880,000	100%	$0	$880,000	
	NMS Voluntary Contributions	$0	$200,000		$200,000	$200,000	**FY18:** $200,000 add'l funds approved by Board August 2017
	Additional work under permit	$100,000	$4,156	4%	-$95,844	$100,000	**FY18:** Increased at Board's request
	Opt/Upgrade/Annual Reporting Studies	$372,298	$26,304	7%	-$345,994	$25,000	**FY19:** Balance remaining on agreement at end of FY18 (est)
	Nutrient Program Coordination	$50,000	$0	0%	-$50,000	$0	**REMOVE in FY19**
	Member Voluntary Nutrient Contributions	$30,000	$0	0%	-$30,000	$0	**FY18:** Palo Alto ($30k)
	Nutrient Workshop(s)	$0	$0		$0	$20,000	Pilot Studies/Plant Review/Innovative Technologies
	General Tech Support	$50,000	$9,942	20%	-$40,058	$51,000	2% increase. EOA ChlResidBPA continues into FY19
	Risk Reduction	$0	$7,975		$7,975	$10,000	$50,000 over 5 years (FY19-FY23)
	Total	**$1,482,298**	**$1,128,377**	76%	-$353,921	**$1,286,000**	
	TOTAL EXPENSES	**$2,203,159**	**$1,499,921**	**68%**	**-$703,238**	**$2,053,501**	
	NET INCOME BEFORE TRANSFERS	**$2,310**	**$703,247**		**$700,937**	**$145,080**	
	TRANSFERS FROM RESERVES	**$0**	**$0**		**$0**	**$0**	
	NET INCOME AFTER TRANSFERS	**$2,310**	**$703,247**		**$700,937**	**$145,080**	

		5 YEAR PLAN - Presented at Pardee 2017; +$200k/yr for FY 18 & 19; $2.2M/yr FY 20-24								
			2018 Adopted Budget	**2018 Projected Actual**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
REVENUES										
	Dues	Principals' Contributions	$487,095	$487,095	$496,837	$506,774	$516,909	$527,247	$537,792	$548,548
		Assoc. & Aff. Contributions	$178,573	$178,573	$182,144	$185,787	$189,503	$193,293	$197,159	$201,102
	Fees	Clean Bay Collaborative Fee	$675,000	$675,000	$675,000	$675,000	$675,000	$675,000	$675,000	$675,000
		Nutrient Surcharge	$800,000	$800,000	$800,000	$1,700,000	$1,700,000	$1,700,000	$1,700,000	$1,700,000
		Member Voluntary Nutrient Contributions	$30,000	$30,000	$0	$0	$0	$0	$0	$0
	Other Receipts	Other Receipts	$0	$0	$0	$0	$0	$0	$0	$0
		Non-BACWA AIR	$6,477	$6,477	$6,800	$7,140	$7,497	$7,872	$8,265	$8,679
		Non-BACWA BAPPG Fee	$3,774	$3,774	$3,800	$3,876	$3,954	$4,033	$4,113	$4,196
		Other	$0	$0						
	Fund Transfer	Special Program Admin Fees (WOT)	$2,550	$2,550	$5,000	$5,100	$5,202	$5,306	$5,412	$5,520
	Investment Income	LAIF	$12,000	$12,000	$20,000	$12,000	$12,000	$12,000	$12,000	$12,000
		Higher Yield Investments	$10,000	$10,000	$9,000	$10,000	$10,000	$10,000	$10,000	$10,000
TOTAL REVENUES		**Total**	**$2,205,469**	**$2,205,469**	**$2,198,581**	**$3,105,677**	**$3,120,065**	**$3,134,751**	**$3,149,742**	**$3,165,045**
EXPENSES										
	Labor		$400,411	$400,411	$412,023	$424,384	$437,115	$450,229	$463,736	$477,648
	Administration		$58,300	$58,300	$59,466	$60,655	$61,868	$63,106	$64,368	$65,655
	Meetings		$23,500	$23,500	$23,970	$24,449	$24,938	$25,437	$25,946	$26,465
	Communication		$6,250	$6,250	$6,950	$7,089	$7,231	$7,375	$7,523	$7,673
	Legal		$4,600	$4,600	$4,692	$4,786	$4,882	$4,979	$5,079	$5,180
	Committees		$206,300	$206,300	$217,900	$222,258	$226,703	$231,237	$235,862	$240,579
	Collaboratives		$21,500	$21,500	$42,500	$43,350	$44,217	$45,101	$46,003	$46,923
	Other Unbudgeted Items				$0	$0	$0	$0	$0	$0
	Technical Support	Nutrients								
		Permit Requirement for Studies	$880,000	$1,080,000	$1,080,000	$2,200,000	$2,200,000	$2,200,000	$2,200,000	$2,200,000
		Additional Work Under Permit	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000
		Optimization / Upgrade Studies	$372,298	$347,298	$25,000	$0	$0	$0	$0	$0
		Regional Study on Non-Grey Scape	$0	$0	$0	$150,000	$100,000	$100,000	$100,000	$50,000
		Nutrient Program Coordination	$50,000	$50,000	$0	$0	$0	$0	$0	$0
		Member Voluntary Contributions	$30,000	$30,000	$0	$0	$0	$0	$0	$0
		Nutrient Workshops			$20,000					
		General Tech Support	$50,000	$50,000	$51,000	$52,020	$53,060	$54,122	$55,204	$56,308
		Risk Reduction	$0	$0	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
	Total Technical Support		$1,482,298	$1,657,298	$1,286,000	$2,512,020	$2,463,060	$2,464,122	$2,465,204	$2,416,308
TOTAL EXPENSES			**$2,203,159**	**$2,378,159**	**$2,053,501**	**$3,298,991**	**$3,270,015**	**$3,291,586**	**$3,313,720**	**$3,286,432**
NET INCOME BEFORE TRANSFERS			**$2,310**	**($172,690)**	**$145,080**	**($193,314)**	**($149,950)**	**($156,835)**	**($163,978)**	**($121,387)**
TRANSFERS TO(+)/FROM(-) RESERVES			**$2,310**	**$172,690**	**$145,080**	**$193,314**	**$149,950**	**$156,835**	**$163,978**	**$121,387**
RESERVES	Operating Target	$160,000								
	Legal Target	$300,000								
	CBC Target	$400,000								
	Target Reserves	**$860,000**								
	Total Reserves at End of FY 17	**$2,733,008**								
	Excess Reserves End of FY	**$1,873,008**	**$1,875,318**	**$1,700,318**	**$1,845,398**	**$1,652,084**	**$1,502,134**	**$1,345,298**	**$1,181,320**	**$1,059,933**

North Bay Watershed Association
2018 Conference

Extreme Future: *Fire, Floods, a Rising Bay*
Friday, April 6th, 2018
8:00 am – 4:30 pm

SPONSOR CONFIRMATION

Yes, I want to participate as a Sponsor for NBWA's 2018 Conference to be held at the Sheraton Sonoma County (in Petaluma) at the following level:

- ☐ $10,000 – Water Steward
- ☐ $ 7,500 – Water Partner
- ☐ $ 5,000 – Water Collaborator
- ☐ $ 2,500 – Water Colleague
- ☑ $ 1,500 – Water Associate

Company/Organization: Bay Area Clean Water Agencies
(As you would like it to appear in printed materials.)

Address: PO Box 24055, MS 702
Oakland, CA 94623

Contact Name: David R. Williams/Sherry Hull

Phone #: 415-404-8303 Fax #: _____

Email: dwilliams@bacwa.org shull@bacwa.org

Total Sponsor Contribution: $1,500.00

I would like _____ additional tickets @ $125 each ($95 before March 1, 2018)

Total amount: $1,500.00

Credit Card: _____ Exp. Date:_____

Name on Card:_____

Signature:_____

1. To pay by credit card please email this completed form to Cheryl Howlett at chowlett@marinwater.org by **Thursday, February 1, 2018**.
Thank you!

2. If you would like to pay by check please send payment and this completed form to:

Marin Municipal Water District
NBWA 2018 Conference
220 Nellen Avenue
Corte Madera, CA 94925

For more information, please email Sophie Porcelli, NBWA staff at sophie.porcelli@scwa.ca.gov.

North Bay Watershed Association
2018 Conference
Extreme Future: *Fire, Floods, a Rising Bay*

Friday, April 6, 2018
8:00 am – 4:30 pm

SPONSOR BENEFITS

Water Steward Sponsor: $10,000
- *Afternoon Wine Tasting Host*
- *Name and/or logo on Pads and Pens for all attendees*
- *Prominent location of sponsor table to distribute materials*
- *6 tickets to Conference*

Water Partner Sponsor: $7,500
- *Luncheon Host*
- *Name and/or logo on luncheon table tent cards*
- *Sponsor table to distribute materials*
- *5 tickets to Conference*

Water Collaborator Sponsor: $5,000
- *Morning & Break Host*
- *Name and/or logo on napkins*
- *Sponsor table to distribute materials*
- *4 tickets to Conference*

Water Colleague Sponsor: $2,500
- *Sponsor table to distribute materials*
- *3 tickets to Conference*

Water Associate Sponsor: $1,500
- *2 tickets to Conference*

All Sponsors receive:
- Name and/or logo listed in Invitation
- Name and/or logo listed in Program
- Name and/or logo listed on Signs at event
- Name and logo displayed on NBWA website for a year

Trip Report:

ACRONYMS

FSMO	Field Sampling and Measurement Organization
LT2	Long Term Enhanced Surface Water Treatment Rule
IUPAC	International Union of Pure and Applied Chemistry
NEFAP	National Environmental Field Activities Program
NELAC	National Environmental Laboratory Accreditation Conference
NELAP	National Environmental Laboratory accreditation Program
NEPTP	National Environmental Proficiency Testing Program
PT	Proficiency Testing
rTCR	Revised Total Coliform Rule
SM	Standard Methods
SSASP	Stationary Source Audit Sample Program
SWTR	Surface Water Treatment Rule
TNI	The NELAC Institute

Disclaimer: There were almost no handout and very few PowerPoint presentations. There were no promises about publishing any of this information on TNI website. I took notes and developed this report; it is highly possibly there are errors and omissions.

The Forum on Environmental Accreditation is an annual meeting organized by TNI to review progress made in the previous year and to plan for the coming year; this year the meeting took place from January 22 to 24, at Albuquerque. EPA staff did not attend due to budget holdup.

The excitement at the Forum was around two topics:

1. ISO 17025 that was updated in 2017 and TNI intend to incorporate those changes. Revision to TNI-2016 officially started at this forum.
2. State of Kansas has met most of the requirements to become a TNI state and is at the brink of being accepted; it will be the 14th state to adopt TNI.

TNI is a consensus standards development body that relies on work groups and subcommittees. The subcommittees for developing consensus standards are:

1. Asbestos Expert Committee
2. Chemistry Expert Committee
3. Field Activities Committee
4. Laboratory Accreditation Body Committee
5. Laboratory Proficiency Testing Committee
6. Laboratory Quality Systems
7. Microbiology Expert Committee
8. Radiochemistry Expert Committee

9. Stationary Source Audit Sample Committee
10. Whole Effluent Toxicity Testing Expert Committee

Other TNI related activities through committees are:

1. Advocacy Program
2. National Environmental Field Activities Program
3. National Environmental Laboratory Accreditation Program
4. National Environmental Proficiency Testing Program
5. Stationary Source Audit Sample Program

Beside the routine work, there were mentoring sessions where state auditors, consultant working as TNI auditors, regulators and laboratory personnel discussed topics of interest. Sessions were devoted to TNI's progress with California.

Highlights of committee work:

Although TNI-2016 standard is being adopted by California, no other state intends to adopt it as of now. In fact, the chemistry module is being reviewed by ANSI and the standard as a whole has not been approved by TNI – approval expected in August 2018. The TNI 2003 and 2009 are being used partially or wholly by various states, a total of 13. The 2003, 2009 and 2016 standards are based on ISO 17025, 2005 standards. In 2017, ISO 17025 was revised. Now TNI has started the process of revising TNI-2016 standards to incorporate the ISO 17025-2017 revisions.

- A whole day was devoted to comparing and debating the revisions for quality systems by Quality System Committee. Several activities are undertaken to promote the TNI-2016 standards, such as, creating a template that will help laboratories prepare a QA manual compliant with the new standard, including multiple examples of documents, forms and procedures. (Available for purchase at $75)
- Preparing a document detailing the changes between 2009 and 2016. However, the TNI website needs to be updated to make this document available to users.
- Check lists for assessors to use during audits is yet to be developed
- TNI plans to update their website so that users can download audit check lists for either 2003, 2009 or the 2016 standards
- TNI has identified that 1500 users across the country are interested in obtaining training for TNI-2016 and they are developing and marketing training modules
- Small lab handbook is undergoing major revisions. So much so, that if anyone buys the handbook now, they will be provided the updated one as it becomes available a no additional cost.
- TNI plans to develop a training module for assessors to use the 2016 module
- On the whole, the TNI-2016 module is being reviewed so that there is no conflict between module requirements and the Quality System requirements

TNI has created the Asbestos Expert Committee in 2017. A comprehensive glossary of terms covering the entire activities of TNI is being developed. TNI also plans to update whole effluent toxicity and asbestos guidance.

The Field Activities Committee reported that Volume-1 and 2 are being updated. NEFAP, whose mission is to support FMSO, reported that there are 21 associate members but only 9 have adopted the FMSO standards. The advocacy committee will focus on this area and intends to expand to cannabis and food testing fields.

It was reported that 10 Standards Interpretation Requests (SIR) were received by various committees; of this one was related to chemistry, one was about quality systems and 8 were deemed invalid.

TNI Board of Directors reported on their responsibilities and activities. They review SOPs and financial information. They advocate for TNI and promote it, and they submit comments where TNI standards are being considered for adoption in regulations. They work on developing conduits/people in non TNI states who will support their cause.

Mentoring session:

Topics were discussed from various perspectives: regulators, auditors and laboratories. It was interesting to work toward a common understanding. Some the topics discussed were:

- Selecting the appropriate method
- Deputizing in the absence of lead staff
- Staff training
- Client coordination
- Data qualifiers
- Internal audits

The take home message on any of these topics was first to develop a plan, write it down and have documentation that the plan is being implemented. For example, in case of data qualifiers, there needs to be an SOP on usage, how it will be reviewed and revised, and how customers will be notified of data quality interpretation.

Implementing TNI in California:

California continues to be a controversial topic because so far, California is partially adopting TNI and will not be a TNI state. The consulting group NV5, which has been given a contract by ELAP to train ELAP staff on auditing, gave a report. They have audited 35 labs and have scheduled to audit 14 more. Three labs looked at their scope of work and decided not to pursue accreditation because these labs deemed it unnecessary for their work. NV5 plans to audit 380 labs in the next 3 years. Audit finding reports are not all complete and some are being delayed.

These audits are focused on drinking water and training ELAP staff. The initially stated intent to perform gap analysis and help the labs hasn't been done – per the consultant, because of the workload. During

audits of labs that perform drinking water and wastewater, ELAP auditors will audit the wastewater segments and NV5 auditors the drinking water segments. Since California is not a TNI state, labs are being audited against methods. There is controversy about which year of SM ought to be used. These questions are being referred to ELAP. Some of the findings highlighted are:

- Interpreting 'shoulds' and 'musts'
- Identifying the correct method to the correct Field of Testing. Example: Colilert vs Colilert-18
- Reporting positive coliform/E.coli results according to rTCR rules
- There is no clarity regarding which version of SM, or which year's update is applicable. NV5 is consulting ELAP on these issues.
- SMs that have a distillation component before measurement, such as SM4500-F, the lab must have documentation to prove that analysis without distillation does not compromise data quality.
- Auditors are verifying if there is correct procedure for dealing with bacti samples that are more than 100 ml; this requirement is taken from the Drinking Water Certification Manual and 40 CFR 141
- Titrants must be certified, even if purchased with a vendor certification
- Volume verification of digestion vessels, pipettes, etc.
- Laboratories cannot add new fields of testing, even if IDOC is available, at the time of audit; however, FOTs can be dropped.
- IDOCs must be done according to method; cited example is 200.7 vs. 200.8
- SWTR and LT2 sample preservation requirement for temperature is a frequent finding
- Procedure for delegation during critical staff absences

Rebuttal to claims that labs closed in Florida and NY due to TNI implementation

This presentation was introduced with the statement to the effect that there are reports floating that adopting TNI standards lead to lab closures and that it is incorrect. Florida Department of Health, Carl Kircher gave the presentation. There were no slides or handouts; therefore the numbers below are from my notes only.

> In 1998 there were 800 labs in Florida, being certified by three different agencies. These agencies were merged under NELAC umbrella and therefore the laboratories certified by NELAC appeared to shrink to 470 facilities. After NELAC implementation, there were 495 labs, which showed the industry grew. Currently there are 350 labs, which was attributed to market forces by Carl Kircher.

Presentation by ELAP Chief, Christine Sotelo

The goal of contracting with NV5 is to provide training to ELAP auditors, help labs prepare for TNI audits and to decrease the drinking water lab audit backlogs. She is satisfied with the progress NV5 is making: they are fast, efficient, and qualified.

Draft ELAP regulations are moving through the 3-year stakeholder process. The next draft will be available in spring/summer of 2018. Board adoption is expected in 2018/2019. After the adoption, labs will be given three years to comply.

Christine reported that the most feedback she receives is that TNI standards do not improve quality and that it is expensive. Small labs are concerned that documentation related costs will shut them down.

ELAP is currently developing a contract to create a pool of third part assessors from which labs can hire auditors. This information will be released in about 6-months' time.

State Board had requested that ELAP trial implementation on two small labs. Consultant will work with these labs to bring them to compliance.

Following this presentation there was a discussion about ELAP adopting one PT per year vs the two required by TNI. IUPAC and DOE require two PTs; State of Virginia requires one PT from non-commercial labs. The ISO-2017 requirements are risk based; therefore, in future, the requirement may be reduced for labs the pass PTs consistently. Christine Sotelo reported that California currently lacks a database system to track and evaluate PT results.

Conclusion:

The forum was attended by TNI staffers, state regulators, state auditors, former state auditors starting a career as private auditors, professional consultants who help labs become TNI compliant, and labs who have adopted TNI standards. (I believe I was the only one from a non-TNI lab.) The consensus was that TNI improves quality and it does not impose additional burden. (There was no information/data given to back this claim.) There are several small labs that have successfully implemented TNI standard and California shouldn't have any problems adopting TNI-2016. My impression is that California will go forward with TNI standard adoption and the pressure to do so is beyond ELAP's discretion.

If anything, BACWA should develop a working relationship with ELAP chief, Christine Sotelo; she is indeed sympathetic to laboratory concerns.

List of consultants for TNI related work:

Anthony Francis
SAW Environmental
tfrancis@sawenviro.com | 801-999-8293

Michelle Wade
Wade Consulting and Solutions
michelle@michellefromks.com | 913-449-5223

John Gumper
ChemVal Consulting Inc
jgumpper@chemval.com | 801-274-8480

Sherry Hull

From: Sherry Hull
Sent: Tuesday, March 13, 2018 10:27 AM
To: Sherry Hull
Subject: FW: agenda item # 19 - Update on Operator training

From: Danielle Gonzalez [mailto:Danielle.Gonzalez@solano.edu]
Sent: Friday, March 9, 2018 10:12 AM
To: David Williams <dwilliams@bacwa.org>
Cc: Joseph Ryan <Joseph.Ryan@solano.edu>
Subject: Proposed Fall 18 for BACWWE

Good Morning,

Here is the proposed schedule for Fall 18, we still need location from BACWWE for these classes. Solano approves to have the following teachers to teach these courses. I have attached the instructors email so that you can coordinate offsite locations with them, once all agree please update me so that I can make sure all the necessary paperwork is filled out.

BACWWE Classes					
WATR 100 Water Treatment 1 …	Offsite	Zolfarelli	M	6:00-10:00	Paul.Zolfarelli@solano.edu
WATR 107 MATH of Water and WW … ?	Offsite	Damerel	R	6:00-10:00	Jordan.Damerel@solano.edu
WATR 101 Basic Chemistry for Water and WW … ?	Offsite	Pirondini	W	6:00-10:00	Anthony.Pirondini@solano.edu
WATR 105 Wastewater Treatment II … ?	Offsite	Fuller	T	6:00-9:00	fuller@dsrsd.com

Thank you,
Dani

Dani Gonzalez
Administrative Assistant
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WATR CLASSES			WATR		MAIN	BACWWE	MAIN	BACWWE	MAIN	BACWWE	MAIN	BACWWE	MAIN	BACWWE	MAIN	BACWWE	MAIN	BACWWE	Totals/2 year	BAC/2yr
		units	Course	Sec/2 yr	SPR 18	SPR 18	SUM 18	SUM 18	FALL 18	FALL 18	SPR 19	SPR 19	SUM 19	SUM 19	FAL 19	FALL 19	SPR 20	SPR 20		
Required	Small Cert	4	100	4						1	1					1	1		4	2
		3	104	4					1			1			1			1	4	2
		4	107	4	1			1		1	1					1	1		5	2
	either	2	120	2								1			1				2	1
	or	2	121	2		1			1									1	2	1
		13 units for small certiifcate																	0	0
																			0	0
Required	Large Cert	4	101	2						1							1		2	1
		3	103	2	1						1					1			2	1
																			0	0
Electives	Large Cert	3	105	2	1					1							1		2	1
Pick two		3	106	4	1				1			1			1			1	4	2
		3	108	2	1						1					1			2	1
		2	112	1	When needed - based on student need														0	0
		2.5	125	2					1									1	2	1
		3	126	2		1						1			1				2	1
		22 to 24 units of WATR for Full Certificate							4	4	4	4	0	0	4	4	4	4		

Note: 120 or 121 which was not used in above can be an elective for the full certificate.

Note: We removed other classes like CHEM and BIO from electives in last meeting.

Note: All Changes in Catalog will take some time. We can offer this pattern in anticipation of changes.

3. Mercury and PCBs Source Control Programs

Each Discharger shall evaluate whether there are controllable sources of mercury or PCBs to its wastewater system (e.g., PCBs-containing industrial equipment for PCBs, discharges from amalgam-generating dental practices for mercury). The Discharger shall continue to implement and look for opportunities to improve existing measures to control such sources. Each Discharger shall submit the results of this evaluation, including any proposed control actions and implementation schedules, in its annual pollution prevention reports required by its individual NPDES permit.

4. Risk Reduction Programs

Each Discharger shall continue to implement and participate in programs to reduce mercury and PCBs-related risks to humans from consumption of San Francisco Bay and Sacramento-San Joaquin River Delta fish. This requirement may be satisfied by a combination of related efforts through the Regional Monitoring Program or other similar collaborative efforts. Each Discharger shall describe the progress of its efforts in its Annual Self-Monitoring Report. Alternatively, the Bay Area Clean Water Agencies (BACWA) may fulfill the annual reporting requirement by providing a summary of annual risk reduction program efforts for agencies that choose to participate through BACWA.

5. Mercury and PCBs Discharge Adjustments for Recycled Wastewater Use by Industrial Dischargers

When an Industrial Discharger listed in Table 1B uses recycled wastewater from a Municipal Discharger listed in Table 1A, the Industrial Discharger may, at its option, apply a discharge adjustment (hereinafter Mercury or PCBs Adjustment) to its mercury or PCBs discharge concentration or mercury mass emission to be subtracted from the final discharge concentration or mass emission when determining compliance with its concentration and mass limits specified in Tables 5A and 5B. The Industrial Discharger may also use its own recycled wastewater to receive a mercury or PCBs concentration adjustment. The Mercury or PCBs Adjustment shall be based on measured influent mercury and PCBs levels from the recycled wastewater in accordance with the following:

a. Monitoring Frequencies. The Industrial Discharger shall sample and analyze the influent recycled wastewater and the effluent discharge at least monthly for mercury and annually for PCBs. Influent sampling shall include measurement of daily flow volume for the entire duration that the Mercury or PCBs Adjustment is applied. Influent sampling shall occur at an appropriate influent monitoring location as identified in the Discharger's individual permit.

b. Time Intervals between Influent and Effluent Sampling. The Industrial Discharger shall determine the time interval (i.e., lag time) between sampling a given constituent of concern in the influent recycled water and sampling the same water for the constituent when it appears in the final effluent. The basis for this determination shall be included in any calculation of a Mercury or PCBs Adjustment.

InfoShare Asset Management – Report to BACWA Board

InfoShare Asset Management Committee meeting on: 02/21/18
Executive Board Meeting Date: 03/16/18
Committee Chairs: Dana Lawson and Aaron Johnson

Committee Request for Board Action: None

Attendees: Dana Lawson, Neil Meyer, PJ Turnham (Central San); Rebecca Overacre (EBMUD), Anthony Smith, Andy Hall, Nga Huynh (City of Livermore); Aaron Johnson (DSRSD); Jeff Greer (MVSD); TiLiAnne Tanner (SCWA); Jon Boitano (HDR)

Introductions

- See Above

Announcements

- Aaron Johnson (DSRSD) is our new co-chair
  - If there is a topic you would like to hear about at a future meeting, please e-mail Aaron (johnson@dsrsd.com) or Dana (dlawson@centralsan.org)
- BayWorks is hosting an Asset Management Workshop on May 23, which will most likely be held in Vallejo. If you are interested in presenting, you can contact Aaron or Levi Fuller who is organizing it.

Presentations

- Standardized asset tagging for all departments and business systems (TiLiAnne Tanner, Sonoma County Water Agency)
- Using the asset register as a tool to identify and prioritize CIP projects (Andy Hall, City of Livermore)

Future Meetings

- 2018 Meeting Schedule: May 16, August 15, November 14
- Please e-mail dlawson@centralsan.org or johnson@dsrsd.com

Next BACWA Asset Management InfoShare Group Meeting: May 16 at DSRSD in Pleasanton

Laboratory Committee – Report to BACWA Board

Laboratory committee meeting on: 13 December 2017
Committee Chair : Nirmela Arsem

Committee Request for Board Action: None

Holiday celebration and meeting:

- This was an abbreviated meeting of one hour due to holiday celebration with a potluck

Clarifying duplicate reporting:

Since Attachment-G was updated, there were questions about how best to understand the requirement to report duplicates. A discussion ensured to describe the various condition and options that can be understood as duplicate samples; no decision was reached.

Types of duplicates – sample collection

a. Two samples collected from the same location in the same manner but in different containers. This could be grab samples immediately in sequence.
b. A large volume of grab sample split in the lab to create duplicate samples.
c. A composite sample, after compositing, is split to create duplicate samples.

Types of duplicates – analytical

a. Batch QC duplicate: one samples is designated as the 'base sample'; the result of this sample becomes the result of record. The other sample becomes the 'Batch QC Duplicate' and the result is used only to evaluate the precision of the batch/analysis.
    1) *Recommendation: identify the Batch QC duplicate while setting-up the batch and before analysis starts.*
b. Inter-laboratory comparison: There are instances where duplicate samples will be analyzed by two different laboratories:
    1) *According to Attachment F, page 2: 'Discharger to report an average of duplicate samples'. However, this does not specify the methods have to be identical.*
    2) *Question to the group: If different methods are used, what should be the guidance? Highly likely that MDL and ML would be different. How does one average CFU and MPN?*
c. Intra-laboratory comparison: A laboratory may choose to analyze a sample in duplicate. in the same batch or in a different batch for various reasons.
        1) *In case the duplicate is in the same batch: Report the arithmetic mean; for microbiology, report geometric mean*
        2) *In case the duplicate is in a different batch and both batches meet QC criteria: Report the arithmetic mean; for microbiology, report geometric mean*
d. A sample where multiple analytes are involved, such as EPA 625, may be run in two or more dilutions when select analyte concentration exceeds the calibration range. However, some analytes may be in calibration range in more than one dilution, and therefore have more than one valid result.
    1) *Assuming no matrix interferences or toxic effect observed:*
        i. *Report results from the first run for all analytes that were within calibration range.*
        ii. *For those for analytes that exceeded calibration range, report from a valid dilution.*
    2) *If matrix effect or toxicity is encountered, follow method guidelines.*
e. BOD5 analyses may yield valid results in two different dilutions.
    1) *Follow method guidance per SM 22nd edition: "Average the test result for all qualified bottles within each dilution series".*

Total Residual Chlorine MDL Survey

- There was good response and feedback for the Total Residual Chlorine MDL survey. It brought to light the various interpretation and unique challenges the agencies encounter. The information gathered was passed on to Tom Hall.

Upcoming meetings, conferences, etc.:

- CWEA annual conference @ Sacramento – April 17-20, 2018
- BACWA annual meeting - January 19, 2018

Laboratory Committee – Report to BACWA Board

Laboratory committee meeting on: 14 February 2018
Executive Board Meeting Date: March
Committee Chair : Nirmela Arsem

Committee Request for Board Action: None

Requirement to Report PCBs Congers through CIWQS:

- There were varied reports from members. The upload to CIWQS was generally problematic and no one present reported to have solved all challenges and experienced a successful upload. However, Visa and Frontier, the two laboratories generally used by members, are helping to find solutions. There were question about co-eluters, QA codes and qualifiers that need to be worked out.

ELAP and TNI:

- The previously agreed request for document management training/facilitated discussion was rescinded. Members indicated that they are following the TNI training provided by CWEA. The consensus was to complete the series of training through CWEA and then decide if additional facilitated discussion will be useful.
- The proposal to bring demos of existing document management software was declined by a member; no other member expressed an opinion on it.
- The distinction between documents and records as defined by TNI was discussed. According to TNI, document give guidance and records are proof of having followed the guidance.
- A quick survey of members present on how they intend to tackle TNI related increased workload elicited a range of responses. Some agencies are planning to hire full time dedicated staff, some agencies are hiring part time help and one agency reported that their pre-treatment group will be providing additional support to the laboratory. Still others are trying to hire consultant but manage workload with existing staff.
- ELAP fee restructuring workgroup has made recommendations; however, ELAP has decided not to take action at this time.
- The CWEA annual meeting this year will include several sessions on TNI related training

Agency Audits

- Silicon Valley Clean Water (SVCW) was audited in December. As part of the plant audit, the flow-through bioassay system was inspected. The auditor has expressed the opinion that if there are interruptions to the flow during the 96-hours, the test should be considered invalid because it is meant to be a continuous flow representing the plant conditions.

Duplicates:

- The discussion on duplicates from previous meeting was reviewed and the following recommendations made.
    1. Since the intent is to report the best possible and representative data, define base sample and matrix duplicate before starting the analysis; then report only the base sample result.
    2. If a sample is split and being analyzed by another laboratory for comparison, before starting the study, document which result will be reported and then report only that data.

Upcoming meetings, conferences, etc.:

- CWEA annual conference @ Sacramento – April 17-20, 2018
- National Environmental Monitoring conference @ New Orleans – August 6-10
- WEFTEC 2018 @ New Orleans – September 29 to October 3
- Water Quality Technology Conference @ Toronto, Canada – November 11 to 15

The next lab committee meeting will be on April 11

Permits Committee –
Report to BACWA Board

Permits Committee Meetings on: 3/13/18
Executive Board Meeting Date: 3/16/18
Committee Chair: Chris Dembiczak

Committee Request for Board Action: None

21 Participants representing 15 member agencies

Upcoming Permits

March – *Oro Loma* – They were granted a shallow water discharge prohibition exception for peak flows in exchange for a performance-based effluent limit for ammonia. They will need to achieve 70% ammonia removal, calculated on an annual basis based on monthly influent/effluent measurements. They will do nitrification year-round and denitrification seasonally. They performed a shellfish survey to verify that the discharge zone does not host shellfish, which influences the effluent coliform limits. On Consent Calendar for 3/14.

May – *San Mateo* **–** They have not requested permission to blend this permit cycle. There is new language being introduced into theirs and other permits about anaerobic digestion (new language underlined): *"The California Department of Resources Recycling and Recovery has proposed to exclude POTWs from Process Facility/Transfer Station permit requirements when the same activities are regulated under WDRs or NPDES permits. The proposed exclusion is restricted to anaerobically-digestible materials that have been prescreened, slurried, processed, and conveyed in a closed system for co-digestion with regular sewage sludge."* Members also had concerns about methods for measuring mercury in influent and biosolids. Lorien with follow up with the Water Board on these items.

June – *Sausalito*- Submitted an updated No Feasible Alternatives analysis. They have not blended much in recent years.

Burlingame – Permit may be delayed due to dilution study update.

Blending issues

After conferring with its blending member agencies without reaching consensus, BACWA decided not to join the Petition asking the State Water Board to remand CMSA's NPDES permit incorporating its satellite agencies. BACWA may join CASA in a letter requesting that the State Water Board take up the petition. Two other blending agencies permits are up for readoption right now, Burlingame and Sausalito, and neither of these TOs incorporate the satellite agencies.

In 2013, the Eighth Circuit Court of Appeal ruled, in a case of the Iowa League of Cities versus the USEPA, that blending is allowable if secondary treatment standards are met at the end of pipe. EPA has since stated that the decision applies only in the jurisdiction of the Eighth Circuit, and that it will apply the decision elsewhere in the country on a case-by-case basis. There has since been a challenge at the DC Circuit Court of Appeals to challenge EPA's refusal to apply the Iowa League of Cities decision nationwide, but on February 28, 2017, the Court decided it did not have jurisdiction over the matter. On February 20, 2018, the U.S. Supreme Court denied a petition for review of the DC Circuit Court of Appeals ruling. Because the DC Circuit's ruling was procedural in nature, application of the Iowa League of Cities decision, and EPA's corresponding authority to regulate blending outside of the Eighth Circuit remains an open judicial question.

PCB Congener Reporting

The Water Board has advised agencies to use picograms per liter instead of micrograms per liter when reporting PCB data, since CIWQS does not allow enough significant figures to report via micrograms, the reporting unit stipulated by the permit. There has also been some uncertainty about how to report estimated detection limits, or "EDLs" in a CIWQS form that only allows MDLs. The Lab committee will work with the contract labs to propose a guidance letter that can be issued by the Regional Water Board.

ELAP Update

New language in permits requiring a QA/QC procedure to be developed for online field sensors is intended to clarify tests already allowed by the Water Code, not to provide agencies an option to reduce documentation burdens associated with the transition to TNI. The allowable field tests are turbidity, pH, temperature, dissolved oxygen, conductivity, disinfectant residual. If new constituents are to be measured via online sensors, EPA permission would need to be obtained.

Members were asked what actions could BACWA take that would be useful assistance in the transition to TNI. Agencies are focused on implementation, and are getting training and other input through CWEA. Some agencies have hired Diane Lawver to consult on the transition and guide agencies on how to proceed. CCCSD will have an implementation plan by the end of the year. They will need about 18 months of staff time to get set up. This estimate of workload does not vary by plant size, therefore the cost for the transition is estimated to be about $10M for the

whole Region. This cost does not include the ongoing document management requirements. There was a suggestion to have ongoing updates from agency representatives about the TNI transition at facilities in the Region.

Nutrients

a. *Science Plan Advance Funding* – The Science Plan Manager has requested that BACWA advance funds for the Science Plan in advance of the second watershed permit. This would allow SFEI to hire scientists to support the increased work rate that will be needed to support management decisions for the third watershed permit. The Board has provisionally approved $600K for FY19, to be released if the Regional Water Board members agree to the tenets of the second watershed permit that were outline in the Regional Water Board staff's **letter** dated October 9 2017. The key concept that needs their approval is that there will be a large increase in support for the science in lieu of load caps. This advance in funding would come from BACWA reserves and not impact the Nutrient Surcharge levels for members.

b. *NST meeting* – The Nutrient Strategy Team will be meeting on March 15 to discuss elements of the second watershed permit - the Regional Study as well as concepts for encouraging early actions and reducing the risk of agencies that plan to implement Capital Projects to reduce nutrients. The Nutrient Strategy team is made up of representatives from large and small agencies in each subembayment.

c. .*Optimization/Upgrade Studies* –
Plant Reports (Reported as of Thursday 3/8):
- 11 plant reports are confirmed sent.
- 3 additional reports are going out this week
- ~10 should go out next week
- The remainder will be delivered over the following two weeks.

A few agencies have raised concerns about the acceptance letters, and have spoken to BACWA staff. At least one plant has indicated needing to take the report and letter to their board prior to execution of the letter.

Wetlands permitting

The Regional Water Board shared a draft report on Wetlands permitting with BACWA and requested comments. The committee found that there were several errors and misunderstandings about the status of existing wetland projects. There are also some big picture permitting concepts that need to be explored. The group agreed to invite Naomi Feger, Regional Water Board, and Ian Wren, Baykeeper/SFEI, to discuss the concepts and next steps.

CASA RWG Report-out (key items)

Hank Brady, CalRecycle – They are writing the regulations to implement SB1383. For the wastewater sector they are focused on methane emission reductions, as well as how to define recycling. They are developing language on how to carve out biosolids where pertinent. They are also investigating how to preempt local ordinances that would prevent or limit beneficial reuse and siting processing facilities. The next draft is expected on April 2, and the regulations won't take effect until 2022.

Karen Larsen, SWRCB

Recycled Water Policy – They are targeting releasing the amendment on April 30, followed by a 60 day comment period. There is a June 19 target date for the hearing. They are trying to decide how to respond to the Scientific Panel's CEC report, and how to implement salt/nutrient management planning. They are committed to removing priority pollutant monitoring. The Executive Director can make changes to the State General Order without reopening it. They plan to introduce a timeline for the regional permittee transition, that may be three years.

Bacterial Standards – The adoption date was pushed back due to resistance from the NGO community, which feels that the EPA didn't evaluate epidemiological studies relevant to California when making their recommendations to only look at enterococcus. They would like fecal coliform to be reinstated as an indicator for human health.

Biostimulatory Substances Objectives – Not a top priority at this time.

ELAP Update – The regulations are moving forward. The target adoption date is January 2019. Karen suggested that the CASA RWG contact Christine Sotelo for an update.

Dredge and Fill Policy – This is a top priority. They will likely need to put it out for public comment again.

SQOs (Phase II) - They are responding to peer review comments. The public hearing is schooled for June, and they plant to adopt in October.

Toxicity – Public release aimed for late April/early May, with a Public hearing in June and adoption in November.

Diana Messina – State Water Board - *SSS WDR* - The State Water Board had not been planning on reissuing the SSS WDR this year, but had been getting feedback about issues with it from agencies across the State. They are planning listening sessions in the North and South, and at Disadvantaged Communities this spring. They will work with CASA and CWEA to develop a more refined permit in the summer of 2018. Diana expressed concerns about the frequency of Clean Water Act lawsuits. Public comment will be the fall of 2018, with adoption in 2019.

Announcements

a. AQPI team has been doing outreach to Bay Area water managers. See **project website**.
b. **NBWA Conference** April 6
c. H2S limit **Association Comment Letter**
d. Recycled Water CEC Scientific Advisory Panel draft report – **Wastewater Association Comment Letter**
e. RMP CEC Workgroup meeting April 12-13
f. RMP Microplastics Workgroup meeting May 15

Next BACWA Permits Committee Meeting: Tuesday April 10, EBMUD Treatment Plant Lab Library. Meetings will be held from noon to 2pm from now on to address traffic concerns.

BACWA
BAY AREA
CLEAN WATER
AGENCIES

Executive Director's February 2018 Report

NUTRIENTS:

Completed a variety of tasks and activities associated with BACWA's interests on nutrients and collaborating with the Water Board including:
-Coordinated with the OP/Upgrade consulting team on administrative issues.
-Planned for the next Nutrient Strategy Team meeting to discuss concepts to be included in the permit language for the 2nd Nutrient Watershed Permit.
-Coordinated with the NMS Science Manager on presentations, meetings, and key issues on nutrients.
-Attended and participated in the 30th meeting of the NMS Planning Subcommittee Committee and provided BACWA in-kind services by serving as scribe. Following the meeting prepared detailed meeting minutes and summary of action items.
-Organized and participated in the monthly CMG conference call to discuss the final efforts needed to complete the Optimization/Upgrade Study
-Coordinated with the HDR Project Manager on the schedule and budget for the Op/Upgrade Report.
-Met with the NMS Program Coordination team to seek their input on the Regional Study as part of the 2nd WS Permit.

BACWA BOARD MEETING AND CONFERENCES:

-Worked with staff in preparing for the February Board Meeting including review of the final agenda and coordination with presenters.
-Organized and participated in the February Board Meeting.
-Continued to track all action items to completion.
-Organized and participated in a Special Board Meeting to consider entering into a joint petition to the SWRCB to remand the Central Marin NPDES Permit.

ASC/SFEI:

-As the Chair of the Governance Committee coordinated with the SFEI Executive Director on committee activities.
-Attended the quarterly ASC/SFEI Board Meeting with the main topic being the update of the strategic plan.

COLLECTION SYSTEM COMMITTEE:

-Attended the meeting and provided updates on inclusion of collection systems in NPDES permits.
-Participated in a conference call of the BACWA SSS WDR Workgroup to formulate comments for submittal to the SWRCB on the pending update of the SSS WDR.

FINANCE:

-Reviewed the monthly BACWA financial reports with the AED.
-Continued coordinating with the AED in tracking the revenues coming in from the BACWA FY18 member invoices.
-Met with the BACWA Finance Committee to review and seek input into the FY 19 Budget and 5 Year Plan.

PERMIT COMMITTEE:

-Coordinated with the RPM for items to agendize for the Permit Committee review.
-Attend the monthly meeting and provided updates on key BACWA activities.
-Polled several members of the Permit Committee regarding their views on BACWA joining a petition for review of the Central Marin Permit.
-Worked with Committee members on developing input into a joint comment letter to Cal OSHA regarding hydrogen sulfide standards.

COLLABORATIONS:

-Coordinated with CASA Regulatory Program Manager and Executive Director on regulatory issues of mutual concern.
-Attended the NACWA Winter Conference but not as the BACWA Executive Director.
-Represented BACWA in a meeting with CASA and the SWRCB to discuss alternate approaches for establishing regulations modeled on the Bay Area NMS governance and science program.

MANAGERS ROUNDTABLE:

-Planned for the next quarterly meeting of the Bay Area Managers Roundtable

AIR COMMITTEE:

-Coordinated with the AIR Committee leadership on current regulatory issues.

BAPPG COMMITTEE:

-Coordinated with BAPPG leadership on upcoming comments letters under development.

WOT:

-Communicated with the BACWWE Executive Committee on how the Spring Semester was progressing.

-Organized and participated in the BACWWE Executive Committee meeting with Solano Community College to plan for future of the operator training program.

ADMINISTRATION:

-Planned for the next monthly BACWA staff meeting to coordinate and prioritize activities.
-Signed off on invoices, reviewed correspondence, prepared for upcoming Board meetings, 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:

-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 ACTION ITEMS

Number	Subject	Task	Deadline	Status
	Action Items from February 16, 2018 BACWA Executive Board Meeting			
2018.2-47	TNI	develop list of activites that BACWA could undertake and review with Board (Ed/RPM	3/16/2018	Completed
2018.2-46	Non-Flushables Study Support	Contact BAPPG to request support (ED)	2/20/2018	Completed
2018.2-44	BAAQMD	Add specific permitting case studies to Agenda for June meeting (RPM)	4/30/2018	Completed
2018.2-43	Committee Meeting Audio	Research cost of providing audio of meetings (AED/RPM/ED)	3/31/2018	Pending
2018.2-42	BAPPG RFQ's	Notify Pesticide & Training, selection comm review of Public Outreach (RPM)	4/30/2018	Completed
2018.2-41	DHS	Distribute Questionnaire to BACWA Members (AED/ED)	2/28/2018	Completed
2018.2-40	Joint Meeting with Water Board	Add items (CEC-PFAS/PFOS priority; Near shore permits for horizontal levies; TNI) to Agenda (RPM)	2/28/2018	Completed
2018.2-39	Opt/Upgrade Sign-Off Letters	Collect, file and forward to HDR (AED)	2/28/2018	Pending
2018.2-38	BACWA FY19 Budget	Add and update line items (AED/ED)	2/28/2018	Completed
	Action Items Remaining from Previous BACWA Executive Board Meetings			
2016.3-61	Membership Policy	Develop policy for out of region agency membership (ED)	6/30/2017	Pending

FY18 *45 of 47 Action Items completed*
FY17: *90 of 90 Action Items completed.*
FY16: *96 of 97 Action Items completed.*

BACWA BOARD CALENDAR
April 2018 to March 2019

DATE	AGENDA
4/20/2018	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 4/13	Monthly Financial Report
Schectel; Mitsuddy, Pagano, White, Connor/Zipkin	**Authorizations & Approvals**
Williams; Fono; Hull	Approval: FY19 Budget
	Other Business - POLICY/STRATEGIC
	Discussion: Draft Agenda Joint Meeting with WB
	Other Business - OPERATIONAL
	Discussion: Update on BAAQMD Regulations
	Discussion: Update on regional and statewide biosolids issues
	Discussion: NBWA Conference Debrief
	Discussion: POTW Pesticide Sampling Efforts (Dr. Jennifer Teerlink)
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports
5/?/2018	
Joint Meeting - Water Board	**Other Business: Discussions**
Items due: 5/?	
Schectel; Mitsuddy, Pagano, White, Connor/Zipkin	
Williams; Fono	
5/18/2018	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 5/11	Monthly Financial Report
Schectel; Mitsuddy, Pagano, White, Connor/Zipkin	**Authorizations & Approvals**
Williams; Fono; Hull	Approval: FY19 Consulting Amendments/Agreements
	Approval: Officers: Chair & Vice-Chair FY19
	Authorization: Legal & IT Support Amendments FY19
	Other Business - POLICY/STRATEGIC
	Discussion: Water Board Jt Mtg Debrief
	Discussion: CEC Update
	Other Business - OPERATIONAL
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)

	Other BACWA Representative Reports

6/?/2018	**TENTATIVE - No Board Actions Permitted**
Nutrient Optimization/Upgrade Workshop #3	
Schectel; Mitsuddy, Pagano, White, Zipkin	Optimization/Upgrade Studies
Williams; Fono	Water Board

6/15/2018	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 6/8	Monthly Financial Report
Schectel; Mitsuddy, Pagano, White, Zipkin	**Authorizations & Approvals**
Williams; Fono; Hull	Approval: FY19 Agreements
	Approval: Appt BACWA Rep to ASC/SFEI Jt Board
	Other Business - POLICY/STRATEGIC
	Discussion: Draft Agenda WB Joint Meeting
	Other Business - OPERATIONAL
	Discussion: BAAQMD Annual Meeting Draft Agenda
	Discussion: CPSC Update
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

7/?/2018	
Joint Meeting - Water Board	**Other Business: Discussions**
Items due: 7/?	
Schectel; Mitsuddy, Pagano, White, Zipkin	
Williams; Fono	

7/20/2018	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 7/13	Monthly Financial Report
Schectel; Mitsuddy, Pagano, White, Zipkin	**Authorizations & Approvals**
Williams; Fono; Hull	Approval: Annual Nutrient WS Payment
	Approval: FY19 Agreements
	Other Business - POLICY/STRATEGIC
	Discussion: Water Board Jt Mtg Debrief
	Discussion: Draft Agenda Pre-Pardee Technical Seminar
	Discussion: Risk Reduction Update
	Discussion: HDR Final Update on Optimization/ Upgrade studies
	Other Business - OPERATIONAL
	Discussion:
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)

	Other BACWA Representative Reports

8/17/2018	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 8/10	Monthly Financial Report
Schectel; Mitsuddy, Pagano, White, Zipkin	**Authorizations & Approvals**
Williams; Fono; Hull	Approval:
	Other Business - POLICY/STRATEGIC
	Discussion: Draft Agenda & Schedule Pre & Pardee Technical Seminar
	Discussion: RMP & NMS Update (Phil Trowbridge/David Senn)
	Other Business - OPERATIONAL
	Discussion:
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

9/21/2018	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 9/14	Monthly Financial Report
Schectel; Mitsuddy, Pagano, White, Zipkin	**Authorizations & Approvals**
Williams; Fono; Hull	Approval:
	Other Business - POLICY/STRATEGIC
	Discussion: Draft Agenda Pardee Technical Seminar
	Discussion: Annual Meeting Planning
	Discussion: Biannual Update on CASA Climate Change Prog? Short Meeting?
	Other Business - OPERATIONAL
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

9/21/2018	**No Board Actions Permitted**
Pre-Pardee Seminar	
Schectel; Mitsuddy, Pagano, White, Zipkin	
Williams; Fono; Hull	

10/25-26/2018	**No Board Actions Permitted**
Pardee Technical Seminar	
Schectel; Mitsuddy, Pagano, White, Zipkin	
Williams; Fono; Hull	

11/16/2018	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 11/9	Monthly Financial Report

Schectel; Mitsuddy, Pagano, White, Zipkin	**Authorizations & Approvals**
Williams; Fono; Hull	Approval: Adoption of FY18 Annual Reports
	Other Business - POLICY/STRATEGIC
	Discussion: Pardee Debrief & Survey
	Discussion: Draft Agenda Joint Meeting with WB
	Discussion: ReNEWIt Industrial Advisory Board Meeting Debrief
	Discussion: Climate Change Update
	Other Business - OPERATIONAL
	Discussion: Annual Meeting Planning
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

12/?/2018	
Joint Meeting - Water Board	**Other Business: Discussions**
Items due:	
Schectel; Mitsuddy, Pagano, White, Zipkin	
Williams; Fono	

12/21/2018	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 12/14	Monthly Financial Report
Schectel; Mitsuddy, Pagano, White, Zipkin	**Authorizations & Approvals**
Williams; Fono; Hull	**Other Business - POLICY/STRATEGIC**
HOLIDAY LUNCH	Discussion: WB Joint Meeting Debrief
COMMITTEE APPRECIATION	**Other Business - OPERATIONAL**
LUNCH	Discussion: Annual Meeting Agenda
	Discussion: Budget Schedule & Key Issues
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

1/25/2019	
Annual Members Mtg	Service & Leadership Recognition
Schectel; Mitsuddy, Pagano, White, Zipkin	RMP & NMS Update
Williams; Fono; Hull	EPA, CWRCB, RWCB, Air Dist,

2/15/2019	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 2/?	Monthly Financial Report
Schectel; Mitsuddy, Pagano, White, Zipkin	**Authorizations & Approvals**
Williams; Fono; Hull	Approval:
	Other Business - POLICY/STRATEGIC

	Discussion: Draft Agenda Joint Meeting with WB
	Discussion: Update on regional and statewide biosolids issues
	Other Business - OPERATIONAL
	Discussion: FY2019 Budget Planning - 1st Draft of FY19 Budget
	Discussion: Annual Meeting Debrief
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports
3/?/2019	
Joint Meeting	**Other Business: Discussions**
Items due: 2/23	
Schectel; Mitsuddy, Pagano, White, Connor/Zipkin Williams; Fono	
3/15/2019	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes (AED)
Items due: 3/9	Monthly Financial Report
Schectel; Mitsuddy, Pagano, White, Connor/Zipkin Williams; Fono; Hull	**Authorizations & Approvals**
	Other Business - POLICY/STRATEGIC
	Discussion: WB Joint Meeting Debrief
	Other Business - OPERATIONAL
	Discussion: Second Draft of FY20 Budget
	Discussion: Biannual Update on CASA Climate Change Program
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports
CURRENTLY	* Suggestions for Monthly Meeting Guest Speakers/Presenters: i.e. Jim McGrath, State Water Board
UNSCHEDULED & SIGNIFICANT	

Regulatory Program Manager's Report to the Board

February 2018

NUTRIENTS: Participated in CMG call. Reviewed Oro Loma Tentative Order.

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

CECs: Reviewed Wastewater Association comments on OPC Ocean Litter Prevention strategy draft. Discussed microplastics methods with SFEI staff. Reviewed CEC Scientific Advisory Panel strategy for Recycled Water draft report and coordinated with WateReuse on comments.

BLENDING: Participated in special meeting conference call on CMSA Adopted Order.

COLLABORATIVES: Participated in CASA RWG conference call and gave BACWA update. Participated in NACWA Regional Association conference call.

SSS WDR: Convened workgroup and set up conference call. Developed notes on BACWA's position to develop comment letter or coordinate with other Wastewater Associations.

COMMITTEE SUPPORT:
BAPPG – Attended meeting and drafted Board report. Received and reviewed submissions for three support RFQs and distributed to selection committee. Set up and participated in selection committee conference call. Notified submitting consultants of the committee's decision. Performed maintenance for baywise email forwarding.
Biosolids – Discussed next meeting and website update with chair.
Collection Systems – Attended meeting and drafted Board Report.
Laboratory – Discussed options for BACWA to address the TNI transition with chair.
O&M Infoshare – Contacted chairs to schedule next meeting. Distributed information and got input on CalOSHA proposed H2S limits.
Permits – Drafted agenda and Board Report, and attended meeting. Contacted San Mateo regarding Admin Draft of permit.
Recycled wWter – Reviewed and edited letter on the Regulation to prevent wasteful use of water. Circulated recycled water survey to Ocean dischargers and upper Napa River dischargers to get a complete picture of recycled water in the Region.
Executive Board – Prepared for and attended Executive Board meeting. Edited action items and meeting minutes.

ADMINISTRATION/STAFF MEETING – Managed committee Google Groups. Updated documents on website. Worked with consultant on finalizing mobile layer for website.

MEETINGS ATTENDED: Collections Systems Comm. (2/1), Special Meeting Call on CMSA Permit Petition (2/7); BAPPG (2/7); CASA RWG Call (2/8); CMG Call (2/9); Permits Comm. (2/13); Executive Board Meeting (2/16); NACWA Regional Associations Call (2/20); SSS WDR Kickoff Call (2/26); BAPPG RFQ Selection Committee Call (2/27).

B. Other BACWA Representatives

Group/Organization	Current Representative
RMP Technical Committee	Mary Lou Esparza, CCCSD
RMP Steering Committee	Karin North, Palo Alto;
	Leah Walker, Petaluma;
	Eric Dunlavey, San Jose
Summit Partners	Dave Williams;
	Lori Schectel, CCCSD
Joint SFEI/ASC Board	Laura Pagano, SFPUC;
	Dave Williams
	Amit Mutsuddy, San Jose
	Karin North, Palo Alto, ASC Board Alternate
Nutrient Management Strategy Governance Steering Committee	Eric Dunlavey, San Jose
	Eileen White, EBMUD
	Bhavani Yerrapotu, Alternate
	Lori Schectel, Alternate
NMS Planning Subgroup	Eric Dunlavey, San Jose
NMS Technical Workgroup	Eric Dunlavey, San Jose
SWRCB Nutrient SAG	Dave Williams
SWRCB Focus Group – Mercury Amendments to the State Plan	Tim Potter, CCCSD;
	Laura Pagano, SFPUC
	Dave Williams, BACWA
NACWA Taskforce on Dental Amalgam	Tim Potter, CCCSD
BAIRWMP	Cheryl Munoz, SFPUC;
	Linda Hu, EBMUD;
	Dave Williams, BACWA
NACWA Emerging Contaminants	Karin North, Palo Alto;
	Melody LaBella, CCCSD
CASA State Legislative Committee	Lori Schectel, CCCSD
CASA Regulatory Workgroup	Lorien Fono, BACWA
ReNUWIt	Jackie Zipkin, EBDA
	Karin North, Palo Alto
RMP Microplastics Liaison	Nirmela Arsem, EBMUD
AWT Certification Committee	Maura Bonnarens, EBMUD
Bay Area Regional Reliability Project	Eileen White, EBMUD
WateReuse Working Group	Cheryl Munoz, SFPUC
SF Estuary Partnership	Eileen White, EBMUD
	David Williams, BACWA
CPSC Policy Education Advisory Committee	Doug Dattawalker, Union San
California Ocean Protection Council	Lorien Fono, BACWA

Changes to BACWA Representation requires Executive Board Approval.

SFEP

SAN FRANCISCO ESTUARY PARTNERSHIP

Implementation Committee

March 7, 2018
9:30 am - 12:30 pm
Oakland MetroCenter Auditorium
101 8th Street, Oakland

MEETING AGENDA

9:30 **1. Welcome and Introductions**
Tom Mumley, Vice Chair

9:40 **2. Public Comment**

9:45 **3. Approve 11/15/17 Meeting Summary (ACTION)**
(Attachment 1)

9:50 **4. Director's Report**
(Attachment 2)

10:05 **5. Select Chair and Vice Chair (ACTION)**
Vice Chair

10:15 **6. Estuary Blueprint Progress Report**
(Attachment 3)
Director

10:30 **7. Draft Work Plan and Budget**
(Attachment 4)
Director

11:00 **Break**

11:15 **8. Partnership Updates**

- Transition Zone Methodology and North Richmond Community Vision (Action 4)
  Heidi Nutters, SFEP
  Juliana Gonzalez, The Watershed Project
  April Robinson, SFEI

- Highway 37 (Action 12)
  Ashley Nguyen, MTC
  Jessica Davenport, State Coastal Conservancy

12:15 **9. IC Member Announcements**

12:20 **10. Concluding Business/Meeting Road Map**
(Attachment 5)

12:30 **11. Adjourn**