BACWA
BAY AREA
CLEAN WATER
AGENCIES

Executive Board Meeting
AGENDA
Friday, December 21, 2018, 9:00 a.m. – 12:30 p.m.
EBMUD, 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 November 16, 2018 BACWA Executive Board Meeting Minutes			**3-11**
2 October 2018 Treasurer's Reports			**12-22**
APPROVALS & AUTHORIZATIONS		**9:06 AM**	
3 Approval: BACWA Policy on Reserves			**23-24**
4 Approval: BACWA Policy on Representatives			**25-26**
5 Approval: SFEI Advance Funding for Modeling Project			**27-38**
6 Approval: BACWA Membership for UC Berkeley			**39**
OTHER BUSINESS - POLICY/STRATEGIC		**9:10 AM**	
7 Discussion: Nutrients			
a. Regulatory			
i. Debrief on Nutrient Strategy Team Meeting			**40-42**
ii. 2nd Watershed Permit Update			
iii. Contract Management Group Debrief			**43-44**
b. Technical Work			
i. SFEI Update			
c. Governance Structure			
i. Debrief of Planning Subcommittee Meeting #36			
ii. Debrief on Nutrient Management Strategy Meeting #19			**45-50**
8 Discussion: SSS WDR Monitor & Reporting Program Meeting Debrief			**51-52**
9 Discussion: Joint Meeting with Water Board Debrief			**53-54**
10 Discussion: Office of Inspector General - Biosolids Report	Documentary		
	OIG Report FAQs		
11 Discussion: Toxicity Provisions Hearing Feedback	CASA Cerio White Paper		**55-69**
12 Discussion: Draft BACWA Policy on Contracting			**70-74**
13 Discussion: Recycled Water Policy Adoption	RW Policy		**75-83**
14 Discussion: Solano County Biosolids Report			**84-95**
15 Discussion: EPA Water Quality Improvement Fund Letters of Support			**96-101**
16 Discussion: SWRCB Climate Change Survey Update			**102-105**
17 Discussion: Extension of A-2241 PCB/Mercury Abeyance Petition			**106-116**
18 Discussion: CEC White Paper	CEC White Paper Draft		
OTHER BUSINESS - OPERATIONAL		**10:45 AM**	
19 Discussion: Update on Silicon Valley Food Waste Program			
20 Discussion: Annual Meeting Planning			**117-118**
21 Discussion: Commendation for Nutrient Reduction Study			**119**
22 Discussion: Executive Board Meeting at Codiga Center			**120-121**
23 Discussion: Update on BACWA Executive Board Calendar			**122**
24 Discussion: Continued BACWA Support of Federal Water Quality Coalition	FWQC Matrix		**123**
25 Discussion: Regional Water Board Meeting Update			
26 Discussion: Update on Requirements for ELAP Dual Certification	Meeting Packet		
27 Discussion: Succession Plan Update			**124-125**
28 Discussion: Conference Call Software - GoToMeeting			

REPORTS		**12:10 PM**	
29 Committee Reports			**126-130**
30 Member Highlights			
31 Executive Director Report			**131-139**
32 Regulatory Program Manager Report			**140-141**
33 Other BACWA Representative Reports			
a. RMP Technical Committee	Mary Lou Esparza, Nirmela Arsem		
b. RMP Steering Committee	Karin North; Leah Walker; Eric Dunlavey		
c. Summit Partners	Dave Williams; Lori Schectel		
d. ASC/SFEI	Dave Williams; Amit Mutsuddy; Karin North		
e. Nutrient Governance Steering Committee	Eric Dunlavey; Eileen White; Lori Schectel; Jackie Zipkin		
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; 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		
s. CPSC Policy Education Advisory Committee	Coleen Henry		
t. California Ocean Protection Council	Lorien Fono		
u. Countywide Water Reuse Master Plan	Karin North, Pedro Hernandez		

34 **SUGGESTIONS FOR FUTURE AGENDA ITEMS**	**12:27 PM**	

NEXT MEETING **The next regular meeting of the Board is scheduled for February 15, 2019 from 9:00 am to 12:30 pm at SFPUC, 13th Floor, Hetch Hetchy Room, 525 Golden Gate Ave, San Francisco, CA. The BACWA Annual Meeting is scheduled for January 11, 2019 at the Scottish Rite Center, 1547 Lakeside Drive, Oakland, CA from 8:30 am to 3:00 pm.**	**12:28 PM**	

ADJOURNMENT	**12:30 PM**	

ROLL CALL AND INTRODUCTIONS

Executive Board Representatives: Lori Schectel (Central Contra Costa Sanitary District); Amit Mutsuddy (San Jose); Eileen White (East Bay Municipal Utility District); Jacqueline Zipkin (East Bay Dischargers Authority); Greg Norby (SFPUC).

Other Attendees:

Name	Agency/Company
Amanda Roa	Delta Diablo
Azalea Mitch	Representing San Mateo via Call In
Daniela Brandao	Representing San Mateo
David Behar	BayCAN
Greg Baatrup	Fairfield Suisun
Holly Kennedy	HDR
Jay Davis	SFEI
Nirmela Arsem	EBMUD
Nohemy Revilla	SFPUC
Patricia McGovern	McGovern McDonald Engineers
Robert Wilson	City of Petaluma
Steve McDonald	McGovern McDonald Engineers
Andrew Damron	Napa San
Arvin Akela	Representing Silicon Valley
Tess Sprague	Woodard & Curran
Karin North	City of Palo Alto
Carla De Las Casa	Brown & Caldwell
YuYun Shang	EBMUD
Steve Linsley	West County
David Williams	BACWA
Lorien Fono	BACWA
Sherry Hull	BACWA

PUBLIC COMMENT

None.

CONSIDERATION TO TAKE AGENDA ITEMS OUT OF ORDER – Item Agenda **Item 28 -** Discussion: Bay Area Climate Adaptation Network (BayCAN) Launch was taken out of order.

CONSENT CALENDAR

1. September 21, 2018, BACWA Executive Board Meeting Minutes – The approved minutes will be posted on the BACWA website.

2. August and September 2018 Treasurer's Reports and Financial Summary – A Financial Summary Report, along with Treasurer's Reports for August and September 2018, were included in the Packet. A copy of the FY18 Budget as of September 30, 2018, (25% 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 is also provided.

Consent Calendar items 1 and 2: *A motion to approve was made by Jacqueline Zipkin and seconded by Eileen White. The motion was approved unanimously.*

APPROVALS & AUTHORIZATIONS

3. Authorization: ED Authorization to Amend the FY19 HDR Agreement– An Executive Director Authorization and Amendment were included in the Packet. The Executive Director noted that the amount of the Amendment was within the Executive Director's contracting authority and there was an urgency to proceed with the work.

4. Approval: Adoption of FY18 Annual Reports – A Board Action Request and links to the BACWA Annual Report, the Basic Financial Statements, and the Memorandum on Internal Controls were included in the Packet. The Executive Director gave an overview of the documents.

Item 4*: A motion to approve was made by Eileen White and seconded by Greg Norby. The motion was approved unanimously.*

5. Approval: BACWA Resolution R-19-01, Membership – A Board Action Request and Resolution R-19-01 were included in the Packet. The Executive Director gave an overview of the reason for the request in Resolution form.

Item 5*: A motion to approve was made by Greg Norby and seconded by Lori Schectel. The motion was approved unanimously.*

6. Approval: BACWA Aquatic Science Center Representative – A Board Action Request was included in the Packet. The Executive Director gave an overview of Aquatic Science Center bylaws. BACWA currently has one Representative and one Alternate. BACWA may have up to two Representatives and two Alternates.

***Item 6**: A motion to approve Eileen White as the Representative and Amy Chastain as the Alternate was made by Lori Schectel and seconded by Greg Norby. The motion was approved unanimously.*

7. Approval: BACWA Nutrient Management Strategy Steering Committee Representative – A Board Action Request was included in the Packet. The Executive Director explained the request for a new Alternate.

***Item 7**: A motion to approve Jacqueline Zipkin as the new Alternate Representative was made by Eileen White and seconded by Lori Schectel. The motion was approved unanimously.*

8. Approval: HDR Agreement for Additional Services to Support 2nd Nutrient Watershed Permit Compliance – A Board Action Request, an Amendment, and a new Proposal & Scope were included in the Packet. The Executive Director gave an overview of the work included in the request. There was a discussion that this work may include support for negotiating the third Watershed Permit.

***Item 8**: A motion to approve was made by Eileen White and seconded by Jacqueline Zipkin. The motion was approved unanimously.*

OTHER BUSINESS-POLICY/STRATEGIC

Agenda **Item 9 –** Discussion: Nutrients

a. Regulatory
    i. Nutrient Strategy Team Future Meeting Schedule – A list of possible dates for future NST meetings following BACWA Executive Board meetings was included in the Packet. The Executive Director explained that more NST meetings will likely be needed since the NST will respond to the Admin Draft of the Watershed Permit in January, and continue negotiations with the Regional Water Board until the permit is adopted in May or June.
    ii. Nutrient Strategy Team November Agenda – The posted Agenda was included in the Packet. The Executive Director noted that the meeting will immediately follow the Board meeting.
b. Governance Structure –
    i. Debrief on Nutrient Management Strategy Planning Subcommittee #35 – The Summary of the November 9, 2018 meeting was included in the Packet. The Executive Director gave an overview noting that the facilitator in the SFEI Program Coordination team will be leaving SFEI. Until SFEI decides how they will fill that position, the Planning Subcommittee decided they would self-facilitate in the short term. The next meeting of the Planning Subcommittee is at the end of November with the Steering Committee meeting being held in December. It was noted that

SFEI will be requesting advanced funding of $200k for the coastal study; and that the USGS will discontinue their ship-based monitoring program due to loss of key personnel and reallocation of federal funds.

ii. Debrief on August 17, 2018 Nutrient Strategy Team Meeting – The minutes of the August 17, 2018 meeting were included in the Packet.

Agenda **Item 10 –** Discussion: Pardee Technical Seminar Debrief & Participant Survey – A LINK to the results of the participant Survey was included in the Packet. The Executive Director gave an overview noting comments and the general approval of the venue and catering. A Board Member thanked the BACWA Staff for their work in putting the Seminar together.

Agenda **Item 11 –** Discussion: ReNUWIt Industrial Advisory Board Meeting Debrief – A Presentation on the ReNUWIt program was included in the Packet. The BACWA Representative to ReNUWIt gave an overview of the meeting noting that they have not been as engaged with the industry as they should have been, suggesting ways to increase that engagement. They include identifying plants that are interested in running pilot projects that would be complimentary to the research. When ReNUIt expires in two years, it is expected that BACWA Members would desire continued engagement with the researchers, and should develop a framework for this purpose. It was suggested that BACWA facilitate an informal dialog with the Codiga Center.

Agenda **Item 12 –** Discussion: Regional Monitoring Program Update –The Executive Director introduced Jay Davis from SFEI who gave an overview of the program. The presentation can be seen **HERE**. There was a discussion about potential decrease in funding for nutrient special studies by the RMP. The BACWA Executive Board expressed its appreciation to SFEI and the RMP for its work. It was suggested that BACWA facilitate a conference call on POTW participation in CEC studies that would include the Water Board Staff and SFEI.

Agenda **Item 13 –** Discussion: Toxicity Litigation Update – Links to the Legal Filing and the EPA Response were included in the Packet. The Executive Director gave an update noting that the litigation is ongoing.

Agenda **Item 14** – Discussion: Toxicity Provisions – A Clean Water Summit Partners letter, along with a LINK to the Statewide Toxicity Provisions were included in the Packet. The Regulatory Program Manager gave a Presentation that highlighted the issues and suggested comments. There is a State Water Board hearing on Toxicity on November 28, 2018. The Regulatory Program Manager will develop a Comment Letter and circulate it to the Executive Board. Comments are due December 7, 2018.

Agenda **Item 15 –** Discussion: SSS WDR CASA Redlines –Links to the Final WDR Redlines and to the Final MRP Redlines was included in the Packet. The Regulatory Program Manager gave an overview of the CASA Redlines and noted that the next meeting with State Water Board staff is

on November 29, 2018.

Agenda **Item 16** – Discussion: Strategy To Work with Bay Area Air Quality Management District – A copy of the August 6, 2018 Meeting Summary was included in the Packet. The Regulatory Program Manager gave an overview noting that the AIR Committee plans to develop recommendations at their next meeting. A Member noted that Air District staff will be observing the kickoff of their food waste program. The Executive Director asked that BACWA be apprised of the outcome.

Agenda **Item 17** – Discussion: BACWA Policies & Procedures – A schedule for updating BACWA Policies was included in the Packet. The Executive Director gave an overview and noted that discussions on two new draft policies will follow.

Agenda **Item 18** – Discussion: Draft Policy on Reserves – A Draft Policy on Financial Reserves was included in the Packet. The Executive Director gave an overview of the policy and requested Board input. The Policy on Reserves will be brought to the Board for Approval in December, 2018.

Agenda **Item 19** – Discussion: Draft Policy on Representation – A Draft Policy on BACWA Representation was included in the Packet. The Executive Director gave an overview of the policy and requested Board input. The Policy on Representation will be brought to the Board for Approval in December, 2018.

Agenda **Item 20 –** Discussion: Draft Agenda Joint Meeting with Water Board Staff – A Draft Agenda for the December 3, 2018 scheduled meeting was included in the Packet. The Regulatory Program Manager gave an overview of the Agenda.

Agenda **Item 21 -** Discussion: Support for Dual Track Lab Certification – Two emails from SCAP along with a draft letter to the SWRCB recommending dual track lab certification were included in the Packet. The Executive Director thanked the Lab Committee and others for their work on this issue. The Chair of the BACWA Lab Committee gave an overview of the current status and agreed to provide modifications to the comment letter for review. But it was suggested that BACWA may want to reconsider its overall strategy and decide what would be the best approach to get an implementable accreditation system for our members. The Lab Committee Chair will invite Christine Sotelo of ELAP to attend a future BACWA Executive Board Meeting.

Agenda **Item 22 -** Discussion: Support for San Francisco Estuary Partnership's Grant Proposal on Transforming Shorelines, that will include using OLSD's expansion of its horizontal levee as a case study for overcoming permitting hurdles for wetlands projects – A BACWA support letter, along with the proposal, were included in the Packet. A Board Member summarized the proposal. The Board indicated support for the program and submission of the support letter. It

was suggested that BACWA set up a conference call with the stakeholders to discuss coordination.

OTHER BUSINESS-OPERATIONAL

Agenda **Item 23 -** Discussion: BACWA Annual Meeting Planning – A copy of the 2018 BACWA Annual Meeting Agenda, along with a list of suggested topics for the 2019 BACWA Annual Meeting, were included in the Packet. The Executive Director asked for input from the Board on the list of topics. It was suggested that Climate Adaptation Resiliency be highlighted as part of the presentations at the meeting.

Agenda **Item 24 -** Discussion: Pardee Technical Seminar Dates in 2019 – A document showing possible dates and conflicts for the 2019 BACWA Pardee Technical Seminar was included in the Packet. The Executive Director explained that the facility may not be available to BACWA on the usual Thursday and Friday in October and asked the Board to give input on possible other dates. The Board suggested September 26-27, 2019 with the Pre-Pardee Seminar following the August 16, 2019 Executive Board Meeting.

Agenda **Item 25 -** Discussion: BACWA Bulletin - Member News Section Pilot– A LINK to the CASA Newsletter showing a Member News section was included in the Packet. The Regulatory Program Manager gave an overview of the possible change to the BACWA Bulletin and asked the Board for input. The Regulatory Program Manager will request member news and set up a Member News section in the Bulletin.

Agenda **Item 26 -** Discussion: Exfiltration Workshop – An email from CASA regarding an October 1, 2018 Workshop on Exfiltration was included in the Packet. The Executive Director gave an overview of what is occurring in southern California on this issue.

Agenda **Item 27 -** Discussion: Options for Supporting the Bay Area Biosolids Coalition – a Proposal and Guidance Budget were included in the Packet. The Executive Director gave an overview of the options for providing support to BABC. The Executive Director will attend the next BABC meeting and come back to the Board with suggestions on how to proceed.

Agenda **Item 28 -** Discussion: Bay Area Climate Adaptation Network (BayCAN) Launch – This item was taken out of order before Item #14 . David Behar from SFPUC gave a presentation on the launch of the Bay Area Climate Adaptation Network. A website will be up and running soon. The alliance will be membership-based with reasonable annual dues. The Executive Director asked the Board for input on participation and the Board agreed that BACWA should consider joining. The Executive Director will proceed under his expenditure authorization authority.

Agenda **Item 29 -** Discussion: Bay Area Chemical Consortium – This item was moved to the

December 21, 2018 BACWA Executive Board Meeting Agenda.

Agenda **Item 30 -** Discussion: Language for Award Plaque – Draft language for an award to be presented from BACWA to retiring Executive Officer of the San Francisco Water Board was included in the Packet. The Executive Director asked for input form the Board. The Board suggested some additions and the Executive Director will provide a draft to the Board for review. BACWA staff will procure the Award and it will be presented at the December 12, 2018 meeting of the San Francisco Water Board.

Agenda **Item 31 -** Discussion: Continued BACWA Support of Federal Water Quality Coalition – A LINK to the FWQC Regulatory Matrix was included in the Packet. This item was moved to the December 21, 2018 BACWA Executive Board Meeting Agenda.

REPORTS

Agenda **Item 32** – Committee Reports – BACWA Committee Reports were included in the Packet. A was included in the Packet.
AIR Committee: A report from the October 17, 2018 meeting was included in the Packet. .
BAPPG Committee: A report from the October 3, 2018 meeting was included in the Packet.
Biosolids Committee: A report from the September 20, 2018 meeting was included in the Packet.
Collections Committee: A report from the September 27, 2018 meeting was included in the Packet.
InfoShare - Asset Management: No meeting.
Lab Committee: Reports from the September 12, and October 10, 2018 meetings were included in the Packet.
Operations & Maintenance – InfoShare Group: A report from the August 29, 2018 meeting was included in the Packet.
Permits Committee: Reports from the September 11, October 9, and November 13, 2018 meetings were included in the Packet.
Pretreatment Committee: A report from the June 14, 2018 meeting was included in the Packet.
Recycled Water Committee: Reports from the September 18, and October 30, 2018 meetings were included in the Packet. It was noted that the State Water Board updated draft Recycled Policy was released November 16, 2018.

Agenda **Item 33** - Discussion: Member Highlights - Executive Board Representatives (Board) were given an opportunity to provide updates from each of the Principal agencies. Non-principal members were also given an opportunity to report out on behalf of their agencies. No actions were taken on the report-outs.

EBDA: No report.

EBMUD: EPA Office of Inspector General released a report stating that it cannot assess the impacts on pollutants in biosolids.
Central Contra Costa: Attended the NACWA Legal Committee conference described recent court cases.
San Francisco: No report.
San Jose: Currently dealing with the smoke issue, have run out of masks, affecting the interior of buildings.
Delta Diablo: No report.
Fairfield Suisun: No report.
San Mateo: No report.

Agenda **Item 34** - The **Executive Director's (ED) Reports** for September and October 2018, along with the Board Calendar, and BACWA Action Items, were included in the Packet. It was noted that 39 of 40 action items from FY19 have been completed.

Agenda **Item 35** - The **Regulatory Program Manager (RPM) Reports** for September and October 2018 were included in the Packet.

Agenda **Item 36 - Other BACWA Representative Reports** – BACWA Representative were given an opportunity to provide updates. No actions were taken based on the reports.

a. RMP-TRC: Mary Lou Esparza, Nirmela Arsem – No report.
b. RMP Steering Committee: Karin North; Leah Walker; Eric Dunlavey – No report
c. Summit Partners: Dave Williams; Lori Schectel **–** No report.
d. **ASC/SFEI:** Laura Pagano; Dave Williams; Amit Mutsuddy; Karin North – An email from the Director of SFEI was included in the Packet along with Links to the Meeting Packet and the SFEI Strategic Plan.
e. Nutrient Governance Steering Committee: Eric Dunlavey; Eileen White; Bhavani Yerrapotu; Lori Schectel – No report.
    i. Nutrient Planning Subgroup: Eric Dunlavey
    iii. NMS Technical Workgroup: Eric Dunlavey
f. SWRCB Nutrient SAG: Dave Williams – Links to the ASCI Webinar, the SAG Webinar, and the Scientific Basis for Biointegrity Goals were included in the Packet.
g. SWRCB Focus Group – Mercury Amendments to the State Plan: Tim Potter; Dave Williams; Laura Pagano – No report
h. NACWA Taskforce on Dental Amalgam: Tim Potter – No report.
i. BAIRWMP: Cheryl Munoz, Linda Hu, Dave Williams - A Draft Project Request Form was included in the Packet.
j. NACWA Emerging Contaminants: Karin North, Melody La Bella – No report
k. CASA State Legislative Committee: Lori Schectel – No report.
l. CASA Regulatory Workgroup – Lorien Fono - No report.
m. ReNUWIt: Jackie Zipkin; Karin North – No report.
n. RMP Microplastics Liaison: Nirmela Arsem – No report.

o. AWT Certification Committee: Maura Bonnarens – No report.
p. Bay Area Regional Reliability Project: Eileen White– No report
q. WateReuse Working Group: Cheryl Munoz – No report.
r. San Francisco Estuary Partnership – Eileen White; Dave Williams – A LINK to the Estuary Blueprint was included in the Packet.
s. CPSC Policy Education Advisory Committee – Doug Dattawalker – No report.
t. California Ocean Protection Council – Lorien Fono – No report.

Agenda **Item 37 - SUGGESTIONS FOR FUTURE AGENDA ITEMS**.
Possible workshop or sharing of information on funding of future Capital Projects.

ANNOUNCEMENTS:
The next regular meeting of the Board is scheduled for **December 21, 2018 from 9:00 am – 12:30 pm** at the **EBMUD Headquarters, 2nd Floor Large Training Room 375 1th Street, Oakland, CA. The BACWA Holiday and Committee Leader Appreciation Lunch will follow the meeting.**

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 12:38 pm.

Fund Balances
In FY 19 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 October 31, 2018 was $1,728,512 which is significantly higher than the target reserve of $160,000 which is intended to cover 3 months of normal operating expenses. $425,941 of the ending fund balance is shown on the October 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. This leaves an actual unobligated excess fund balance of $1,302,571 as of October 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 October 31, 2018 was $2,145,511 which is significantly higher than the target reserve of $400,000. $150,833 of the ending balance is obligated to meet line item expenses for completion of the Optimization/Upgrade Studies contract, the Chlorine Residual BPA work, and for technical support. This leaves an actual unobligated excess fund balance of $1,994,678 as of October 31, 2018. Total Disbursements for FY19 from the CBC Fund include the Nutrient Voluntary Contribution of $200,000 and the Nutrient Watershed Permit payment of $880,000. 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. If needed, transfers can be made between the BACWA Fund and the CBC Fund in order to ensure adequate funds are available to complete all the work designated to be paid for by these two funds. It is 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 October 31, 2018, 2018 (33% of the FY) are at 99.33% due primarily to timing of invoices, and to timing of interest received. The FY19 BACWA invoices were sent at the end of July 2018 and the end of August 2018.

Overall Expenses as of October 31, 2018 (33% of the FY) are at 64% due to the timing of the Nutrient Surcharge contributions required by the Nutrient Watershed Permit and voluntary contributions to support additional science.

Those needing additional explanation (i.e. either 10% over or under budget) are:

Administration: This category is 20.59% expended at 33% of the FY due to the timing of invoices.

Communication: This category is 15% expended at 33% of the FY due primarily to timing of invoices.

Legal: This category is 0% expended at 33% of the FY due to no need for legal support to date.

Committees: This category is 21% expended at 33% of the FY due to timing of invoices.

Collaboratives: This category is 2% expended at 33% of the FY due to timing of invoices.

Technical Support: This category is 87% expended at 33% of the FY due to the timing of the Nutrient Contributions.

NOTE: One Alternative Investment holding matured in May, 2018 in the amount of $140,000. Another holding matured in October, 2018 in the amount of $165,000. Based on information about interest rates and size of holdings obtained from the Investment division of EBMUD, staff recommended that the $140,000 be kept in cash until the entire $300,000 could be invested in a 3-year maturity. EBMUD's Investment Department, at BACWA staff direction, invested the $300,000 in a 3-year maturity which will be reflected in the December Treasurer's Reports.

FY 2019
BACWA BUDGET

BACWA BAY AREA CLEAN WATER AGENCIES

BACWA FY19 BUDGET	Line Item Description	FY 2019 Budget	Actuals Oct 2018	Actual % of Budget Oct 2018 (33% of Budget)	Variance	NOTES
REVENUES & FUNDING						
Dues	Principals' Contributions	$496,837	$496,835	100.00%	-$2	**FY19:** 2% increase. (Diff due to rounding error)
	Associate & Affiliate Contributions	$182,144	$166,620	91.48%	-$15,524	**FY19:** 2% increase. Assoc: $8,090; Affiliate: $1,600 ($197 over budget due to rounding error)
Fees	Clean Bay Collaborative	$675,000	$656,480	97.26%	-$18,520	Prin: $450,000; Assoc/Affil: $225,000
	Nutrient Surcharge	$800,000	$779,224	97.40%	-$20,776	Prin: $533,335; Assoc/Affil: $266,673
	Voluntary Nutrient Contributions	$0	$0		$0	
Other Receipts	AIR Non-Member	$6,800	$6,800	100.00%	$0	5% increase (Santa Rosa)
	BAPPG Non-Members	$3,800	$3,801	100.03%	$1	2% increase (Sta Rosa, Sac Reg'l, Vacaville)
	Other	$0	$50,000		$50,000	Biosolids & Climate Change Research in Agricultural Soils Project
Fund Transfer	Special Program Admin Fees	$5,000	$0	0.00%	-$5,000	**FY19:** BACWWE increase in FY19 , may include Prop 84 Admin Fees for FY16, FY17, FY18, FY19 if closed out
Interest Income	LAIF	$20,000	$23,121	115.61%	$3,121	BACWA, Legal, & CBC Funds invested in LAIF
	Higher Yield Investments	$9,000	$908	10.09%	-$8,092	Alternative Investment Interest (Legal & CBC Funds invested in AltInv)
	Total Revenue	**$2,198,581**	**$2,183,789**	**99.33%**	**-$14,792**	

BACWA FY18 BUDGET	Line Item Description	FY 2019 Budget	Actuals Oct 2018	Actual % of Budget Oct 2018	Variance	NOTES
EXPENSES						
Labor						
	Executive Director	$201,682	$50,420	25.00%	-$151,262	2.9% CPI (SF/Oakland/San Jose Metro Area Dec 2017)
	Assistant Executive Director	$90,526	$31,442	34.73%	-$59,084	2.9% CPI (SF/Oakland/San Jose Metro Area Dec 2017)
	Regulatory Program Manager	$119,815	$40,017	33.40%	-$79,798	2.9% CPI (SF/Oakland/San Jose Metro Area Dec 2017)
	Total	**$412,023**	**$121,879**	**29.58%**	**-$290,144**	
Administration						
	EBMUD Financial Services	$40,800	$6,615	16.21%	-$34,185	2% increase
	Auditing Services (Maze)	$6,426	-$67	-1.04%	-$6,493	FY19: $6,300 Accrued from FY18 to FY19, less $1,870, $3,740 & $623 paid for FY18
	Administrative Expenses	$7,650	$1,302	17.02%	-$6,348	Travel, Supplies, Parking, Mileage, Tolls, Misc.
	Insurance	$4,590	$4,393	95.71%	-$197	2% increase
	Total	**$59,466**	**$12,243**	**20.59%**	-$47,223	
Meetings						
	EB Meetings	$2,550	$466	18.27%	-$2,084	2% increase. Catering, Venue, other expenses
	Annual Meeting	$10,200	$4,300	42.16%	-$5,900	2% increase. Catering, Venue, other expenses. (Venue paid in full)
	Pardee	$6,120	$1,104	18.04%	-$5,016	2% increase. Catering, Venue, other expenses
	Misc. Meetings	$5,100	$3,378	66.24%	-$1,722	2% increase. Hol & Comm Chair Lunch, Staff Mtgs, Fin Comm, Summit Ptnrs, CASA, NACWA Tech WS, Low Flow WS
	Total	**$23,970**	**$9,248**	**38.58%**	**-$14,722**	
Communication						
	Website Hosting (Computer Courage)	$600	$600	100%	$0	
	File Storage (Box.net)	$750	$0	0%	-$750	
	Website Development/Maintenance	$1,500	$0	0%	-$1,500	Domains, website changes
	IT Support (As Needed)	$2,600	$180	7%	-$2,420	
	Other Commun (MS, SM, Backup, PollEv)	$1,500	$266	18%	-$1,234	MS Exchange, Survey Monkey, CrashPlanPro, Carbonite, Doodle Polls, PollEv
	Total	**$6,950**	**$1,046**	**15%**	**-$5,904**	

EXPENSES						
Legal						
	Regulatory Support	$2,601	$0	0%	-$2,601	2% increase
	Executive Board Support	$2,091	$0	0%	-$2,091	2% increase
	Total	**$4,692**	**$0**	**0%**	**-$4,692**	
Committees						
	AIR	$51,000	$11,909	23%	-$39,091	Lunches included in budget but not in Carollo agreement
	BAPPG	$100,000	$33,224	33%	-$66,776	Includes CPSC @ $10,000 and Pest. Reg Spt. @ $15,000
	Biosolids Committee	$3,100	$206	7%	-$2,894	Includes WEF Conf
	Collections System	$1,000	$0	0%	-$1,000	
	InfoShare Groups	$1,200	$173	14%	-$1,027	iunds for 2 workgroups (Asset Mgmt & O&M)
	Laboratory Committee	$6,100	$0	0%	-$6,100	Includes Tech Conf. & training funds
	Permits Committee	$1,000	$556	56%	-$444	
	Pretreatment	$7,500	$0	0%	-$7,500	Includes training funds & Factsheet not expended in FY18
	Recycled Water Committee	$1,000	$0	0%	-$1,000	
	Misc Committee Support	$45,000	$0	0%	-$45,000	$10,000 increase in FY19
	Manager's Roundtable	$1,000	$111	11%	-$889	
	Total	**$217,900**	**$46,179**	**21%**	**-$171,721**	
Collaboratives						
	Collaboratives					
	State of the Estuary (SFEP-biennial)	$20,000	$0	0%	-$20,000	Bienniel in Odd Fiscal Years. (Paid bienniely in odd years for even year conference)
	Arleen Navarret Award	$0	$1,000		$1,000	Bienniel in Even Fiscal Years (FY18 Budgeted Amount paid in FY19)
	FWQC (Fred Andes)	$7,500	$0	0%	-$7,500	Dues unchanged in FY19
	Stanford ERC (ReNUWIt)	$10,000	$0	0%	-$10,000	
	Misc	$5,000	$0	0%	-$5,000	$2,000 increase in FY19 (North Bay WS)
	Total	**$42,500**	**$1,000**	**2%**	**-$41,500**	
Other						
	Unbudgeted Items					
	Other	$0	$0		$0	Misc Expense Items Not Budgeted (Placehoder for Actuals)
		$0	**$0**		$0	
Tech Support						
	Technical Support					
	Nutrients					
	Watershed	$880,000	$880,000	100%	$0	
	NMS Voluntary Contributions	$200,000	$200,000	100%	$0	Approved April 2018 in FY19 Budget & Workplan
	Additional work under permit	$100,000	$7,132	7%	-$92,868	Increased at Board's request (LimnoTech, HDR add'l SOW's in FY19 - 2 Amendments)
	Opt/Upgrade/Annual Reporting Studies	$25,000	$21,652	87%	-$3,348	**FY19:** Balance remaining on agreement at end of FY18 (Actual $25,652.20)
	Member Voluntary Nutrient Contributions	$0	$0		$0	
	Nutrient Workshop(s)	$20,000	$0	0%	-$20,000	Pilot Studies/Plant Review/Innovative Technologies
	General Tech Support	$51,000	$10,632	21%	-$40,368	2% increase. EOA ChlResidBPA continues into FY19
	Risk Reduction	$10,000	$0	0%	-$10,000	$50,000 over 5 years (FY19-FY23) 2 Contracts for $25,000 each over FY19, 20, & 21
	Total	**$1,286,000**	**$1,119,416**	**87%**	**-$166,584**	
	TOTAL EXPENSES	**$2,053,501**	**$1,311,011**	**64%**	**-$742,490**	
	NET INCOME BEFORE TRANSFERS	**$145,080**	**$872,778**			
	TRANSFERS FROM RESERVES	**$0**				
	NET INCOME AFTER TRANSFERS	**$145,080**				

CHECK ON BACWA LIQUIDITY THRESHHOLD

	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	June 2019	FY20 July 2019	Aug 2019	Sept 2019	Oct 2019	BUDGET Totals FY19	BUDGET (est) Totals FY20
BEGINNING UNOBLIGATED FUND BALANCE	$4,174,022	$4,642,542	$4,361,417	$4,280,292	$4,199,167	$4,118,042	$4,036,917	$3,955,792	$3,874,667	$3,783,084	$4,467,920	$3,152,756		
Average Monthly Revenues	$549,645	$0	$0	$0	$0	$0	$0	$0	$0	$776,419	$776,419	$776,419	$2,198,581	$3,105,677
Average Monthly Expenditures (Less Large one time Expenses)	($81,125)	($81,125)	($81,125)	($81,125)	($81,125)	($81,125)	($81,125)	($81,125)	($91,583)	($91,583)	($91,583)	($91,583)	$973,501	$1,098,991
Less Large Expenditures	$0	($200,000)	$0	$0	$0	$0	$0	$0	$0	$0	($2,000,000)	$0		
NET AVAILABLE FOR INVESTMENT	$4,642,542	$4,361,417	$4,280,292	$4,199,167	$4,118,042	$4,036,917	$3,955,792	$3,874,667	$3,783,084	$4,467,920	$3,152,756	$3,837,592		
NEW INVESTMENTS														
Higher Yield (non-liquid)	($600,000)	($900,000)	($900,000)	($900,000)	($900,000)	($900,000)	($600,000)	($900,000)	($900,000)	($900,000)	($900,000)	($900,000)		
MATURITIES/Called														
Higher Yield (non-liquid)	$305,000	$0	$0	$0	$0	$0	$300,000	$0	$0	$0	$0	$0		
AVAILABLE LIQUID FUNDS	$4,347,542	$3,461,417	$3,380,292	$3,299,167	$3,218,042	$3,136,917	$3,655,792	$2,974,667	$2,883,084	$3,567,920	$2,252,756	$2,937,592		
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

November 30, 2018

MEMO TO: Bay Area Clean Water Agencies Executive Board
MEMO FROM: D. Scott Klein, Controller, East Bay Municipal Utility District
SUBJECT: Fourth Month FY 2019 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, 2018 through October 31, 2018** (four months of Fiscal Year 2019). 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),
- Water/Wastewater Operator Training (WOT),
- Prop84 Bay Area Integrated Regional Water Mgmt (PRP84)

BACWA Fund Report as of October 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	1,186,598	733,509	191,596	1,728,512	425,941	1,302,571
804	LEGAL RSRV	300,000	-	-	300,000	-	300,000
805	CBC	1,814,647	1,450,279	1,119,415	2,145,511	150,833	1,994,678
	SUBTOTAL 1	*3,301,245*	*2,183,788*	*1,311,011*	*4,174,022*	*576,773*	*3,597,249*
810	WOT	208,214	138,000	600	345,613	-	345,613
	SUBTOTAL 2	*208,214*	*138,000*	*600*	*345,613*	-	*345,613*
811	PRP84	117,907	-	-	117,907	-	117,907
	SUBTOTAL 3	117,907	-	-	117,907	-	117,907
	GRAND TOTAL	**3,627,367**	**2,321,788**	**1,311,611**	**4,637,543**	**576,773**	**4,060,770**

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	1,186,598	733,509	191,596	1,728,512	97,507	1,826,019	1,408,929	417,089	18%	-	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	1,814,647	1,450,279	1,119,415	2,145,511		2,145,511	-	1,845,511	82%	300,000	ME2	priority # 2 for allocation
	SUBTOTAL 1	3,301,245	2,183,788	1,311,011	4,174,022	97,507	4,271,529	1,408,929	2,262,600	100%	600,000		
810	WOT	208,214	138,000	600	345,613		345,613	345,613		0%	-		pass-through funds, no allocation
	SUBTOTAL 2	208,214	138,000	600	345,613	-	345,613	345,613	-	0%	-		
811	PRP84	117,907	-	-	117,907		117,907	117,907	-	0%	-		pass-through funds, no allocation
815	PRP50	-	-	-	-		-	-	-	0%	-		pass-through funds, no allocation
	SUBTOTAL 3	117,907	-	-	117,907	-	117,907	117,907	-	0%	-		
	GRAND TOTAL	**3,627,367**	**2,321,788**	**1,311,611**	**4,637,543**	**97,507**	**4,735,050**	**1,872,450**	**2,262,600**		**600,000**		
											-		

Reconciliation to Trial Balance - accrual basis

Per Report above:

General		2,183,788
WOT		138,000
PROP		-
subtotal		**2,321,788**

Billings-Pending Receipts

4686	Mem Contrib	29,520
4687	Transfer	-
4690	Assoc Contrib	18,058
4696	Other	(29,226)
4731	State Grant	330,736
4732	Grant Retention	36,748
subtotal		**385,837**

Trial Balance Revenue Accounts

4411	Interest	(24,028)
4686	Mem Contrib	(1,320,835)
4687	Transfer	-
4690	Assoc Contrib	(184,678)
4696	Other	(810,599)
4731	State Grant	(330,736)
4732	Grant Retention	(36,748)
subtotal		**(2,707,625)**
Difference		**(0)**

BACWA Revenue Report as of October 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	0408511	Administrative & General	-	-	-	-	-	-	-	-	-
800	BACWA	1011099	BDO Member Contributions	496,837	-	-	-	-	496,835	-	496,835	2
800	BACWA	1011108	BDO Other Receipts	-	-	-	-	-	-	-	-	-
800	BACWA	1011109	BDO Fund Transfers	5,000	-	-	-	-	-	-	-	5,000
800	BACWA	1011117	BDO- Interest Income from LAIF	20,000	-	-	5,122	-	-	9,453	9,453	10,547
800	Bay Area Clean \	1011133	BDO Assoc.&Affiliate Contr	182,144	-	45,959	-	-	166,620	-	166,620	15,524
800	Bay Area Clean \	1014251	BDO Non-Member Contr BAPPG	3,800	-	2,534	-	-	3,801	-	3,801	(1)
800	BACWA	1014252	BDO Non-Member Contr AIR	6,800	-	6,800	-	-	6,800	-	6,800	-
800	BACWA	1014511	BDO-Alternative Investment Inc	9,000	-	-	-	-	-	-	-	9,000
800	BACWA	1015005	Biosolids&ClimateRsch-OtrRcpts	-	-	-	-	-	50,000	-	50,000	(50,000)
	BACWA TOTAL			**723,581**	**-**	**55,293**	**5,122**	**-**	**724,056**	**9,453**	**733,509**	**(9,928)**
805	Clean Bay Collab	1011099	BDO Member Contributions	675,000	-	77,658	-	-	656,480	-	656,480	18,520
805	Clean Bay Collab	1011108	BDO Other Receipts	800,000	-	89,171	-	-	779,224	-	779,224	20,776
806	Clean Bay Collab	1014511	BDO-Alternative Investment Inc	-	908	-	-	908	-	-	908	(908)
805	WQA-CBC	1011117	BDO- Interest Income from LAIF	-	-	-	7,170	-	-	13,668	13,668	(13,668)
805	WQA-CBC	1014528	BDO-Voluntary Nutrient Contrib	-	-	-	-	-	-	-	-	-
	WQA CBC TOTAL			**1,475,000**	**908**	**166,829**	**7,170**	**908**	**1,435,704**	**13,668**	**1,450,279**	**24,721**
	TOTAL			**2,198,581**	**908**	**222,122**	**12,292**	**908**	**2,159,760**	**23,121**	**2,183,788**	**14,793**

	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 - Wtr/Wwtr	1011099	BDO Member Contributions	-	-	33,000	-	-	138,000	-	138,000	(138,000)
810	WOT	1011108	BDO Other Receipts	-	-	-	-	-	-	-	-	-
810	WOT	1011117	BDO- Interest Income from LAIF	-	-	-	-	-	-	-	-	-
	WOT TOTAL			**-**	**-**	**33,000**	**-**	**-**	**138,000**	**-**	**138,000**	**(138,000)**

	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			-	-	-	-	-	-	-	-	-
	PROP TOTAL			**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Grand Total			**2,198,581**	**908**	**255,122**	**12,292**	**908**	**2,297,760**	**23,121**	**2,321,788**	**(123,207)**

BACWA Expense Detail Report as of October 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	201,682	(16,807)	16,807	-	-	151,262	50,420	-	-	201,682	-
AS-Assistant Executive Directo	1011124	90,526	(7,996)	7,996	-	-	59,084	31,442	-	-	90,526	-
AS-Regulatory Program Manager	1011149	119,815	(12,940)	12,940	-	-	79,798	40,017	-	-	119,815	-
ADMINISTRATION												
AS-EBMUD Financial Services	1011125	40,800	(6,615)	6,615	-	-	34,185	6,615	-	-	40,800	-
AS-Audit Services	1014512	6,426	-	-	623	-	-	1,870	4,363	(6,300)	(67)	6,493
AS-BACWA Admin Expense	1011118	7,650	-	-	374	-	-	-	1,302	-	1,302	6,348
AS-Insurance	1011126	4,590	-	-		-	-	-	4,393	-	4,393	197
MEETINGS												
GBS-Meeting Support-Exec Bd	1014513	2,550	-	-	-	-	2,313	237	229	-	2,779	(229)
GBS-Meeting Support-Annual	1014514	10,200	-	-	3,800	-	-	-	4,300	-	4,300	5,900
GBS-Meeting Support-Pardee	1014515	6,120	-	-	825	-	-	-	1,104	-	1,104	5,016
GBS-Meeting Support-Misc	1014516	5,100	-	-	38	-	-	-	3,378	-	3,378	1,722
GBS- Meeting Support	1011122	-	-	-	-	-	-	-	-	-	-	-
COMMUNICATION												
CAR-BACWA Website Hosting	1014517	750	-	-	-	-	-	-	600	-	600	150
CAR-BACWA File Storage	1014518	1,500	-	-	-	-	-	-	-	-	-	1,500
CAR-BACWA IT Support	1014519	2,600	-	-	-	-	2,420	180	-	-	2,600	-
CAR-BACWA IT Software	1014520	1,500	-	-	69	-	-	-	266	-	266	1,234
CAR-BACWA Website Dev/Maint	1011116	600	-	-	-	-	-	-	-	-	-	600
LEGAL												
LS-Regulatory Support	1011107	2,601	-	-	-	-	2,601	-	-	-	2,601	-
LS-Executive Board Support	1011110	2,091	-	-	-	-	2,091	-	-	-	2,091	-
COMMITTEES												
AIR-Air Issues&Regulation Grp	1014253	51,000	(6,851)	6,851	-	-	38,500	11,500	409	-	50,409	591
BC-BAPPG	1011147	100,000	(9,071)	9,071	-	-	53,688	22,312	10,912	-	86,912	13,088
BC-Biosolids Committee	1011101	3,100	-	-	-	-	-	-	206	-	206	2,894
BC-Collections System	1011097	1,000	-	-	-	-	-	-	-	-	-	1,000
BC-InfoShare Groups	1011102	1,200	-	-	-	-	-	-	173	-	173	1,027
BC-Laboratory Committee	1011103	6,100	-	-	-	-	-	-	-	-	-	6,100
BC-Permit Committee	1011098	1,000	-	-	182	-	-	-	556	-	556	444
BC-Pretreatment Committee	1011146	7,500	-	-	-	-	-	-	-	-	-	7,500
BC-Water Recycling Committee	1011100	1,000	-	-	-	-	-	-	-	-	-	1,000
BC-Manager's Roundtable	1014777	1,000	-	-	-	-	-	-	111	-	111	889
BC-Miscellaneous Committee Sup	1011104	45,000	-	-	-	-	-	-	-	-	-	45,000
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	20,000	-	-	-	-	-	-	-	-	-	20,000
CAS-Misc Collaborative Sup	1014521	5,000	-	-	-	-	-	-	-	-	-	5,000
BDO-Contract Expenses (PHARM)												
BDO-Contract Expenses (PHARM)	1014551	-	-	-	-	-	-	-	-	-	-	-
BACWA TOTAL		**767,501**	**(60,279)**	**60,279**	**6,911**	**-**	**425,941**	**164,594**	**33,302**	**(6,300)**	**617,537**	**149,964**
TECH SUPPORT												
WQA-CE Addl Work Under Permit	1014254	100,000	(7,132)	7,132	-	-	79,279	7,132	-	-	86,410	13,590
WQA-CE-Technical Support	1011127	51,000	(10,632)	10,632	-	-	67,554	10,632	-	-	78,186	(27,186)
WQA-CE CASA Chem of Concern	1011128	-	-	-	-	-	-	-	-	-	-	-
WQA-CE Opt-Upgrade Studies	1014255	25,000	(21,652)	21,652	-	-	4,000	21,652	-	-	25,652	(652)
WQA-CE Risk Reduction	1014023	10,000	-	-	-	-	-	-	-	-	-	10,000
WQA-CE-Nutrient WS Permit Comm	1014021	880,000	-	-	-	-	-	-	880,000	-	880,000	-
WQA-CE-Program Mgmt	1011131	-	-	-	-	-	-	-	-	-	-	-
WQA-CE Voluntary Nutr Contrib	1014529	200,000	-	-	-	-	-	-	200,000	-	200,000	-
Member Voluntary Nutrient Cont	1015014	-	-	-	-	-	-	-	-	-	-	-
Nutrient Workshops	1015015	20,000	-	-	-	-	-	-	-	-	-	20,000
TECH SUPPORT (CBC) TOTAL		**1,286,000**	**(39,415)**	**39,415**	**-**	**-**	**150,833**	**39,415**	**1,080,000**	**-**	**1,270,248**	**15,752**
GRAND TOTAL		**2,053,501**	**(99,695)**	**99,695**	**6,911**	**-**	**576,773**	**204,010**	**1,113,302**	**(6,300)**	**1,887,785**	**165,716**
							TOTAL	**1,311,011**				
WOT												
Administrative Support	1011142	-	-	-	-	-	-	-	-	-	-	-
BDO Contract Expenses	1011143	-	-	-	-	-	-	-	600	-	600	(600)
		-	**-**	**-**	**-**	**-**	**-**	**-**	**600**	**-**	**600**	**(600)**
GRAND TOTAL (BDO, CBC, WOT)		**2,053,501**	**(99,695)**	**99,695**	**6,911**	**-**	**576,773**	**204,010**	**1,113,902**	**(6,300)**	**1,888,385**	**165,116**

Proposition 84 Revenue Report as of October 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	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1011706	Hacienda Ave Green St Improvem	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1011707	WQ Improve Flood Mgmt & EP	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1011911	Stream Restoration w/Schools i	-	-	-	-	-	-	-	-	-
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	1012218	Stream Restoration in North BD	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1012219	Flood Infrastructure Mapping T	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1012220	Stormwater Improvements & PBP	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1012221	Richmond Shoreline & San PFP	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1012222	Pescadero Integrated FRAH	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1012223	Restoration Guidance, San FC	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1012224	SF Estuary Steelhead MP	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	1012225	Watershed Program Admnstrtn	-	-	-	-	-	-	-	-	-
	PROP 84 TOTAL			**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Proposition 84 Expense Detail Report as of October 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	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Hacienda Ave Green St Improvem	-	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Stormwater Improvements & PBP	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Richmond Shoreline & San PFP	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Pescadero Integrated FRAH	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Restoration Guidance, San FC	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	SF Estuary Steelhead MP	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Stream Restoration in North BD	-	-	-	-	-	-	-	-	-	-	-
811	Prop84BayAreaIntegRegnlWtrMgmt	Watershed Program Admnstrtn	-	-	-	-	-	-	-	-	-	-	-
	PRP84 TOTAL		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 3
FILE NO.: 19-28
MEETING DATE: Dec 21, 2018

TITLE: Request for Board Approval of BACWA Policy BFP-2.04 Financial Reserves

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

RECOMMENDED ACTION
Approve BACWA Policy BFP-2.04 Financial Reserves that sets the target reserves for the various BACWA Funds.

SUMMARY: It is important that BACWA maintain sufficient reserves to provide for unforeseen circumstances that require funds beyond what has been budgeted. Setting and meeting target reserve levels can impact dues, fees, and surcharges that BACWA collects from its members. Setting target levels is a Board policy issue. The attached policy sets target levels of reserves for the operating, legal and Clean Bay Collaborative funds. A review of the reserve policy will be scheduled every two years..

FISCAL IMPACT
No fiscal impact to BACWA.

ALTERNATIVES
This action does not require consideration of alternatives.

Attachment; BACWA Policy BFP-2.04 Financial Reserves

Approved:

Date: December 21, 2018

Lori Schectel, Chair
BACWA Executive Board

POLICY NUMBER: BFP – 2.04

NAME OF POLICY: Financial: Reserves

DATE APPROVED:

LAST REVISED:

PURPOSE: The Policy sets the target Reserves for the various BACWA Funds (Operations - BACWA Fund), Legal (Legal Fund), and regulatory activities (Clean Bay Collaborative Fund). The level of Reserves is important since it impacts dues, fees, and surcharges that BACWA collects from its Members.

RESERVE POLICY

The amount of Reserves to be held for each Fund will be formally approved by the BACWA Executive Board through the Board Authorization Request process. The Reserve amounts will be reviewed by the BACWA Executive Board every two years and modified as need. The intent is for the Reserve level in each Fund to meet the target level at the end of the Five-Year BACWA Financial Plan which is updated on an annual basis. The target reserves for each Fund are as follows:

BACWA Fund: Will maintain Reserves in the amount of three months Operating Expenses based on the fiscal year in which the amount is determined.

Legal Fund: Will maintain Reserves in the amount of $300,000.

CBC Fund: Will maintain Reserves in the amount of $1,000,000

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 4
FILE NO.: 19-29
MEETING DATE: Dec 21, 2018

TITLE: Request for Board Approval of BACWA Policy BAP – 1.01 BACWA Representation

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

RECOMMENDED ACTION
Approve BACWA Policy BAP – 1.01 BACWA Representatives that outlines the selection, approval, and responsibilities of BACWA Members representing BACWA to other external Committees, Boards, Workgroups, and Projects.

SUMMARY: BACWA members often serve as volunteers on external committees, boards, workgroups and projects. When opportunities arise to represent BACWA, interest on the part of the membership will be solicited. In some cases, the Board will formally select the representative (e.g. Nutrient Management Strategy Steering Committee, Aquatic Science Center) while in other cases a BACWA Committee will chose a representative. The Board will be notified of a change in representatives by the Executive Director and through the periodic review of the BACWA Succession Plan, will confirm all representatives.

FISCAL IMPACT
No fiscal impact to BACWA.

ALTERNATIVES
This action does not require consideration of alternatives.

Attachment; BACWA Policy BAP – 1.01

Approved:

Date: December 21, 2018

Lori Schectel, Chair
BACWA Executive Board

POLICY NUMBER: BAP – 1.01

NAME OF POLICY: BACWA Representation

DATE APPROVED:

LAST REVISED:

PURPOSE: A policy outlining the selection, approval, and responsibilities of BACWA Members representing BACWA to other external Committees, Boards, Workgroups and Projects.

POLICY

BACWA members often serve as volunteers on external committees, boards, workgroups and projects. When opportunities arise to represent BACWA, interest on the part of the membership will be solicited. In some cases, the Board will formally select the representative (e.g. Nutrient Management Strategy Steering Committee, Aquatic Science Center) while in other cases a BACWA Committee will chose a representative. The Board will be notified of a change in representatives by the Executive Director and through the periodic review of the BACWA Succession Plan, will confirm all representatives.

BACWA representatives have the following responsibilities:

1. Keep abreast of key activities, events, and information on their particular issues
2. Attend important meetings, hearings, seminars, etc. on the issue whenever held
3. Keep the BACWA Board informed on needed input being sought on an issue
4. Get direction from the Board on the BACWA input on an issue in advance of providing the input
5. Report back to the Board after providing the input and/or participating in the activity on the issue

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EXECUTIVE BOARD AUTHORIZATION REQUEST

AGENDA NO.: 5

FILE NO.: 19-31

MEETING DATE: Dec. 21, 2018

TITLE: Payment of $200,000 to SFEI as an advance on science funding anticipated in the 2nd Nutrient Watershed Permit

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

RECOMMENDED ACTION

Authorize payment in the amount of $200,000 to SFEI as an advance on the anticipated 2nd Nutrient Watershed Permit requirement to fund scientific investigations in the amount of $2.2 M per year

SUMMARY

Currently San Francisco Bay has high nutrient loads but does not appear to be in immediate danger of becoming impaired for beneficial uses. Given the large cost of implementing nutrient reductions from POTWs, the regulators want to ensure that any required management actions are based on scientific findings. As part of negotiations for the 2nd Nutrient Watershed Permit, BACWA has agreed to increase its funding for scientific investigations such that the regulators will be well informed when the 3rd Watershed Permit is adopted in 2024.

In September 2018 the NMS Steering Committee approved a modeling project to investigate the effects of San Francisco Bay-sourced nutrients in the coastal ocean. Since there are not enough funds remaining in the FY 19 NMS budget to support this project, SFEI has requested $200,000 from BACWA as a funding advance based on the regulatory requirement anticipated in the 2nd Nutrient Watershed Permit for funding scientific investigations in the amount of $2.2M per year.

FISCAL IMPACT

The BACWA members have been informed about and support the increased science funding for the 2nd Nutrient Watershed Permit. Funds to meet the regulatory requirement will be collected through the Nutrient Surcharge in FY 20. However, funds are currently available in the BACWA CBC reserves to allow for the requested advance of $200,000 which would then reduce the amount to be paid under the first year of the new permit to $2.0M. The advance presumes that the 2nd Watershed Permit will indeed contain the increased science funding requirement which has been negotiated with the Water Board.

ALTERNATIVES

Do not approve the request for advance funding: This is not recommended since BACWA members included in the 1st Watershed Permit have indicted their interest in increasing the funding of the science to get better data upon which to base any future regulations as opposed to implementing more conservative numeric regulations in the 2nd Watershed Permit. In addition, the Water Board staff have provided written confirmation that the 2nd Watershed Permit will include the requirement for increased funding of the science.

Attachments:

SFEI Funds Request Letter
Coastal Modeling Project Summary
Invoice

Approved: _____ Date: December 21, 2018

Lori Schectel, Chair,
BACWA Executive Board

SAN FRANCISCO ESTUARY INSTITUTE
4911 Central Avenue, Richmond, CA 94804 • p 510-746-7334 • f 510-746-7300 www.sfei.org

David Williams
Executive Director
Bay Area Clean Water Agencies

November 12, 2018

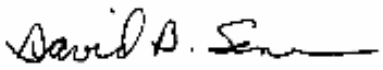
Dear Dave

At its September 14 2018 meeting, the San Francisco Bay (SFB) Nutrient Management Strategy Strategy Steering Committee (NMS SC) approved a modeling project to investigate the effects of SFB-sourced nutrients in the coastal ocean. To support this project, SFEI is requesting $200,000 from BACWA as a funding advance from anticipated FY2020 Permit Funds.

Additional information about the project and funding request are below (excerpt from NMS SC minutes) and attached (project description).

Please let us know if we can provide any further information, and thank you in advance.

Sincerely,



David B. Senn, Ph.D
Lead Scientist, San Francisco Bay Nutrient Science Program
Senior Scientist, San Francisco Estuary Institute
510.999.1105
davids@sfei.org

NMS SC Decision (9/14/2018): *A motion was made and seconded and unanimously approved to approve a budget for the Ocean-Bay Exchange Special Study of $200,000 for Year 1. $183,000 is for subcontracts and $17,000 is for SFEI. The $17,000 can be used for SFEI labor for project management or costs to hold some team meetings at SFEI (e.g., travel, meals, coordination). The source of the funding will be an advance of next year's BACWA funding. The project needs to evaluate exchange of nutrients between the Bay and ocean, not just exports of nutrients from the Bay to the ocean. The project needs to produce a technical report on Year 1 findings before funding will be approved for Year 2. Action Item: The SM is to update the coastal study proposal to show linkage to the NMS's needs for deliverables from the study.*

Investigating the Effects of San Francisco Bay's Nutrient Exports to the Central CA Shelf

Project Summary

San Francisco Bay (SFB) is a nutrient-enriched estuary that receives large anthropogenic nutrient loads from multiple sources (Figure 1A). The Bay Area's 37 publicly owned treatment works (POTWs), which treat wastewater from the region's 7.4mill people, discharge ~50,000 kg d^{-1} dissolved inorganic nitrogen (DIN) to SFB (Figure 1A). The POTW loads account for the vast majority of dry season DIN inputs, and are fairly constant year-round (±15%); however, recent analysis indicates POTW loads have increased substantially over the past decade (Figure 1B; SFEI, in prep). The Sacramento and San Joaquin Rivers carry water from California's Central Valley, delivering 90% of SFB's freshwater inputs to northern SFB along with large, seasonally-varying DIN loads (Figure 1A). Although SFB's waters are highly enriched in DIN, the system has not historically experienced eutrophication problems typical of other nutrient-enriched estuaries. Observations over the past decade have identified substantial interannual shifts in the SFB's response, or sensitivity, to nutrients (Cloern et al. 2007; SFEI, 2017). In response, regulators and stakeholders launched the SFB Nutrient Management Strategy (NMS) Science Program to carry out expanded monitoring and targeted investigations to inform management decisions related to SFB's 'carrying-capacity' for nutrients.

SFB's resistance to elevated nutrients stems from several factors (e.g., high turbidity, strong tidal mixing) that cap phytoplankton primary productivity and reduce DIN utilization within the system. While those factors tend to increase SFB's internal DIN carrying-capacity, they necessarily translate into greater DIN exports to the coastal ocean. Early coupled biogeochemical- hydrodynamic model simulations suggest that, while substantial fractions of SFB's DIN loads are 'lost' internally (denitrification), SFB serves as a large DIN point source to the coastal ocean via efflux through the Golden Gate (Figure 1C). Despite the large magnitude of these DIN loads, we currently know very little about their potential effects on ecological conditions along the coast.

This project will apply coupled atmospheric-physical-biogeochemical ocean models to investigate how SFB-derived DIN influences ecosystem conditions along the Central California Shelf (CCS). Work will focus on two sets of questions, the first emphasizing physical processes and the second addressing biogeochemical or ecological responses.

1. What geographic zones of the CCS are influenced by outflow from SFB? What factors regulate the SFB plume's trajectory, areal extent, and duration of influence?
2. What are the ecosystem structure resulting from natural coastal processes (e.g., upwelling, alongshore coastal transport, vertical mixing)? In impacted zones, what is the magnitude of the perturbation resulting from the outflow and SFB-sourced DIN? Over meaningful temporal averages (e.g., monthly or seasonal), what are the quantitative changes to primary production, phytoplankton concentrations, and community structure resulting from the outflow? What quantitative effects do these have on dissolved oxygen and acidity?

We will pursue this work through collaborating with an on-going (year 5) multi-institution project (UCLA, SCCWRP, UW, NOAA) that is applying coupled physical/biogeochemical models for the California Current system to predict the effects of ocean acidification and hypoxia (OAH) along the CA coast. That project, led by investigators at UCLA and SCCWRP and funded by the CA Ocean Protection Council and NOAA, has a specific emphasis on quantifying degree to which regional anthropogenic nutrient inputs influence OAH, via their influence on phytoplankton productivity. As a result, while the NMS and UCLA-SCCWRP projects differ somewhat in their specific goals or focus, the state-of-the-art models they are developing are ideal for addressing the NMS' management questions along the CCS.

In addition, the UCLA-SCCWRP project, which focused initially on the Southern California Bight, plans to begin shifting their geographic focus to CCS in 2019. The NMS-funded project is thus well timed (start late-2018/early-2019) to make meaningful contributions to the broader UCLA-SCCWRP project.

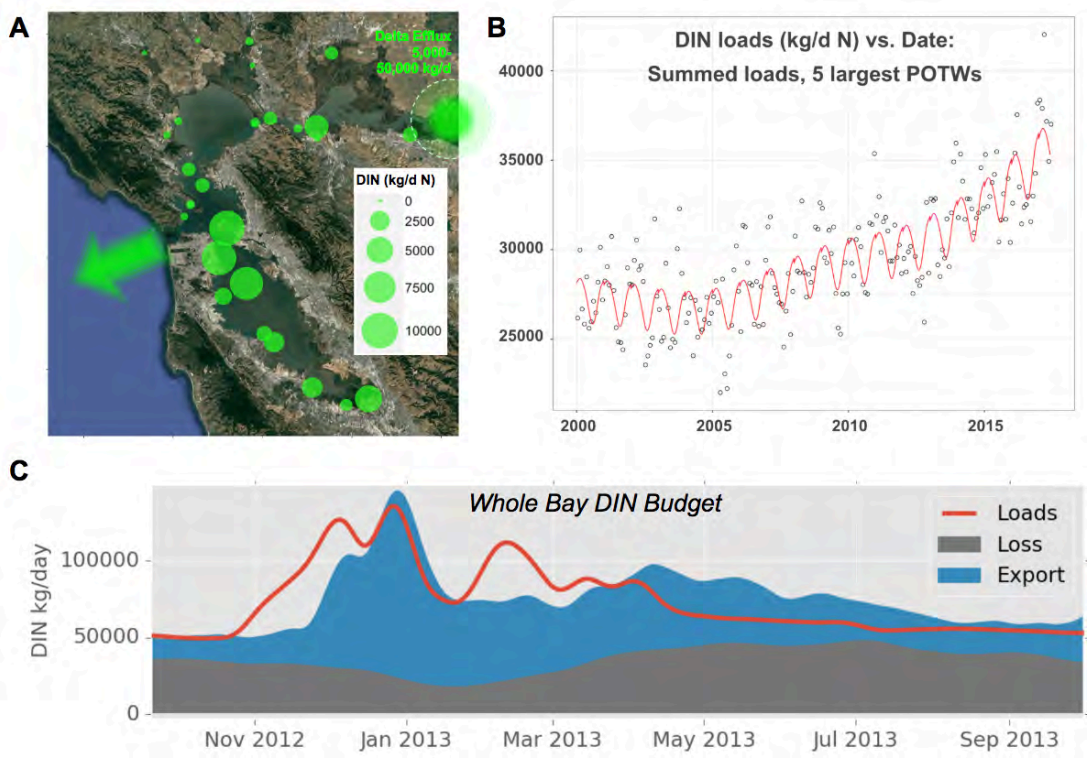


Figure 1 A. Locations and magnitudes (area of symbols) of major DIN loads to SFB. Delta efflux loads (northeast) vary seasonally (5,000-50,000 kg/d), as do predicted Exports to the coast (see C). **B.** Summed DIN loads from SFB's five largest POTWs vs time; ~40% increase, Jan 2005-Jun 2017. **C**. DIN Budget for SFB, WY2013, using the NMS v1.0 biogeochemical model. Instantaneous differences between the curves for Loads and Loss+Export indicate changes in DIN internal storage (i.e., changes in concentration).

Project Team(s), NMS funded project:

Lead PIs:	Christopher A. Edwards (UCSC), James C. McWilliams (UCLA)
Co-Investigators:	Faycal Kessouri (SCCWRP), Martha Sutula (SCCWRP), David Senn (SFEI)

Note: The project team for the UCLA-SCCWRP project includes other PIs, as discussed below.

Work Flow, Milestones, and Deliverables

Time-Frame: We envision Phase 1 being a 3-yr study, with funding currently being sought for Year 1.
Deliverables: Progress report at end of Year 1, and Technical Reports at ends of Years 2 and 3 (written as draft manuscripts, if relevant)

Year 1: Contribute to development and set-up of physical model for CCS, physical model validation
Year 2: Focus on CCS biogeochemistry and productivity, quantifying contributions
Year 3: Refine physics, biogeochem/productivity, application to OAH endpoints.

Budget: $183,000 for Year 1
Includes salary support for 1 Postdoc, 1 graduate student, 1 month summer salary support for C Edwards, $20,000 for travel (postdoc splitting time between UCLA and UCSC), and $4000 for equipment; and assuming an indirect rate of 10%

Expanded Project Description:

Project A (OPC, NOAA) Co-Principal Investigators: James C. McWilliams and Daniele Bianchi (UCLA), Faycal Kessouri, Martha Sutula (SCCWRP), Curtis Deutsch (UW), Richard Feely (NOAA PMEL)

Project B Team (NMS Funded): Lead PIs: Christopher A. Edwards (UCSC), James C. McWilliams (UCLA); Co-Investigators: Faycal Kessouri (SCCWRP), Martha Sutula (SCCWRP), David Senn (SFEI)

Goals & Scientific Questions: This project will apply coupled atmospheric-physical-biogeochemical ocean models to investigate the relative impact of natural versus anthropogenic forcing on nutrient mass balance, primary productivity, acidification and hypoxia on the Central California Shelf with historical hindcasts over multi-year simulations. Our work is driven by four key questions:

1. What is the uncertainty in model predictions of Central Coast physics, biogeochemistry, and lower ecosystem responses?
2. What is the effect of terrestrial and atmospheric sources of nutrients, organic matter and acidity on central coast shelf nutrient mass balance, productivity, carbonate chemistry, and oxygen and what is the spatial and temporal footprint of this impact over seasons and interannual climate cycles?
3. What is the geographic zone of the coast that is influenced by outflow from the San Francisco Bay estuary? Does the zone extend beyond Half Moon Bay and the Gulf of the Farallones? Under what conditions does it impact the region north (or south) of the Golden Gate? What is the fraction of time different regions are impacted?
4. What are the contributions of regional DIN sources (SFB exports, other freshwater exports, atmospheric), relative to ocean forcings, on nutrient mass balance, productivity, carbonate chemistry, and oxygen along the Central California shelf?

Background. The Central California Coast Shelf (CCS) of the California Current Ecosystem (CCE) is one of the most productive in the world, providing significant economic, cultural and recreational services to large populations living along the coast (Halpern et al., 2008). Climate change related effects are predicted to shift and intensify natural gradients and variability related to ocean acidification (OA), warming, and deoxygenation (Bakun et al. 2010; Turi et al., 2016; Gruber et al., 2012). In the CCS and Southern California Bight, mean declines in DO of 20-24% below the mixed layer from 1984–2006, and a 65-80 m shoaling of the hypoxic zone on the shelf have been documented (Bograd et al. 2008, McClatchie et al. 2010, Booth et al. 2014). The CCS is also experiencing some of the highest rates of acidification on the West Coast (Feely et al. 2008), at levels that are already impacting marine calcifying organisms (Bednarsek et al. in prep). These trends and fluctuations are projected to accelerate over the next decades (Gruber, 2016; Turi et al., 2016, Garcia-Reyes et al., 2016; Hauri et al., 2013). Local drivers have the potential to exacerbate OA and hypoxia (Duarte et al. 2013). One area of concern is CCS, where the discharges of primary or secondary treated wastewater from a population of 15 million people in San Francisco Bay (SFB) and agricultural discharges from the Salinas River Valley and the Bay-Delta represent an outwelling of anthropogenic nutrients to the coast. The West Coast Ocean Acidification and Hypoxia (OAH) Expert Panel recently urged the investigation of the degree to which anthropogenic inputs are currently influencing OAH along the California Coast, how their relative effect will change over time, and their influence on regional OAH hotspots of vulnerability (Chan et al. 2016) and been the focus of legislative directives aimed at crafting California's response to climate change (Legislative Assembly Bill 2139).

This investigation is the focus of a currently funded California Ocean Protection Council (OPC) and NOAA NOS/NCOS-funded project (Integrated Modeling of OAH to Support Ecosystem Prediction and Environmental Management in the California Current System; McWilliams and Deutsch, Lead PIs). The goal of this funded study, currently in its 6th year and with an interdisciplinary team of 15 scientists, is to model the physics, biogeochemistry, and lower trophic response to perturbations from climate

change, natural climate cycles, and anthropogenic carbon and nutrient inputs along the U.S. Pacific Coast. At the backbone of this effort is the Regional Ocean Model System (ROMs) with biogeochemical elements (BEC, Moore et al. 2002), a state-of-the-art modeling system is currently being used to investigate the relative influences of climate change, natural variability and local anthropogenic forcing on OAH trends, with direct applications to marine resource and local pollution management. ROMs has been successfully used for more than a decade for many locations including the CCS, and among our team are its principal creators and developers; BEC simulates the time-dependent global biogeochemical cycles of carbon (C), oxygen (O_2), phosphorus (P), nitrogen (N), and iron (Fe), driven by 3 functional groups of phytoplankton and 1 zooplankton. Phytoplankton groups include N-fixing diazotrophs, small phytoplankton, and diatoms. The ecosystem is linked to an ocean biogeochemistry module based on an expanded version of the OCMIP biotic model (Doney et al. 2004), with prognostic variables for carbon, alkalinity, iron, and DO. The model has been expanded the model to include explicit sinking particles, and a detailed nitrogen cycle (dissolved organic nitrogen, nitrate, nitrite and ammonium) for our work on oxygen minimum zones (e.g. (Deutsch et al. 2011, Deutsch et al. 2014. Validation of the U.S. West Coast 4-km domain indicates that the model reasonably captures broad patterns of dissolved nutrients, carbonate system, and oxygen in the CCE, as well as upwelling-driven phytoplankton blooms (Renault et al. 2016).

The model is further downscaled to 1-km nests for California and Oregon/Washington, then further downscaled a 300 m nest for specific investigations in the the Southern California Bight (SCB) and the CCS, areas of focus because of management interest in local pollution impact assessments (Howard et al, 2014, SFB NMS, SFB Regional Water Quality Control Board). Simulations are now being conducted within the SCB, where a stakeholder advisory group (SAG), including municipal dischargers, environmental non-profits, and water quality regulators, are actively engaged in a process to evaluate science supporting evidence for needed reductions of atmospheric and terrestrial point and non-point source loads to SCB coastal waters, based on impacts to OAH. Biological endpoints based on OA and hypoxia impacts to CCE marine organisms are proposed to interpret chemical model output (e.g. Bednarsek et al. in prep, Howard et al, in prep). During stakeholder meetings, dischargers have stressed that model validation and quantifying uncertainty in modeled predictions is a critical line of inquiry, as it impacts the degree to which we can make conclusions about local pollution impact.

NOAA- and OPC-funded ROMs-BEC simulations of the CCS will begin in spring 2019. These simulations are the starting point of a proposed collaboration between UCLA, UCSC, SCCWRP, and SFEI to further investigate impact of Central Coast and SFB outwelling on CCS nutrient budgets, productivity, and OAH. These investigations are timely, for two reasons. First, an existing SFB stakeholder workgroup, united under the SFB Nutrient Management Strategy (NMS, SFB NMS, SFB Regional Water Quality Control Board), have been supporting science to investigate the impact of anthropogenic nutrients on the SFB ecosystem. NMS-funded science has included an ongoing project to develop a coupled physical-biogeochemical and lower ecosystem model of SFB. A key component of this modeling project is to determine biogeochemical fluxes across the Golden Gate, because of their potential to decrease impact of anthropogenic nutrient loading on SFB, but at the same time, enhance productivity and exacerbate OAH in the coastal ocean. Modeling studies of the CCS need SFB model output to quantify fluxes to the coastal ocean, but also can provide key boundary conditions to force the SCB Delf3D physical and biogeochemical model.

Second, UCSC research programs in nested, coupled physical/biogeochemical modeling that examine fundamental dynamics of the CCE, including the CCS as a focal region. An example of this is a recently completed study by Fiechter et al. (2018, Figure 1), that examined how regional variations in alongshore wind stress and horizontal circulation patterns increase shelf nutrient supply between capes contribute meaningfully to primary productivity and ecosystem variability. The California OPC (Sutula et al. 2014) and the West Coast OAH Expert Panel (Chan et al. 2016) promotes a model ensemble approach, in which two or more models predict similar outcomes (e.g. nutrient transport, primary productivity, etc.) in order to better examine sources of model uncertainty in supporting

management actions. The use of UCSC and UCLA/UW approaches to coupled physical/biogeochemical modeling can provide improved insights the range of forcing mechanisms and processes that drive local currents at many scales and can help to constrain uncertainty.

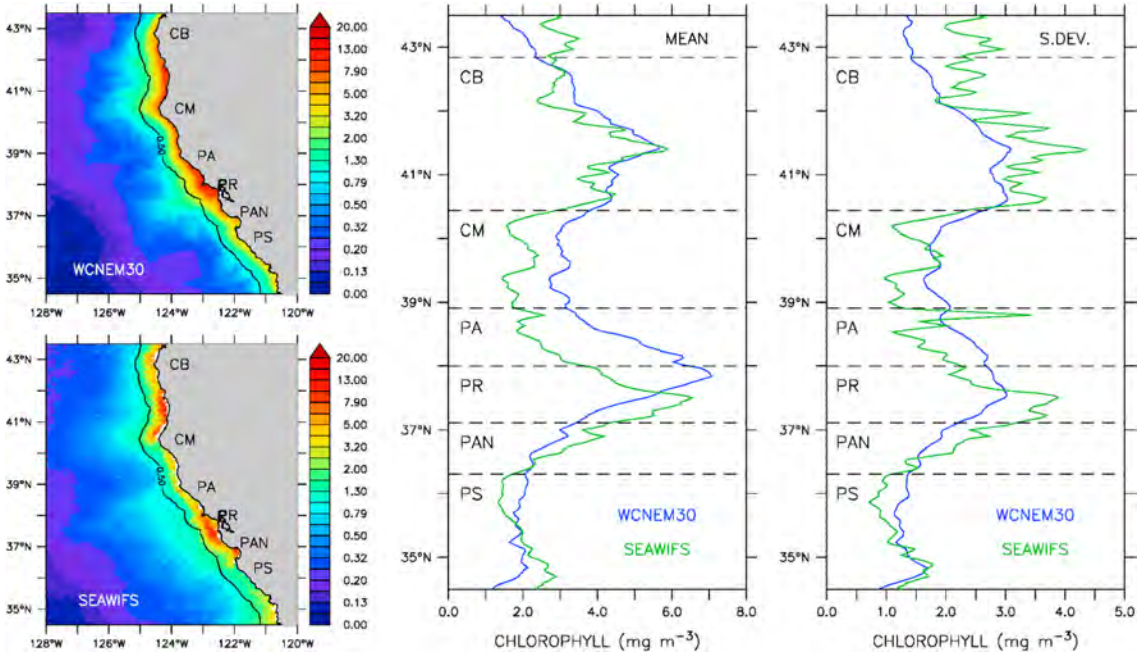


Figure 1: Left: Simulated (WCNEM30) and observed (SEAWIFS) surface chlorophyll concentrations (mg/m^3) during May-July for 1998-2010. The left panel shows a 13-year May-July mean surface chlorophyll concentration from the model at a roughly 3 km resolution and from a satellite estimate of surface chlorophyll. The middle and right panels present the mean and standard deviation of surface chlorophyll (averaged within roughly 50km of the coast) as a function of latitude for both model and data. Both the model and data reveal significant alongshore changes in phytoplankton concentration associated with well-known geographic features in the coastline. From Fiechter et al. (2017).

Proposed Work:

We propose a model ensemble study to understand the evolution and fate of terrestrial outflow, including pollution sources, along the CCS and its subsequent BGC impacts. The study would use ROMS in a nested configuration. The modeled area will be a broad swath of the central California coast, including Monterey Bay and San Francisco Bay, using a model grid with at least 300 m resolution. To leverage the OPC- and NOAA-funded efforts focuses on broader assessments of local pollution sources, including Salinas River Valley ag inputs to Monterey Bay, this project proposed for NMS funding will focus on outflow from the SFB estuary, identifying impacted coastal regions which may vary seasonally as well as on short time-scales associated with changing atmospheric or oceanic conditions. The objective would be to compare realistic coastal BGC and lower ecosystem models that can investigate whether pollution sources from SFB influences coastal ecosystem dynamics relative to natural processes associated with the ocean dynamical response to local and remote physical forcing.

We will investigate dynamics of the coastal ecosystem, quantifying the relative significance of naturally occurring processes with those influenced by the plume. Ecosystem impact by outflow properties will

be assessed through changes in primary production, phytoplankton standing stock and phytoplankton community structure, as well as other metrics. To asses model uncertainty associated with model construction (e.g., number of phytoplankton functional types) and mathematical representation of biological processes (e.g., nutrient uptake), two independent BGC and lower ecosystem models will be applied, and their results compared.

The added benefit of a next higher nest (having perhaps 75 m resolution) will be considered in terms of dynamical processes represented and overall model fidelity (see additional background on physics and biogeochemistry, Appendix 1). Simulations will extend for at least two model years, allowing statistical analysis and characterization of plume evolution and dispersal under a wide range of conditions. SFB would not be resolved explicitly, but volume and property fluxes would be specified at the mouth of the bay based on observations or independent modeling studies that focus on bay-ocean exchange. The time-period would be historical, a multi-year integration that has characteristic bay-ocean exchange and typical California Current System dynamics.

Responsibilities:
Modeling activities will be shared between the UCLA, UCSC, and SCCWRP groups, with science support (interpretation and management translation) from SFEI, UW, and NOAA PMEL. UCLA researchers will be responsible for carrying out the physical ROMS calculations, including construction of nests, attainment of a relevant, multi-year atmospheric forcing. The UCLA and SCCWRP group will calculate biogeochemical fields using the BEC model, described above, which will be applied in an online configuration, simultaneously with the physics. The team have assembled a first cut of atmospheric and terrestrial forcing data for the CCS 300-m domain, including SFB outflow, CCS rivers and coastal outfalls, atmospheric wet and dry deposition, and atmospheric ambient C02 (Kessouri et al. in prep), and will run 300-m resolution scenarios in the spring 2019, with and without atmospheric and terrestrial forcing, to assess total impact on nutrient budget, productivity, and OAH on the CCS. The significant computational expense of running the coupled model system will restrict this configuration to only a few additional tests. The UCSC group will calculate complementary BGC integrations offline (i.e., independent of the physical circulation, but using the stored physical circulation fields as input), applying versions of either the NEMURO or Darwin biogeochemical models. The NEMURO model (Kishi et al., 2007), has been extensively used in the CCS (e.g., Fiechter et al., 2014, Song et al., 2016, Mattern et al., 2017), and it is computationally quite efficient with a small number of total state variables. The Darwin model is a much more complex model, with more phytoplankton functional types. It has a long history in global models (Follows et al. 2007, Ward et al. 2014) as well as in the CCS (Goebel et al., 2010). Sensitivity calculations that consider different nutrient loading conditions within the outflow plume will be carried out with the offline configuration.

A joint post-doctoral research associate, co-supervised by UCSC and UCLA, will work collaboratively to diagnose model output and verify that outflow plume dynamics are well-represented and reasonably consistent with available observations, such as remotely sensed satellite-derived information, HF RADAR surface current estimates. UCSC personnel will work collaboratively with UCLA and SCCWRP group members, with regular skype calls and travel, enabling cross-fertilization of ideas, technology transfer when appropriate, and ensuring best practices in model development and analysis.

SFEI and SCCWRP will engage the NMS steering committee and technical/scientific advisory workgroups to vet the overall project approach, identify best available data for terrestrial and atmospheric forcing as well ambient ocean observations, and discuss model validation and interpretation throughout the project periods.

Timeframe: We envision a multi-year effort. Year 1 would include formalizing atmospheric and terrestrial forcing data for the CCS, setting up and running the physical model and biogeochemical model (UCLA, SCCWRP), gathering and analyzing data sets for evaluation and beginning physical and biogeochemical model evaluation and validation (UCSC, SCCWRP and UCLA). Year 2 would include necessary refinements of the physical and BEC model (UCLA), possible downscaling near the San Francisco Coast, and its evaluation (UCSC, UCLA and SCCWRP). Year 3 would pursue sensitivity studies in which anthropogenic forcing is modified to investigate source attribution and ecosystem response relative to natural processes is determined, with both parties involved in either online or online contexts (UCLA, SCCWRP and UCSC).

Deliverables: As noted above, project deliverables included progress reports or technical reports at the ends of Years 1-3, with the technical reports written as journal manuscripts if relevant. We anticipate that three publications will result from this study. One will report on the validation and preliminary pollution impact of collective atmospheric and terrestrial sources on the CCS (questions 1 and 2 above). The second is the physical evolution and fate of the SF Bay outflow plume, addressing question 3 above. The third publication will examine question 4 above, focusing on biogeochemical impacts resulting from plume outflow. Additional publications relating to these calculations and analysis are likely.

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Invoice

San Francisco Estuary Institute
4911 Central Ave.
Richmond, CA 94804
EIN 94-2951373

December 18, 2018
Project No: 1092.70
Invoice No: 1092702

Bay Area Clean Water Agency
PO Box 24055, MS702
Oakland, CA 94623

Project 1092.70 SF Bay Nutrient Strategy Support FY2019
attn: Sherry Hull

Professional Services from July 01, 2018 to June 30, 2019

Funding Advance for Scientific Studies under the 2nd Nutrient Watershed Permit	**Fee**	**200,000.00**
	Total this Invoice	**$200,000.00**

Contact Lawrence Leung at 510-746-7356 or lawrence@sfei.org for questions.

BACWA BOARD AUTHORIZATION REQUEST

AGENDA NO.: 6

FILE NO.: 19-32

MEETING DATE: Dec. 21, 2018

TITLE: Requests for Board Approval of Collection System Participation

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

RECOMMENDED ACTION

Approve participation by UC Berkeley in the Collection System Committee and set fee at $500.00 per year.

SUMMARY

In November, 2018 BACWA approved EXECUTIVE BOARD RESOLUTION NO. R-19-01 to formally establish sub-categories of BACWA Associate Members as defined in the JPA. Included in that Resolution were public agencies that desire to participate in some of BACWA's activities and Committees but are not recognized as BACWA members. These agencies would not pay BACWA dues but rather be charged a fee set by the Executive Board on a case-by-case basis which would allow them to continue their level of participation. UC Berkeley has asked to participate in BACWA's Collection System Committee. They have indicated that they could budget $500 per year as their fee for participation. The UC Berkeley campus collection system is a tributary system to the City of Berkeley which ultimately flows to the EBMUD treatment plant. Having all collection systems engaged in BACWA Collection System Committee benefits the region by keeping staff of those systems informed and up to date on all issues and responsibilities for collection systems operations.

FISCAL IMPACT

There is little fiscal impact to BACWA beyond a small increase in revenue.

ALTERNATIVES

Do not allow participation by UC Berkeley: This is not recommended since BACWA encourages participation from all agencies and collection systems in the Bay Area.
Require higher fees: This is not recommended since this would deter UC Berkeley from participating in the Committee's activities.

Approved:

_____ Date: December 21, 2018

Lori Schectel, BACWA Chair

Nutrient Strategy Team Meeting Summary

December 3, 2018

Action Items

- Dave to schedule a meeting with BACWA, the Regional Board, SFEI and SFEP to discuss the scope of the Regional Study for the 2nd Watershed Permit.
- The Regional Board is planning on distributing the Administrative Draft of the Second Watershed Permit to the POTWs in January. BACWA can incorporate results of the survey into the permit.

1. Briefly discussed the presentation on the Optimization/Upgrade Study presentation at the Nov 14th Water Board meeting

2. **Averaging Period**: HDR made a presentation on the logic for dry weather based planning level targets
   - Chesapeake Bay precedent, also Spokane and MCES
   - Dry season has most potential for phytoplankton growth; has less variability
   - Newport Bay (Irvine Ranch) example – issue is moot at lower temperatures and lower sunlight
   - High consistency in group data – dry average is 94% of annual except really wet year
   - Dry season positions for more flexibility, innovation, more aggressive design criteria
   - Understanding that you don't want to have to rely on factors out of your control (e.g. wet weather) for compliance
     - Handful of plants won't have targets because they don't discharge in dry weather
       - ✓ Primarily San Pablo Bay
       - ✓ Most already meeting nutrient limits – they're also less than 2% of the entire Bay load
     - Generally, these plants are already meeting planning targets, not much to plan for. They're a small part. Potentially table them for now and then determine what's the right way to handle them in a regulatory context.
   - WB found the information presented was helpful and inclined to use dry weather performance for Permit

3. **BACWA Surveys**: Briefly discussed results of surveys
   - Early action:
     - Will include in Planned Changes section of Fact Sheet
       - ✓ In construction by 2024? Could include if construction beginning after that if plan and expected reductions are concrete. Generally covers 5 years of permit term
     - Parallel effort to recognize robust planning

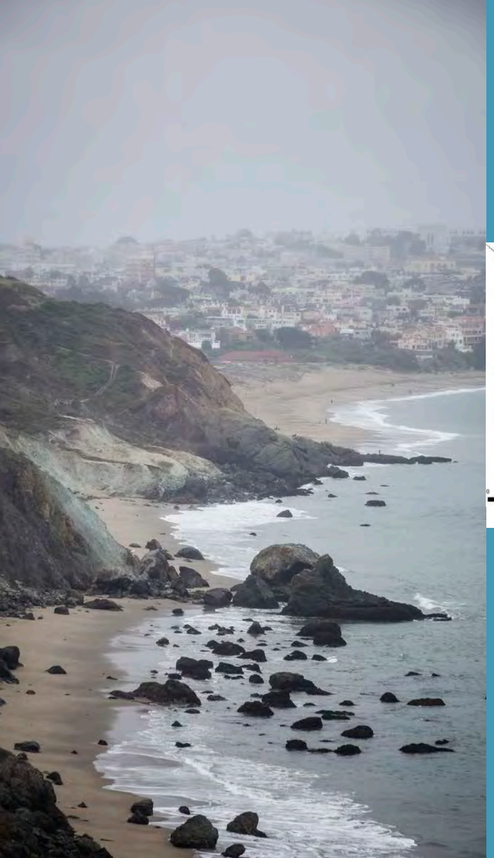
- Factors impacting nutrient loads:
    - Intent is to include general language in Fact Sheet re: water recycling, solids diversions. Would be useful to specific information on any plant anticipating changes in future nutrient loads.
    - Add population growth if anticipated to be in excess of 2%
- This info can be reviewed in the Admin Draft
    - Easiest way is for WB to include a table and BACWA members can help fill it in
- BACWA will share draft survey results at Jan 11 BACWA Annual Meeting to spur others to participate if they haven't already

4. Second Watershed Permit Schedule:
    - The Regional Board is planning to distribute the Administrative Draft of the Second Watershed Permit (Permit) in January
    - Administrative Draft version 2 of the Permit will be distributed in February
    - The Tentative Order will be issued in early March
    - The Regional Board is targeting to publish the Second Watershed Permit in May and then there would be a two-week comment period

5. Planning Level Targets (PLTs):
    - WB cautioned about having PLTs be overly conservative or paint too rosy a picture because then a plant could be caught unprepared for future load caps. PLTs are intended as a frame of reference. They are for planning and not regulatory purposes.
    - BACWA is still looking at data that may provide justification for >15% buffer for growth but no conclusions yet
    - For certain plants where the past average loads are not representative of a baseline, the highest year may be more appropriate. Or if the standard baseline calculations underestimate actual loads due to unusual circumstances (i.e. FSSD due to a pilot study) the WB is open to making adjustments in the baseline. Don't want to do across the Board but can consider special considerations on a case-by-case basis.
    - Three of the planning years were drought years, so RW might be higher than going forward

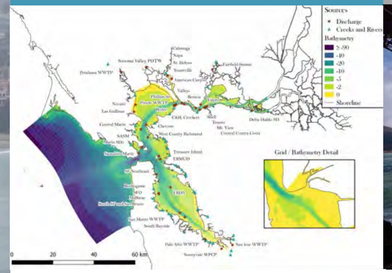
6. MRP:
    - WB:
        - Talked to Dave Senn about soluble reactive phosphorus. SFEI doesn't need that data. If we're going to remove another constituent, that could be one.
        - BACWA had discussed the benefits of voluntary influent monitoring
    - WB feels influent monitoring would be helpful and plans on including influent monitoring and reporting in Admin Draft
    - WB is open to the suggestion to exclude small plants from influent requirements

7. Regional Study:
    - WB thoughts
        - Integrating results from HDR study and results from looking at multi-benefit opportunities for nutrient reduction, sub embayment scale looking at what is the most feasible and cost-effective option for each discharger
        - Separate provision for the multi-benefit study
            - ✓ Each discharger identify options they can do
            - ✓ For those that have a cost-effective option, expectations is to pursue that options
        - Subsequently look at everything comprehensively – compare multi-benefit with traditional approach to treatment
        - SFEI develop scoping plan after adoption permit adoption
    - For BACWA, the default is the proven gray scape approach unless multi-benefit nature based solution (NBS) prove to be more cost-effective
    - WB:
        - Wants to be able to make informed decisions in 4 years re: load management requirements in the next permit
        - Want to make sure they are well-informed on what it will take to meet those requirements, incl. costs for NBS
        - Not just NBS, also want to know about recycled water
        - All agree on the NBS effort being a coordinated effort through SFEI
        - BACWA will commit a certain amount of money – need to figure out what does that buy?
        - Goal is to have enough understanding of what options are cost-effective in order to pursue grant money
        - -> Convene a special meeting – RWB, BACWA, SFEI, SFEP (Dave to set up)
    - Influx of money from BACWA should supplement the on-going work at SFEI on OLU so that the potential for nutrient reductions can be assessed
    - Round 2 of RWB money for OLU is coming in, plus $500k unrestricted funds have been committed to SFEI
    - BACWA:
        - Urge cautious optimism re: pilots because may take the whole permit term for permitting
        - SFEP and EPA are working on to identify on regulatory barriers to permitting wetlands

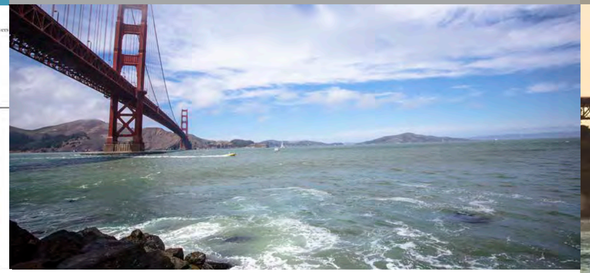


SCIENCE

San Francisco Estuarine Institute is developing the science to inform policy for managing nutrients (if supporting by sound science) and maintaining beneficial uses within the Bay. A cornerstone effort of the science is development of a Bay wide model as captured below.



Baywide Model Developed by SFEI for Advancing the Science



NEXT STEPS

The collaborative effort is continuing into the future with the following future goals:

- On-going science will continue with the goal of informing policy by the year 2024
- Wastewater treatment plants will continue to evaluate nutrient management solutions
- Continue stakeholder involvement into the future

WHAT IS THE BAY AREA CLEAN WATER AGENCIES (BACWA)?

BACWA is a joint powers agency, formed under the California Government Code by the five largest wastewater treatment agencies in the San Francisco Bay Area. Our members include the many municipalities and special districts that provide sanitary sewer services to more than 6.5 million people. BACWA is dedicated to working with our members, state and federal regulatory agencies, and non-governmental organizations to improve and enhance the San Francisco Bay environment. We provide technical expertise, financial support, and a public utility perspective to ensure that regulations affecting our members are well-informed, thoughtful and effective.

BACWA
PO Box 24055, MS 59 Oakland, CA 94623
www.BACWA.org

NUTRIENT MANAGEMENT
in the Bay

BACWA BAY AREA CLEAN WATER AGENCIES

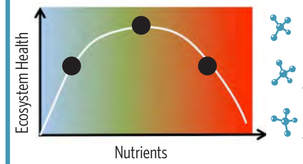
December 2018

BACKGROUND INFORMATION

San Francisco Bay receives some of the highest nitrogen loads among estuaries worldwide, yet has not exhibited problems typical of nutrient-enriched estuaries. It is not known whether this level of nitrogen loading, which will continue to rise in proportion to human population increase, is sustainable over the long-term. There is a need to evaluate and determine causal factors for potential impacts of these conditions on human and ecological health. A wide range of monitoring and special studies is on-going to understand the implications on Bay water quality associated with changes in nutrients and other factors.

NUTRIENTS ARE ESSENTIAL FOR LIFE

However, it can be too much of a good thing:



- Large algae blooms
- Low dissolved oxygen levels
- Harmful algae and toxins

NUTRIENTS DEFINED

Nutrients are naturally present in estuaries and are essential for a properly functioning biological community. The nutrients of interest for this effort are nitrogen and phosphorus species. Nutrient effects on estuaries are moderated in how they are expressed by a multitude of factors. Determining the appropriate nutrient levels is a site-specific exercise, which is a fundamental goal of the on-going science efforts to inform future regulatory decisions.

Treatment Plants in the Bay Area represent approximately two thirds of nutrient loads to the Bay

MACRO NUTRIENTS OF INTEREST

NITROGEN BASED	PHOSPHORUS BASED
Ammonia (a Nitrogen Species)	Soluble Phosphorus
Total Nitrogen	Total Phosphorus

A collaborative approach of scientists, BACWA members, non-government organizations, and others is key for developing a transparent and effective strategy for managing nutrients in the Bay

A COLLABORATIVE APPROACH

While the impact of nutrients on Bay Health are unclear, a collaborative partnership that includes BACWA, the Regional Water Quality Control Board, San Francisco Estuarine Institute (SFEI), and others. This collaborative effort is essential for developing a transparent and effective strategy for managing nutrients in the Bay.

STUDY APPROACH

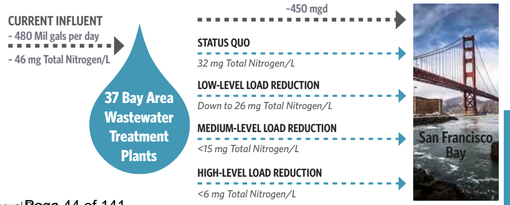
The Regional Water Board issued a Regional Permit (R2-2014-0014 in 2014[1]) to evaluate nutrient load management strategies at 37 Wastewater Treatment Plants across the Bay.

The permit included core requirements:

- A scoping and evaluation plan was developed in 2015 that describes the evaluation approach[2]
- Conduct analysis of low-, medium-, and high-level nutrient reduction for each treatment plant[2]
- Annual nutrient discharge load trending survey is released each fall[3]

EFFLUENT CONCENTRATION

Example of Evaluation for Total Nitrogen Load Reduction



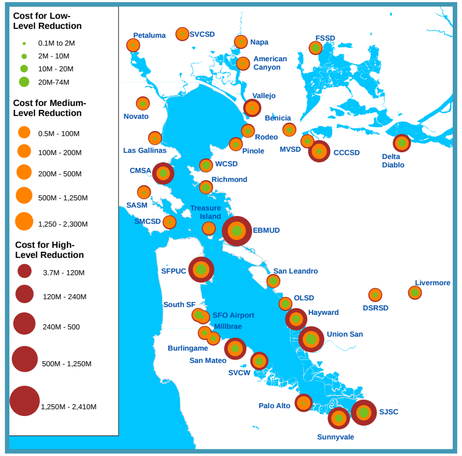
[1] R2-2014-0014 [2] Final Nutrient Reduction Study [3] 2018 Annual

NUTRIENT REDUCTION STUDY

Following the plant reports, a Nutrient Reduction Study[2] was written that compiled all the individual plant reports and submitted in June 2018. The 1,400+ page report includes:

- Individual plant reports and sign-off letters for all 37 plants
- Individual sections and a summary that section that compares the low-, medium-, and high-level nutrient load reduction strategies

STUDY RESULTS



REGION-WIDE SUMMARY

NUTRIENT LOAD REDUCTION LEVEL	TOTAL NITROGEN LOAD REDUCTION	CAPITAL COST
Status Quo	0% (Wastewater Treatment Plants Contribute approximately two thirds of nutrient loads to the Bay)	—
Low	7-19%	$119M - $391M
Medium	57%	$7 Billion
High	82%	$8.5 Billion

7M+ SERVICE POPULATION → **37** WWTPs → **~450** MGD TREATED EFFLUENT

San Francisco Bay Nutrient Management Strategy (NMS)
Steering Committee Meeting # 19
December 14, 2018
Meeting Summary

Steering Committee Attendees

Organization	First	Last	Role	Present	Comments
BASMAA	Adam	Olivieri	Member		
	Tom	Hall	Alternate	x	
	Matt	Fabry	Alternate		
	Geoff	Brosseau	Alternate		
BACWA	Eileen	White	Member	x	
	Lori	Schectel	Alternate	x	
	Eric	Dunlavey	Member	x	
	Jackie	Zipkin	Alternate	x	
Cal DFW	Becky	Ota	Member		
	Bill	Paznokas	Alternate		
Delta Stewardship Council	Rainer	Hoenicke	Alternate		
Napa County Farm Bureau	Jeff	Page	Member	x	
U.S. Geological Survey	Joe	Holomuzki	Member		
NOAA Fisheries	Joe	Dillon	Member	x	
	Melanie	Harrison	Alternate		
Regional San	Lisa	Thompson	Member	x	
San Francisco Baykeeper	Ian	Wren	Member	x	
South Bay Salt Pond Restoration Project	Jared	Underwood	Member	x	
Interagency Ecological Program	Steve	Culberson	Member		
SFCWA	Lynda	Smith	Member		
	Frances	Brewster	Alternate		
	Stephanie	Fong	Alternate		
U.S. EPA	Terry	Fleming	Member	x	
	Luisa	Valiela	Alternate		
U.S. FWS	Leanna	Zweig	Member		
WSPA	Kevin	Buchan	Member		
	Mike	Armour	Alternate		
Central Valley Water Board	Adam	Laputz	Member		
	Janis	Cooke	Alternate	x	
	Christine	Joab	Alternate		

SF Bay Water Board	Tom	Mumley	Member	x	
	Richard	Looker	Alternate	x	

Additional Attendees

David Williams, BACWA
David Senn, SFEI, Science Manager, Program Coordinator Team
Robert Schlipf, Water Board
Yuyun Sheng, EBMUD
SFEI staff
Jim Ervin, retired
Mike Connor, retired

1. **Welcome, Introductions and Agenda Review:** The Water Board explained that with the departure of the previous Facilitator, Phil Trowbridge, the Water Board would serve as the meeting Facilitator in the interim until a new person was identified. As part of that discussion it was noted that the Charter was silent on how the meetings should be chaired. ***Action item: revise the Charter to identify how meetings should be chaired (Program Coordination Team (PCT)).***

   The Facilitator welcomed all attendees and introductions were made. There were no changes to the agenda.

2. **Decision: Approve Prior SC Meeting Summaries:** The minutes from the September 14, 2018 meeting were unanimously approved.

   Materials:

   - September 14, 2018 meeting summary

3. **Information: Action items:** It was reported that all Action Items had been completed

   Materials:

   - Action Items Table

4. **Information: Program Update:**

   - Quarterly update of staffing and finances – The Science Manager (SM) reported that three new staff have been added since July. They include a modeler, a biogeochemist, and an engineer.

New funds coming in for FY 19 include funding from BACWA in the amount of $880k as a regulatory requirement, $200k voluntary funding, and $200k, as an advance on the regulatory requirement of $2.2M in the 2nd Watershed Permit, for the conduct of the coastal effects study.

SEP funds that go to the RMP for allocation to identified projects may yield some funding if NMS projects meet the criteria for being added to the approved list of projects eligible for SEP funds

Three technical Reports on modeling, moored sensors and trend analyses have been completed and will be added to the NMS web site. The HAB synthesis is in the final stages of being completed.

- SC membership updates – The following updates were provided:
  - NOAA - Melanie Harrison has left, a replacement is being sought
  - SCVWD – conducting modeling for RO concentrate in conjunction with plans for a larger new plant
  - BACWA – Oro Loma was part of a WQIF grant request by SFEP that will initiate design for the next mile of the Oro Loma horizontal levee
  - Regional San – ECHO facilities are still under construction. The plan is to first commission the nitrification facilities followed by the BNR plant in the Spring of 2020
  - It was noted that recently three members of the NMS SC have retired: Joe Holomuzki. Rainer Hoenicke, and John Bourgeois

- Policy for SC review of NMS funded research – A recommendation for amending the Charter was distributed and unanimously approved. ***Action Item: amend the Charter to reflect the new policy on NMS funded research (PCT)***

- Update on fundraising efforts – The SM reported that several proposals were being submitted as follows:
  - Prop 1 funds for HAB risk modeling in the Delta
  - Letter of Intent to NOAA for $3-5M for HAB research

Materials:
- Quarterly Financial Report
- Memo of policy regarding SC-review of NMS-funded research

5. Information: Science Plan Update. Pt. 1

- Overview and discussion of work to date to update the Science Plan strategy – The SM provided a handout and presentation on the progress of the Science Plan (SP) to date and the direction of the Plan over the next several years. Funding is still considerably below what would be ideal but additional funds will for coming in with the adoption of the 2nd Nutrient Watershed Permit. Focus areas of study were presented with 65% of available funding going towards DO studies and nutrient cycling, transport and source attribution while 35% would go towards assessing risk and conducting advanced studies on HABs and coastal effects, and biotic endpoints.

  Of the six key questions on impacts of nutrients and the various projects identified to help answer the questions, the SM proposed which projects would be the highest priority for work between now and 2024 when the 2nd Watershed Permit would be adopted. The WB has indicated their interest in being as well informed as possible by 2024 in order to make decisions on management actions for nutrient reductions.

  The SM then presented his assessment of the how confident the science team would be in drawing conclusions by 2024 on the condition of the Bay, the linkage to nutrients and any necessary actions needed at that time.

  It was explained that in order to complete the activities envisioned for FY 20, the SM would need to start now in organizing the efforts and most importantly getting commitments from collaborators. This will require the SM to be able to indicate to potential collaborators what level of funding they might be able to count on for the next FY. In order to begin to get commitments, the SM requested authority to utilize up to $500k of NMS funding to line up collaborators with the caveat that any contract would come back to the NMS SC for ultimate approval.

  The SC engaged in a lengthy discussion of the SM's request and asked several clarifying questions.

  Materials:
  Presentation

Break

6. **Information: Science Plan Update. Pt. 2**

- Feedback from SC on Permit 2 priorities – The discussion on the authorization for the use of $500k continued following the Break. It was pointed out that with envisioned supplement funds coming in through grants and other funding sources,

the available funds for the NMS SP over the next five years would be roughly $15M total.

Much of the discussion focused on the relative amount of funds over the next five years that will be spent on research on DO, HABs, coastal effects and changes in the physics of the Bay as well as further progress on development of the assessment framework and analyses of confidence in the results of the studies.

It was pointed out that an adaptive management approach would be a rationale way to modified the SP as more was learned over time

A motion was ultimately made to approve the use of up to $500k for the SM to proceed with planning and negotiating with potential collaborators with the Planning Subcommittee providing interim guidance. The SM will report back at the March SC meeting on progress in setting the stage for the conduct of next year's research plan. The motion was seconded and unanimously approved. ***Action Item: Circulate a two-page writ-up on tentative projects to be pursued in FY 20.***

Materials:
Presentation

Lunch (provided)

7. Technical Update

- The SM present technical updates on the Moored Sensor Program and the Water Quality Model Calibration. Copies of both reports were distributed. Improvements are being made which will allow the hydrodynamic water quality model to be calibrated in much shorter run times using the concept of aggregation, a low resolution approach used for calibrating models. A request was made to have a more in-depth dialogue on the modeling efforts. ***Action Item: The SM to establish a forum for interested parties to further discuss the modeling efforts. Any comments on the reports should be sent to the SM (all)***

An update on the use of the general additive model (GAM) for trend analyses associated with the water quality model was presented. The focus of the presentation was on trend tracking for chl-a. The SM received several comments and questions from the SC members including looking at other trends besides just chl-a.

8. **Discussion: Status update of USGS monitoring program**
    - Near- and medium-term status and scenarios for maintaining a ship-based monitoring program – The SM explained the situation with changes at USGS, most notably the retirement of Joe Holomuzki and the pending retirement of Jim Cloern in March 2019. USGS has indicated that their current plans do not consider filling Cloern's position and continuing the decades old monitoring program for the Bay beyond August 2019. The SM is hopeful that continued discussion with USGS will convince them of the importance of the monitoring program and to continue it at some level.

      The consensus was that all efforts should be made to try to get the monitoring program continued but that absent success, a parallel track of looking at other viable options should be pursued. ***Action Items: The SM will develop options for the SC consideration as to how best to get the NMS data needed should efforts to continue the USGS program fail. This will be presented at the March SC meeting.***

9. **Other Business**

    - NACWA Award for SF Bay NMS (Eileen White) – the SC was briefed on the recent NACWA award received for the collaborative efforts of the NMS to address nutrient issues for San Francisco Bay

    - Updates from other activities/members – no updates provided

10. **Action Items and Wrap-up**
    - Confirm next meeting date: March 8, 2019 @ SFEI – At this meeting the final draft SP for approval at the June meeting will be presented

    - Following meeting: June 14, 2019 @ SFEI

Adjourn

Sherry Hull

From: Sherry Hull
Sent: Friday, December 7, 2018 10:32 AM
To: Sherry Hull
Subject: FW: Summary from Meeting #2 with SWRCB Staff on SSS WDR

From: Adam Link [mailto:alink@casaweb.org]
Sent: Thursday, December 6, 2018 9:26 AM
To: Adam Link via Collectionwg <collectionwg@lists.casaweb.org>; LFrigo@ocsd.com; nsmal@lacsd.org; ryoshida@lacsd.org; NMunakata@lacsd.org; Marissa.Flores@sbmwd.org; ngranquist@DowneyBrand.com; mthorme@DowneyBrand.com; javiera@emwd.org; RyJackson@sfwater.org; matthew.bequette@lacity.org; jwestfall@lacsd.org; David Williams <dwilliams@bacwa.org>; Lorien Fono <lfono@bacwa.org>; Steve Jepsen <sjepsen@dudek.com>; Haney, Lisa <LHaney@OCSD.COM>; Franklin. Rebecca <FranklinRe@sacsewer.com>; eofficer@cvcwa.org; Pagano, Laura <laura.pagano@veolia.com>; PAUL CAUSEY <causeywc@comcast.net>; Christopher Brown <cbrown@oroloma.org>
Subject: Summary from Meeting #2 with SWRCB Staff on SSS WDR

CASA SSS WDR Group,

Thanks to those of you who attended the meeting last week. Similar to last time, here are some key takeaways and notes on the issues we discussed:

MRP and Similar Issues: We covered items in the MRP that tied to issues in the WDR from our first meeting. Specifically we covered the idea that there could be modified reporting for small spills (possibly recharacterized as "Category 4") which would fall into that lower spill range (50 gallons or below). The spill would not be submitted to CIWQS, but would need to be recorded in a more limited fashion than other spill reports by the agency, and kept at the agency in case of future audits/requests. They still seemed receptive to this idea. In addition, they indicated they still intent to allow for private lateral reporting in the updated WDR (similar to Region 9) but did not indicate they planned to make it mandatory. They seemed amendable to all other changes related to the questionnaire, change log, and OES notification requirements.

Backups in Homes: SWRCB staff clarified that they intend to limit SSO definition of a spill to not include circumstances where there is containment in a residence or other building. This is an interesting and positive development.

Reduced/Streamlined Reporting for "Good" Systems: Following up on an item from the first meeting, SWRCB staff threw out a few suggestions about what might constitute a good system for purposes of reducing certain requirements under the WDR/MRP (they tentatively referred to these as "Class A" systems). Some of the suggestions included sustained compliance with the SSS WDR compliance (including 100 percent reporting compliance, timeliness, etc.), a "spills per mile" or similar metric like volume spill per capita, and (maybe) a measure based on percentage of certified operators. We explained some of the practical problems with a single spill metric that doesn't account for system size, lateral ownership, etc. and they seemed to get it. We also talked about the need to account for large storm events outside of design storm criteria. They also talked about including the operator certification as some kind of extra factor rather than a requirement, not sure exactly how that would work yet. Most importantly, they reiterated that this would be an incentive for systems that meet the criteria, not a punishment to those who do not, and it wouldn't change the baseline reporting requirements for the other systems.

Incorporation of Asset Management/Climate Change in SSMP: We spent a significant amount of time on this issue and it is clear we will need further meetings or discussion on this. They seemed to indicate they might be including fairly extensive requirements related to asset management and climate change, but also indicated it was not their intent to

significantly increase the burden on agencies or cost of compliance. **They will be providing a new SSMP outline soon, and I will send that out separately for your review and thoughts.** They also reiterated their commitment to make it flexible enough (and not prescriptive) to suit each agency's needs.

In terms of next steps, there are going to be workshops January 9 in Fresno, January 15 in Redding, and January 22 in San Diego, and February 5 in Sacramento. Notices will go out through LYRIS soon. They may also work with CWEA to do something in April and offered to present at a CASA event in that timeframe as well. They still anticipate a Fall 2019 adoption date but are also concerned about resource constraints slowing the process. We can talk about that specifically on our next CWG call in January.

Let me know if you have any questions or concerns.

- Adam

Adam D. Link
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California Association of Sanitation Agencies
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Ensuring Clean Water for California
www.casaweb.org

Joint BACWA/Regional Water Board staff Meeting Summary

December 3, 2018, 10am-12pm

Attendees:

Eileen White, EBMUD
Amit Mutsuddy, San Jose
David Williams, BACWA
Lorien Fono, BACWA
Lori Schectel, CCCSD
Eric Dunlavey, San Jose
Karin North, Palo Alto
Amit Mutsuddy, San Jose
Monte Hamamoto, SVCW
Ramana Chinnakotla, Sunnyvale
Tom Hall, EOA
Armando Lopez, USD
Steve Linsley, West County
Robert Schlipf, Regional Water Board
Tom Mumley, Regional Water Board
Bruce Wolfe, Regional Water Board
James Parrish, Regional Water Board

1. **Introductions**

2. **Toxicity**
   BACWA outlined its concerns pertaining to the State Water Board's proposed Toxicity Provisions. BACWA plans to comment on the assessment of Reasonable Potential, the median monthly effluent limit monitoring schedule, and the availability of the reduced monitoring frequency for agencies with a good compliance history. Regional Water board staff replied that their concern about the testing schedule is that it precludes random sampling if the schedule dictates that sampling occurs at the same time each month.

3. **Wetlands**
   BACWA has provided a list of planned or potential wetland projects to the Regional Water Board. Naomi Feger, now retired, was spearheading the project, and her replacement has not yet been appointed. The Regional Water Board plans to reevaluate its wetlands priorities in the spring. Bruce reported that after retirement, he will continue involvement with Measure AA efforts, and has just received the next round of proposals for funding. The Regional Water Board is looking to draw connections between Measure AA projects and the Operational Landscape Units project through SFEI.

4. **Risk Reduction**
   To comply with the 2017 Mercury and PCB watershed permit, BACWA is repeating its grant program of $50,000 to community-based organizations to conduct risk reduction activities. The California Indian Environmental Alliance (CIEA), and APA Family Support Services (APA) will be providing education to at-risk groups on safe fish consumption. BACWA will arrange an update by the grantees to the Regional Water Board in Fall 2019.

5. **CECs**
   BACWA is developing a White Paper on POTW participation in CECs studies. They have been gathering data that SFEI staff identified would be used to select POTWs for

specific studies. A preliminary, work-in-progress draft of this White Paper was sent to Regional Water Board staff. Water board staff would like to see more specific guidance on how POTWs would be selected for specific studies. BACWA will arrange a conference call with SFEI and Regional Water Board staff to plan next steps.

The State Water Board is moving forward with plans to improve CECs monitoring Statewide. They have hired new staff from UC Riverside, and both DTSC and DPR would like to be involved in this effort. Moving forward, it is anticipated that this multi-agency collaboration will be able to give constructive advice to the Ocean Protection Council on their CEC monitoring efforts.

6. **Annual Meeting**
   BACWA's Annual meeting is scheduled for January 11 at the Scottish Rite Center in Oakland, and as usual, will kick off with updates from regulators. Both Bruce and Tom would like time allocated to speak at the event. Dave Smith, EPA, and Tam Doduc, State Water Board member, have also been invited to speak.

ADJOURNMENT TO NST MEETING

December 21, 2018

Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
1001 I Street, 24th Floor
Sacramento, CA 95814

VIA EMAIL: commentletters@waterboards.ca.gov

Subject: Comment Letter – Toxicity Provisions

Ms. Townsend,

The Bay Area Clean Water Agencies (BACWA) appreciates the opportunity to comment on the proposed Establishment of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California; and Toxicity Provisions (proposed Toxicity Provisions). BACWA is a joint powers agency whose members own and operate publicly-owned treatment works (POTWs) and sanitary sewer systems that collectively provide sanitary services to over 7.1 million people in the nine-county San Francisco Bay Area. BACWA members are public agencies, governed by elected officials and managed by professionals who protect the environment and public health.

BACWA has been working with State Water Resources Control Board (State Water Board) staff on different iterations of these proposed Toxicity Provisions for over a decade. While we still have significant concerns pertaining to the introduction of numeric limits for toxicity testing, and the use of the Test of Significant Toxicity (TST), we thank State Water Board staff for providing multiple venues for discussion over that time period. These proposed Toxicity Provisions incorporate many of our previous recommendations on ways to mitigate those concerns. At this juncture, BACWA's comments are largely focused on the proposed Toxicity Provisions' determination of Reasonable Potential, monitoring frequency, and test scheduling. In addition to our comments herein, we also support the comments provided by the California Association of Sanitation Agencies.

1. **All dischargers should need to establish Reasonable Potential prior to receiving numeric effluent limits**

In previous communications with the State Water Board, BACWA and other POTWs have argued that the establishment of toxicity numeric limits does not yield any water quality benefits

beyond those provided by numeric triggers. In either case, after the observation of apparent toxicity, the sole route available to a discharger is to investigate and reduce the observed toxicity to the extent feasible. The only additional consequence of having numeric limits, rather than triggers, is the threat of a violation upon the occasion of a WET test failure, with the associated Federal liabilities.

The proposed Toxicity Provisions do not allow dischargers with permitted capacity at or above 5 mgd to perform a Reasonable Potential Analysis (RPA) prior to being assigned numeric limits. The draft Staff Report provides the justification that due to their size, larger dischargers have a higher potential to introduce toxicity to receiving waters since their influent is less understood, and that the 5 mgd threshold is justified because it is the same as that established for Federal Pretreatment requirements. However, larger facilities have been doing chronic toxicity monitoring for decades, and many of our larger agencies have never observed toxicity. Given their track record, there is no reason to assume that their effluent is more likely to be toxic than that of a smaller POTW, and that they should have automatic numeric limits.

It is worth noting that the State Water Board previously considered, and rejected, using a similar automatic or default reasonable potential determination for regulation of Priority Pollutants. Seven alternative approaches for conducting reasonable potential analyses were presented in the Third Public Draft Functional Equivalent Document for Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (January 31, 2000). Chapter 1.1 Determination of Pollutants (pp. V-5 – V-22).

Alternative 7 was to "Require effluent limitations for all priority pollutants". "The RWQCB would make a "reasonable potential" determination by using the following method:

> *Step 1. Determine applicable water quality criteria or objectives for the receiving water body.*
>
> *Step 2. Effluent limitations are necessary for all pollutants for which criteria or objectives apply."*

This Alternative 7 required no data or data analysis. It simply assumed that all dischargers by default had reasonable potential. This alternative 7 was rejected in favor of Alternative 4, the approach currently included in the State Implementation Plan (SIP). While toxicity is not a priority pollutant, EPA has asserted that it is considered equivalent to a chemical constituent in terms of ability to be measured. Therefore it is appropriate that a data based reasonable potential approach be used for assessing reasonable potential for POTWs with flow rates equal to or greater than 5.0 mgd.

BACWA recommends that all agencies should need to establish Reasonable Potential prior to receiving limits. Agencies with flows of greater than 5 mgd could be required to do routine monitoring regardless of their Reasonable Potential. Routine monitoring without numeric limits for agencies without Reasonable Potential would provide "standardized and comparable measurements of toxicity based on measurements of biological responses", which is what staff

stated as intent of establishing limits in their Response to BACWA's 2012 Comment Letter. A reopener clause would allow the permitting authority to introduce numeric limits at any point after apparent toxicity was observed.

2. The threshold for determining Reasonable Potential should be greater than 10%

For agencies that are required to do RPAs, the proposed Toxicity Provisions establish a threshold of 10 percent effect at the Instream Waste Concentration (IWC) as the determinant of Reasonable Potential. Staff have stated that the Reasonable Potential threshold is so much lower than the effluent limit of 25 percent effect so that limits will be imposed before there is a toxicity problem that requires a response. However, since this threshold is within the inherent variability of most test species, few agencies will *not* have reasonable potential. In their comment letter, Central Contra Costa County present data from their tests, using the *Americamysis bahia* species. Their data show that a TST run using the reference toxicant control versus the control from the chronic test calculates a percent effect of up to 17.5%. Other species such as *Ceriodaphnia dubia* are expected to have even higher variability, and be even less likely to pass the 10 percent effect threshold, even in the absence of toxicity.

Although the TST only considers the data point measured at the IWC, dischargers still must run their tests at multiple concentrations to comply with EPA test methods, so data from higher concentrations is available. **Instead of setting the Reasonable Potential threshold at 10% at the IWC to be protective, BACWA recommends that the Toxicity Provisions set the threshold at 25%, but determine Reasonable Potential using an effluent sample more concentrated than the IWC, where that data is available.**

3. Reduced routine monitoring frequency should be allowed using historic data

BACWA thanks State Water Board staff for providing a provision whereby agencies with good compliance records can reduce the frequency of their routine monitoring. Since toxicity testing is currently the most expensive analysis done by POTWs, this provision will allow agencies with no recent history of toxicity problems to allocate some of those resources to more critical issues.

As written, the proposed Toxicity Provisions only allow agencies who have not exceeded their MDEL or MMEL within five years to access the reduced monitoring frequencies. This means that the reduced routine monitoring schedule will not be available for an entire permit term after implementation of these Toxicity Provisions in NPDES permits, since agencies do not currently have these limits included their permits.

To close this gap, BACWA recommends that the following language be added to Section IV.B.2.c.i.(B)

> *The PERMITTING AUTHORITY may approve a reduction in the frequency of the ROUTINE MONITORING specified in Section IV.B.2.c.i.(A) for dischargers upon*

reissuance, renewal, or reopening (to address toxicity requirements) of an NPDES permit when during the prior five consecutive years the following conditions have been met:

1. The MDEL and MMEL as specified in Section IV.B.2.e have not been exceeded;
2. If the dischager's prior NPDES permit did not include the MDEL and MMEL as specified in Section IV.B.2.e, then no test from data generated within five years, with a minimum of 10 tests, has resulted in a "fail" at the IWC, or the nearest sample with higher concentration if no test was run at the IWC;
~~2~~.3 The toxicity provisions in the applicable NPDES permit(s) have been followed.

4. Requiring three tests in one calendar month is not feasible

Toxicity testing requires significant logistical resources and planning to in order to be conducted in a timely manner. BACWA thanks the State Water Board for allowing the Permitting Authority discretion to set the beginning of the Calendar Month at any point during the actual month. This will hopefully prevent a rush of agencies all vying for limited capacity at contract labs, and the associated demand to purchase test organisms at the same time every month.

BACWA also supports the concept of a median limit, if numeric limits are required. Since a certain rate of false determination of toxicity is built into the statistical test method, having a three sample median will help avoid violations due to these false determinations of toxicity.

As acknowledged by State Water Board staff at the November 28th State Water Board Hearing, initiating three tests within a 30 day period is possible, but very difficult. This makes it for all practical purposes, infeasible on an on-going basis across the State. For a 7-day chronic toxicity test, agencies that use contract laboratories get final results back after two to three weeks, or just under two weeks for preliminary results. However, factors outside of an agency's control, such as: control failures, upsets, problems with availability of organisms, unexpected lack of capacity at the contract lab, and other unforeseen events, can effect testing and result reporting. Since contract laboratories are an integral part of the process, and given agencies' relative lack of control over the logistics needed for successful completion of a toxicity test for the reasons listed above, more time must be provided.

For agencies that do the test in-house and use *Ceriodaphnia dubia* as their test species, they must first do a 6-day food testing screen, test the control water, and perform organism screening tests to select the individual organisms that are most fit for the test prior to beginning the actual chronic toxicity test. Because of this lead time required before running the second two tests, the total time required for the test staging and the test itself is at least 13 days. In the best case scenario, the third test could not be initiated until day 27 of the calendar month. Again, this leaves agencies extremely vulnerable to small slippages in the timeline due to unforeseen events.

Some agencies are not able to collect samples on the first day of their assigned calendar month. For example, per the NPDES permit for the Southeast Water Pollution Control Plant, the San Francisco Public Utilities Commission can only collect samples for toxicity testing during dry weather conditions. The occurrence of multiple wet weather events can repeatedly interrupt 7-day toxicity tests. Additionally, POTWs occasionally shut down due to unanticipated events during a 24/48-hour composite sample collection. In this case, the samples would not be representative and sampling event needs to be repeated at a later time. A median monthly effluent limit with no flexibility built in could make it impossible for three tests to be conducted within a 30-day period in these, and other instances that are outside of an agency's control.

For all the reasons described above, BACWA requests that the State Water Board reevaluate its median limit requirements. The proposed Toxicity Provisions, as written, set up agencies for failure due to factors outside their labs' control in the worst case scenario, or waste of resources due to planning unnecessary testing under the best case scenario. **Instead of a median monthly limit, BACWA recommends that the Toxicity Provisions allow a six-week period to initiate all three tests.** Since at least one of the tests may be initiated within the next calendar month, agencies required to do monthly testing and fail their routine monitoring test should have the ability to use the first median effluent limit compliance test as the routine monitoring test for the subsequent month.

The following table illustrates this proposal:

Month 1	**Month 2 (Routine test for Month 2, 1st compliance test for Month 1)***	**(2nd Month 1 compliance test by 6 weeks from Month 1)**	**Month 3**	**Next steps**
Pass	Pass	N/A		Continue routine monitoring
Fail	Fail Violation	N/A		Accelerated monitoring in month 3
Fail	Pass	Pass No violation		Continue routine monitoring
Fail	Pass	Fail Violation	Pass	Continue routine monitoring
Fail	Pass	Fail Violation 1	Fail Violation 2	TIE/TRE

*Month 2 routine test is also the first compliance test following a "fail" in Month 1.

The proposed Toxicity Provisions, Section IV.B.2.c.B.iv, might be revised as follows, assuming that the median monthly effluent limit (MMEL), is modified to a median effluent limit (MEL):

> *If an acute or chronic toxicity ROUTINE MONITORING test results in a "fail" at the IWC, then NON-STORM WATER NPDES DISCHARGERS shall conduct a maximum of two ~~M~~MEL COMPLIANCE TESTS. The ~~M~~MEL COMPLIANCE TESTS shall be initiated within ~~the same CALENDAR MONTH~~ six weeks of the day that the first ROUTINE MONITORING test was initiated that resulted in the "fail" at the IWC. If the first chronic ~~M~~MEL COMPLIANCE TEST results in a "fail" at the IWC, then the second ~~M~~MEL COMPLIANCE TEST is waived. For the purposes of ~~M~~MEL COMPLIANCE TEST, for dischargers that conduct ROUTINE MONITORING at a less than monthly frequency, the CALENDAR MONTH begins from the initiation of the ROUTINE MONITORING test. The first COMPLIANCE TEST that is initiated within six weeks of the day the first ROUTINE MONITORING test was initiated that resulted in the "fail" at the IWC may also be considered as the ROUTINE MONITORING test for the subsequent CALENDAR MONTH for dischargers that conduct ROUTINE MONITORING at a monthly frequency.*

Implementing a median effluent limit where violations are based on two test failures within a six week period, rather than a thirty day period, builds in the flexibility to help agencies avoid violations from not being able to comply with the Toxicity Provisions due to factors outside of their control. It also allows them to collect samples for routine testing at times other than the beginning of their calendar month. It is important to take this opportunity to build into the proposed Toxicity Provisions an orderly and strategic timeline to allow agencies to comply with the testing schedule.

5. Laboratory capacity limitations are outside of dischargers' control

Because of the level of complexity and expertise required to perform WET tests, most agencies send their sample to contract laboratories. There are limited accredited laboratories available to perform toxicity testing; at present there are three in the San Francisco Bay area. It is likely that at some point an agency will not be able to locate a laboratory able to accept their sample, or turn around reports to meet the schedule stipulated. The proposed Toxicity Provisions should avoid penalizing an agency in this situation. Similar consideration must be given to the very real possibility that a test may be invalidated due to laboratory error, quality control failure, and unavailability of test organism due to seasonal nature, and permittees are not able to meet the required time limits.

BACWA requests that the Permitting Authority be given discretion to extend the allowable schedule for effluent testing if an agency can prove that they are unable to conduct their test for reasons outside of their control, such as lack of species availability, control failure, or capacity at any of the available contract laboratories.

6. The Economic Analysis does not reflect actual costs associated with WET tests

BACWA reviewed the July 2018 Economic Considerations of Proposed Whole Effluent Toxicity Control Provisions for California (Economic Analysis) with some concern. The cost estimation methods in the Economic Analysis do not reflect the true costs of toxicity tests at contract laboratories, at least in the San Francisco Bay Region. Our concerns with the document include the following:

- Exhibit 4.4 – Costs presented in this Table are much lower than actual costs paid by our members, which are approximately $3,000 per sample, more or less, depending on the species. It is possible that the quotes obtained by the researchers did not include reference toxicant tests that are required to be run as part of the method, or left out other key factors necessary to run the test.
- The cost estimating methods do not include the costs of collecting and shipping samples to contract laboratories, because the Economic Analysis assumes that the samples can be collected and shipped together with samples collected for priority pollutant analysis. BACWA notes that the timing for collecting toxicity samples may be different than chemical pollutants, and toxicity laboratories are different entities than the chemical analysis contract laboratories used by our agencies.

BACWA has no request at this time pertaining to the Economic Analysis, other than to enter into the public record that the costs therein likely underestimate the true costs associated with complying with the Toxicity Provisions.

BACWA would appreciate the opportunity to discuss our comments with State Water Board staff prior to the adoption of final Toxicity Provisions. Please do not hesitate to contact Lorien Fono, BACWA Regulatory Program Manager, at lfono@bacwa.org to discuss next steps.

Respectfully Submitted,

David R. Williams
Executive Director
Bay Area Clean Water Agencies

cc: BACWA Board

CALIFORNIA ASSOCIATION of SANITATION AGENCIES

1225 8th Street, Suite 595• Sacramento, CA 95814 • TEL: (916) 446-0388 • www.CASAweb.org

Address
Address
Address

Dear _____,

The California Association of Sanitation Agencies (CASA) appreciates the opportunity to comment on the proposed toxicity provisions within the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries, as well as the supporting staff reports and appendices. CASA is an association dedicated to protecting public health and the environment through effective wastewater treatment. We promote sustainable practices such as water recycling, biosolids management, and renewable energy production. We represent over 100 public agencies in California and focus on advocacy, education, and leadership.

CASA has been working with State Water Resources Control Board (State Water Board) members and staff for several years on various approaches to addressing toxicity on a statewide level. There have been many positive changes to the toxicity provisions between the 2012 version and the current proposal, and we appreciate the recent workshops and materials designed to clarify the approach staff is recommending to address toxicity for inland surface waters. Unfortunately, many of our previously articulated concerns regarding fundamental elements of the toxicity provisions remain unresolved. The required use of a particular species (*ceriodaphnia dubia*) is at the core of our concerns related to test variability, incorrect determinations of toxicity, and ultimately increased violations based on inaccurate measures of real toxicity. In addition, there are several areas we will discuss below where clarification is needed to ensure the overall regulatory approach is implementable and makes sense.

Ongoing Concerns

1. Imposition of Numeric Limits for Whole Effluent Toxicity Testing is Inappropriate and Will Not Improve Environmental Outcomes

In response to the various iterations of the toxicity provisions that have been released, CASA has consistently submitted comments noting that numeric limits for chronic toxicity are both unnecessary and inappropriate. Numeric limits will not result in greater environmental protection than narrative limits with numeric triggers, which have been sufficiently protective of receiving water beneficial uses. This position has not changed.

From an overarching perspective, it is important to remember that WET testing is a biological test, not a chemical test. Unlike chemical testing, the effects measured must be compared to effects on unexposed organisms. Further, "toxicity" is not a pollutant per se, but rather a condition that results if (presumably) chemicals are present in amounts or combinations deemed harmful to certain organisms. Perhaps more importantly, there are no proactive or immediate reactive actions that can be performed to prevent or control toxicity based on violation of a numeric toxicity limit (aka a "test failure") until a contaminant cause has been identified. This is particularly true of POTW dischargers. Until the source of the toxicant has been identified through an appropriate toxicity reduction evaluation (TRE) process, it is impossible to proactively address toxicity because the cause is typically unknown. Thus, numeric limits do nothing more than impose liability on dischargers for circumstances generally outside of their control, based on the presence of unknown chemicals for which there are no specific objectives, all while the discharger investigates for the cause of the apparent toxicity.

Instead, narrative limits with appropriate numeric triggers are far more suitable given the inherent differences between standard chemical testing and WET testing. Narrative limits are equally protective of the environment while avoiding the additional costs, compliance, and liability issues created for public agencies through imposition of numeric limits. A positive test result for toxicity is used as a trigger to investigate what specific chemicals or classes of chemicals may have caused the test failure. It is because of these features of WET testing, and the difficulties inherent in the implementation of a test that looks for impacts of unknown constituents on living organisms, that the use of numeric objectives and limitations based on WET testing in NPDES permits has been controversial for so long. It is also these underlying reasons why numeric limits for toxicity are unnecessary, inappropriate, and not well suited to the nature of the tests.

2. Mandating Use of the Test of Significant Toxicity (TST) in the Toxicity Provisions is Inappropriate, Particularly When Applied to the *Ceriodaphnia* Reproduction Endpoint

We continue to have significant concerns with incorporation of the test of significant toxicity (TST) into the toxicity provisions for a variety of reasons. First, the TST has never been through a public review-and-comment rulemaking process, which is required when a new method is proposed for NPDES testing. A formal rulemaking must be conducted by the United States Environmental Protection Agency (USEPA) to incorporate the TST into the WET methods, before the TST can be required in California for purposes of measuring compliance in NPDES permits. Other commenters have focused on the legality of using an unapproved method like the TST in this context, so our comments will not get into greater detail on that issue. To the extent that CASA's prior comment letters and the comments of other wastewater associations and entities address components of the toxicity plan that relate to the imposition of numeric limits and use of the TST, we incorporate those comments by reference.

However, the practical issues associated with the TST as applied to certain freshwater species, notably the *Ceriodaphnia dubia* reproduction endpoint, are of primary concern to CASA. When USEPA first proposed approval use of the *Ceriodaphnia* endpoint in NPDES testing, there was

litigation over the rule, and the court ordered USEPA to amend the test method to include safeguards to protect against identifying non-toxic samples as toxic.[1] The safeguards included a requirement to run multiple concentrations and look at the response to see if the results make sense. The safeguards also included application of variability criteria. The rationale for this safeguard is that a clearer understanding is gained with more information from running multiple dilutions (e.g. at 20-40-60-80% effluent), to see if a valid pattern of increasing effects with increasing concentrations is obtained. The TST strips away these safeguards. Finally, we have other significant concern with use of the TST in combination with the *Ceriodaphnia dubia* reproduction endpoint, which is discussed in greater detail below.

Core Implementation Concern

Eliminate or Modify the "Reproduction" Endpoint for the *Ceriodaphnia dubia* Chronic Freshwater Method Until Fundamental Testing Issues Are Resolved

The implementation issues identified above are important to making the toxicity provisions workable, but CASA's primary and overriding concern is the continued use of the reproduction endpoint for the *Ceriodaphnia dubia* (water flea) chronic freshwater method. This species is the primary source of unacceptable testing variability, and it will lead inevitably to increased instances of incorrect determinations of toxicity, and attendant violations, when combined with use of the TST.

This endpoint is particularly troublesome for toxicity testing because the result is derived from counting how many offspring each water flea produces. In the absence of any other contributing factors, this figure can range from 15 to 45 in a non-toxic control, resulting in a range whose upper bound is 300% higher than its lower bound. With such a high inherent variability among non-toxic control treatments, it is exceptionally difficult to reliably identify a 25% percent effect in the reproduction endpoint, which is the management decision currently identified in this draft of the toxicity provisions.

Compounding this concern, use of the TST exacerbates the problem presented by use of the water flea because it strips away essential safeguards such as multiple dilution tests. Research conducted in this area by USEPA, the Southern California Coastal Water Research Project (SCCWRP), and the State Water Board has consistently shown that the high within-test variability associated with this reproduction endpoint results in a higher frequency of toxicity detections when evaluated using the TST compared to the NOEC, particularly compared to those observed for the other species and endpoints. In light of these findings and scientific consensus about the limitations of the *Ceriodaphnia* reproduction endpoint, and in conjunction with currently available information suggesting that the other species and endpoints contained in Table 1 **(Provisions at p. 6)** may be robust enough for application of the TST in a regulatory context, it is clear that the *Ceriodaphnia dubia* reproduction endpoint is simply not amendable to the TST statistical method.

[1] Citation to court decision needed?

In the peer-reviewed publication of the State Water Board/USEPA "Test Drive" study,[2] USEPA concluded that although the TST exhibited a similar or lower frequency of toxicity detections than the NOEC approach for most of the test endpoints examined when the mean effect was less than the 25% regulatory management decision, stating, "the Ceriodaphnia reproduction… endpoints exhibited a somewhat opposite pattern (Table 1)." The authors further identified that the "chronic Ceriodaphnia reproduction endpoint yielded the largest number of tests declared toxic using the TST when the mean effect in the effluent was less than the toxic RMD of 25% (13 of 29 tests or 45%; Table 2)…the proportion of Ceriodaphnia tests having this outcome is approximately twice the proportion observed in the entire study (45 vs 23%, respectively)." To draw out the contradiction between the policy and staff report, in essence, while the staff report supporting the toxicity provisions frequently cites the Test Drive as evidence that the TST works and is reliable overall, the data within the Test Drive demonstrates that the *Ceriodaphnia* reproduction endpoint does not follow that trend and is in fact highly variable.

This observation was subsequently affirmed and corroborated in a SCCWRP-conducted blank study funded by the Stormwater Monitoring Coalition.[3] In this study, half of the non-toxic blank samples (laboratory dilution water) tested with *Ceriodaphnia dubia* were incorrectly identified as toxic using the TST. While recognizing that the reason for this observed toxicity has not been identified, the report recommended that future studies should be conducted to "confirm this anomalous result" and "conduct the experimental manipulations to identify the source of this inter-laboratory variability." Absent that additional research, and in the light of the unreliability of the *Ceriodaphnia dubia* reproduction endpoint, we think it is inappropriate for the toxicity provisions to require this species.

Attached to this letter is a comprehensive white paper that summarizes the findings above in greater detail and utilizes the data from the Test Drive and SCCWRP study to highlight the variability of the *Ceriodaphnia* reproduction endpoint using the TST.[4] The purpose of the analysis in the white paper is to summarize the existing chronic toxicity *Ceriodaphnia dubia* reproduction test data from prior studies which were conducted on known non-toxic blank samples, and to assess whether the results are sufficient to resolve concerns regarding the variability of interlaboratory *Ceriodaphnia dubia* test results or whether additional testing is necessary and advisable to develop recommendations for reducing observed variability. While these studies have been somewhat limited in size, together they indicate that we cannot have confidence in the accuracy of the test results for the *Ceriodaphnia dubia* reproduction endpoint when the TST is used. Because of this problem, we believe that the *Ceriodaphnia* reproduction endpoint should not be included in the toxicity provisions at this time.

[2] Environmental Toxicology and Chemistry, Vol. 32, No. 5, pp. 1101–1108, 2013

[3] SCCWRP Technical Report 956. December 2016. Stormwater Monitoring Coalition Toxicity Testing Laboratory Guidance Document. Kenneth C. Schiff and Darrin Greenstein, Southern California Coastal Water Research Project.

[4] Larry Walker Associates, Inc. 2018. *Ceriodaphnia dubia* Short-term Chronic Reproduction Test: Understanding the Probability of Incorrect Determinations of Toxicity in Non-toxic Samples. White Paper prepared for California Association of Sanitation Agencies. November.

CASA is willing to partner with the State Water Board and others to work on resolution of these real issues going forward, including exploring a partnered study with industry experts, the State Water Board, and other agencies including dischargers, to resolve the issues related to the *Ceriodaphnia dubia* reproduction endpoint. This study could be used to inform future use of this species as an indicator of toxicity, and to reduce test interferences.

To summarize this point, any application of a regulatory limit associated with this species should not be considered until the problems identified by USEPA are addressed and the solutions can be appropriately implemented. CASA and other stakeholders are in the process of developing an alternative approach whereby removal of this species need not delay implementation of the rest of the toxicity provisions, and we look forward to working with State Water Board staff on this issue.

Additional Implementation Issues

1. The Provisions Should Clarify That Routine Acute Toxicity Testing is Not Generally Expected to Occur When Chronic Testing is Already Occurring

We appreciate that the toxicity provisions specify that Regional Boards are not required to conduct a reasonable potential analysis (RPA) for acute toxicity. Specifically, the provisions state that RPA is "not required" for both categories of POTW dischargers but that the Regional Boards "may require POTW dischargers to conduct a REASONABLE POTENTIAL analysis for acute toxicity" and shall document that decision in the NPDES fact sheet or equivalent document. **(Provisions at p. 14 / Staff Report at p. 16)**

For POTWs, chronic toxicity testing is generally as protective of beneficial uses as both acute and chronic toxicity testing. From previous discussions with staff, it is our understanding that circumstances where a Regional Board would require a POTW already subject to routine monitoring for chronic toxicity to also conduct acute testing would be exceedingly rare. The staff report supports this understanding and makes clear that POTWs should only be required to run acute toxicity under limited circumstances, such as when there are high dilution rates or where an adequate chronic toxicity test does not exist. The economic analysis supports this proposition as well, as the chronic testing cost analyses assume no acute testing is taking place and the cost estimates do not account for the costs of acute testing in its "sample" facilities analysis. (**See Table 9-1, Staff Report at Page 245**). However, we believe additional language needs to be added in the toxicity provisions themselves to reflect what is in the staff report, and delineate the anticipated circumstances where testing for both acute and chronic toxicity might be ordered by a Regional Board. Thus, we request additional language in the toxicity provisions to clarify that in general, when chronic testing is being performed, acute testing is not simultaneously required. CASA and other stakeholders are in the process of developing language that reflects this approach, and we look forward to working with State Water Board staff on this issue.

2. The Provisions Should Clarify That Regional Boards Should Generally Reduce Monitoring Frequency During a Toxicity Reduction Evaluation (TRE)

We appreciate that the toxicity provisions specify that the Regional Boards may approve a temporary reduction in the frequency of routine monitoring for dischargers conducting a TRE. (**Provisions at p. 18, Staff Report at p. 96-97).** This approach makes sense as the discharger typically would perform extensive testing during a TRE that would make chronic testing for compliance purposes redundant. In addition, if there is an ongoing toxicity issue during the TRE, it does not make sense for a discharger to continue to receive routine monitoring compliance "fails" that could result in MMEL and MDEL violations while it is simultaneously conducting the TRE, which is the only remedial measure available to potentially address the toxicity. Finally, as the staff report acknowledges, reducing routine monitoring while a discharger is conducting a TRE "allow[s] the discharger to concentrate resources on finding and eliminating the source of toxicity." **(Staff Report at p. 98)** Accordingly, we request additional language in the draft provisions themselves to clarify that in general, Regional Boards should grant a temporary reduction in the frequency of routine monitoring for dischargers conducting a TRE. CASA and other stakeholders are in the process of developing language that reflects this approach, and we look forward to working with State Water Board staff on this issue.

3. The Provisions Should Clarify That Compliance Data Prior to Adoption of the Toxicity Plan Can be Used in Requests for Reduced Monitoring Frequency

We appreciate that the provisions include potential reduced routine monitoring schedules for chronic toxicity testing in specified circumstances. Specifically, the provisions allow the Regional Boards to approve a reduction in the frequency of routine monitoring when during the "prior five consecutive years" the MDEL and MMEL have not been exceeded and the toxicity provisions in the applicable NPDES permit have been followed. **(Provisions at p. 17)**

Unfortunately, the current language is written in such a way as to effectively prohibit consideration of positive compliance data gathered at any time before adoption of the new toxicity provisions. As noted above, there is specific reference made to exceedances of the MDEL and MMEL. However, the MDEL and MMEL do not currently exist (and have not existed in previous years), and therefore it would be impossible for agencies with existing, long records of positive compliance data and no prior toxicity issues to be granted a reduced monitoring frequency in the first five years after the provisions are implemented. We understand that this may be a drafting error and not necessarily intent on the part of the Board to prohibit consideration of prior years' data, and look forward to working with staff to develop language that addresses this issue.

4. The Provision Should Address Implementation Issues Relating to the Number of Routine Monitoring Tests Conducted Within a Calendar Month

We appreciate that the Water Board has attempted to address the practical issues related to conducting multiple toxicity tests in a limited window with some of the changes to the

provisions (e.g. allowing start dates to be varied among the regulated community and cross over months). Under this draft of the toxicity provisions, it still will be logistically difficult to comply in circumstances where an entity is required to conduct three tests within a calendar month. As has been acknowledged by State Water Board staff, initiating three tests within a thirty day period is theoretically possible, but very difficult. Comments submitted by the Bay Area Clean Water Agencies (BACWA) provide additional detail regarding the logistics and difficulties of these tests, including one example (SFPUC) where it may be impossible to conduct three tests in a calendar month where there are wet-weather events. Thus, we concur with and reiterate BACWA's proposed amendments that would instead allow a six-week period to initiate all three tests. Since at least one of the tests may be initiated within the next calendar month, agencies required to do monthly testing that fail their routine monitoring test should have the ability to use the first median effluent limit compliance test as the routine monitoring test for the subsequent month.

5. Mixing Zones and Dilution

[POSSIBLE ADDITIONAL LANGUAGE TO BE PROVIDED HERE BY CVCWA]

6. The Economic Analysis Understates Actual Testing Costs, Fails to Account for Increased Costs Associated With Potential Acute Testing, and Fails to Account for the Increased Likelihood of Incorrect Determinations of Toxicity Resulting in Violations

CASA is concerned that the economic analysis contained in the staff report supporting the proposed toxicity provisions is inaccurate in several respects and understates that true costs of implementing these provisions. Specifically, the cost estimates **(Staff Report at pp. 241 – 249 and Table 9-1)** do not reflect the true costs of toxicity tests at contract laboratories. As articulated by BACWA in their written comments, in the Bay Area POTWs pay approximately $3,000 per sample depending on the species. In addition, the cost estimating methods do not include the costs of collecting and shipping samples to contract laboratories.

Also problematic, as noted above, is that the economic analysis references but does not adequately articulate the potential cost to dischargers if a Regional Board were to impose monthly acute toxicity routine monitoring requirements. The analysis notes this amount could be as much $9,468 per year, yet the "Potential Incremental Costs for Sample Facilities" table excludes the costs of acute testing entirely. If the Water Board were to articulate in the provisions the relative rarity of the need for routine acute testing where chronic already taking place, as we suggest above, this may be more defensible. However, as written the economic analysis should at minimum identify more accurate sample examples of what costs would be if Regional Boards were to impose acute testing requirements.

Finally, as articulated in greater detail by SCAP in their written comments, the economic analysis entirely fails to account for the potential cost of increased violations from imposition of numeric limits and the TST. Staff has acknowledged that imposition of the toxicity provisions will likely lead to an increase in toxicity violations at wastewater facilities, yet nowhere in the

economic analysis is the potential financial impact of such violations acknowledged or quantified. Both Regional Board enforcement actions and third-party lawsuits impose significant costs on local agencies, and need to be articulated in the economic analysis.

We appreciate the opportunity to comment and look forward to discussing these issues with you in early 2019. If you have any questions or concerns, please do not hesitate to reach out to me directly at (916) 446-0388 or alink@casaweb.org. Thank you.

Adam D. Link
Director of Operations

POLICY NUMBER: BFP – 2.03

NAME OF POLICY: Contracting

LAST REVISED:

PREVIOUSLY LAST REVISED: November 15, 2013

PURPOSE: Pursuant to Section 4 of the Joint Powers Agreement, BACWA has the authority to make and enter into contracts for the conduct of its business. This Policy establishes guidance for use of BACWA's contracting authority.

POLICY

BACWA will accomplish its Mission through a combination of member agency staff volunteers and, when needed, professional services contracts.

When entering into contracts, BACWA will seek services from firms that reflect the public constituency of the BACWA participating agencies.

Contractors for needed services will periodically be selected through a competitive, qualification-based process. When services are anticipated to be annual on-going services, the goal is to conduct a competitive selection process at least every three years unless there is an overriding benefit associated with continuity of maintaining the same provider of services, such as Executive Director, Assistant Executive Director and Regulatory Program Manager.

Contracts should be aligned with the BACWA budget.

PROCEDURE NUMBER: 203

NAME OF PROCEDURE: Contracting for Professional Services

LAST REVISED: November 15, 2013
December 21, 2018

PURPOSE: Provide guidelines for implementing Board Policy BFP 2.03 Contracting

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DEFINITIONS: *Single Source*: A procurement in which two or more vendors can perform the services required, but one vendor is selected without a competitive process over the others for reasons such as expertise or previous experience with similar contracts.

Informal Competition: A procurement in which information about the scope of services requested and the potential vendors' fees and qualifications are communicated informally via email, telephone, and/or facsimile transmissions followed by an evaluation by BACWA and selection of a contractor.

Request for Proposals: A description of the services sought and a solicitation to prospective contractors to submit proposals on how they would provide those services and at what level of effort. BACWA then establishes and evaluation process whereby the most qualitied contractors are interviewed and a selection made

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PROCEDURE: Professional Services Contracting (PSC) will be implemented in accordance with the following considerations in order comply with Board Policy BFP 2.03.

1. Check to ensure all PSC is done in accordance with procedures of the State of California to reflect the regional nature and purposes of the BACWA Joint Powers Agreement.

2. Any PSC by BACWA will include a provision to terminate for convenience on 30-day's notice. This provision is based on the nature of the Association's annual budgeting process (cash accounting) and to assure conservation and effectiveness of the use of limited resources.

3. PSC to provide support for significant projects or technical support with a value of more than $100,000 shall be open to consideration of all qualified candidates. This provision does not apply where BACWA is funding studies as part of a regional collaboration, involving other funding sources, where funds have been pooled and directed to a central scientific research organization that provides continuity in conducting interrelated investigations over several years.

4. Multi-year contracts will be approved annually by the Board after the Board has appropriated the funds for the multi-year contract through the approval of the annual budget.

6. Contracting authorization limits are in accordance with Table 1 (see attached)

Table 1.
AUTHORIZATION
LIMITS[4 5 6]

Annual Contract Value	Contracting Authority	Competition Requirements	Contract Terms & Limitations	Amendment Guidelines
Less than $5,000	Executive Director Approval[1]	Single Source[2]	Contract term may not exceed one fiscal year. Must be consistent with and specified in the Board-approved budget and work plan.	Any amendment requires approval of the Executive Board.
Less than $10,000	Chair of the Executive Board Approval[1]	Single Source[2]	Contract term may not exceed one fiscal year.	Chair may approve an amendment increasing the total contract amount by no more than 25%.
Less than $50,000	Executive Board Approval	Single Source[2]	Contract term may not exceed three years, including any optional extensions.	Executive Board may approve an amendment increasing the total contract amount by no more than 25%.
$50,000 to $99,999.99	Executive Board Approval	Informal Competition[2]	Contract term may not exceed three years, including any optional extensions.	Executive Board may approve an amendment increasing the total contract amount by no more than 25%.
Greater than or equal to $100,000	Executive Board Approval	Request for Proposals[3]	Contract term may not exceed four years, including any optional extensions.	Executive Board may approve an amendment increasing the total contract amount by no more than 25%.

1. On a monthly or more frequent basis, the Executive Director will report to the Executive Board all contracts which were approved by either the Chair of the Executive Board or the Executive Director.

2. When single source or informal competition is used, the Executive Director will report to the Executive Board the reasons that a particular vendor was selected over others.

3. For all contracts of $100,000 or more, BACWA will issue a request for proposals (RFP). The RFP will be developed by the Executive Director and publicly noticed. A committee comprised of the Executive Director, and at least one Committee Chair shall review the proposals received and recommend a vendor to the Executive Board based on their review and approval.

4. The Chair has the authority to approve a requested change in subcontractors on an executed contract providing the value of the work involved does not exceed 40% of the total contract amount or $50,000. All such changes shall be reported to the Board at the next regularly scheduled Board meeting. Changes in subcontractor work greater than 40% of the total contract amount or $50,000 must be approved by the Executive Board.

5. The Chair has the authority to approve reallocation of budget between work items in the scope of work of an executed contract provided the reallocation of budget does not exceed 20% of the total contract amount or $50,000. Reallocations that exceed either of these limits must be approved by the Executive Board.

6. For the purposes of conforming to these authorization limits, the value of a multi-year contract is the sum of the amounts for the individual years including any optional extensions of the contract.

Proposed Amendment to the Policy for Water Quality Control for Recycled Water (Recycled Water Policy)

Change Sheet #1

Changes in ~~red-strikeout text~~ are NEW deletions of the clean version of the proposed Amendment posted on November 15, 2018.

Changes in blue-underline text are NEW additions of the clean version of the proposed Amendment posted on November 15, 2018.

POLICY:

Definitions

Bioanalytical equivalent concentration (BEQ): The output from bioanalytical screening tools are referenced to a substance that initiates a physiological response from the receptor (strong agonist) to generate BEQs. A BEQ is generated from a standard curve of a strong agonist for the receptor and is expressed in mass (ng/L) or molar concentration units. A BEQ is typically derived by comparing the 50th percentile effect concentration (EC50) or 10th percentile effect concentration (EC10) responses of the test sample with the same effect concentration (EC) level of the standard curve. The BEQ is compared to the Monitoring Trigger Level in water for the strong agonist for the receptor used to generate the BEQ. In the event the sample BEQ result is at or below the Reporting Limit in Table 3 of Attachment A, the Reporting Limit shall be used to generate the BEQ.

Wastewater treatment plant: Any of the following, as defined in Water Code section 13625(d):

> (A) Any facility owned by a state, local, or federal agency and used in the treatment or reclamation of sewage and industrial wastes.
>
> (B) Any privately-owned facility used in the treatment or reclamation of sewage and industrial wastes and regulated by the Public Utilities Commission pursuant to Sections 216 and 230.6 of, and Chapter 4 (commencing with Section 701) of Part 1 of Division 1, of the Public Utilities Code.
>
> (C) Any privately-owned facility used primarily in the treatment or reclamation of sewage for which the state board or a regional board has issued waste discharge requirements. Consistent with California Code of Regulations, title 23, section 3671, the term "wastewater treatment plant" does not include onsite sewage treatment systems as defined in Water Code section 13290.

Section 6.1.2

Salts and nutrients from all sources must be managed on a basin-wide or watershed-wide basis in a manner that ensures attainment of water quality objectives and protection of beneficial uses. The most effective way to address salt and nutrient loading~~issues~~ is typically through the development of regional or subregional salt and nutrient management plans rather than imposing requirements solely on individual recycled water projects or other individual sources of salts and nutrients.

Section 6.2.3

Regional water board review and acceptance of salt and nutrient management plans. Proposed salt and nutrient management plans shall be submitted to the regional water board for review. The regional water board shall evaluate the salt and nutrient management plan in accordance with the provisions of 6.2.4. Following review, the regional water board shall make one of the following determinations through a resolution. This determination shall be made within six months of receipt of a proposed salt and nutrient management plan, unless compliance with CEQA is required and the regional water board notifies the public of this within the six-month period.

Section 7.4

Site-specific monitoring. For non-potable recycled water projects, project-specific groundwater monitoring shall not be required if the criteria below are met, unless the regional water board determines there are unique site-specific conditions, or unless such project-specific monitoring is required under the accepted salt and nutrient management plan, ~~or~~ applicable basin plan, or other Water Board program such as the Irrigated Lands Regulatory Program. Unique site-specific conditions include but are not limited to areas where recycled water is proposed to be used for irrigation over high transmissivity soils over a shallow (5' or less) high quality groundwater aquifer or proposed to be stored in unlined ponds where the regional water board determines that it will result in an unacceptable threat to groundwater quality. The criteria are:

Section 11.2.2

If an enrollee under an existing regional water board general order for non-potable uses of recycled water has a Title 22 ~~E~~engineering ~~R~~report approved after January 1, 2001, the regional water board shall transition the enrollee to Order WQ 2016-0068-DDW or its successor, unless a site-specific order is more appropriate, before [one year from the effective date of this Policy].

Section 11.3.2

The r~~R~~egional water boards shall review all recycled water permits and shall update any recycled water permits and/or monitoring and reporting programs that are (1) inconsistent with this Policy; (2) inconsistent with an approved Title 22 engineering report pursuant to 11.3.1; or (3) inconsistent with the applicable regional water board basin plan. Regional water boards shall enroll permittees in Order WQ 2016-0068-DDW or its successor if appropriate.

Section 11.3.4

The regional water boards~~Groundwater recharge projects and reservoir water augmentation projects~~ shall ~~be~~ periodically update~~d~~ permits for groundwater recharge and reservoir water augmentation consistent with the requirements for update of Title 22 ~~E~~engineering ~~R~~reports in California Code of Regulations, title 22.

ATTACHMENT A:

Third Paragraph, pg. A-1

The regional water boards shall not issue requirements for monitoring of additional CECs or bioanalytical screening in recycled water beyond the requirements provided in this Policy except when recommended by the State Water Board following the review of the Title 22 ~~E~~engineering ~~R~~report or when requested by the recycled water producer. However, the regional water boards can require other monitoring requirements consistent with their authorities.

Footnote [1] pg. A-1

[1] The Science Advisory Panel was convened in accordance with provision 10.2 of the Policy. The Panel's recommendations were presented in the report *Monitoring Strategies for Constituents of Emerging Concern (CECs) in Recycled Water – Recommendations of a Science Advisory Panel*, dated April 2018[2] ~~Standards for disinfected tertiary recycled water presented in California Code of Regulations, title 22, section 60301.230 and 60301.320.~~

Section 1.2

A laboratory providing analyses of CECs and bioanalytical screening must hold a valid certificate of accreditation from the State of California Environmental Laboratory Accreditation Program (ELAP) for the analytical test methods or analytes selected, if such methods or analytes are accredited by ELAP at the time that monitoring is required to begin. If ELAP accreditation for analytical test methods or an analyte becomes available after monitoring is initiated, then the laboratory providing analysis of CECs shall be accredited by ELAP for those methods or analytes within one year of such accreditation becoming available. If ELAP accreditation is unavailable for a method or an analyte, the recycled water producer shall use a laboratory that has been accredited for a similar analytical method, instrumentation, or analyte until ELAP accreditation becomes available, unless otherwise approved by the regional water board or State Water Board.

Section 4, second paragraph

A recycled water producer may submit existing CEC monitoring data for the health-based CECs and performance indicator CECs, surrogates for CECs, and bioanalytical screening tools from a water recycling treatment plant with a State Water Board-approved Title 22 ~~E~~engineering ~~R~~report to the regional water board to satisfy the requirements in the initial assessment or baseline monitoring phase. If the regional water board, in consultation with the State Water Board, determines the existing CEC monitoring data meet the intent of the initial assessment phase (section 4.1 below), it may allow a recycled water producer to initiate the baseline monitoring phase (section 4.2 below). If the regional water board, in consultation with the State Water Board, determines the existing CEC monitoring data meet the intent of the baseline monitoring phases, the recycled water producer can initiate the standard operation monitoring phase. All facilities must conduct the standard operation monitoring phase.

Section 4.1, second paragraph

The purpose of the initial assessment phase is to: (1) identify the occurrence of health-based CECs, performance indicator CECs, and surrogates in recycled water for groundwater recharge or reservoir water augmentation; (2) determine treatment effectiveness; (3) define the project-specific performance indicator CECs and surrogates to monitor during the baseline monitoring phase; (4) specify the expected removal percentages for performance indicator CECs and surrogates; and (5) gather bioactivity data for ER-α and AhR bioanalytical screening tools to determine the range of responses for the bioassays for standardized water quality monitoring. The Initial Assessment Phase shall be conducted after the water recycling treatment plant has received approval from the State Water Board for the facility's Title 22 ~~E~~engineering ~~R~~report.

Table 5

Baseline ~~Phase~~ Monitoring Phase Requirements

Section 5

EVALUATION OF CECs, SURROGATES, AND BIOANALYTICAL SCREENING TOOL MONITORING RESULTS

Table 1: Required Equivalency Agonists and Monitoring Trigger Levels for Bioanalytical Screening Tools

Constituent/ Parameter	Equivalency Agonist	Monitoring Trigger Level (nanograms/liter)[1]
Estrogen receptor-α (ER-α)	17-beta-estradiol	3.5
Aryl hydrocarbon receptor (AhR)	2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)	0.5

[1] The MTL for ER-α represents a health-based MTL. The MTL for AhR represents a level which may or may not be indicative of a health-based effect due to the wide variation in health-based predicted no-effect concentrations of agonists.

Table 2: BEQ/MTL Thresholds and Response Actions for Bioanalytical Screening Tools

BEQ/MTL Threshold	Response Action
If BEQ/MTL ratio is consistently less than or equal to 0.15 for ER-α or 1.0 for AhR	A) After completion of the baseline monitoring phase, consider decreasing monitoring frequency or requesting removal of the endpoint from the monitoring program.
If BEQ/MTL ratio is greater than 0.15 and less than or equal to 10 for ER-α or greater than 1.0 and less than or equal to 10 for AhR	B) Continue to monitor.
If BEQ/MTL ratio is greater than 10 and less than or equal to 1000	C) Check the data, resample within 72 hours of notification of the result and analyze to confirm bioassay result. Continue to monitor. Contact the regional water board and State the Water Board to discuss additional actions, which may include, but are not limited to, targeted analytical chemistry monitoring, increased frequency of bioassay monitoring, and implementation of a source identification program.
If BEQ/MTL ratio is greater than 1000	D) Check the data, resample within 72 hours of notification of the result and analyze to confirm bioassay result. Continue to monitor. Contact the regional water board and the State Water Board to discuss additional actions, which may include, but are not limited to, targeted and/or non-targeted analytical chemistry monitoring, increased frequency of bioassay monitoring, toxicological studies, engineering removal studies, modification of facility operation, implementation of a source identification program, and monitoring at additional locations.

STAFF REPORT WITH SUBSTITUTE ENVIRONMENTAL DOCUMENTATION:

Section 2.2.3

Recycled water available for reuse under Order WQ 2016-0068-DDW is required to be adequately treated by wastewater treatment processes to water quality levels that are in compliance with permits issued by the Water Boards. Order WQ 2016-0068-DDW does not include treatment specifications, so recycled water producers seeking coverage under this order generally would also need separate WDRs or an NPDES permit for the production of recycled water. However, Order WQ 2016-0068-DDW reduces the need for separate water recycling requirements (WRRs) for new recycled water use sites within a use area covered by an administrator.

Section 4.5.2 (formatting change: underline removed)

- Natural systems, such as wetlands, wildlife habitats, and duck clubs, where augmentation or restoration has occurred, and that are not part of a wastewater treatment plant.

Section 4.5.2

The Amendment requires monthly collection and annual reporting of the volumes of influent, treated wastewater produced, and treated wastewater discharged, and requires at least annual reporting of the volume of recycled water used. This frequency of data collection and reporting for influent, production, and discharge is intended to capture volumetric trends that will delineate the potential of recycled water in California in terms of treatment, use, and potential. In addition, more frequent data for these volumes may provide useful information for the State Water Board and others to answer management questions (e.g., how influent volume changes during drought conditions). Monthly data collection is not expected to be burdensome since these should be volumetric data that facilities can easily report based on flow. The reason for allowing annual collection and reporting for recycled water use is that determining the different use categories for recycled water may not be a simple task for some facilities that distribute treated wastewater to other distributors or retailors, as they may need to work with those other entities to track and report the volumes of recycled water use for the various categories outlined above. Annual reports of the volumes of influent and treated wastewater produced, discharged, and recycled are anticipated to be submitted in April ~~between January and March~~ of each year for the previous calendar year.

Section 4.8.2

The ~~Policy~~Amendment requires the regional water board to make a determination regarding acceptance of an SNMP through a regional water board resolution within six months of receipt of the accepted SNMP,~~states that SNMPs include~~ unless compliance with CEQA is required. If compliance with CEQA is required, the Amendment requires the regional water board to notify the public of this within six months of receipt of a proposed SNMP. Compliance with CEQA may be required if the regional water boards choose to consider basin plan amendments that are based on the SNMPs, including establishment of new or modified water quality objectives or new rules for regulating salt and nutrient discharges. Compliance with CEQA may also be required if the regional water board accepts an SNMP through a resolution because the SNMP

may include future recycled water projects that have not yet gone through the CEQA process. A resolution accepting an SNMP could, in certain limited circumstances, be considered an implicit approval of these future projects, which could constitute an action subject to CEQA.

Section 4.10.4

The final subsection under the section on permitting and antidegradation analysis for non-potable recycled water projects regards site-specific groundwater monitoring. The Amendment states that project-specific groundwater monitoring shall not be required for non-potable recycled water projects if two criteria are met, unless the regional water board determines there are unique site-specific conditions, or unless such project-specific monitoring is required under the accepted SNMP, ~~or~~ applicable basin plan, or other Water Board program such as the Irrigated Lands Regulatory Program. The two criteria are 1) for irrigation projects, application of recycled water at rates to minimize percolation of recycled water below the plant's root zone, and 2) appropriate use of fertilizer that takes into account nutrient levels in recycled water and nutrient demand by plants. This statement expands on existing language in the Policy limiting project-specific groundwater monitoring for landscape irrigation projects that meet the streamlined permitting criteria. The two criteria included here are critical to justify the restriction of groundwater monitoring and for the application of recycled water in a manner that protects water quality. These criteria are included as streamlined permitting criteria in the Policy.

Section 4.14.1

Cost estimates for the targeted CEC analyses are given in Table 4-4, pursuant to Water Code section 13267. Costs for analyzing the complete set of analytes in Table 4-3 would be approximately $1,450-2,075 ~~1,250- $1,600~~ per sample, which would apply to surface application groundwater recharge projects. For reservoir water augmentation and subsurface application groundwater recharge projects, the analyte list does not include gemfibrozil and iohexol, thus the cost of analysis may be lower for laboratories that run these separately from other CECs. For the shorter list of analytes, the cost would be approximately $1,050-1,325 ~~850~~ per sample. The estimated costs for the targeted chemical analyses for the first four years of monitoring and thereafter are given in Table 4-4. There are multiple commercial laboratories in California that can provide these analyses, as well as multiple laboratories outside of California.

Table 4-4

Table 4-4 Cost estimates for targeted chemical analyses

Monitoring phase	Year	Number of samples per year	Groundwater recharge – surface application *(9 ~~7~~ CECs)* *Cost per sample: $2,075 ~~1600~~*	Reservoir water augmentation and Groundwater recharge – subsurface application *(7 ~~5~~ CECs)* *Cost per sample: $1,325 ~~600~~*
Initial assessment	1	4	$8,300 ~~6,400~~	$5,300 ~~3,400~~
Baseline	2	2	$4,150 ~~3,200~~	$2,650 ~~1,700~~
	3	2	$4,150 ~~3,200~~	$2,650 ~~1,700~~
	4	2	$4,150 ~~3,200~~	$2,650 ~~1,700~~
Subtotal for years 1-4		***10***	***$20,750*** ~~16,000~~	***$13,250*** ~~6,400~~
Standard operating	5 and thereafter	2	$4,150 ~~3,200~~ per year	$2,650 ~~1,700~~ per year

ANNUAL REPORT to the
SOLANO COUNTY BOARD OF SUPERVISORS

LAND APPLICATION OF BIOSOLIDS in SOLANO COUNTY

Prepared by the BACWA Biosolids Committee
December 2018

Introduction

With the 2018 application season recently completed, the Bay Area Clean Water Agencies (BACWA) Biosolids Committee is pleased to present its annual summary report on land application of biosolids in Solano County. BACWA wishes to express its sincere appreciation to the staff of the Environmental Health Services Division of the Department of Resource Management for the continuing support of the biosolids land application program. This program allows for the effective use of biosolids as an agricultural soil amendment in the County. We believe this partnership provides a valuable resource to the Solano County agriculture and provides many Bay Area agencies with an opportunity to ensure their biosolids are put to their highest and best use and are making a positive impact on the environment.

This report provides information on trends in the use of biosolids resources in California and the Bay Area, an update on regional biosolids programs, and specific information on projects from individual agencies currently applying biosolids in the County. It highlights each agency's compliance with the requirement in Chapter 25, Article IV, Sec. 25-400 that "Class B biosolids may only be land applied provided that the generator of the Class B biosolids is individually or as part of a consortium having a portion of their biosolids produced as Class A Exceptional Quality biosolids, converting biosolids to energy, or otherwise diverting Class B biosolids away from land spreading or landfilling (as waste or as Alternative Daily Cover)."

This report is intended as supplemental information to the report submitted by the County Department of Resource Management staff and by Synagro, contract haulers and appliers of biosolids. It has been prepared for the Solano County Board of Supervisors in response to the Board's request for an annual update on agency activities and progress towards compliance with the goals set forth in County Code, Chapter 25. The affected agencies have coordinated the required reporting through BACWA to produce a single report for the Board.

We would like to acknowledge the assistance of your staff in working with BACWA member agencies throughout the year, particularly Jagjinder Sahota (Program Manager), Jeffrey Bell (Supervisor), Anthony Endow, Misty Kaltreider, Chelsea Lash and Long Lai.

Municipal Agencies Applying Biosolids in Solano County

The use of biosolids as an amendment supplies valuable plant nutrients and carbon to soils which enhances the productivity and financial resilience of local farms. Each agency that applies biosolids is required to meet strict standards and provides a report annually to the United States Environmental Protection Agency (USEPA) to demonstrate compliance. The following Bay Area agencies currently transport biosolids to agricultural land in Solano County under contract with Synagro:

City of Calistoga
Central Marin Sanitation Agency (serving San Rafael, Ross Valley, Larkspur, and Corte Madera)
Delta Diablo (serving Antioch, Pittsburg, Bay Point)
East Bay Municipal Utility District (serving El Cerrito, Albany, Berkeley, Emeryville and Alameda)
City of Eureka
Fort Bragg Municipal District #1
Ironhouse Sanitary District (serving Oakley and Bethel Island)
San Francisco Public Utilities Commission
Southeast Water Pollution Control Plant
Oceanside Water Pollution Control Plant
City of San Leandro
Silicon Valley Clean Water (serving Redwood City, Belmont, San Carlos, Woodside, and Menlo Park)
Union Sanitary District (serving Fremont, Newark and Union City)
Town of Windsor

A total of 7,665 dry tons were land applied on agricultural sites in Solano County in 2018. The portion from each agency is shown on the follow page in Figure 1. Data provided by Synagro indicates that the total quantity of biosolids applied to agricultural land in Solano County in 2018 increased by 23 percent over the 2017 application season total of 6,243 dry tons and 5 percent over the 2016 application season total of 7,318 dry tons.

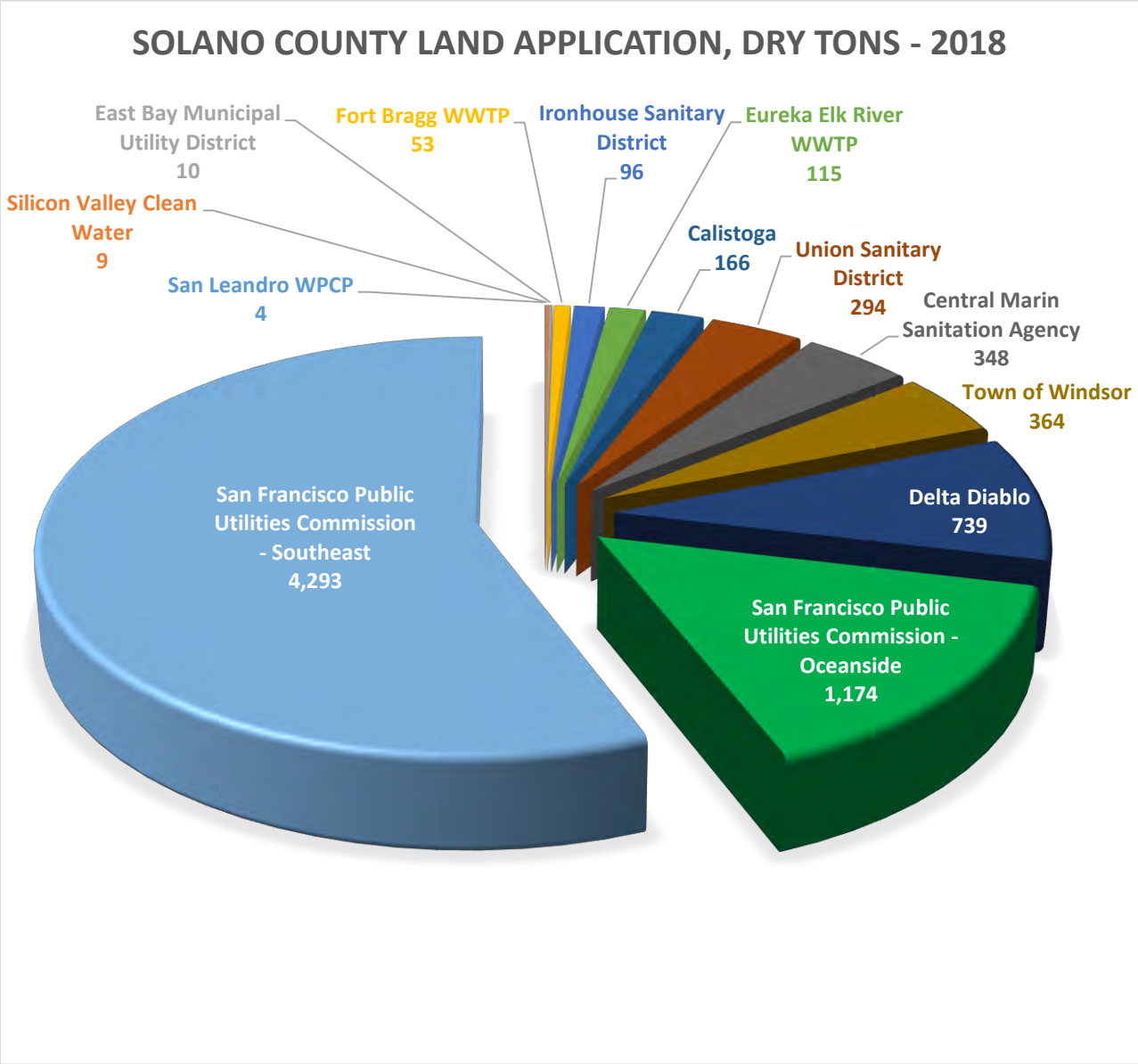

Figure 1. Amount of Biosolids Applied in Solano County by Each Agency in Dry Tons (2018). ***(Data provided by Synagro).***

Trends in Biosolids Usage in California

Wastewater agencies in California are continuing to identify and evaluate new options for biosolids reuse and recycling, including emerging technologies as well as established practices such as composting and heat drying.

Overall Use Summary. Figure 2 summarizes the use of biosolids in California for calendar years 2009 through 2017. Data for 2018 are not yet available and will be included in the 2019 report. The number one use statewide continues to be land application for agriculture in the form of compost, Class B biosolids and Class A biosolids. The use of biosolids compost has increased steadily, accounting for 20% of statewide biosolids use in 2011 to 33% in 2016 and 36% in 2017. Land application of Class B biosolids decreased slightly from 21% to 18%, and land application of Class A biosolids increased from 5% to 8%. Biosolids have proven to be a safe, reliable, and nutrient-rich soil amendment that offers a more cost-effective alternative to chemical fertilizers, which are increasingly expensive and energy intensive to produce. The beneficial use of biosolids as alternative daily cover in landfills and landfill disposal are also common management practices for biosolids in California, account for 15% and 14% respectively of statewide biosolids distribution.

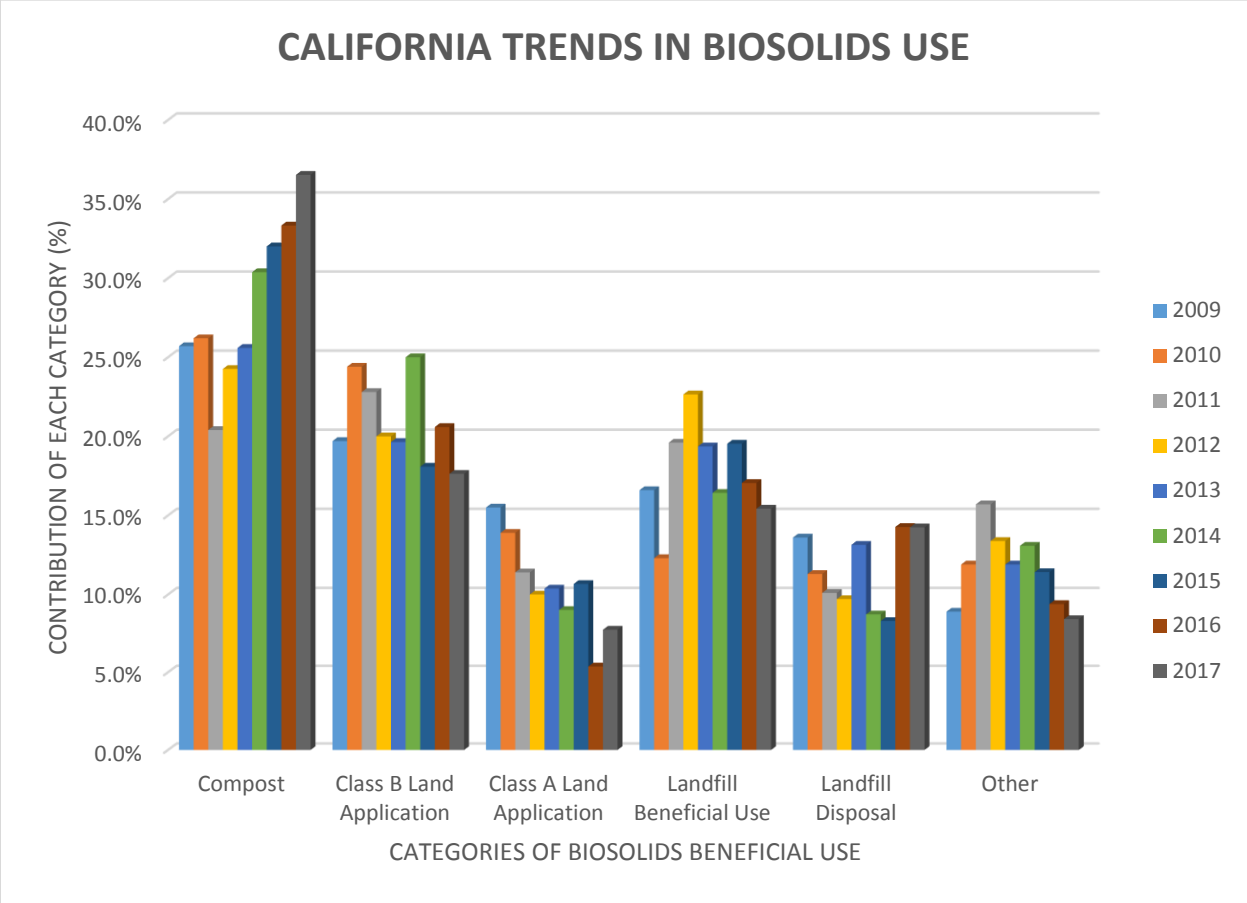

Figure 2. California Trends in Biosolids Use for the Years 2009 to 2017. ***(Data provided by USEPA Region 9).***

Bay Area Trends. Looking solely at the nine county Bay Area, Figure 3 illustrates end uses of biosolids. The primary uses continue to be landfill beneficial use, land application, and incineration, which together account for 87 percent of biosolids end uses in the Bay Area. Compost, landfill disposal, and surface disposal levels remained similar to 2015 percentages.

Tonnage for biosolids conveyed to the Lystek OMRC is categorized as Class A EQ liquid fertilizer and has increased from representing 0.7% of Bay Area biosolids end uses in 2016 to 3.8% in 2017. Several Bay Area agencies send their biosolids to the Lystek OMRC. The OMRC conducts further biosolids processing by utilizing LysteGro technology to create a Class A EQ product. Lystek's hydrolysis process uses high speed shearing, low pressure steam and alkali in an enclosed reactor to transform sludge or biosolids into a liquid fertilizer. Lystek's fertilizer program in Solano County began in spring 2017. The following agencies sent material to Lystek in 2018: Central Marin Sanitation Agency, City of Benicia, City of Petaluma, City of Santa Rosa and the San Francisco Public Utilities Commission.

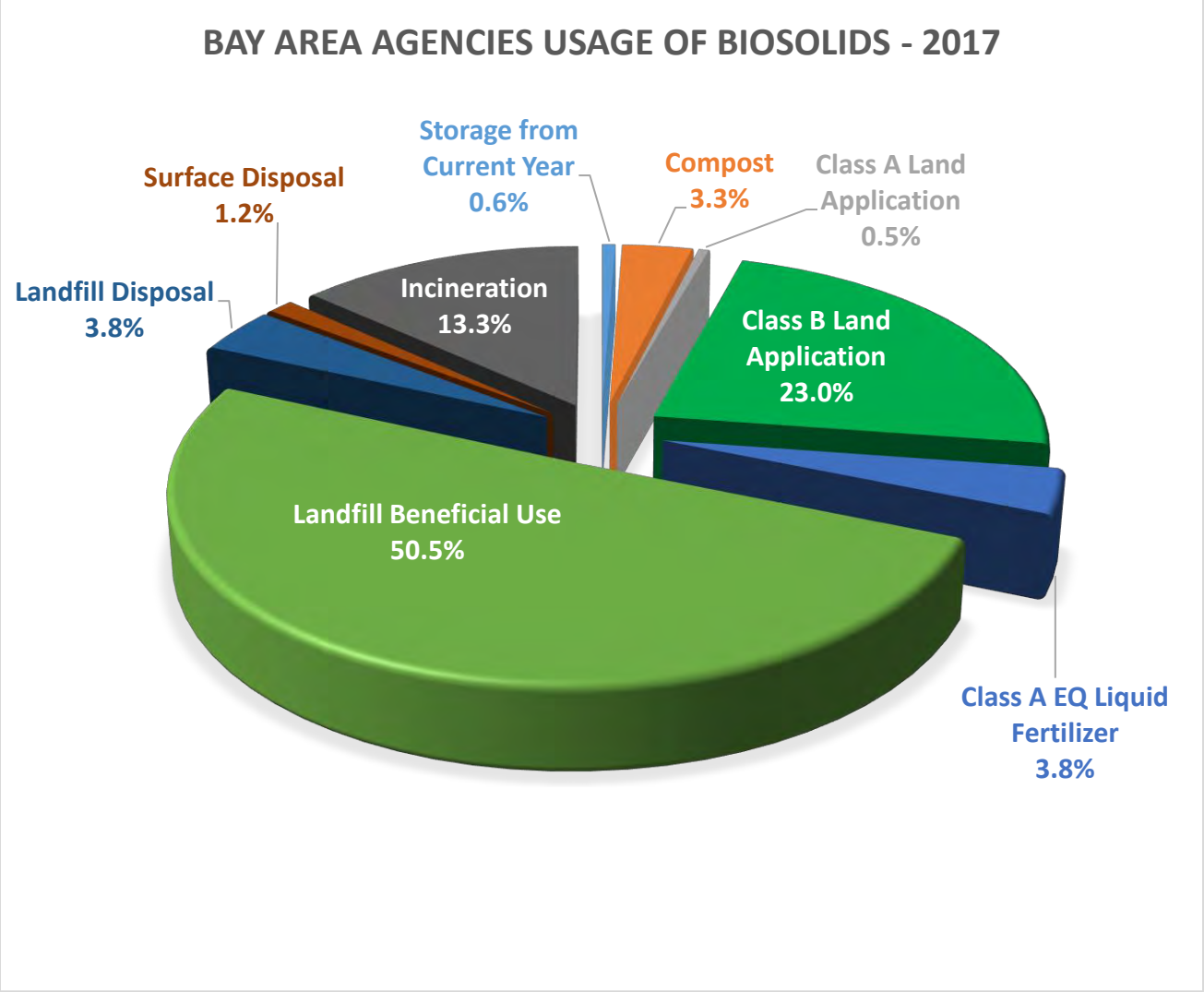

Figure 3. Bay Area Agencies Usage of Biosolids - 2017. ***(Data Provided by USEPA Region 9).***

Biosolids were applied to agricultural land primarily in five different Northern California counties in 2017 with Solano County ranking third at 10 percent, similar to the 2016 proportion of 11 percent. Figure 4 illustrates the distribution of land applied biosolids among the counties.

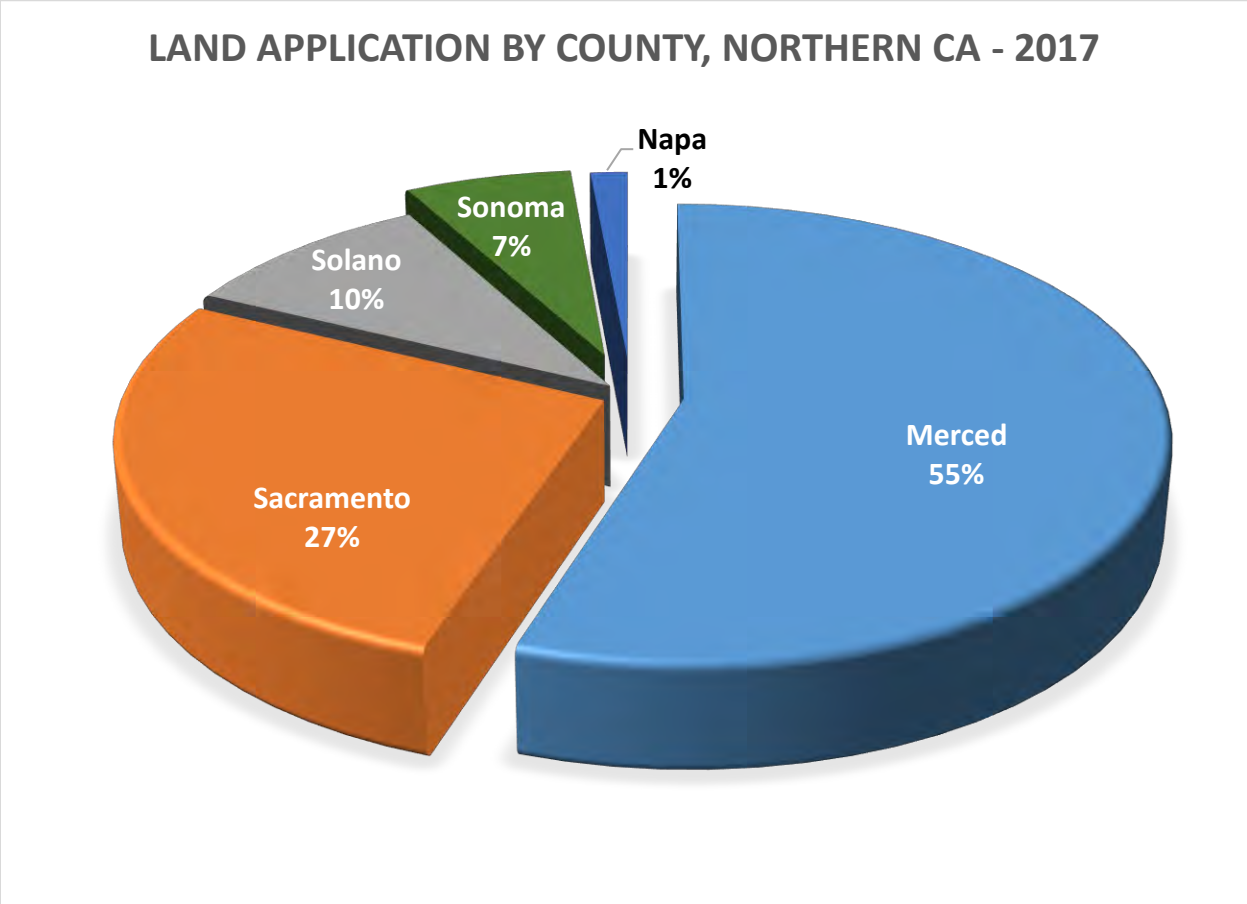

Figure 4. Distribution of Land Application of Biosolids among the Northern California counties - 2017. ***(Data Provided By USEPA Region 9 and Synagro).***

Bay Area Regional Efforts

BACWA Biosolids Committee. The mission of the BACWA Biosolids Committee (The Committee) is to support the development and maintenance of cost-effective, sustainable biosolids management options for the more than 140,000 dry metric tons of biosolids produced in the Bay Area annually. The Committee continues to provide proactive support and information sharing to member agencies on regional biosolids issues, projects, and proposed regulations and legislation.

The Committee holds quarterly meetings with an emphasis on biosolids technology information sharing among the participating agencies by providing facility tours and establishing a forum for vendors to present their products and technologies. In 2018, the Committee met at the San Jose/Santa Clara Regional Wastewater Facility, and toured their current operations and

construction. They are adding new centrifuges, a new cogeneration facility, and plan to construct a new dewatering facility. The Committee also toured the Santa Rosa composting facility, one of the few sites in the Bay Area where biosolids are converted to a marketable product. The committee held one joint meeting with the CASA Regulatory Workgroup Land Committee in March, and plans a second joint meeting in December 2018. In 2016, the Committee conducted a survey of all BACWA members and compiled the results to show the production rates, current uses, costs, and future plans for biosolids management across member agencies. In 2017, the Committee completed the 2016 Biosolids Trends Survey Report, which is available at https://bacwa.org/wp-content/uploads/2017/08/BACWA-2016-Biosolids-survey-report-1.pdf. BACWA updated and repeated the survey in 2018 to help track changes in biosolids trends over time. The 2018 Biosolids Trends Survey Report is anticipated to be complete in early 2019.

Bay Area Biosolids Coalition. **Bay Area Biosolids Coalition**. The Bay Area Biosolids (BAB) Coalition originally formed in 2004 when a group of agencies came together to evaluate the feasibility of a regional biosolids management project to avoid the threat of a potential ban on land application of biosolids. By 2008, the membership expanded and the group decided to officially brand itself as the Bay Area Biosolids to Energy (BAB2E) Coalition to take advantage of opportunities anticipated to be developed under new state legislation (specifically, Assembly Bill 32 or AB 32). Assembly Bill 32 was adopted in 2006 requiring the state to reduce greenhouse gas (GHG) emissions to 1990 levels by 2020 (with further reductions through 2050). To achieve GHG reductions, the state created numerous programs incentivizing renewable energy and low carbon fuel production. This legislation served as a driver to prioritize the conversion of biosolids to energy for the BAB2E Coalition.

A decade later, Governor Brown announced five overarching "pillars" by which he plans to achieve the 2030 GHG reduction target under Senate Bill 32 (SB 32). These pillars recognize that several major areas of the California economy will need to reduce emissions.

1. Reducing petroleum use in cars and trucks by 50 percent
2. Increasing the procurement of electricity derived from renewable sources from 33 to 50 percent
3. Doubling the energy efficiency achieved at existing buildings
4. Reducing the release of short-lived climate pollutants (including methane)
5. Increasing land-based carbon sequestration

To enact these pillars, the Governor has signed legislation that either directly or indirectly impacts the disposal and use of WWTP biosolids at landfills, as well as the diversion of other organic waste streams to WWTPs. In an effort to holistically address biosolids end use options, the BAB2E Coalition re-branded themselves as the Bay Area Biosolids Coalition in 2017. While the Coalition continues to be vigilant in identifying biosolids to energy opportunities, the Coalition has expanded its focus to biosolids end use options that manage additional nutrient loading and produce other value-added products to address the Governor's goals and associated regulations in support of GHG reductions statewide. The updated focus of the BAB Coalition continues to satisfy the Solano County Code requirements for land application of biosolids.

The Coalition has been evaluating biosolids management options with the intent of identifying three to six options by the end of 2018 that can be implemented within the next two to three years and generate a product that can be beneficially used locally in all seasons of the year. The first step of the evaluation was an initial screening process completed in October 2017. The next phase is underway and includes further information gathering and discussions with specific technology providers that had passed the initial screening process. The Coalition continues to pursue a multi-pronged approach that includes:

- Investigating viable, year-long (weather resilient) alternatives to land application that look beyond "biosolids to energy" and seek to responsibly recycle back value-added products of biosolids to the environment.
- Educating the public on biosolids management issues in California through public outreach efforts, including the creation of a public website and securing media coverage.
- Serving as a technology incubator - particularly for pre-commercial technologies.
- Supporting land application in the Bay Area by seeking to create more capacity for biosolids in the Bay Area marketplace.
- Advancing the industry and legislative state of knowledge on biosolids as a valuable resource.

To achieve the Coalition objectives (listed above) and address critical challenges identified in the next two years, the Coalition will:

- **Build Relationships** - among members and local governments (e.g., Solano County), academia, legislature, state agencies, public, etc.
- **Achieve Project Maturity** - gaining experiences from the six existing sub regional projects
- **Promote Product Development** - continuing to identify/develop technologies and other biosolids end use products that can be replicated by others

Current Coalition members are:

City of Millbrae
City of Petaluma
City of San Jose
City of Santa Rosa
Central Marin Sanitation Agency
Delta Diablo
Dublin San Ramon Services District
East Bay Municipal Utility District
Fairfield-Suisun Sewer District
Ironhouse Sanitary District
North San Mateo County Sanitation District
San Francisco Public Utilities Commission
Sausalito-Marin City Sanitary District
Union Sanitary District
Vallejo Flood & Wastewater District
West County Wastewater District

Individual Agency Programs

Individual BACWA agencies are responsible for their own biosolids management programs and each develops its own plan in addition to participating in regional programs. Below are program descriptions from all agencies which sent biosolids to Solano County for agricultural use via land application.

Several Bay Area agencies send their biosolids to the Lystek OMRC as an alternative end use. The OMRC conducts further biosolids processing by utilizing LysteGro technology to create a liquid bio-fertilizer Class A EQ product. Lystek's hydrolysis process simultaneously introduces high speed shearing, low pressure steam and alkali in an enclosed reactor to transform sludge or biosolids into a liquid fertilizer. Lystek's fertilizer program in Solano County began in spring 2017. The following agencies sent material to Lystek in 2018: CMSA, City of Benicia, City of Petaluma, City of Santa Rosa and the SFPUC.

Agencies that land applied Class B biosolids in Solano County either participated in the BAB Coalition and/or converted portion of their biosolids to Class A either through their own means or at a 3rd party conversion facility (e.g., compost facility or Lystek OMRC).

Central Marin Sanitation Agency. The Central Marin Sanitation Agency (CMSA) contracted with Synagro for land application of its biosolids during the dry weather season in Sonoma and Solano counties. CMSA also has contracts in place for sending the biosolids to Redwood Landfill for landfill beneficial use and to Lystek International for further processing to meet Class A biosolids requirements. CMSA is a member of the Bay Area Biosolids Coalition.

City of Calistoga. The City of Calistoga produces biosolids according to 40 CFR regulations. At this facility, solids are processed by the treatment methods of thickening and application to drying beds. The material is land applied to various fields in Solano County by Synagro, and a portion of this material is diverted to produce Class A Biosolids at Synagro's Central Valley Compost Site.

Delta Diablo. Delta Diablo produces Class B biosolids and contracts with Synagro for biosolids management. Over 90% of the biosolids are land applied in either Solano, Sacramento or Merced Counties with a portion of the material sent to Synagro's Central Valley Compost facility. Delta Diablo is an active participant in the Bay Area Biosolids Coalition and continues to explore additional and alternative biosolids management options.

East Bay Municipal Utility District. EBMUD produces Class B biosolids. In 2018 approximately, half of the biosolids was land applied, approximately ten percent was composted, and the remainder was used for landfill alternative daily cover. While most of the land application occurred in Merced County, a small portion was land applied in Solano County.

City of Eureka. The City of Eureka's Elk River Wastewater Treatment Plant contracts with Synagro to land apply biosolids to farmland in Solano, Sonoma, and Sacramento Counties. As

part of the Synagro contract, Synagro diverts a portion of Eureka's biosolids to the CVC composting facility in Dos Palos, CA where a Class A product is produced. The City of Eureka continues to investigate feasible and cost-effective Class B disposal options as well as Class A processes for the future.

Fort Bragg Municipal District #1. The Fort Bragg Municipal District #1 Wastewater Treatment facility produces Class B bio-solids according to 40 CFR regulations. During the construction of our new Aero-Mod Activated sludge plant we have contracted with Synagro to manage our bio-solids. Synagro transported a portion of our bio-solids to their Central Valley Compost (CVC) site to be further processed into Class A Bio-solids.

Ironhouse Sanitary District. The Ironhouse Sanitary District (ISD) produces biosolids according to 40 CFR regulations. ISD's Water Recycling Facility is designed to produce Class B biosolids. In 2018, about 93 dry tons of ISD's biosolids were land applied to various fields in Solano County by Synagro and about 22 wet tons were sent to Central Valley Composting to be composted for Class A transformation. ISD is currently a member agency of the Bay Area Biosolids Coalition.

San Francisco Public Utilities Commission (Southeast and Oceanside WPCPs). The San Francisco Public Utilities Commission (SFPUC) marked its eighteenth consecutive season of land application of biosolids for agricultural use in Solano County. Inspectors from the SFPUC perform land application inspections in Solano County to ensure that the contractors are following local regulations. The SFPUC also contracts with Synagro to land apply Class B biosolids in Sacramento County and with Lystek to produce a Class A EQ liquid fertilizer. A portion of biosolids are beneficially used for alternative daily cover at Vasco Road and Potrero Hills landfills. The SFPUC is an active participant in the Bay Area Biosolids Coalition.

The Oceanside WPCP currently runs its digesters in a TPAD (Temperature Phased Anaerobic Digestion) process which uses thermophilic digestion to produce Class A biosolids. In August of 2018, the SFPUC demonstrated to the EPA that the Oceanside WPCP met Class A standards via Alternative 1 of 40 CFR Part 503 regulations (thermal treatment), fecal coliform testing and salmonella testing. Time and temperature requirements for digestion, bi-weekly fecal coliform testing, and monthly salmonella testing continue to be employed to ensure Class A compliance. The SFPUC is also proceeding with a multi-billion dollar Sewer System Improvement Program http://sfwater.org/index.aspx?page=116, which includes a keystone project – complete reconstruction of the Southeast WPCP's biosolids processing facility. This facility will use thermal hydrolysis pretreatment prior to mesophilic digestion to produce Class A biosolids. Completion of the new facility is expected in the summer of 2024, followed by a transition period to conduct performance testing and facility commissioning, with full operation commencing in the summer of 2025.

City of San Leandro. The City of San Leandro contracted with Synagro to land apply Class A and Class B biosolids. Most of the land applied biosolids were utilized in Sacramento County with less than 1% applied in Solano County.

Silicon Valley Clean Water. SVCW produces class B biosolids and contracts with Synagro for hauling, and disposal. The majority of biosolids are used for land application in Sacramento and Merced Counties. For calendar year 2018 Synagro has land applied 8.96 DT in Solano County. Synagro also hauls Biosolids to the Central Valley Compost site in Merced County. During the winter months when land application and or composting are not available biosolids may be hauled to land fill.

SVCW is also in contract with BioForceTech Corporation (BFT). BFT has a two-step method that allows for economical and energy efficient in-house biosolids disposal. BFT developed a technology that removes most of the water from biosolids with minimal net energy input. To avoid truck transportation of waste, the BFT plant reduces the weight of biosolids (and other biomasses) by more than 90%. What is left is extra energy and BioChar, a nutrient rich soil amendment.

Town of Windsor. The Town of Windsor Water Reclamation Facility contracts with Synagro to land apply biosolids to farmland in Solano, Sonoma, and Sacramento Counties. As part of the Synagro contract, Synagro diverts a portion of its biosolids to its Merced County facility for composting. The Town of Windsor continues to investigate feasible and cost-effective Class B biosolids treatment and process options.

Union Sanitary District. Union Sanitary District (USD) beneficially used all of its biosolids in 2018 and met all USEPA regulations for the 25th consecutive year. USD continues to contract with Synagro for its biosolids management, with approximately 65 percent of USD's biosolids land-applied to farmland in Sacramento, Merced and Solano Counties. Nearly 35 percent of biosolids production was delivered to Merced County for producing Class A compost. USD is one of 16 Bay Area wastewater utilities actively participating in the Bay Area Biosolids Coalition.

BACWA
BAY AREA
CLEAN WATER
AGENCIES

December 3, 2018

Luisa Valiela
EPA Region 9, Watersheds Office
75 Hawthorne Street
San Francisco, CA 94105

RE: 2018 SF Bay Water Quality Improvement Fund - Transforming Shorelines Application

The Bay Area Clean Water Agencies (BACWA) is pleased to partner with the San Francisco Estuary Partnership and a diverse set of organizations on the Transforming Shorelines project, an ambitious multi-benefit venture linking water quality improvement, nature-based solutions (NBS), and shoreline resilience.

BACWA is a joint powers agency whose members own and operate publicly-owned wastewater treatment and sanitary sewer systems that collectively provide sanitary services to over 7.1 million people in the nine-county San Francisco Bay Area. BACWA members are dedicated to the protection and enhancement of San Francisco Bay.

Wastewater agencies sit at the literal intersection of rising sea levels and pressures to improve water quality. BACWA's members are being challenged to enhance shoreline resilience at their facilities, and at the same time to reduce discharges of nutrients and constituents of concern into San Francisco Bay. NBS have tremendous potential to simultaneously address these drivers, offering a potentially cost-effective solution to water quality challenges while also providing shoreline resilience and habitat. What is critically needed for BACWA's members to move forward on large-scale implementation of NBS is proof of concept and lessons learned on how to practically get projects done, from navigating complex permitting, to designing and maintaining natural systems in a way that ensures their long-term success.

The Transforming Shorelines project will help provide our region with the necessary tools to face and solve complex challenges of the future linked with sea level rise, nutrient management and water quality, habitat creation, and the future of our shoreline. It will also better prepare BACWA members to take the next step toward NBS implementation.

Transforming Shorelines will (a) build regional capacity for nature-based shoreline infrastructure through technical support and analyses; (b) implement innovative solutions to achieve nutrient management and climate resiliency goals; and (c) advance a project of significant regional importance, the East Bay Dischargers Authority "First Mile" Horizontal Levee.

The requested grant and matching funds will provide the needed funding for the overall project which will be managed by the San Francisco Estuary Partnership. The project is closely aligned with other related on-going scientific investigations including: 1. The San Francisco Estuary Institute (SFEI) work on Operational Landscape Units; 2. SFEI's scientific investigations as part of the Water Board's Nutrient Management Strategy and; 3. SFEI's work envisioned under the 2nd Nutrient Watershed Permit on the conduct of a Regional Study that will explore opportunities for NBS and other non-conventional approaches for nutrient load reduction . The Transforming Shorelines project should be complementary and integrated with these other efforts being undertaken by SFEI to create a roadmap for implementing NBS at Bay Area wastewater treatment facilities. As such, the grant should emphasize support for the continuation of the on-going collaboration and coordination needed among these various efforts.

The proposed project fulfills a critical need for BACWA and we urge your support of this timely and impactful proposal. If you have any questions, please do not hesitate to contact me at dwilliams@bacwa.org.

Sincerely,

David R. Williams

David R. Williams
Executive Director

BACWA
BAY AREA
CLEAN WATER
AGENCIES

December 3, 2018

Ms. Luisa Valiela
San Francisco Bay Water Quality Improvement Fund
EPA Region 9 (WTR-3)
75 Hawthorne Street
San Francisco, CA 94105

SUBJECT: Support for Oro Loma Sanitation District's WQIF Proposal, "San Francisco Bay Nutrient Removal: Implementing Next-Generation Biological Sidestream Treatment"

Dear Ms. Valiela:

On behalf of the Bay Area Clean Water Agencies (BACWA), I am writing to express support for Oro Loma Sanitary District's application for funding, pursuant to US EPA's 2018 solicitation for the San Francisco Bay Water Quality Improvement Fund (WQIF). BACWA is a joint powers agency, formed under California Government Code section 6500 et seq. Our members own and operate publicly-owned treatment works (POTWs) and sanitary sewer systems that provide wastewater collection and treatment services to over 7.1 million people in the nine-county San Francisco Bay Area. BACWA members are public agencies, governed by elected officials and managed by professionals charged with protecting the environment and public health. Over the past several years, BACWA has invested more than five million dollars on research into the impacts of nutrients on the San Francisco Bay.

The Bay has relatively high loading of nutrients, the majority of which come from POTWs. There is concern about increasing nutrient loads even further due to growth. Based on the recently completed Nutrient Reduction Study required by the first Nutrient Watershed Permit, reducing nutrient loads to the Bay using conventional treatment technologies can be very expensive. For these reasons BACWA is encouraging its members to seek and test new innovative technologies which hold the promise of being able to reduce nutrients loads in a more cost-effective manner.

Oro Loma Sanitary District, a BACWA member, has pilot tested a new technology developed by Microvi and reports that it is a more cost-effective approach for converting ammonia to nitrate, an intermediate step necessary for full nitrogen removal, and therefore they are pursuing construction of a full-scale operation for treatment of their nutrient rich sidestream from their solids dewatering process. Data from a full scale operation would be very useful to other BACWA members who are interested in innovative more cost-effective technology for reducing their nutrient loads.

Oro Loma has demonstrated a strong history of executing innovative wastewater treatment strategies and the region will closely follow the outcomes of this project. BACWA supports use of innovative technology and strongly encourages EPA to award the grant to Oro Loma Sanitary District.

If you have any questions, please contact me at (925) 765-9616.

Sincerely,

David R. Williams

David Williams, P.E.
Executive Director

BACWA
BAY AREA
CLEAN WATER
AGENCIES

December 21, 2018

Ms. Luisa Valiela
San Francisco Bay Water Quality Improvement Fund
EPA Region 9 (WTR-3)
75 Hawthorne Street
San Francisco, CA 94105

SUBJECT: SUPPORT FOR CENTRAL CONTRA COSTA SANITARY DISTRICT'S PROPOSAL, "SOLIDS HANDLING FACILITIES IMPROVEMENTS PROJECT, DP 7348"

Dear Ms. Valiela:

On behalf of the Bay Area Clean Water Agencies (BACWA), I am writing to express support for the Central Contra Costa Sanitary District's (Central San) application for funding, pursuant to the United States Environmental Protection Agency's (EPA) 2018 solicitation for the San Francisco Bay Water Quality Improvement Fund. BACWA is a joint powers agency, formed under California Government Code section 6500 et seq. Our members own and operate publicly-owned treatment works (POTWs) and sanitary sewer systems that provide wastewater collection and treatment services to over 7.1 million people in the nine-county San Francisco Bay Area. BACWA members are public agencies, governed by elected officials and managed by professionals charged with protecting the environment and public health.

Within BACWA, the Air Issues and Regulations (AIR) Committee focuses on air quality related issues, research, and regulations as they affect the operation and maintenance of San Francisco Bay Area POTWs. Currently, the AIR Committee is also tracking climate change related legislation on a national, state, and local level. BACWA supports Central San's efforts to improve energy efficiency at wastewater treatment plants, climate change resiliency, and air and water quality in the San Francisco Bay Area.

The Solids Handling Facilities Improvements Project will address aging infrastructure, energy efficiency, operational reliability, and regulatory compliance. The Project will include replacement of sludge blending and mixing equipment, dewatering and pumping equipment, ash handling equipment, air emissions control equipment, multiple hearth furnace (MHF) improvements, process control, and electrical equipment, as well as seismic improvements for both the Solids Conditioning Building and the MHFs. These improvements will ensure the long-term reliability of the solids handling equipment, and compliance with the Federal Clean

Air Act Section 129 standards for sewage sludge incinerators and the Bay Area Air Quality Management District's regulatory requirements.

The replacement of the air emissions control equipment is expected to reduce criteria air pollutants and toxic air contaminants released into the atmosphere from the incineration process, including mercury and dioxins, into the San Francisco watershed.

One of Central San's strategic goals is to reduce reliance on non-renewable energy. With the installation of more energy efficient equipment, the Solids Handling Facilities Project is anticipated to reduce Central San's energy consumption by more than 30%. The expected improvement in energy efficiency translates into reduced anthropogenic greenhouse gas emissions. The Project will support Central San's commitment to implement the greenhouse gas reduction goals of California's Global Warming Solutions Act and other regional climate change initiatives. Additionally, the planned seismic retrofits will protect and improve the resiliency of Central San's facilities.

Central San has demonstrated a strong history of executing innovative wastewater and solids handling treatment strategies and the region will closely follow the outcomes of this project. BACWA strongly encourages EPA to award the grant to Central San.

If you have any questions, please contact me at (925) 765-9616.

Sincerely,

David Williams, P.E.
Executive Director

Questions for Wastewater Collection, Conveyance, and/or Treatment Agencies
CLIMATE CHANGE IMPACTS

Agency:_____

Check facilities your agency is responsible for: ☐ Collection ☐ Interception ☐ Treatment ☐ Disposal

Approximate population receiving wastewater service from your agency:_____

Contact:_____ Title:_____

Phone:_____ Email:_____ Date:_____

PLEASE NOTE THIS SURVEY DOES NOT ALTER PERMIT REQUIREMENTS, DOES NOT SERVE IN LIEU OF ACTION PLANS, AND IS NOT A COMMITMENT OF FUNDING.

1. Has your agency conducted a facility or infrastructure vulnerability assessment that includes climate change-related impacts or future extreme weather events (e.g. sea level rise, storm surge, drought, high intensity precipitation, flooding, or extreme heat)? ☐ Yes (**Skip to 1b.**) ☐ No

   1a. Is there a local or a regional assessment (e.g. municipal Climate Action Plan or Integrated Regional Water Management Plan) that addresses infrastructure vulnerability to climate change-related impacts and includes your system?

   ☐ Yes. **Continue to 1b.**
   ☐ No. The survey for your agency is complete. **Stop here.**

   1b. Which components were covered by the vulnerability assessment? (Check all that apply)

   ☐ Collection system
   ☐ Interceptors and pump stations
   ☐ Treatment facilities
   ☐ Dechlorination
   ☐ Discharge facilities
   ☐ Oxidation ponds, sludge drying beds, and wet weather facilities
   ☐ Power source / Biogas / Cogeneration
   ☐ Telecommunications

2. Are results of the assessment available on the internet? ☐ Yes ☐ No

   If Yes, please provide the website address:_____

3. Select status of measures to increase resilience of your facilities to climate change impacts. For measures already in place, indicate the year of completion. For in-progress, and planned measures indicate the expected year of completion:

Measures	Status of measures				Completion Year
	In Place	In-progress	Planned	Not Planned	
Expanding capacity	☐	☐	☐	☐	
Increasing maintenance or rehabilitation frequency	☐	☐	☐	☐	
Enhancing treatment capability	☐	☐	☐	☐	
Hardening facilities (e.g., installing, increasing or improving barriers, buffers or levees, elevating or floodproofing equipment, or sealing doors, sewer mains or manholes)	☐	☐	☐	☐	

Measures	Status of measures				Completion Year
	In Place	In-progress	Planned	Not Planned	
Updating emergency response and maintenance procedures	☐	☐	☐	☐	
Securing an alternative power supply or a backup power supply	☐	☐	☐	☐	
Relocating facilities or constructing or installing redundant facilities	☐	☐	☐	☐	
Other (please describe): _____	☐	☐	☐	☐	
Other (please describe): _____	☐	☐	☐	☐	

4. Can the measures to increase resilience to climate change impacts be accomplished within your existing budget or anticipated future budgets? ☐ Yes ☐ No

   Please estimate the total financial impact to implement identified measures as a percentage of your annual gross revenues?

   _____
   _____

5. Notes (please include any other relevant information, or to explain a response that may need clarification):

   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

This completes the survey. Thank you.

Please return completed surveys to:

[return instructions]

CASA Comments on
SWRCB's Proposed Survey for WWTPs on Climate Change Impacts
November 14th Summit Partner Meeting with SWRCB

General comments for consideration with regard to climate change impacts to municipal wastewater treatment plants (WWTPs):

- While some WWTPs have developed climate action plans or performed vulnerability assessments, there are many that have not yet done so. Some WWTPs have addressed anticipated changes by modifying facility planning assumptions, rather than performing standalone assessments (see below).
- Wastewater agencies would like more clarity in defining what vulnerability assessments entail to inform the type and level of technical assistance needed. For example, a guidance document or checklist would be helpful in defining which climate impacts and risks are relevant to each agency. This approach would also provide for the flexibility needed in defining and tailoring these assessments/plans to each system, as we know the impacts will vary regionally. Similar to SSMPs where there is a list of topics that must be covered, but each agency tailors the analysis to their own facilities and specific circumstances. Regardless of the approach, various agencies – especially smaller ones – will need funding assistance in order to prepare a vulnerability assessment.
- Sufficient time needs to be provided to agencies for preparing vulnerability assessments. A minimum range of 1 to 3 years is estimated considering there is a wide range in systems, some being large and complex encompassing collection and treatment at multiple plants. This estimate may change if a public/stakeholder input process is required (e.g., an advisory group or public comment period).
- It is expected that some of these assessments will result in the identification of capital investments to address climate change that will need to be considered in long-term project planning. Without having completed a vulnerability assessment, it is premature to estimate how much those costs may be. That said, in 2009 the National Association of Clean Water Agencies (NACWA) and the Association of Metropolitan Water Agencies (AMWA) studied the impacts and challenges the wastewater community expects to encounter in the coming years (including impacts of climate change), and the projected costs of meeting those challenges. The report projects nationwide costs for water and wastewater climate adaptation needs could range from one-half to one trillion dollars through 2050. Of this, the total estimated cost to adapt wastewater systems to climate change across the U.S. is between $123 billion and $252 billion, above and beyond existing wastewater system infrastructure upgrade, renewal, and replacement needs. Efforts to address the unmet existing infrastructure needs that put the State at further risk to climate change impacts must be addressed first.
- For utilities to plan for future changing conditions related to climate change and make commitments to invest hundreds of millions of ratepayer dollars in infrastructure (above and beyond what is needed to keep the existing systems in good repair), it is imperative that the "best available science" be used. However, if decision makers are faced with an unnecessarily wide range in effects (e.g., a wide range in projected sea level rise), it makes the planning and permitting environment more difficult for the permittee. Additionally, there are liability concerns regarding recent litigation across the U.S. related to assessing impacts of and planning for climate change. It would be helpful to discuss why inserting a climate change-specific planning requirement in a NPDES permit may raise the risk of third party lawsuits considerably. It is important to note, the wastewater sector already plans for

changing conditions to satisfy permit requirements (to prevent spills and provide sufficient capacity) and take into account population growth. As a result, wastewater agencies are already considering climate change-related factors (e.g., changes in sea/tide level, storms/peak flows, as well as updated flood insurance rate maps) in their planning efforts.

Specific Comments on SWRCB's Draft Survey:

- For agencies of large/complex systems (i.e., multiple treatment plants that include collection system pump stations), completing the survey as-is will be difficult. Provisions will need to be made to answer questions (particularly #3) for specific systems or facilities. Respondents need the option to fill in the table (or entire survey) multiple times for specific facilities within a single agency's jurisdiction.
- Questions should be developed for agencies that have not completed a Vulnerability Assessment (VA) or Climate Action Plan (CAP) or if work is "under development." Otherwise, many agencies that answer No to question 1 or 1a will end the survey and the information will not be captured. Additionally, many agencies have completed or are in the process of implementing projects addressing drought or other conditions (e.g., aging infrastructure) that also address climate change impacts – these projects will not be captured if the questions are not broadened to document them.
    - Broaden language to inquire about Climate Adaptation or Resilience Plans (CARP), not Climate Action Plans. Climate Action Plans are typically focused more on managing and reducing greenhouse gas emissions rather than adapting to climate change impacts. We recommended looking at this site for examples and language: http://www.ca-ilg.org/post/local-climate-adaptation-resilience-plans
    - We also recommend requesting the timeframe for the VA/CARP, and whether short-term and/or long-term actions will be identified.
- Question 1a:
    - Some agencies are contributing to IRWMPs and must address climate change (per DWR requirements) with a focus on assisting their Region in being more resilient with respect to water supply. For example, considering recycled water projects, emergency water system interconnection projects (for drought preparedness), etc.
    - Information about regional or collaborative efforts (e.g., names of those groups or titles of their plans) should be requested. For example, in the LA area there is the Los Angeles Regional Collaborative (LARC).
- Question 1b:
    - Recommend adding an "other" checkbox to provide the option to list additional components. Citywide, regional or interagency assessments may look beyond wastewater facilities.
- Questions regarding the preparation of a VA/CARP should be included, such as the level of effort (hours/timeframe) and cost, whether use of consultants was necessary or if it was prepared in-house, and perhaps an open-ended question about "lessons learned."
- If an agency has not prepared a VA/CARP, we recommend requesting what the Water Boards could do to assist them in performing one (e.g., on-site technical assistance, workshops, funding, etc.). Perhaps there could be a partnership of regional associations (BACWA, CVCWA, SCAP, etc.) and the Water Boards to develop a peer-to-peer approach with technical assistance.

DOWNEYBRAND

Melissa A. Thorme
mthorme@downeybrand.com
916.520.5376 Direct
916.520.5776 Fax

Downey Brand LLP
621 Capitol Mall, 18th Floor
Sacramento, CA 95814
916.444.1000 Main
downeybrand.com

December 8, 2016

VIA FIRST CLASS MAIL AND EMAIL: philip.wyels@waterboards.ca.gov
waterqualitypetitions@waterboards.ca.gov

Philip G. Wyels
Assistant Chief Counsel
STATE WATER RESOURCES CONTROL BOARD
Office of Chief Counsel
P.O. Box 100
Sacramento, CA 95812-0100

Re: BACWA Request to Extend Abeyance Period
SWRCB/OCC File A-2241

Dear Mr. Wyels:

The Bay Area Clean Water Agencies (BACWA) respectfully requests that the above-referenced petition be held in abeyance for another two (2) years from the current abeyance end date of January 11, 2017, to allow BACWA time to continue to work with the Regional Water Quality Control Board for the San Francisco Bay region on PCB and related permitting issues.

Very truly yours,

DOWNEY BRAND LLP

Melissa A. Thorme

MAT:kc

Attachment

1465734.1

cc: Via Email Only

Mr. David Williams, Executive Director
BAY AREA CLEAN WATER AGENCIES
P.O. Box 24055, MS 702
Oakland, CA 94623
dwilliams@bacwa.org

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lori.okun@waterboards.ca.gov

Yuri Won, Esq.
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Mr. David W. Smith
Chief
Permits Office
U.S. EPA, Region 9
75 Hawthorne Street
San Francisco, CA 94105
smith.davidw@epa.gov

State Water Resources Control Board

DEC 27 2016

[via U.S. Mail and email]
Melissa A. Thorme, Esq.
Downey Brand LLP
621 Capitol Mall, 18th Floor
Sacramento, CA 95814
mthorme@downeybrand.com

Dear Ms. Thorme:

PETITION OF BAY AREA CLEAN WATER AGENCIES (WASTE DISCHARGE REQUIREMENTS ORDER NO. R2-2012-0096 [NPDES NO. CA0038849] FOR MERCURY AND PCBS FROM MUNICIPAL AND INDUSTRIAL WASTEWATER DISCHARGES TO SAN FRANCISCO BAY), SAN FRANCISCO BAY REGIONAL WATER QUALITY CONTROL BOARD: APPROVAL OF REQUEST TO CONTINUE TO BE HELD IN ABEYANCE
SWRCB/OCC FILE A-2241

Pursuant to your request, the State Water Resources Control Board (State Water Board) will continue to hold this petition in abeyance until January 11, 2019. Please pay careful attention to this date, because the State Water Board is not responsible for reminding petitioners that their abeyance periods are about to expire. If the State Water Board does not receive prior to 5:00 p.m. on the last business day before January 11, 2019 either (1) a written request to further extend the abeyance period, or (2) a written request to remove the petition from abeyance and activate the petition, then this petition will be deemed withdrawn as of January 11, 2019. If the petition is deemed withdrawn, you will not be able to seek judicial review of the regional water quality control board's action or inaction. Requests to extend abeyance periods or to remove petitions from abeyance should be sent to waterqualitypetitions@waterboards.ca.gov or to the mailing address below. A copy of the request must be sent to the other parties to the petition, including the regional water quality control board.

If you decide that you would like to remove this petition from abeyance and activate it at some time in the future, it is important that you carefully consult the State Water Board's regulations. (See Cal. Code Regs., tit. 23, § 2050.5.) If you request that this petition be removed from abeyance and activated, the petition will be dismissed on the 91st day following the State Water Board's receipt of your written request to remove the petition from abeyance unless:

(1) the State Water Board has notified you, the regional water quality control board and interested persons that the regional water quality control board and interested persons have 30 days to respond to the petition;

(2) the State Water Board has received a written request from you to place this petition back in abeyance; or

(3) the State Water Board has notified you prior to 91st day that the petition is dismissed.

If none of these events occurs prior to 5:00 p.m. on the last business day before the 91st day after the State Water Board receives your written request to remove the petition from abeyance, this petition will be automatically dismissed without further action by the State Water Board. Dismissal of a petition, whether done by operation of law or by a letter issued by the State Water Board, is a final agency action for purposes of seeking judicial review of the regional water quality control board's action or inaction.

If you have any questions regarding this letter, please contact me at (916) 341-5178.

IN ALL FUTURE CORRESPONDENCE, PLEASE REFER TO
SWRCB/OCC FILE A-2241

Sincerely,

Philip G. Wyels
Assistant Chief Counsel

cc: See next page

DEC 27 2016

cc: **[via U.S. Mail and email]**
David Williams, Executive Director
Bay Area Clean Water Agencies
P.O. Box 24055, MS 702
Oakland, CA 94623
dwilliams@bacwa.org

[via U.S. Mail only]
Dischargers Interested Parties List – Exhibit A

Bruce Wolfe **[via email only]**
Executive Officer
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
bruce.wolfe@waterboards.ca.gov

Ms. Dyan Whyte **[via email only]**
Assistant Executive Officer
San Francisco Bay Regional Water Quality Control Board
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dyan.whyte@waterboards.ca.gov

Thomas Mumley **[via email only]**
Assistant Executive Officer
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Lori T. Okun, Esq. **[via email only]**
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State Water Resources Control Board
1001 I Street, 22nd Floor [95814]
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Sacramento, CA 95812-0100
Philip.Wyels@waterboards.ca.gov

David W. Smith, Chief **[via email only]**
Permits Office
U.S. EPA, Region 9
75 Hawthorne Street
San Francisco, CA 94105
smith.davidw@epa.gov

EXHIBIT A
A-2241 [BAY AREA CLEAN WATER AGENCIES]
DISCHARGERS INTERESTED PARTIES LIST

City of American Canyon
Wastewater Treatment and
Reclamation Facility
151 Mezzetta Court
American Canyon, CA 94503

City of Benicia
Benicia Wastewater Treatment Plant
614 East Fifth Street
Benicia, CA 94510

City of Burlingame
Burlingame Wastewater Treatment Plant
1103 Airport Boulevard
Burlingame, CA 94010

Central Contra Costa Sanitary District
Central Contra Costa Sanitary District
Wastewater Treatment Plant
5019 Imhoff Place
Martinez, CA 94553

Central Marin Sanitation Agency
Central Marin Sanitation Agency
Wastewater Treatment Plant
1301 Andersen Drive
San Rafael, CA 94901

Delta Diablo Sanitation District
Wastewater Treatment Plant
2500 Pittsburg-Antioch Highway
Antioch, CA 94509

East Bay Dischargers Authority (EBDA)
c/o EBDA Common Outfall
14150 Monarch Bay Drive
San Leandro, CA 94577

Cities of Hayward and San Leandro

Hayward Water Pollution Control Facility
San Leandro Water Pollution Control Plant
c/o EBDA Common Outfall
14150 Monarch Bay Drive
San Leandro, CA 94577

Oro Loma Sanitary District
Castro Valley Sanitary District
Oro Loma/Castro Valley Sanitary
Districts Water Pollution Control Plant
c/o EBDA Common Outfall
14150 Monarch Bay Drive
San Leandro, CA 94577

Union Sanitary District
Raymond A. Boege Alvarado
Wastewater Treatment Plant
c/o EBDA Common Outfall
14150 Monarch Bay Drive
San Leandro, CA 94577

Livermore-Amador Valley Water Management Agency
Livermore-Amador Valley Water Management
Agency Export and Storage Facilities
c/o EBDA Common Outfall
14150 Monarch Bay Drive
San Leandro, CA 94577

Dublin San Ramon Services District
Dublin San Ramon Services District
Wastewater Treatment Plant
c/o EBDA Common Outfall
14150 Monarch Bay Drive
San Leandro, CA 94577

City of Livermore
City of Livermore Water Reclamation Plant
c/o EBDA Common Outfall
14150 Monarch Bay Drive
San Leandro, CA 94577

East Bay Municipal Utility District
East Bay Municipal Utility District,
Special District No. 1 Wastewater
Treatment Plant (WWTP)
2020 Wake Avenue
Oakland, CA 94607

Fairfield-Suisun Sewer District
Fairfield-Suisun Wastewater Treatment Plant
1010 Chadbourne Road
Fairfield, CA 94534

Las Gallinas Valley Sanitary District
Las Gallinas Valley Sanitary District
Sewage Treatment Plant
300 Smith Ranch Road
San Rafael, CA 94903

Sanitary District No. 5 of Marin County (Paradise Cove)
Paradise Cove Treatment Plant
3700 Paradise Drive
Tiburon, CA 94920

Sanitary District No. 5 of Marin County (Tiburon)
Tiburon Treatment Plant
2001 Paradise Drive
Tiburon, CA 94920

City of Millbrae
Water Pollution Control Plant
400 East Millbrae Avenue
Millbrae, CA 94030

Mt. View Sanitary District
Mt. View Sanitary District
Wastewater Treatment Plant
3800 Arthur Road
Martinez, CA 94553

Novato Sanitary District
Novato Sanitary District
Wastewater Treatment Plant
500 Davidson Street
Novato, CA 94945

City of Palo Alto
Palo Alto Regional Water
Quality Control Plant
2501 Embarcadero Way
Palo Alto, CA 94303

City of Pinole
Pinole-Hercules Water
Pollution Control Plant
11 Tennent Avenue
Pinole, CA 94564

Rodeo Sanitary District
Rodeo Sanitary District
Water Pollution Control Facility
800 San Pablo Avenue
Rodeo, CA 94572

City of Saint Helena
City of St. Helena Wastewater
Treatment and Reclamation Plant
1 Thomann Lane
St. Helena, CA 94574

City and County of San Francisco
San Francisco International Airport
Mel Leong Treatment Plant, Sanitary Plant

918 Clearwater Drive
San Francisco, CA 94128

City and County of San Francisco (Southeast Plant)
Southeast Water Pollution Control Plant
750 Phelps Street
San Francisco, CA 94124

San Jose/Santa Clara Water Pollution Control
Plant and Cities of San Jose and Santa Clara
San Jose/Santa Clara Water Pollution Control Plant
4245 Zanker Road
San Jose, CA 95134

City of San Mateo
City of San Mateo
Wastewater Treatment Plant
2050 Detroit Drive
San Mateo, CA 94404

Sonoma Valley County Sanitary District
Municipal Wastewater Treatment Plant
22675 8th Street East
Sonoma, CA 95476

South Bayside System Authority
South Bayside System Authority
Wastewater Treatment Plant
1400 Radio Road
Redwood City, CA 94065

Cities of South San Francisco and San Bruno
South San Francisco and San
Bruno Water Quality Control Plant
195 Belle Air Road
South San Francisco, CA 94080

City of Sunnyvale
Sunnyvale Water Pollution Control Plant
1444 Borregas Avenue
Sunnyvale, CA 94089

Vallejo Sanitation and Flood Control District
Vallejo Sanitation and Flood Control District
Wastewater Treatment Plant
450 Ryder Street
Vallejo, CA 94590

West County Agency Combined Outfall
West County Agency (West County Wastewater
District and City of Richmond Municipal Sewer District)
601 Canal Boulevard
Richmond, CA 94804

Town of Yountville
Municipal Wastewater Treatment Plant
7501 Solano Avenue
Yountville, CA 94599

BAY AREA CLEAN WATER AGENCIES
Draft ANNUAL MEETING PROGRAM
JANUARY 11, 2019

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ENTER: pollev.com/bacwa
For Ranking questions: use the lines to the right to arrange your answers

TIME	SUBJECT	DESCRIPTION	SPEAKER
QUESTION 0		Rank your favorite holiday desserts	
8:30 am - 9:00 am	Coffee and Refreshments		
9:00 am - 9:15 am	Welcome	Introduction and Year in Review (including business issues)	Lori Schectel, Chair
9:15 am - 10:30 am	EPA/SWRCB/RWQCB/ Priorities	Moderator	Amit Mutsuddy
		EPA Region IX, Manager, NPDES Permits Office	?
		SWRCB Board Member	Tam DoDuc
		RWQCB Executive Officer	Bruce Wolfe, Michael Montgomery, Tom Mumley
		BAAQMD APCO	Jack Broadbent (invited)
10:30 am - 10:45 am	Break		
10:45 am - 10:50 am	Nutrients - Overview	Progress on 1st WS Permit/Governance Update	Eileen White
10:35 am - 11:45 am	Nutrients - Regulatory Update	Moderator	Jackie Zipkin
	(cont'd)	Optimization/Upgrade Studies Final Report	Neethling/Falk, HDR
		2018 Group Annual Report	Neethling/Falk, HDR
		Q & A	Neethling/Falk, HDR
		LayPerson's Brochure and Presentation	Kennedy, HDR
QUESTION 1		Has your agency done an analysis on the rate impact of nutrient upgrades? (Y/N)	
11:45 am - 11:55 am	BACWA Leadership Recognition	(scrolling screen with Committee Accomplishments)	Lori Schectel, Chair
11:55 am - 12:25 pm	Lunch		
12:25 pm - 1:05 pm	Nutrients - Technical Update	Moderator	Brian Henderson
		New Findings	David Senn, SFEI
QUESTION 2			
1:10 pm - 1:30 pm	Nutrient - Regulatory	Preview of the 2nd Watershed Permit	David Williams

QUESTION 3		My agency has responded or plans to respond to 1) Early actors template 2) factors increasing loading template 3)neither (pick all that apply)	
1:30 pm - 2:45 pm	BACWA Hot Topics	Moderator	Eileen White
		AIR Issues/Climate Adaption	Sarah Deslauriers
QUESTION 4		Does your agency currently have plans for a new project or expansion to accept more organic waste?	
QUESTION 5		Does your agency struggle to balance reduction of greenhouse gas emissions with toxic air contaminants?	
		Recycled Water Policy	Leah Walker
		ELAP/TNI implementation	Nirmela Arsem
QUESTION 6		How will your agency respond to the new TNI standards? Choose One	
		Toxicity Provisions	Lorien Fono
QUESTION 7		Choose one of the following pertaining to compliance with future toxicity limits: 1) Agency has not considered how toxicity provisions will impact compliance; 2) Agency has done complance analysis and does not foresee problems; 3) Agency has done compliance analysis and foresees possible issues; 4) This is the first I've heard about the toxicity provisions	
		Compounds of Emerging Concern	Becky Sutton
2:45 pm - 2:50 pm	Annual Meeting Wrap-Up		Lori Schectel, Chair

BACWA
BAY AREA
CLEAN WATER
AGENCIES

December 21, 2018

Mr. David Clark, PE, WEF Fellow
Senior Vice President, Wastewater Market Sector Director
HDR, Inc.
412 E Parkcenter Blvd, Suite 100
Boise, ID 83706

Subject: Completion of the Nutrient Reduction Study

Dear Mr. Clark,

As the Executive Director of the Bay Area Clean Water Agencies (BACWA) I wanted to express my sincere appreciation for a job well done on the completion of the San Francisco Bay Area Nutrient Reduction Study. The consulting team of HDR/Brown & Caldwell did an excellent job on completion of this four and one-half year effort. From the beginning with the successful completion of the Scoping and Evaluation Plan, approved by the Regional Water Board, through all of the 37 site visits and investigations, the plant specific analyses, the Group Annual Reports and the presentation of the Final Report, the team was outstanding. Particularly helpful was the monthly Contract Management Group conference calls where your team presented progress reports and solicited input form the POTW community. Also noticeable as the work progressed was the trust and confidence your team fostered with the Water Board regulators which I believe was a direct result of the competence and credibility of the team members. Although a host of folks from both firms took part in the effort I wanted to express a special thanks to team members Holly Kennedy, J.B. Neethling, Mike Falk, Linda Sawyer, Rion Merlo, and Mallika Ramanathan. Collectively they represented a dream team from a client's perspective.

Once again, thanks for a job well done!

Sincerely,

David R. Williams

David R. Williams
Executive Director

Cc: Holly Kennedy
J.B. Neethling
Mike Falk
Linda Sawyer
Rion Merlo
Mallika Ramanathan

Sherry Hull

From: Sherry Hull
Sent: Tuesday, December 18, 2018 12:43 PM
To: Sherry Hull
Subject: Meeting at Codiga

From: Kara Elizabeth Baker [mailto:Kara.Baker@stanford.edu]
Sent: Tuesday, December 11, 2018 8:58 AM
To: David Williams <dwilliams@bacwa.org>
Cc: Lorien Fono <lfono@bacwa.org>; Sherry Hull <shull@bacwa.org>; Sebastien Tilmans <stilmans@stanford.edu>; Richard G. Luthy <luthy@stanford.edu>; Craig Criddle <criddle@stanford.edu>; Shamealle Bostic <sbostic@stanford.edu>
Subject: Re: BACWA Meeting at Codiga Research Center

Hi David,

Thank you so much for reaching out and for your interest in a tour of the Codiga Center. Sebastien Tilmans, the Director of Operations at Codiga, as well as Dick Luthy, the Director of ReNUWIT, are available on February 15th, 2019.

Regarding having the BACWA Board meeting at Stanford in coordination with the tour, we can reserve a room in the Y2E2 building at 473 Via Ortega. It is about 1.4 miles from Y2E2 to Codiga, so the logistics won't be quite as simple as walking next door, but hopefully that will be convenient enough for the group to either carpool or take a walk if the weather is nice.

Please confirm if the February 15th date works for you and we will go ahead and get a room reserved from 8:30am-12:30pm on that day for the Board meeting in advance of the tour. I don't know if you typically provide lunch for the Board meetings, but if you need assistance coordinating on-campus catering, please let me know.

Best regards,
Kara

Kara Baker
Research & Industrial Liaison Officer – NSF ERC for ReNUWIt
Stanford University
Y2E2 Bldg, Room 119
473 Via Ortega
Stanford, CA 94305-4020
Phone: 650.725.2172

From: David Williams <dwilliams@bacwa.org>
Date: Sunday, December 9, 2018 at 12:12 PM
To: Kara Elizabeth Baker <Kara.Baker@stanford.edu>
Cc: Lorien Fono <lfono@bacwa.org>, Sherry Hull <shull@bacwa.org>
Subject: BACWA Meeting at Codiga Research Center

Kara,

At a recent BACWA Board meeting, a suggestion was made to combine a future Board meeting with a tour of the Codiga research Center. I am writing to see if this might be a possibility. Given the location of the Research Center and the fact that BACWA Board meeting are rotated between the EBMUD building in downtown Oakland and the SFPUC building in SF, the thought was to actually hold a BACWA meeting at Codiga and have the tour at the end of the meeting. We generally have about 20 folks attend our Board meetings, so would need a meeting room large enough to accommodate that many attendees. Our meetings are held from 9:00 am to 12:30 pm on the 3rd Friday of each month. Let me know if holding at meeting at Codiga would be possible for some time in the first half of 2019. Thanks

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

2019 BACWA EXECUTIVE BOARD
REGULAR MONTHLY MEETING SCHEDULE

DATE	TIME	LOCATION
January 11, 2019 *(Annual Member Meeting – no regular Board meeting in January)*	8:30 – 3:30	Scottish Rite Center 1547 Lakeside Dr. 3rd Flr. Oakland, CA
February 15, 2019	9:00 – 12:30	SFPUC, Hetch Hetchy Room
March 15, 2019	9:00 – 12:30	EBMUD HQ, 2nd Floor Large Training Room
April 19, 2019	9:00 – 12:30	SFPUC, Hetch Hetchy Room
May 17, 2019	9:00 – 12:30	EBMUD HQ, 2nd Floor Large Training Room
June 21, 2019	9:00 – 12:30	SFPUC, Hetch Hetchy Room
July 19, 2019	9:00 – 12:30	EBMUD HQ, 2nd Floor Large Training Room
August 16, 2019 *(Short Regular Board Meeting-Pre-Pardee Tech Seminar*	8:30 – 9:00 9:00 – 4:00	SFPUC, Hetch Hetchy Room
September 26-27, 2019 *(Pardee Tech Seminar – no regular Board meeting in September*	TBD	EBMUD Pardee Reservoir Facility
October 18, 2019	9:00 – 12:30	EBMUD HQ, 2nd Floor Large Training Room
November 15, 2019	9:00 – 12:30	SFPUC, Hetch Hetchy Room
December 20, 2019 *(Holiday & Committee Leadership Appreciation Lunch)*	9:00 – 12:30 12:30 – 2:00	EBMUD HQ, 2nd Floor Large Training Room

Special Board Meetings to be scheduled in 2019:

Joint BACWA/San Francisco Bay Regional Water Board meetings will be scheduled for March, May, July, September (Pardee), and December

Sherry Hull

From: Sherry Hull
Sent: Tuesday, December 18, 2018 4:38 PM
To: Sherry Hull
Subject: WOTUS Coming Soon - and FWQC Dues Announcement for 2019 (Good News!)

From: Andes, Fredric [mailto:Fredric.Andes@btlaw.com]
Sent: Monday, December 10, 2018 9:18 AM
To: Andes, Fredric <Fredric.Andes@btlaw.com>
Subject: WOTUS Coming Soon - and FWQC Dues Announcement for 2019 (Good News!)
Importance: High

OK, two quick things. First, as you may have heard, the Administration is scheduled to release the new draft WOTUS rule tomorrow (Tuesday). We do have some clues as to what is in it, thanks to some talking points that have been used to brief the Hill, and which are finding their way around DC. Those talking points are attached. As you'll see, the rule appears to be close to what we expected – much narrower than the 2015 rule. Of course, we'll need to see the details. Once the proposal comes out, we will send it around right away, and schedule a call to discuss. So, keep tuned…

Second, I know that many of the members are currently finalizing their budgets for next year. Some of you have called to check on what FWQC dues would be for 2019. As you may recall, we increased dues in 2015, for the first time in over 10 years. At the time, we indicated that we would plan to keep dues steady again for a while. So, there will be no dues increase this year - except for a few exceptional situations. (I have talked with those folks, so you know who you are.) Therefore, with those few exceptions, your 2018 dues amount will also be your dues amount for 2019.

Some of you, confronted by the vagaries of your internal accounting procedures, have also asked if we can send out dues invoices early, before Jan. 1, so they can be paid this year. The answer is: Yes. If you would like an invoice for 2019 dues now, please let me know, and we will get it to you. (Some of you have already done that, in which case, of course, you can ignore this message.) Also, please let me know if we can send a pdf copy by e-mail, or if a paper copy is needed by regular mail. And, of course, please feel free to call or e-mail if you have any questions. Thanks.

P.S. Just to make sure everyone knows this: If your organization (for example, a company) is part of the FWQC because your trade association (for example, API or AF&PA) is a member, then this note doesn't apply to you, at least not directly, since the dues are paid by the association.

P.P.S. Here is a link to this note on the FWQC web site: http://fwqc.org/members/DocumentLibrary/WOTUS%20Coming%20Soon%20-%20and%20FWQC%20Dues%20Announcement%20for%202019%20(Good%20News!).htm .

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BAY AREA CLEAN WATER AGENCIES
SUCCESSION PLANNING
Fiscal Year 2019

A. BACWA Principal Representatives

Agency	Representatives	Title & Roles
CCCSD	Lori Schectel	BACWA Chair, CASA State Legislative Committee, Nutrient Governance Steering Committee Alternate, Summit Partners
	Roger Bailey (Alternate)	
	Jean-Marc Petit (Alternate)	
EBDA	Jacqueline Zipkin	BACWA Executive Board Rep, ReNUWIt Industrial Advisory Committee Member
	Jason Warner, Oro Loma (Alternate)	
EBMUD	Eileen White	BACWA Executive Board Rep, Nutrient Management Strategy Governance Steering Committee, Bay Area Regional Reliability Project, SF Estuary Partnership
	Maura Bonnarens (Alternate)	AWT Certification Committee
	Nirmela Arsem	RMP Microplastics Liaison
SFPUC	Brian Henderson	BACWA Executive Board Rep,
	Greg Norby (Alternate)	
	Jennie Pang (Alternate)	
	Ryan Jackson (Alternate)	
	Amy Chastain (Alternate)	
San Jose	Amit Mutsuddy	BACWA Executive Board Rep, Joint SFEI/ASC Board
	Eric Dunlavey (Alternate)	RMP Steering Comm; Nutrient Management Strategy Comm;

Changes to Principal Representation require submission of a Designation Letter and a Statement of Economic Interest Form within 30 days

B. Other BACWA Representations

Group/Organization	Current Representative	Succession Planning
RMP Technical Committee	Mary Lou Esparza, CCCSD	
	Nirmela Arsem, EBMUD	
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	Eileen White, EBMUD	
	Dave Williams	
	Amit Mutsuddy, San Jose	
	Karin North, Palo Alto, ASC Board Alternate, Amy Chastain, SFPUC, ASC Board Alternate	
Nutrient Management Strategy Governance Steering Committee	Eric Dunlavey, San Jose	
	Eileen White, EBMUD	
	Jackie Zipkin, EBDA	
	Lori Schectel, Alternate	
NMS Planning Subgroup	Eric Dunlavey, San Jose	
NMS Technical Workgroup	Eric Dunlavey, San Jose	
SWRCB Nutrient SAG	Dave Williams	
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	Colleen Henry, CCCSD	
California Ocean Protection Council	Lorien Fono, BACWA	
Countywide Water Reuse Master Plan	Karin North, Palo Alto	Was Bhavani Yerrapotu
	Pedro Hernandez, San Jose	

Changes to BACWA Representation requires Executive Board Approval.

C. BACWA Committees

Committee	Chair	Vice/Co-Chair	Comments	Succession Planning
AIR	Nohemy Revilla, SFPUC, Co-Chair	Randy Schmidt, CCCSD, Co-Chair	CWCCG Representative	Nohemy Revilla; Randy Schmidt
BAPPG	Autumn Cleave, SFPUC	Robert Wilson, (Petaluma) Co-Chair, Simret Yigzaw, V-Chair of Budget; Joe Neugebauer (WCWD) V-Chair of Reporting	Robert Wilson is new Co-Chair	Autumn Cleave, Chair; Simret Yigzaw, V-Chair of Budget; Joe Neugebauer (WCWD) V-Chair of Reporting
BAPPG Pesticide Subcommittee	Karin North, Palo Alto	Robert Wilson, Petaluma; Autumn Cleave, SFPUC	New Subcommittee effective November 2017	Karin North, Robert Wilson, Autumn Cleave
Biosolids	Alicia Chakrabarti, EBMUD, Chair	Ravi Krishnaiah, SFPUC, Vice-Chair		Alicia Chakrabarti, Chair; Ravi Krishnaiah, Vice-Chair
Collection Systems	Erin Smith, City of Alameda, Chair	Andrew Damron, Napa San, Vice-Chair		Erin Smith; Andrew Damron
InfoShare Ops/Maint	Joaquin Gonzales, Delta Diablo, Co-Chair	Kevin Dickison, EBMUD, Co-Chair		Juaquin Gonzales, Kevin Dickison, Co-Chairs
InfoShare Asset Mgmt	Co-Chair	Co-Chair	Both Dana Lawson, CCCSD, and Aaron Johnson, DSRSD, stepped down form Co-Chair positions. Committee on hiatus for now	Dana Lawson, Aaron Johnson, Co-Chairs
Laboratory	Nirmela Arsem, EBMUD, Chair	Noel Enoki, San Jose, Vice-Chair	BACWA Executive Board Alternate	Nirmela Arsem, Noel Enoki
Permits	Robert Wilson, Petaluma, Chair	Samantha Engelage, City of Palo Alto, V-Chair		Robert Wilson, Chair; Samantha Engelage, City of Palo Alto, V-Chair
Pretreatment	Tim Potter, CCCSD, Co-Chair	Michael Dunning, Union San, Co-Chair		Tim Potter, Michael Dunning, Co-Chairs
Recycled Water	Leah Walker, City of Petaluma, Co-Chair	Stefanie Olsen, DSRSD, Co-Chair		Leah Walker, Stefanie Olsen, DSRSD, Co-Chairs

Changes to Committee Leadership will be reported annually and intra-year by Executive Director to Executive Board

Meeting Date: December 5, 2018
Executive Board Meeting Date: December 21, 2018
Prepared By: Lorien Fono, BACWA RPM
BAPPG Chair: Autumn Cleave, Robert Wilson

Committee Notes are available online.

Regional Water Board Update Debbie Phan requested that agencies submitting P2 Annual Reports simply reference BAPPG's Annual Report, and don't include it as an attachment.
Google Analytics report The Univision Spanish radio ads played over the Thanksgiving holiday week. The committee did an in-depth review of the Google Analytics report (see attached) for baywise.org to see what sources of web traffic we are getting, and what pages the public is looking at. The group agreed that we should ask O'Rorke for analysis on what the data tell us with respect to actionable results.
Social Media BAPPG cannot run Facebook ads without maintaining a Facebook Page, so the Steering Committee is considering launching one. There is the question of who will maintain/update the page, and who will respond to questions and comments received through the page. It was suggested that the BACWA AED would receive the questions and forward them to the current committee chair. The Steering Committee will develop a draft social media policy for BAPPG.
Budget The FY19 committee budget was approximately 45%, spent.

Next BAPPG Meeting

BAPPG General Meeting
February 6, 2018: 9:00am-1:00pm
1515 Clay Street, Second Floor, Room 11
Oakland, CA

Collection Systems Committee Meeting on: 11/29/18
Executive Board Meeting Date: 12/21/18
Committee Chairs: Erin Smith and Andrew Damron

Committee Request for Board Action: None

31 attendees, representing 17 member agencies.

SSS WDR Reissuance

There was a discussion about what makes a "good" collection system, since these may have a special designation under the new SSS WDR, where they are eligible for decreased reporting requirements. The obvious metrics, such as volumetric and numeric spill rates, and peaking factors, all have problems since it is hard to do an apple-to-apples comparison. They may also unfairly penalize older collection systems compared to new ones. A performance-based metric may be more appropriate.

CASA met with State Water board staff the afternoon of 11/29 to continue to clarify the issues of concern and to discuss the MRP. The first draft of the revised SSS WDR is expected in February/March 2019.

Regional Water Board FY19 Priorities

Regional Water board staff attended the meeting and described their priorities for this fiscal year. In the past year, they did 13 inspections. The Administrative Enforcement Office decides which agencies get penalties. In general, violations have been issued for non-compliant reporting where the report is missing, rather than just late. The outline for their prioritization scoring is:

Spill Ranking

- SSO rate and Volume
- Category 1 SSOs
- SSOs that exceed 50,000 gallons
- Percentage of SSO spilled that reached surface water

Compliance Rankings

- Missing "No Spill" certifications
- CIWQS Questionnaire completed on time.
- All SSMP elements are complete
- Pipe Age

Other Rankings

- Most recent inspection
- Formal enforcement actions (ACLOs, CDOs, NOVs)
- Failure to report required items into CIWQS
- Third party actions (e.g., EPA, Baykeeper, or ERF consent decrees)

Degreasers and Root Foaming Agents

There was a discussion about chemicals applied for sewer maintenance. One member reported that their agencies does root cutting and removal prior to treating with Vaporoot. One issue to keep in mind is that the homeowner cannot use their lateral for a few hours the day the root chemical is applies. No one at the meeting reported using degreasing chemicals in restaurant laterals.

Next Collection System Committee Meeting

Our next committee meeting will be held on January 24, 2019.

Laboratory committee meeting on: November 14, 2018 and December 12, 2018
Executive Board Meeting Date: December 21, 2018
Committee Chair : Nirmela Arsem

Committee Request for Board Action: none

10 attendees representing member 5 agencies at 11/14 meeting
11 attendees representing member 8 agencies at 12/12 meeting

TNI Transition:
After several iterations, there is a plausible proposal for a California QMS systems that would be the foundation for a dual track laboratory accreditation system. The recommendation would keep the TNI sections addressing quality control, but drop those related to bookkeeping. This proposal was to be presented at the ELTAC meeting on 12/13.

Residual Chlorine
EOA circulated a survey to get information on reporting limits for total residual chlorine. However, because agencies use many different methods/instruments, the committee suggested they would get better information by looking at nationally collected data.

11/13 ELAP Meeting report-out
ELAP is taking a long time to issue recertifications. ELAP is deciding how to classify deficiencies. Labs are concerned that ELAP is disproportionately punishing small deficiencies.

Toxicity
There was a discussion about the difficulties involved with running three tests within a 30-day period, and an alternative proposal for the three tests to be run within 6 weeks. There are going to be other changes resulting from the new Toxicity Provisions, for example, some species will not be allowed, and others won't be feasible to use because of their spawning season.

Nutrient Watershed Permit
The Regional Water Board is considering dropping the organic nitrogen analysis from the MRP of the 2nd nutrient watershed permit, and will base future limits or targets on dissolved inorganic nitrogen. They are considering dropping total reactive phosphorus as well.

Conferences
There will be a TNI conference on California-specific issues in Newport Beard in February 2020
The Monterey P3S CWEA Conference will have a 2-day lab workshop on February 12-13, 2019
TNI is hosting five two-hour training webinars beginning February 5, 2019

Next meeting: February 13, 2019

Pretreatment Committee – Report to BACWA Board

Pretreatment Committee Meeting on: 10/30/2018
Executive Board Meeting Date: 12/21/18
Committee Chairs: Tim Potter, Michael Dunning

Committee Request for Board Action: None

10/30/18 Pretreatment Committee Meeting – 27 in-person attendees and 3 phone attendees representing 20 agencies

1. BACWA Updates
   - Committee FY 18-19 budget approved.
   - SWRCB posted changes to toxicity testing and regulatory standards with goal of adopting new standards in early 2019. Workshops scheduled. CASA and BACWA are participating in process. Toxicity violations could require pretreatment program resources to conduct Toxicity Reduction Evaluations (TRE).
2. Committee Projects
   - Mobile surface cleaners –Contact pages of current draft regional BMP document routed. Agencies attending asked to update/enter the applicable contact information to be used for the document. An updated draft document will be routed to member agencies for comment.
   - Resource template – work ongoing
3. Debrief PCA/PCI
   - No activity since last committee meeting reported.
4. Experiences Categorizing IU Operations
   - No significant discussions under this standing agenda topic.
5. 439 CFR Pharmaceutical Pretreatment Standards
   - Reviewed member's experience with conflicting feedback about the applicability of the 439 CFR categorical standards to a manufacturer in their service area. Discussed
6. Constituents of Emerging Concern (CEC) White Paper
   - Lorien joined meeting via conference call to obtain input on scope and feasibility for upcoming survey to assist with completion of CEC White Paper. Used modified outline provided by SFEI of targeted industries and business categories. Input provided and Lorien identified logistics of survey intended to be low effort to complete by individual agencies.
7. Update on Regulatory Programs for Cannabis Grow Operations
   - Update on recent conference call by SWRCB with pretreatment programs to cover several modifications to the General Order related to discharges from grow and production operations to POTWs.
   - Reviewed current strategies and experiences of Bay Area agencies with existing and proposed grow and production operations. Consensus of group to revisit this subject during future meetings as experiences increase and data on discharge quality starts to be available.
8. Regulating Discharges from Fueling Islands
   - Question from member about how other agencies are regulating fuel islands requesting connection to sanitary sewer.
   - Most common practice is to prohibit connection to sanitary sewer and require blind sump to protect storm water system. Alternative strategy identified to require LEL monitoring with compliance sampling under a permit.

9. Industrial User Training
    - Member identified recent IU Academy conducted to provide overview of permitting, inspections, sampling and enforcement for permitted IUs in service area. Other agencies shared their strategies for completing similar events.
    - Discussion about how to optimize participation by regulated businesses.

10. Update on Developing a Committee Webpage
    - Identified input from Lorien about developing committee webpage using Lorien's support. Agreed to start by formatting page similar to BAPPG webpage.
    - Joe Neugebauer and Michael Dunning agreed to lead effort. Other members welcome to support their efforts.

11. Update on Sampling Training
    - Identified strategy of using the trainer that lead the sampling training at the NACWA annual workshop in Providence RI.
    - Plan to hold after March to avoid conflicts with Annual Pretreatment Report submittals. Target is field staff with program managers being able to attend. Currently planning two sessions in north and south bay venues.
    - Input received to conduct training with practical, hands-on emphasis. Discussed using venues that would enable demonstration using manhole placement of equipment.

12. Inviting Regulators to Attend Next Meeting: Topics/Advance research
    - Reviewing process for obtaining support with clarifying applicability of categorical standards.
    - Review current and future roles of different agencies.
    - Discuss occasional findings in PCI/PCA reports involving other agencies' regulations or standards (e.g. hazardous waste, safety).

13. General Discussion Topics
    - Discharges from black water operations – Member asked about experiences and strategies being used to respond to projects involving discharges from black water recycling options. Potential pollutants of concern discussed. Currently few agencies have needed to consider this issue but trend may require more agencies to develop programs to address. Consensus of group to bring this subject up during future committee meetings when appropriate.
    - Inspector training – Member asked about training programs and resources available, asking if committee can provide training for new staff. Committee capacity limits ability to serve as training forum for all new staff. Discussed training strategies and resources used by other agencies (e.g. CWEA P3S Annual Conference, CalEPA Basic Inspector Academy). Identified training sessions sponsored by committee (e.g. dental amalgam training last year, upcoming sampling training).

14. Review meeting – Pros/Cons
    - Good space for a great turnout.
    - DSRSD staff did a great job hosting.

15. Next meeting: Targeting January 2019 at EBMUD in Oakland
    - Invite Amelia Whitson, Michael Chee, and SWRCB staff to attend

Executive Director's November 2018 Report

NUTRIENTS:

Completed a variety of tasks and activities associated with BACWA's interests on nutrients and collaborating with the Water Board including:
-Communicated with the Contract Management Group on the next scheduled conference call.
-Coordinated with the NMS Science Manager on presentations, meetings, and key issues on nutrients.
-Held the Nutrient Strategy Team Meeting to discuss language and approaches for the watershed permit on incentivizing early actions to reduce nutrients and conducting the Regional Study
-Worked with SFEI to plan for the 19th meeting of the NMS Steering Committee
-Planned for and participated in the 35th meeting of the NMS Planning Subcommittee and provided a summary of the meeting for review by the Committee.
-Coordinated with the HDR Project Manager on the schedule and budget for the additional tasks for preparation of the Op/Upgrade Report brochure and summary presentation to the Water Board.
-Attended the Water Board monthly meeting and spoke in support of the work on the Optimization/Upgrade Studies
-Participated in a conference call to discuss the coordination amongst BACWA. SFEI and SFEP on the EPA Water Quality Improvement Fund grant request for nutrient investigations.

BACWA BOARD MEETING AND CONFERENCES:

-Worked with staff in preparing for the November Board meeting including preparation of the final agenda and coordination with presenters.
-Continued to track all action items to completion

ASC/SFEI:

-As the Chair of the Governance Committee, coordinated with the SFEI Executive Director on committee activities.
-Discussed coordination of activities between SFEI and SFEP with the SFEI Executive Director

COLLECTION SYSTEM COMMITTEE:

-Coordinated with the RPM on planning for the next Collection System Committee meeting.
-Coordinated with BACWA staff on the collaborative effort amongst CASA, SCAP and BACWA on continuing to inform the SWRCB on issues with the proposed SSS WRD.

FINANCE:

-Reviewed the monthly BACWA financial reports with the AED.
-Reviewed the revised Reserve Policy with the Board

PERMIT COMMITTEE:

-Coordinated with the RPM for items to agendize for the next Permit Committee meeting.
-Attended the monthly Permit Committee meeting which included discussion with the Water Board on variety of topics including nutrients and toxicity testing

LAB COMMITTEE:

-Coordinated with the Summit Partners on the next steps in finding a workable solution for all labs on meeting the challenges of implementing the TNI standards.

COLLABORATIONS:

-Coordinated with CASA Regulatory Program Manager and Executive Director on regulatory issues of mutual concern.
-Coordinated with the Bay Area Biosolids Coalition to discuss a potential role for BACWA in assisting with the administration of the Coalition's activities.
-Continued serving as contract administrator for a research effort with UC Merced.
-Coordinated with SCAP and their legal team on the next steps on the toxicity lawsuit against EPA
-Represented BACWA at the quarterly meeting of SFEP

AIR COMMITTEE:

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

WOT:

-Coordinated with Solano Community College in planning for the Spring 2019 BACWWE classes.
-Participated in a conference call with the BayWork group to continue discussing collaboration between BayWork and BACWWE.
-Participated in conference calls to plan for the EPA hosted Workforce Convening event in Washington DC in November.
-Coordinated with BACWWE members on questions they had on the program.

MANAGER'S ROUNDTABLE
-Planned for the next Bay Area Manager's Roundtable Meeting in January.

ADMINISTRATION:

-Planned for and conducted the monthly BACWA staff meetings 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	Responsibiity	Deadline	Status
	Action Items from November 16, 2018 BACWA Executive Board Meeting				
2018.11-57	Chemical Consortium	Coordiante with Jeff Carsons DSRSD	ED	12/14/2018	waiting for reply
2018.11-56	BayCAN	ED to authorize membership at $1,500 and provide contact info to Members	ED/AED	11/30/2018	Completed
2018.11-55	Bay Area Biosolids Coalition Support	ED to attend next BABC Comm Mtg	ED	1/17/2019	Completed
2018.11-54	BACWA Website Member News Section	Set up page and request member news	RPM	11/30/2018	Completed
2018.11-53	Pardee Technical Seminar 2019	Reserve 9/26-27, 2019 at Pardee. Add Pre-Pardee to August, 2019	AED	11/19/2018	Completed
2018.11-52	Annual Meeting Agenda	Add Climate Adaptation(invite Sarah D, Tam DuDoc)	ED	12/31/2018	Completed
2018.11-51	SFEP Grant Proposal on Transforming Shorelines	Conference Call with Warner, Dave S, Jackie, BACWA, to discuss coordination	ED/RPM/AED	11/30/2018	Completed
2018.11-50	Dual Track Lab Certification	Nirmela to edit letter, then send to Summit Partners for review, invite Christine to Mtg	ED/RPM	11/30/2018	Completed
2018.11-49	Joint Meeting with Water Board	Finalize Agenda and send with Outlook Invitation to EB	AED	11/19/2018	Completed
2018.11-48	NST Meetings	Schedule next meeting as part of Dec 3 joing meeting with RWB	ED/RPM/AED	11/30/2018	Completed
2018.11-47	BACWA DRAFT Policies	Put Approvals on December Agenda	AED	11/30/2018	Completed
2018.11-46	BAAQMD/Silicon Valley Food Waste Program	Schedule Silicon Valley to report to EB in December or February	ED/RPM/AED	11/30/2018	Completed
2018.11-45	DRAFT Toxicity Provisions	Develop a Comment Letter for Board review	RPM	11/30/2018	Completed
2018.11-44	CEC's	Set up Conf Call with Tom Mumley, Rebecca Sutton, Jay Davis, Karin North,	AED/RPM/ED	12/15/2018	Completed
2018.11-43	Dick Luthy, Codiga Center	Facilitate informal dialogue at Stanford	ED	12/31/2018	Completed
2018.11-42	Pardee Technical Seminar	Create Tent Cards (for Water Board Staff at a minimum)	AED	on-going	Pending
2018.11-41	NST Meetings	Notify NST Members in advance of when Water Board Staff will attend.	ED/RPM/AED	on-going	Pending
	Action Items Remaining from Previous BACWA Executive Board Meetings				
2018.7-02	State level AIR & Water Regulatory conflicts	Take to next meeting of Summit Partners	ED	9/30/2018	Pending

FY19 *53 of 57 Action Items completed*
FY18 *66 of 66 Action Items completed*
FY17: *90 of 90 Action Items completed*
FY16: *96 of 97 Action Items completed*

BACWA BOARD CALENDAR
January 2019 to December 2019

DATE	AGENDA
1/11/2019	
Annual Members Mtg	Service & Leadership Recognition
Schectel, Mitsuddy, White, Zipkin, Henderson	RMP & NMS Update
Williams; Fono; Hull	EPA, CWRCB, RWCB, Air Dist,
2/15/2019	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes
Items due: 2/8	Monthly Financial Report
Schectel, Mitsuddy, White, Zipkin, Henderson	**Authorizations & Approvals**
Williams; Fono; Hull	Approval:
	Other Business - POLICY/STRATEGIC
	Discussion: Draft Agenda Joint Meeting with WB
	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 - Water Board	**Other Business: Discussions**
Schectel, Mitsuddy, White, Zipkin, Henderson	
Williams; Fono	
3/15/2019	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes
Items due: 3/8	Monthly Financial Report
Schectel, Mitsuddy, White, Zipkin, Henderson	**Authorizations & Approvals**
Williams; Fono; Hull	**Other Business - POLICY/STRATEGIC**
	Discussion: WB Joint Meeting Debrief
	Other Business - OPERATIONAL
	Discussion: Second Draft of FY20 Budget
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

4/19/2019	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes
Items due: 4/12	Monthly Financial Report
Schectel, Mitsuddy, White, Zipkin, Henderson	**Authorizations & Approvals**
Williams; Fono; Hull	Approval: FY20 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
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

5/?/2019	
Joint Meeting - Water Board	**Other Business: Discussions**
Schectel, Mitsuddy, White, Zipkin, Henderson	
Williams; Fono	

5/17/2019	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes
Items due: 5/10	Monthly Financial Report
Schectel, Mitsuddy, White, Zipkin, Henderson	**Authorizations & Approvals**
Williams; Fono; Hull	Approval: FY19 Staff Consulting Amendments/Agreements
	Approval: Officers: Chair & Vice-Chair FY19
	Authorization (ED): Legal & IT Support Amendments FY19
	Other Business - POLICY/STRATEGIC
	Discussion: Water Board Jt Mtg Debrief
	Discussion: CEC Update
	Discussion: Update on regional and statewide biosolids issues
	Other Business - OPERATIONAL
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

6/21/2019	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes
Items due: 6/14	Monthly Financial Report
Schectel, Mitsuddy, White, Zipkin, Henderson	**Authorizations & Approvals**
Williams; Fono; Hull	Approval: FY19 Agreements
	Approval: Confirm BACWA Rep to ASC/SFEI Jt Board

	Other Business - POLICY/STRATEGIC
	Discussion: Update on CASA Climate Change Program
	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

7/19/2019	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes
Items due: 7/12	Monthly Financial Report
Schectel, Mitsuddy, White, Zipkin, Henderson	**Authorizations & Approvals**
Williams; Fono; Hull	Approval: Annual Nutrient WS Payment
	Approval: FY20 Agreements
	Approval: BACWA Biennial Conflict of Interest Code Review
	Other Business - POLICY/STRATEGIC
	Discussion: Water Board Jt Mtg Draft Agenda
	Discussion: Draft Agenda Pre-Pardee Technical Seminar
	Discussion: Risk Reduction Update
	Discussion: RMP & NMS Update (Phil Trowbridge/David Senn)
	Other Business - OPERATIONAL
	Discussion: Options for Supporting the Bay Area Biosolids Coalition
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

8/16/2019	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes
Items due: 8/9	Monthly Financial Report
Schectel, Mitsuddy, White, Zipkin, Henderson	**Authorizations & Approvals**
Williams; Fono; Hull	Approval:
	Other Business - POLICY/STRATEGIC
	Discussion: Water Board Jt Mtg Draft Agenda
	Discussion:
	Other Business - OPERATIONAL
	Discussion:
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)

	Other BACWA Representative Reports

8/16/2019	**No Board Actions Permitted**
Pre-Pardee Seminar	
Schectel, Mitsuddy, White, Zipkin, Henderson	
Williams; Fono; Hull	

8/?/2019	
Joint Meeting - Water Board	**Other Business: Discussions**
Schectel, Mitsuddy, White, Zipkin, Henderson	
Williams; Fono	

9/26-27/2019	**No Board Actions Permitted**
Pardee Technical Seminar	
Schectel, Mitsuddy, White, Zipkin, Henderson	
Williams; Fono; Hull	

10/18/2019	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes
Items due: 10/11	Monthly Financial Report
Schectel, Mitsuddy, White, Zipkin, Henderson	**Authorizations & Approvals**
Williams; Fono; Hull	Approval:
	Other Business - POLICY/STRATEGIC
	Discussion: Pardee Debrief & Survey
	Discussion: Regional Water Board Jt Mtg Debrief
	Other Business - OPERATIONAL
	Reports
	Committee Reports (Committee Chairs)
	Board Reports (Executive Board)
	ED Report (ED)
	RPM Report (RPM)
	Other BACWA Representative Reports

11/15/2019	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes
Items due: 11/8	Monthly Financial Report
Schectel, Mitsuddy, White, Zipkin, Henderson	**Authorizations & Approvals**
Williams; Fono; Hull	Approval: Adoption of FY19 Annual Reports
	Other Business - POLICY/STRATEGIC
	Discussion: Draft Agenda Joint Meeting with WB
	Discussion: ReNEWIt Industrial Advisory Board Meeting Debrief
	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/?/2019	
Joint Meeting - Water Board	**Other Business: Discussions**
Schectel, Mitsuddy, White, Zipkin, Henderson Williams; Fono	

12/20/2019	**Consent**
Monthly Board Mtg	Previous Board Meeting Minutes
Items due: 12/13	Monthly Financial Report
Schectel, Mitsuddy, White, Zipkin, Henderson Williams; Fono; Hull	**Authorizations & Approvals**
HOLIDAY & COMMITTEE LEADER APPRECIATION LUNCH	**Other Business - POLICY/STRATEGIC**
	Discussion: WB Joint Meeting Debrief
	Discussion: Update on CASA Climate Change Program
	Other Business - OPERATIONAL
	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

CURRENTLY UNSCHEDULED & SIGNIFICANT	Sugestions for Monthly Meeting Guest Speakers/Presenters

Regulatory Program Manager's Report to the Board

November 2018

NUTRIENTS: Sent nutrient growth and planning survey results to members and asked for updates, and compiled results. Developed templates for early actors and increased loads. Reviewed Regional Water Board calculations for planning level targets. Participated in call with Regional Water Board staff on 2nd Watershed Permit. Participated in NST meeting and drafted meeting summary.

BACWA BULLETIN: Drafted and distributed November Bulletin.

CECs: Sent out draft CEC White Paper to BACWA stakeholders for feedback. Schedule conference call with BACWA stakeholders and Regional Water board staff.

COLLABORATIONS: Participated in CASA RWG call. Participated in Summit Partners meeting on proposed State Water Board Climate Change survey. Worked to develop scoping pages for Ocean Protection Council Ocean Litter Prevention Strategy Action Items.

TOXICITY: Reviewed State Water Board draft toxicity provisions. Developed presentation on toxicity provisions for lab and permits committee. Developed presentation on BACWA comments for Executive Board. Discussed comments with member agencies and other POTW associations. Attended State Water Board Hearing. Reviewed CASA White Paper on *Ceriodaphnia dubia* variability.

COMMITTEE SUPPORT:
AIR – Reviewed meeting summary and drafted Board Report.
BAPPG – Updated dental resource page on baywise.org. Drafted Board report.
Biosolids – Drafted board report and assisted in Solano County Biosolids Report.
Collection Systems – Drafted September Board Report. Drafted November agenda, attended meeting, communicated with Regional Water board staff.
Laboratory – Assisted with agenda, developed survey on summit partner's letter, and attended meeting. Drafted Board Report.
O&M Infoshare – Drafted Board Report.
Permits – Developed agenda, and participated in meeting. Drafted Board report.
Recycled Water – Drafted notes and Board report from October meeting. Reviewed updated draft Recycled Water Policy. Discussed 96-011 transition with RWB staff. Contacted Regional Water Board staff on issue of recycled water production permitting.

Executive Board – Developed agenda for joint meeting with Regional Water Board. Prepared for Executive Board meeting, attended meeting, and edited meeting minutes drafted by AED.

ADMINISTRATION/STAFF MEETING – Managed committee Google Groups. Updated documents on website. Investigated conference calling options for BACWA and signed up for GoToMeeting.

MEETINGS ATTENDED:
CASA call on Toxicity Provisions (11/5), CASA RWG Call (11/8), Call with RWB on 2nd WS Permit (11/9), Permits Committee (11/13), Lab Committee (11/14), Executive Board meeting (11/16), CASA Call to coordinate Toxicity testimony (11/27), Toxicity hearing (11/28), Collection Systems Committee (11/29), CASA SSS WDR Call (11/29).

RMP- Technical Review Committee Summary for meeting held 12/13/18

Melissa Foley PhD was introduced as the new manager for the RMP

The meeting dates for 2019 were set: 3/14, 6/13, 9/26 and 12/12

TRC Decisions:

- TRC members decided not to increase the 2020 planning budget since the “must do” studies account for 1.47% of the predicted available funds. The predicted available funds include fees and the alternate monitoring program. Funds predicated to be available are 1.28M and the “must do” studies costs are 1.95M.
- TRC members agreed to proceed with the Margins Study in San Pablo and Suisun Bay in 2020. San Pablo and Suisun studies are the last to be completed. The margins for Central Bay and South Bay were completed in 2015 and 2017 respectively. Don Yee presented data for Hg, Cu, Pb, CEC’s, and MeHg from the Margin Studies draft technical report that will be finalized in February 2019. Concentration differences between the margins and the open bay, for some analytes, were not as anticipated indicating that some current conceptual models need further refinement.
- No decision was reached regarding the analysis of legacy pesticides on achieved margin sediments. Jay Davis and Don Yee will provide information on what question these data serve to answer.
- TRC members decided to continue with some form of this year’s Data Visualization Challenge. The winners of the Data Visualization Challenge were 1) Kaveh Karami Asli and Froggi VanRiper, a professor and student team from Oregon, and 2) Akshar Ramkumar from Nueva HS in the South Bay.

TRC meetings where BACWA representatives may need guidance are in March and June of 2019. When guidance is necessary, Nirmela Arsem and/or Mary Lou Esparza will request time at the Executive Board meeting to discuss.