



Central Marin Sanitation Agency

COMMISSION REGULAR MEETING AGENDA

Tuesday, January 9, 2018

at the Agency Office

7:00 p.m.

Members of the public may directly address the Board on any item appearing on the Agenda. They may address the Board when the item is called by the Board Chair and he/she indicates it is the time for the public to speak to the agenda item. Audio and video recordings will be made of this meeting and will be posted to the Agency website.

1. 7:00 p.m.: Call Meeting to Order/Pledge of Allegiance

2. Roll Call

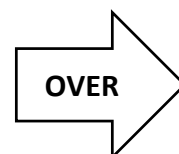
3. Open Period for Public Participation

Open time for public expression, up to two minutes per speaker, on items within CMSA's jurisdiction and not on the Board of Commissioners' agenda. The Board will not discuss or take action during open time.

4. Consent Calendar

Matters listed under this item are considered routine and will be enacted by one motion. The consent calendar may include resolutions; therefore, the motion, second, and vote will also be applicable to the resolution and recorded accordingly. There will be no separate discussion of these items unless requested by a member of the Board or the public prior to the time the Board votes on the motion to adopt.

- a) Minutes—Special Board Meeting—December 13, 2017
- b) Treasurer's Report—Operating Account—December 2017
- c) Schedule of Investments—December 2017
- d) NPDES, Process, and Maintenance Report—December 2017
- e) Performance Metric Report— December 2017
- f) FY 2018 Budget Status – Second Quarter Report
- g) FY 2018 Asset Management Program – Second Quarter Report
- h) Resolutions of Appreciation for Byron Jones, Steve Schoenstein, and Ray Tiongson
- i) Revised Health and Safety Program Agreement



5. **2017 Performance Metric Report**
Recommendation: Accept the Agency's 2017 Performance Metric Report.
6. **Employee Compensation and Benefit Approval Process**
Recommendation: Discuss the Finance Committee's recommendation to approve employee compensation and benefit adjustments using a two-step process, and provide direction to staff as appropriate.
7. **Solar Power Generation Report – 2017 Facilities Master Plan**
Recommendation: Informational, provide comments and/or direction to the General Manager, as appropriate.
8. **Preliminary 5-Year Revenue Plan**
Recommendation: Discuss the preliminary 5-year revenue plan and provide direction to staff and the Finance Committee.
9. **Schedule a Special Meeting to discuss CMSA's renewed NPDES permit.***
10. **North Bay Watershed Association (NBWA) Report***
11. **Oral Reports by Commissioners/General Manager***
12. **Next Scheduled Meeting**
Tuesday, February 13, 2018 at 7:00 p.m. at the Agency office.

*Information not furnished with Agenda

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact Central Marin Sanitation Agency at 415-459-1455. For auxiliary aids or services or other reasonable accommodations to be provided by the Agency at or before the meeting, please notify the Agency at least 3 business days in advance of the meeting date (meeting is the second Tuesday of each month). If the Agency does not receive timely notification of your reasonable request, the Agency may not be able to make the necessary arrangements by the time of the meeting.



Central Marin Sanitation Agency

COMMISSION SPECIAL MEETING MINUTES
Wednesday, December 13, 2017
at the Agency Office

Note: The minutes are an official record of the Board meeting.

There are also official audio and video recordings available on the Agency's website at www.cmsa.us.
 The time stamps on these minutes refer to the items' start times on the video recording of the meeting.
 Please contact CMSA at 415-459-1455 for information about receiving a copy of these records.

1. Call Meeting to Order/Pledge of Allegiance

Chair Furst called the meeting to order at 7:03 p.m. A quorum was present.

2. Roll Call

00:00:25

Present: Chair Diane Furst; Vice-Chair Thomas Gaffney; Commissioners Maribeth Bushey, Michael Boorstein, and Dan Hillmer; Alternate Commissioner Dean DiGiovanni (for Al Boro).

Absent: Secretary Al Boro

Staff present: Jason Dow, General Manager; Ken Spray, Administrative Services Manager; Kate Brouillet, Recording Secretary

Public present: None

3. Open Period for Public Participation

00:00:44

There were no comments from the public.

4. Consent Calendar

- a) Minutes—Regular Board Meeting—November 14, 2017
- b) Treasurer's Report—Operating Account—November 2017
- c) Schedule of Investments—November 2017
- d) NPDES, Process, and Maintenance Report—November 2017
- e) Performance Metric Report— November 2017
- f) Accept Completion of the Maintenance Facility Modifications Project
- g) CASA 2018 Winter Conference
- h) Revised Performance Appraisal Personnel Policy
- i) EPMC Resolutions for CalPERS
- j) Revised Health and Safety Manager Job Description

Comments from the Public:

There were no comments from the public.

ACTION: Commissioner Hillmer moved to approve Consent Calendar items; second, Commissioner Boorstein.

Ayes: BOORSTEIN, BUSHEY, DIGIOVANNI, FURST, GAFFNEY, HILLMER

Nos: NONE

Abstentions: NONE

5. FY 2017 Comprehensive Annual Financial and Popular Annual Financial Reports 00:01:35

GM Dow reviewed the process for production of the Comprehensive and Popular Annual Financial Reports (CAFR and PAFR), and stated that the Agency participates in the GFOA Certificate of Achievement and Outstanding Achievement award programs for its CAFR and its PAFR, respectively. He stated that the Agency continues to meet the high standards of the programs and has received the Certificate of Achievement award for the past fifteen consecutive years and the Outstanding Achievement award for the past seven consecutive years. GM Dow stated that he recommends acceptance of the FY 17 CAFR and PAFR.

The Board asked if the CAFR and PAFR documents are available on the website. GM Dow stated they are.

Chair Furst noted a formatting correction on the PAFR. GM Dow stated that any comments or corrections would be made in the final document.

The Board commended the staff on the content, readability, and presentation of the information in both documents, and commented that the CAFR also serves as continuing disclosure document for the 2015 Bond issuance requirements.

Comments from the Public:

There were no comments from the public.

ACTION: Commissioner Bushey moved to accept the CAFR and PAFR with the noted corrections; second, Commissioner Hillmer.

Ayes: BOORSTEIN, BUSHEY, DIGIOVANNI, FURST, GAFFNEY, HILLMER

Nos: NONE

Abstentions: NONE

6. Maintenance Department Succession Planning 00:6:58

GM Dow stated that the Agency's first strategic Business Plan (2004-2010) included an objective focusing on Agency Succession Planning to ensure continuous department and work-group staffing as long-term employees retire, and to facilitate the knowledge transfer from senior staff to new employees. He stated that since then, Succession Planning has been fully supported by the Board, with its

authorization of several advance recruitments, temporary overstaffing for transition of key positions, and department and Agency reorganizations.

GM Dow stated that one element in the FY 18 Maintenance Department's secession plan is to recruit an Electrical and Instrumentation (E/I) Technician in advance of the June 30, 2018 retirement date of the Agency's long time E/I Assistant Maintenance Supervisor, Kit Groves. He stated that funding for this recruitment was included in the FY18 budget.

GM Dow stated that staff recommends authorizing the temporary addition of an Electrical and Instrumentation Technician position to the Agency's organization structure.

The Board asked various questions, including availability of a staff member for promotion to the E/I Assistant Supervisor position. GM Dow stated that existing E/I staff do not currently have the qualifications for this position.

Vice-Chair Gaffney stated that rating agencies consider succession planning in their evaluations, and these types of memos should be saved and could be provided to them at a future debt issuance.

Commissioner Bushey asked what can be done during the recruitment process to increase reach to a more diverse group of prospective applicants.

GM Dow stated that the Agency normally conducts this type of entry-level recruitment internally, but suggests that use of a recruitment agency, with their expertise, might increase the reach to a broader pool of applicants.

The Board engaged in a discussion regarding the position and the Agency's recruitment process, and concurred that increasing diversity at the Agency is important, and engaging a recruitment firm for this position would be warranted.

Comments from the Public:

There were no comments from the public.

ACTION: Commissioner Boorstein moved to authorize the temporary addition of an Electrical and Instrumentation Technician position to the Agency's organization structure; second, Commissioner DiGiovanni.

Ayes: BOORSTEIN, BUSHEY, DIGIOVANNI, FURST, GAFFNEY, HILLMER

Nos: NONE

Abstentions: NONE

DIRECTION: GM Dow to engage a recruiting firm to conduct the recruitment, and to request that they extend the reach to venues serving a diverse applicant pool.

7. Joint Powers Agreement Review Status Report 00:18:23

GM Dow stated that staff has been actively engaged in the JPA review process, and that the ad hoc JPA Review Committee has been making good progress. He stated that the Committee has updated about 80% of the amended 1979 CMSA Joint Powers Agreement (JPA), and should have a draft 2018 JPA prepared and ready for presentation to each JPA member agency board in the spring of 2018.

GM Dow briefly reviewed the staff memo and attachments, including the Committee approved JPA Review Plan, an initial draft of the partially completed 2018 JPA, and the JPA's Exhibit A that will replace the existing Memoranda of Understanding between CMSA and the JPA agencies.

Chair Furst asked GM Dow to describe the illustrations that would be included in the new JPA Agreement. GM Dow described the two drawings that would be developed for various assets listed in Exhibit A.

Vice-chair Gaffney stated that CMSA's JPA is well-constructed, as CMSA's facilities and assets are not owned by individual agencies.

Ken Spray agreed that the equity method of accounting employed by some agencies is complex, and stated that it is more beneficial that the assets are owned by CMSA.

The Board commented that the process has been very smooth, and was wise to start the process with the JPA managers and to break the review process up into sections.

This item was informational, and no action was taken by the Board.

Comments from the Public:

There were no comments from the public.

8. Revised Annual Budget Financial Policy 00:26:55

GM Dow stated that Marin County's 2016/2017 Civil Grand Jury released a report on May 17, 2017, titled "Marin's Retirement Health Care Benefits: *The Money Still Isn't There*". He stated that a Board ad hoc committee was formed and worked with staff to prepare responses to the report's nine recommendations, which were considered and approved by the Board at its September 12 meeting.

GM Dow referred to the staff memo and attachments, and stated that the first three report recommendations pertain to the Agency adopting a formal policy to fund its Other Post Employment Benefit (OPEB) plan, establishing a practice to comply with the new policy, and that the annual OPEB contribution will fund the GASB 75 determined OPEB annual payment. He stated the Agency responded to the recommendation that a policy will be prepared by the end of calendar year 2017 to state the annual GASB 75 Annual Dedication Contribution will be incorporated into the Agency's FY19 and future budgets.

GM Dow stated that staff presented the proposed revisions to Financial Policy #550: Annual Budget the Finance Committee, which the Committee accepted. He stated

that the Finance Committee and staff recommend approving the revised Financial Policy #550: Annual Budget.

The Board did not have a discussion.

Comments from the Public:

There were no comments from the public.

ACTION: Commissioner Gaffney moved to approve the revised Financial Policy #550: Annual Budget; second, Commissioner Boorstein.

Ayes: BOORSTEIN, BUSHEY, DIGIOVANNI, FURST, GAFFNEY, HILLMER

Nos: NONE

Abstentions: NONE

9. 2017 California Water Environment Association Awards – Redwood Empire Section 00:30:38

GM Dow stated that CMSA is a member of the Redwood Empire Section of the California Water Environment Association (CWEA), which includes the wastewater agencies in Marin, Sonoma, Napa, and parts of Mendocino and Solano counties. He stated that each CWEA section administers a competitive award program for individual members to nominate their respective agencies for organizational awards and/or fellow employees for position specific awards. He stated that in 2017, CMSA received six Redwood Empire Section awards in the individual, regional, and organizational categories.

GM Dow then read the award recipients' names and the Agency awards. He stated that he recommends the Board adopt the Resolution of Appreciation (No. 318) to Agency staff for receiving the 2017 organizational, regional, and individual awards from the CWEA Redwood Empire Section.

The Board asked GM Dow to congratulate the staff on the awards, and asked various questions regarding the awards and the recipients. GM Dow answered the Board's questions.

Comments from the Public:

There were no comments from the public.

ACTION: Commissioner Hillmer moved to adopt the Resolution of Appreciation (No. 318) to Agency staff for receiving the 2017 organizational, regional, and individual awards from the Redwood Empire Section of the California Water Environment Association; second, Commissioner Boorstein.

Ayes: BOORSTEIN, BUSHEY, DIGIOVANNI, FURST, GAFFNEY, HILLMER

Nos: NONE

Abstentions: NONE

10. North Bay Watershed Association (NBWA) Report **00:36:45**

Chair Furst stated that she attended the December 1, 2017 NBWA Board meeting. She stated that there was a very informative presentation on the response and recovery from the October North Bay fires by San Francisco Estuary Institute (SFEI). She stated the presentation included a discussion of water quality and sediment monitoring in the watersheds affected by the fires.

Chair Furst offered a copy for review of the San Francisco Estuary Institute's 25th anniversary report, "The Pulse of the Bay," and a copy of the Sonoma Ecology Center's flyer on North Bay fire recovery.

11. Oral Reports by Commissioners/General Manager **00:45:30**

GM Dow referred to his handout and stated:

- The Agency's NPDES Permit Tentative Order will be heard on January 10, 2018, and RWB responses to the comment letters are still pending.
- The NBWA's bi-annual conference is on April 6, 2018.
- JPA members are aware of the Sea Level Rise Assessments and are considering potential impacts in their capital replacement and improvement plans.
- Three members of the CPUC Energy Division toured the Agency on 11/29 and were impressed with the organic waste and energy generation programs.
- Byron Jones, long time utility worker, has retired, and there will be a resolution of appreciation for him at the January meeting.
- Ray Tiongson, operator, will be retiring at the end of December, and there will be a resolution also for him at the January meeting.

Chair Furst commented that she read an article indicating that Moody's will be reviewing mitigation efforts for climate change impacts during their rating evaluations.

12. Next Scheduled Meeting **00:49:05**

Tuesday, January 9, 2018 at 7:00 p.m. at the Agency office.

Chair Furst adjourned the meeting at 7:57 p.m.

Respectfully Submitted,

Kate Brouillet, Recording Secretary

Tom Gaffney, Vice-Chair

Central Marin Sanitation Agency
Treasurer's Report - Operating Account
For the Month of December 2017

I. Accounts Summary: Bank & Investment Accounts

Summary of Bank & Money Market Accounts

Westamerica Bank - Account Activity shown below	\$ 169,573.33
Local Agency Investment Fund (LAIF) - Refer to Schedule of Investments	14,383,996.72
California Asset Management Program (CAMP) - Refer to Schedule of Investments	362,313.60
Total Bank & Investment Accounts: Ending Balance on December 31, 2017	\$ 14,915,883.65

II. Account Activity for Westamerica Bank

Beginning Balance on December 1, 2017	280,989.32
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Cash Receipts (Deposits into Westamerica):

Transfers from LAIF	850,000.00
Permit and Inspection Fees	1,087.25
Revenue from Haulers & RVs	14,351.78
Revenue from Organic Waste Programs	19,217.90
SD 2 Operations & Maintenance Contract (FY18: October & November)	45,506.33
SQSP Wastewater Services Contract (FY18: October)	89,908.83
Misc Revenue: MetLife Dividend, CalCARD Incentive Payment	428.63
Expense Reimbursement from NSD for Examinetics Hearing Tests	458.18
Miscellaneous Reimbursements: Copy costs for public records request, refund duplicate payment	379.26
Total Cash Receipts	\$ 1,021,338.16

Cash Disbursements (Withdrawals from WestAmerica):

December 2017 Operating account disbursements register (see attached)	\$759,120.54
Regular Payroll paid 12/08/17	134,455.23
Regular Payroll paid 12/22/17	135,987.38
Transfers to EFTPS Federal Payroll Taxes (12/13, 12/27)	76,938.18
Merit Pay (7), Vacation Cash-Out (1)	26,252.82
Total Cash Disbursements	\$1,132,754.15
Ending Balance on December 31, 2017	\$ 169,573.33

Prepared by: 
Kenneth Spray, Administrative Services Manager

Reviewed by: 
Jason Dow, General Manager

Central Marin Sanitation Agency
Operating Account Disbursements Register
For the Month of December 2017

Check Number	Date	Vendor/Payee	Amount	Description
16079				Last check # from prior month's register
16080	12/04/17	Env. Lab Accreditation Program	6,145.00	Renewal for Lab ELAP certification
16081	12/04/17	Ricoh USA Inc	259.35	Lab copier lease, 11/09-12/08/2017
16082	12/04/17	Airgas USA, LLC	50.24	Nitrogen cylinder rental
16083	12/04/17	Amazon	1,634.53	Security camera equipment; electrical supplies
16084	12/04/17	AT&T	399.45	Fax and emergency phone service, 10/02-11/01/17
16085	12/04/17	Katherine Brouillet	94.63	Employee Expense Reimb: break room supplies
16086	12/04/17	Duke's Root Control Inc	1,154.34	SQVSMO Maint: Sewer root control (Note B)
16087	12/04/17	Chris Finton	200.00	Commuter Reimbursement Program: October-November 2017
16088	12/04/17	Alan Flore	669.90	Employee expenses eligible for Agency dental reimbursement
16089	12/04/17	Phillip Frye	225.63	Reimbursement for retiree health benefits by check
16090	12/04/17	GFOA	310.00	Annual membership (two employees)
16091	12/04/17	Graybar	4,193.71	LED replacement lighting
16092	12/04/17	Harrington Industrial Plastics	556.22	Steel basket strainer
16093	12/04/17	Hazen and Sawyer	1,802.42	Prof Svcs: Aeration tank microscopic analyses, August-October 2017
16094	12/04/17	Hoffmeyer Co. Inc.	1,955.46	Storm drain isolation gate
16095	12/04/17	Industrial Electrical Co	267.42	Electrical supplies
16096	12/04/17	James L. Johnson	172.48	Reimbursement for retiree health benefits by check
16097	12/04/17	Byron Jones	605.39	Reimbursement for retiree health benefits by check
16098	12/04/17	Kone Inc	131.59	Elevator monthly maintenance
16099	12/04/17	Heidi Lang	557.00	Employee expenses eligible for Agency dental reimbursement
16100	12/04/17	Marin County Tax Collector	3,685.00	Legal services: General Counsel, July-September 2017
16101	12/04/17	Northern Tool & Equipment	467.91	Maintenance parts and supplies
16102	12/04/17	P.G.& E.	14,956.01	CMSA electricity service, 10/19-11/16/2017
16103	12/04/17	Platt	2,521.56	Electrical transformers (2 invoices)
16104	12/04/17	Promium LLC	36,823.35	LIMS hardware and software; LIMS implementation services (2 invoices)
16105	12/04/17	Mike Silva	200.00	Commuter Reimbursement Program: October-November 2017
16106	12/04/17	Anthony Smith	362.00	Employee expenses eligible for Agency dental reimbursement
16107	12/04/17	SPURR	2,001.33	Natural gas supply, October 2017
16108	12/04/17	State Water Resources Ctrl Brd	150.00	Certification renewal (one employee)
16109	12/04/17	Synagro West, Inc.	1,443.75	Biosolids land application fee, October 2017
16110	12/04/17	Toyota Material Handling	240.64	Parts for electric cart
16111	12/04/17	Univar USA Inc	8,493.83	Sodium Hypochlorite (3 deliveries)
16112	12/04/17	Woodland Center Auto Supply	245.06	1) SD2 PS Maint: engine spray (Note B); 2) auto parts and supplies (4 invoices)
16113	12/12/17	California Public Employee	4,127.45	Contribution to Retiree Health Benefits Trust Fund, PPE 12/02/2017 (Note C)
16114	12/12/17	California State Disbursement	250.50	EE Garnishment, PPE 12/02/2017 (Note A)
16115	12/12/17	ICMA Retirement Trust-457	4,565.00	Deferred compensation contributions, PPE 12/02/2017 (Note A)
16116	12/12/17	Navia Benefit Solutions	540.19	Flexible spending account, PPE 12/02/2017
16117	12/12/17	SEIU Local 1021	1,038.50	Union dues, PPE 12/02/2017
16118	12/14/17	AireSpring	703.83	Telephone service, November 2017
16119	12/14/17	Airgas USA, LLC	48.52	Nitrogen cylinder rental
16120	12/14/17	Aramark Uniform Services	902.24	Uniform services, October 2017
16121	12/14/17	Bay City Boiler & Engineering	4,735.00	Annual boiler service
16122	12/14/17	Katherine Brouillet	315.59	Employee Expense Reimb: office/kitchen supplies
16123	12/14/17	Caltest Analytical Laboratory	3,520.32	Lab analyses (14 invoices)
16124	12/14/17	Carollo Engineers, Inc.	42,886.33	Prof Svcs: 2017 Facilities Master Plan Project, October 2017
16125	12/14/17	City Electric Supply	119.88	Maintenance parts & supplies (2 invoices)
16126	12/14/17	Chemurgic Agricultural	5,860.84	Sodium Bisulfite (1 delivery)
16127	12/14/17	Comcast	191.20	Internet service, 12/04/2017-1/03/2018
16128	12/14/17	County of Marin	5,466.00	1) SQPS Maint: Hazardous Waste Permit renewal (Note B);

Central Marin Sanitation Agency
 Operating Account Disbursements Register
 For the Month of December 2017

Check Number	Date	Vendor/Payee	Amount	Description
				2) CMSA Hazardous Waste Permit renewal
16129	12/14/17	CWEA TCP	490.00	Memberships for 5 employees
16130	12/14/17	Dee Consultants LLC	10,350.00	Prof Svcs: Construction Management Support, November 2017
16131	12/14/17	EPIC Compliance Systems, Inc.	1,913.69	Annual certification for underground storage tanks (2 invoices)
16132	12/14/17	Evoqua Water Tech LLC	20,313.16	Hydrogen Peroxide (2 deliveries), lab supplies (2 invoices)
16133	12/14/17	Fisher Scientific	212.34	Lab supplies (2 invoices)
16134	12/14/17	Forge Architecture	2,640.00	Prof Svcs-ESDC: Maintenance Building Modifications Project, June 2017
16135	12/14/17	Grainger	508.47	Maintenance parts & supplies (3 invoices)
16136	12/14/17	Kit Groves	247.00	Employee expenses eligible for Agency dental reimbursement
16137	12/14/17	Horizon Dist. Inc	187.35	Maintenance parts & supplies
16138	12/14/17	Hopkins Technical Products Inc	1,928.89	Pressure relief valves
16139	12/14/17	IEDA, Inc.	782.00	Labor relations consulting, December 2017
16140	12/14/17	Jackson's Hardware	306.60	Utility supplies, October 2017
16141	12/14/17	Lord and Sons Inc	464.18	Maintenance parts & supplies
16142	12/14/17	Lystek International LTD	9,478.20	Biosolids beneficial reuse fee, November 2017
16143	12/14/17	Marin Independent Journal	1,164.20	Public notices (3): OIT recruitment, invitation to licensed contractors, bid notice
16144	12/14/17	Marin Sanitary Service	6,239.26	Yardwaste and rag box disposal service, November 2017
16145	12/14/17	Marin Office Supply	1,001.47	Office supplies, November 2017
16146	12/14/17	Marin Resource Recovery Center	35.00	Yardwaste disposal
16147	12/14/17	McMaster-Carr Supply Co.	1,843.53	Maintenance parts & supplies (10 invoices)
16148	12/14/17	Medical Center of Marin	120.00	Audiometric testing for 3 employees
16149	12/14/17	Miller Pacific	12,841.90	Prof Svcs: Landslide Geotechnical Investigation and Design, 05/29-10/29/2017
16150	12/14/17	Modular Space Corporation	709.06	Portable office rental, 12/04/2017-01/03/18
16151	12/14/17	Orchard Business/SYNCB	509.88	Maintenance parts & supplies, November 2017
16152	12/14/17	Michael Pimm	127.33	Employee Expense Reimb: mileage to pre-employment medical evaluation
16153	12/14/17	Production Specialties Corp	1,692.56	Safe access gates for Chlorine Contact Tanks
16154	12/14/17	R & B Company	135.82	Maintenance parts & supplies
16155	12/14/17	Ryan Herco Flow Solutions	196.77	Lab supplies (2 invoices)
16156	12/14/17	Safety-kleen Systems, Inc	257.20	Parts washer service
16157	12/14/17	State Water Resources Control	48,522.00	NPDES annual permit fee
16158	12/14/17	Thatcher Company of	4,941.33	Ferric Chloride (1 delivery)
16159	12/14/17	Total Waste Systems, Inc.	6,554.85	Biosolids hauling fee, November 2017
16160	12/14/17	Univar USA Inc	10,533.68	Sodium Bisulfate (2 deliveries); Sodium Hypochlorite (1 delivery)
16161	12/14/17	Waste Management	14,905.78	Redwood Landfill biosolids reuse fee, November 2017
16162	12/14/17	Western Exterminator Co.,Inc.	170.50	Pest control, November 2017
16163	12/14/17	Wiley Price & Radulovich	357.50	Prof Svcs: Employment law services, November 2017
16164	12/18/17	CASH-PETTY CASH Replenishment	335.52	Petty cash replenishment
165-16174	12/20/17	CWEA Award	1,100.00	CWEA Awards (11 employees)
16175	12/20/17	Amazon	1,563.38	Computer and electrical supplies, November 2017
16176	12/20/17	Aramark Uniform Services	167.02	Uniform service
16177	12/20/17	AT&T	327.70	Fax and emergency phone services, 12/07/2017-01/06/2018
16178	12/20/17	AT&T Dataplan	405.21	Wireless service, 11/02-12/01/2017
16179	12/20/17	Bay Area Air Quality	17,319.00	Operating permit renewal
16180	12/20/17	Burlingame Engineers, Inc.	18,847.58	Chemical pump rehabilitation parts
16181	12/20/17	Chemurgic Agricultural	5,860.84	Sodium Bisulfite (1 delivery)
16182	12/20/17	Emerson Process Mngmt	380.72	Electrical supplies
16183	12/20/17	Evoqua Water Tech LLC	261.00	Lab tank rental
16184	12/20/17	Chris Finton	139.10	Employee Expense Reimb: CALPELRA Conference
16185	12/20/17	FLO-LINE Technology Inc.	4,401.79	Ferric Chloride pump replacement
16186	12/20/17	Foster & Kroeger	1,000.00	Prof Svcs: Andersen Hillside clean-up, November 2017

Central Marin Sanitation Agency
Operating Account Disbursements Register
For the Month of December 2017

Check Number	Date	Vendor/Payee	Amount	Description
16187	12/20/17	Frontier Analytical Lab.	900.00	Lab supplies
16188	12/21/17	Hagel Supply Co.	687.58	Utility supplies, November 2017
16189	12/21/17	Hazen and Sawyer	520.93	Prof Svcs: Aeration tank microscopic analyses, November 2017
16190	12/21/17	Inductive Automation	4,416.00	SCADA software annual contract renewal
16191	12/21/17	JWC Environmental	2,278.26	SQ PS Maint: Channel grinder parts (Note B)
16192	12/21/17	FL Smidth Krebs Inc	854.85	Cone liner for grit classifiers
16193	12/21/17	Marin Independent Journal	306.80	Subscription renewal
16194	12/21/17	Monica Oakley	780.00	Prof Svcs: Regulatory consulting, 10/28-12/01/2017
16195	12/21/17	Marin Municipal Water District	1,538.11	Water service, 10/10-12/07/2017 (4 invoices)
16196	12/21/17	Pacific EcoRisk	3,785.00	NPDES Chronic Toxicity Testing
16197	12/21/17	Power Industries Co.	5,470.92	Hydraulic valves for Headworks influent gates
16198	12/21/17	Kenneth R Spray	919.08	Employee Expense Reimb: CALPELRA Conference
16199	12/21/17	Stanley Convergent Security	2,373.00	Fire alarm inspection
16200	12/21/17	Thomas Fish Company	279.00	Lab supplies (2 invoices)
16201	12/21/17	Univar USA Inc	2,992.05	Sodium Hypochlorite (1 delivery)
16202	12/21/17	Caltest Analytical Laboratory	2,612.13	Lab analyses (13 invoices)
16203	12/21/17	Carollo Engineers, Inc.	9,805.45	Prof Svcs: PG&E Interconnection Design Project, November 2017
16204	12/21/17	City Electric Supply	77.56	Electrical supplies
16205	12/21/17	Fisher Scientific	989.75	Lab supplies (6 invoices)
16206	12/21/17	Grainger	378.99	Maintenance parts & supplies (5 invoices)
16207	12/21/17	Hach Company	18,695.78	WIMS data management system training and services; lab supplies (3 invoices)
16208	12/21/17	McMaster-Carr Supply Co.	2,990.46	Maintenance parts & supplies (11 invoices)
16209	12/21/17	Platt	249.21	Electrical supplies (2 invoices)
16210	12/21/17	Praxair Distribution, Inc.	98.13	Acetylene cylinder rental fee
16211	12/21/17	Ryan Herco Flow Solutions	85.39	Lab supplies
16212	12/21/17	Calmat Co./Shamrock Materials	88.91	Propane
16213	12/21/17	Mike Silva	200.00	Commuter Reimbursement Program: Oct-Nov 2017
16214	12/21/17	Anthony Smith	389.00	Employee Expense Reimb: safety glasses
16215	12/21/17	ULINE	443.82	Utility supplies
16216	12/21/17	VWR International	17,778.06	Analytical balance and supplies
16217	12/21/17	Water Components & Bldg. Supp.	2,832.76	Maintenance parts & supplies, November 2017
16218	12/21/17	Waters, Jeff	230.00	Employee Expense Reimb: safety shoes
16219	12/21/17	Russ Turnbull	100.00	CWEA Award
16220	12/21/17	California Public Employee	4,127.45	Contribution to Retiree Health Benefits Trust Fund, PPE 12/16/2017 (Note C)
16221	12/21/17	California State Disbursement	250.50	EE Garnishment, PPE 12/16/2017 (Note A)
16222	12/21/17	ICMA Retirement Trust-457	4,665.00	Deferred compensation contributions, PPE 12/16/2017 (Note A)
16223	12/21/17	Navia Benefit Solutions	540.19	Flexible spending account, PPE 12/16/2017
16224	12/21/17	SEIU Local 1021	1,075.68	Union dues, PPE 12/16/2017

Payments by Automatic Clearing House:

12/4/2017	Payments to 23 retirees	6,689.54	Reimbursement for retiree health benefits
	Buhler ACH	96,583.90	Maintenance Facility Modifications Project, November 2017 Progress Payment #7
	Calpers Medical ins	59,481.35	Medical Insurance, December 2017
	Delta Dental	7,790.35	Dental insurance, December 2017
	Vision Service Plan -(CA)	902.46	Vision insurance, December 2017
	CalPERS	34,778.12	Retirement Pension Contribution: Agency and Employees, PPE 12/02/2017 (Note C)
	CalPERS	35,771.00	Retirement Pension Contribution: Agency and Employees, PPE 12/16/2017 (Note C)
	EDD	13,111.41	State & SDI Taxes, PPE 12/02/2017

Central Marin Sanitation Agency
 Operating Account Disbursements Register
 For the Month of December 2017

Check Number	Date	Vendor/Payee	Amount	Description
		EDD	12,008.22	State & SDI Taxes, PPE 12/16/2017
		NRS/PEHP-3 and Z	5,697.41	Deferred compensation contribution, PPE 12/02/2017
		NRS/PEHP-3 and Z	5,764.03	Deferred compensation and MARA contribution, PPE 12/16/2017
12/20/2017		Michael Owen Boorstein	100.00	Stipend for 12/13/2017 Regular Board meeting
		Maribeth Bushey	100.00	Stipend for 12/13/2017 Regular Board meeting
		Dean DiGiovanni	100.00	Stipend for 12/13/2017 Regular Board meeting
		Diane L. Furst	200.00	Stipend for 12/13/2017 Board meeting and NBWA meeting
		Thomas E Gaffney	100.00	Stipend for 12/13/2017 Regular Board meeting
		Dan Hillmer	100.00	Stipend for 12/13/2017 Regular Board meeting
		Grand Total	759,120.54	

Notes:

- A: Not an Agency Expense. Expense funded through Payroll deduction.
- B: Not an Agency Expense. CMSA will be reimbursed for this expense.
- C: CMSA is partially reimbursed for this expense per Employee Labor Agreements.

Central Marin Sanitation Agency
Schedule of Investments
As of Month Ending December 31, 2017

Description (1)	Book Value (2)	Market Value (3)	Agency Reserve Target for December 31, 2017
I. Investments managed by California Asset Management Program (CAMP)			
<u>Money Market Funds (< 1 year in maturity)</u>			
CAMP Cash Reserve Pool: 1.29%			
b1. Agency Unrestricted Reserve: Operating	\$ 12,313.60	\$ 12,313.60	See LAIF
b2. Agency Unrestricted Reserve: Emergency	\$ 250,000.00	\$ 250,000.00	\$ 250,000
b3. Agency Unrestricted Reserve: Insurance	\$ 100,000.00	\$ 100,000.00	\$ 100,000
Total with CAMP	\$ 362,313.60	\$ 362,313.60	
II. Investments managed by Local Agency Investment Fund (LAIF)			
<u>Money Market Funds (< 1 year in maturity)</u>			
Local Agency Investment Fund (LAIF): 1.07% (estimate)			
a. Current Year Operating	\$ 3,067,861.57	\$ 3,067,861.57	
b1. Agency Unrestricted Reserve: Operating	\$ 2,853,336.40	\$ 2,853,336.40	\$ 2,865,650
c1. Capital Reserves (Restricted)	\$ 990,477.00	\$ 990,477.00	\$ 990,477
c1. Capital Reserves (Restricted-Capacity/Connection-Fees)	\$ -	\$ -	
c2. Capital Reserves (Unrestricted)	\$ 7,472,321.75	\$ 7,472,321.75	\$ 6,175,485
Total with LAIF	\$ 14,383,996.72	\$ 14,383,996.72	
TOTAL INVESTMENTS	\$ 14,746,310.32	\$ 14,746,310.32	
<u>Amount designated for Capital Reserves</u>			
1. CAMP	\$ -	\$ -	
2. LAIF	\$ 8,462,798.75	\$ 8,462,798.75	\$ 7,165,962
Total	\$ 8,462,798.75	\$ 8,462,798.75	\$ 7,165,962

COLUMN DEFINITIONS:

(1) Description - the issuer, type of security and interest rate

(2) Book Value - The sum of Original Cost and Accumulated Amortization

(3) Market Value - An estimate of the value at which the principal would be sold from a willing seller to a willing buyer as-of the close of the last business day
Market values are per the fiscal agent's respective monthly statements.

NOTES:

Capacity connection fees collected each fiscal year are the initial source of funding for capital projects. Capital reserve restricted and unrestricted balances reflect amounts remaining after expenditures for CIP to date, including \$42,550.75 in capacity charges collected to date. Beginning balances for both reserves were determined by the FY 17-18 Adopted Budget.

Statement of Compliance

The above portfolio of investments is in compliance with the Agency's investment policy, adopted at the July 22, 2015 Commission meeting, and California G. Section 53600. In addition, the Agency does have the financial ability to meet its cash flow requirements for the next six months.



BOARD MEMORANDUM

January 4, 2018

To: CMSA Commissioners and Alternates

From: Chris Finton, Treatment Plant Manager *CF*

Approved: Jason Dow, General Manager

Subject: **December 2017 NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report**

Recommendation: Accept the December 2017 NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report.

I. NPDES Permit Compliance

Our NPDES permit testing for December showed that the CMSA treatment plant effluent was in compliance with all permit limits. The Monthly Compliance Summary Table shows the results by permitted parameter, the sample's frequency, the sample results, and the permit limit. We successfully passed the December 96-hour flow through bioassay test.

Seasonal enterococcus sampling ended in October. CMSA's NPDES permit specifies monitoring for enterococcus bacteria during dry weather months and for each wet weather blend event, to verify compliance with established effluent limits.

II. Influent Flow

This December was one of the driest on record in our region. Central Marin County experienced cold daily temperatures and rainfall totals were less than one-tenth of an inch as recorded by the Agency's rain gauge. The treatment plant did not exceed the maximum secondary capacity of 30 MGD during the month, and the facility's average daily influent flow was 8.6 MGD. The CMSA treatment plant and each satellite collection agency's daily average and total monthly influent flows are shown in the table below:

December Monthly Influent Flows	San Rafael (SRSD)	Ross Valley (SD#1)	San Quentin (SQSP)	Corte Madera (SD#2)	CMSA Plant Total
Average Daily (MGD)	3.0 MGD	4.4 MGD	0.48 MGD	0.78 MGD	8.6 MGD
Total for Month (MG)	92.3 MG	135.3 MG	15.0 MG	24.3 MG	266.9 MG
Percent of Flow	35.0 %	51.0 %	5.0 %	9.0 %	100 %

III. Treatment Process

The facility is currently operating in the dry weather mode with additional processing equipment ready to be placed into service as needed to treat the additional inflow from the collection systems as the wet weather season progresses. The Mixed Liquor Suspended Solids (MLSS) inventory averaged 1,227 mg/l this past month with no significant change in biomass from last month. The biomass inventory is satisfactory in spite of the ambient temperature change over the past month and aligns with the process control decision to carry between 1,200 and 1,400 mg/L to manage our biomass and effectively meet our permit limits. Operations staff removed an aeration basin from service this past month that was no longer required due to a lack of any rain events.

Graph #3 shows the Total Suspended Solids (TSS), which is a good indicator of the effluent quality. The TSS monthly average in December was 5.9 mg/l, which is 39.0% of our Key Performance Indicator (KPI) of 15 mg/l, and is 20.0% of our permit's monthly average limit of 30 mg/l.

Graph #4 shows the coliform most probable number (MPN), which represents the effectiveness of the disinfection process. All thirteen coliform samples collected in December were below our KPI of 30 MPN, and well below our daily limit of 10,000 MPN. The total coliform monthly geometric mean for December was 4.5 MPN, well below our permit's monthly limit of 240 MPN.

IV. Maintenance Activities

The cogeneration system produced 95.4% of the Agency's power in December, and MCE supplied the balance. The generator, as indicated on Graph #8, was in service and produced green power for the entire month. There were two occasions in December when the cogeneration system was temporarily removed from service:

- December 11 – System running in “Baseload” for unrelated electrical repairs
- December 20 – Spark plug replacement

In the absence of any rain events in December, Agency technicians leveraged this opportunity to move a majority of their shop equipment back into the rehabilitated Maintenance Building, and this work was in addition to completing monthly preventative maintenance. Scheduled project work in December included the installation of a new effluent monitoring sampler; and replacement of a mixing pump, hose and glycerin, and grinder parts at the organic waste receiving station; installation of two new hot water recirculation pumps and four isolation valves on the digester's heating system.

Attachment

- December 2017 NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report

NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report

December 2017



Facility influent flow samplers installed in November



Facility effluent flow sampler installed in Decemeber

The installation of the final effluent flow sampler completes a project to upgrade the facility's flow through sampling equipment.

Monthly Compliance Summary Table

Central Marin Sanitation Agency

December, 2017

Final Effluent Monitoring

Parameter	Frequency	Units	Results	Limit
Carbonaceous BOD Highest Weekly Average	Weekly	mg/L	10.07	Maximum 40
Carbonaceous BOD Monthly Average	Monthly	mg/L	7.7	Maximum 25
Carbonaceous BOD Monthly Removal Rate	Monthly	%	97.9	Minimum 85
Total Suspended Solids Highest Weekly Average	Weekly	mg/L	7.1	Maximum 45
Total Suspended Solids Monthly Average	Monthly	mg/L	5.9	Maximum 30
Total Suspended Solids Monthly Removal Rate	Monthly	%	98.2	Minimum 85
Chlorine Residual Instant Limit	Instant	mg/L	ND	Maximum 0.0
Ammonia Monthly Average	Monthly	mg/L	25.50	Maximum 60
Ammonia Maximum Daily	Daily	mg/L	28.60	Maximum 120
pH Lower Limit	Continuous	SU	7.0	Minimum 6
pH Upper Limit	Continuous	SU	8.0	Maximum 9
Bacteriological Analysis				
Total Coliform Monthly Geometric Mean	3 X Week	MPN/100mL	4.5	Maximum 240
Total Coliform Daily Maximum	3 X Week	MPN/100mL	7.8	Maximum 10,000
Enterococcus Monthly Geometric Mean	Monthly	MPN/100mL	*	Maximum 35
Flow Through Bioassay				
Acute Toxicity 11 Sample 90th Percentile	Monthly	% survival	100	Minimum 70
Acute Toxicity 11 Sample Median	Monthly	% survival	100	Minimum 90
Metals Analysis				
Copper Daily Limit	Monthly	ug/L	6.40	Maximum 85
Copper Monthly Average	Monthly	ug/L	6.40	Maximum 49
Cyanide Daily Limit	Monthly	ug/L	ND	Maximum 41
Cyanide Monthly Average	Monthly	ug/L	ND	Maximum 21
Mercury Weekly Average	Weekly	ug/L	0.0036	Maximum 0.072
Mercury Monthly Average	Monthly	ug/L	0.0036	Maximum 0.066
Mercury Monthly Loading	Monthly	kg/mo	0.003222	
Mercury Annual Loading (watershed permit) (b)	Jan-Dec	kg/yr	0.13982	Maximum 0.11
Permit Analysis				
Dioxin - Total Equivalentents (TEQ) Daily Maximum	1/Permit Cycle	ug/L	*	Maximum 2.8E-08
Dioxin - Total Equivalentents (TEQ) Monthly Average	1/Permit Cycle	ug/L	*	Maximum 1.4E-08
Polychlorinated Biphenyls (PCBs) Daily Limit	1/Permit Cycle	ug/L	*	Maximum 0.017
Polychlorinated Biphenyls (PCBs) Monthly Limit	1/Permit Cycle	ug/L	*	Maximum 0.012
Quarterly Analysis				
Oil and Grease Daily Limit	Quarterly	mg/L	*	Maximum 20
Oil and Grease Monthly Average	Quarterly	mg/L	*	Maximum 10
Chronic Bioassay Toxicity	Quarterly	Tuc	*	Maximum 20
Chronic Bioassay Toxicity (3 sample median)	Quarterly	Tuc	*	Maximum 10
Flow Analysis				
	Daily Max	Hourly Max	5 minute Max	Monthly Average
Effluent Flow (a)	8.97	13.20	15.31	7.54
Influent Flow (a)	9.35	13.40	18.51	8.6
# Days Blended				0

(a) Influent & Effluent flow values are currently being reviewed to assess daily variability between values.

(b) Although annual mercury loading is above the watershed mercury annual loading limit, historical annual loading of all dischargers have typically been well below the threshold limit of 11 kg/yr. As such it is highly unlikely that CMSA's annual mercury loading will result in a violation.

* Monitoring Not Required This Month ND = None Detected X = Data not available at report time DNQ = Detected by not Quantified

Glossary of Terms
NPDES Permit Compliance Summary Table

- **Ammonia:** CMSA's NPDES permit requires that we analyze the final effluent for ammonia due to its toxicity to aquatic organisms and potential for providing nutrients for algae in the San Francisco Bay. The permit has a maximum daily limit of 60 mg/L and a monthly average limit of 120 mg/L. The maximum daily limit is the number that cannot be exceeded on any sample and the monthly average applies to all samples collected in any month (although typically we are required to take only one sample).
- **Biochemical Oxygen Demand (BOD):** The amount of dissolved oxygen needed by microorganisms (biomass) to stabilize organic material in the effluent. The permit limits for our effluent require that removal of 85% influent BOD, and meet a weekly average of less than 40 mg/L and a monthly average of less than 25 mg/L BOD.
- **Chlorine Residual:** The secondary effluent is disinfected with hypochlorite (chlorine "bleach"), and then the residual chlorine is neutralized with sodium bisulfite to protect the Bay environment. The final effluent chlorine residual limit is 0.0 mg/l, which is monitored continuously.
- **Bacteria:** Coliform and enterococcus bacteria are the indicator organisms for the determination of the effectiveness of the disinfection process.
- **Dioxin - Total Equivalents:** These are 17 dioxin-like compounds that we analyze for twice per year which have permit limits.
- **Fats, Oils, and Grease:** We are required to monitor our effluent for Fats, Oils, and Grease quarterly.
- **Flow Through Bioassay:** A 96-hour test in which we test the toxicity of our effluent to young rainbow trout (15-30 days old) in a flow-through tank to determine their survivability under continuous exposure to CMSA effluent. The permit requires that we maintain a 90th percentile survival of at least 70% and an 11-sample median survival of at least 90%. In layman's terms, this means that out of the last 11 samples, only one bioassay may fall below 70% survival, and the middle value—when all 11 samples are placed in numerical order—must be at least 90%.
- **Metals Analysis:** Our permit requires that we analyze our effluent for many different metals on a monthly basis. We have permit limits for three of the metals. The limits are stated as a maximum daily limit and a monthly average limit.
- **pH:** pH is a measurement of acidity, with pH 7.0 being neutral and higher pH values being basic and lower pH values being acidic. Our permit effluent pH must stay within the range of 6.0 to 9.0, which we monitor continuously.
- **Total Suspended Solids (TSS):** Measurement of suspended solids in the effluent. Our permit requires that we remove at least 85% of the influent TSS and that the effluent limit is less than 45 mg/L as a weekly average and less than 30 mg/L as a monthly average.

Executive Summary Process Performance Data
December 2017

The removal efficiencies shown are based on the monthly average of the following treatment processes that were in service.

Primary Clarifier Performance

Average Total Suspended Solids (TSS) in:	396	mg/l
Average TSS out:	142	mg/l
Average Percent Removal Achieved:	65.5	%
Average Total Carbonaceous Biochemical Oxygen Demand (CBOD) in:	348	mg/l
Average CBOD out:	185	mg/l
Average Percent Removal Achieved:	47.0	%
Average Plant Influent Flows:	8.6	MGD

Expected removal efficiencies as outlined in
Metcalf & Eddy Wastewater Engineering
Manual

Design 50-70% Removal

Design 25-40% Removal

Biotower Performance

Average TSS out:	142	mg/l
Average CBOD out:	106	mg/l
Average Percent CBOD Removal Achieved:	41.9	%

Design 25-30% Removal

Aeration Tanks/Activated sludge

Dissolved Oxygen set point:	2.0	mg/l
Average MLSS:	1,227	mg/l
Average MCRT	4.6	Days
Average SVI:	164	

Secondary Clarifiers

Average WAS concentration: 6,742 mg/l

Final Effluent

Average Effluent TSS for the month was:	5.9	mg/l	(Maximum Limit: 30mg/l)
Week #1 weekly average	4.7		(Maximum Limit: 45mg/l)
Week #2 weekly average	4.3		"
Week #3 weekly average	7.1		"
Week #4 weekly average	6.5		"
Week #5 weekly average	6.2		"
Monthly average TSS removal efficiency through the plant was:	98.2	%	(Minimum Limit: 85%)

Average Effluent CBOD was:	7.7	mg/l	(Maximum Limit: 25mg/l)
Week #1 weekly average	8.2		(Maximum Limit: 40mg/l)
Week #2 weekly average	5.0		"
Week #3 weekly average	8.0		"
Week #4 weekly average	9.1		"
Week #5 weekly average	10.07		"
Monthly average CBOD removal efficiency through the plant was:	97.9	%	(Minimum Limit: 85%)

Disinfection Dosing Rate:	4.5	mg/l	monthly average
Total Coliform Monthly Geometric Mean:	4.5	MPN	(Maximum 240)
The Daily Maximum Total Coliform Count for the month was:	7.8	MPN	(Maximum 10,000)
Enterococcus Monthly Geometric Mean:	No sample	MPN	(Maximum 35 MPN)
Effluent pH for the month was: Min	7.0		(Min 6.0)
Max	8.0		(Max 9.0)

Digester Treatment

Average Thickened Waste Concentration from the RDT was:	5.98	%	
Average percent of Volatile Solids destroyed was:	86.70	%	
Cubic feet of biogas produced was:	8,576,828	(Total)	276,672 (Daily Average)
Average temperature of the digester was:	101.9	degrees Fahrenheit	

Executive Summary Process Performance Data
December 2017

The removal efficiencies shown are based on the monthly average of the following treatment processes that were in service.

Dewatering

Average Centrifuge Feed concentration was:	2.5	%
Average Biosolids concentration was:	26.3	%
Average TSS of the Centrate was:	0.019	%
Solids capture of the Centrifuge was:	99.30	%
Polymer use per Dry ton of biosolids was:	15.51	#/dry ton
Average polymer feed rate per run was:	3.30	gpm
Average concentration of the polymer batches was:	0.328	%
Average sludge feed rate per run was:	57.1	gpm

Comments:

The treatment plant has been running well with final effluent being of very good quality.

Graph #1:

Depicts the total influent flow (from all collection agencies) entering the treatment plant. The red graph line represents total influent flows; and the blue graph line depicts the CMSA rain gauge recordings for the month.

Graph #2:

Depicts individual collection member agency flows. The Y-axis is in the Dry Weather flow range of 0-20 MGD.

Graph #3:

Depicts the total suspended solids in the effluent. Our monthly average was 5.9 mg/l versus our KPI of 15 mg/l and permit monthly average limit of 30 mg/l.

Graph #4:

Depicts the coliform most probable number (MPN) results which are an indication of the disinfection system's performance. The monthly Total Coliform Geometric Mean was 4.5 MPN through December, which is less than our KPI median of 30 MPN and permit limit of 240 MPN.

Graph #5:

Depicts the effluent CBOD which measures the oxygen demand of the wastewater. The December effluent CBOD average was 7.3 mg/l, well below our NPDES limits of 40 mg/l weekly and 25 mg/l for the month.

Graph #6:

Depicts the degree to which the biosolids have been dewatered. Our biosolids % concentration exceeded our KPI of 25% for the entire month of December.

Graph #7:

Depicts the amount of Biogas that is produced in the digesters, and then used to produce electricity. Biogas production in December averaged 276,672 cubic feet per day, which exceeded our monthly KPI of 200,000 cubic feet per day. The Christmas and New Year's holidays contributed to a slight drop-off in biogas production at the end of the month as depicted on the graph.

Graph #8:

This graph depicts the amount of energy produced through cogeneration versus the energy purchased from MCE for Agency operations. The cogeneration engine was online for the entire month of December producing 95.3% in the facility's power needs. The engine was temporarily removed from service as described in the December staff report and as shown on the graph.

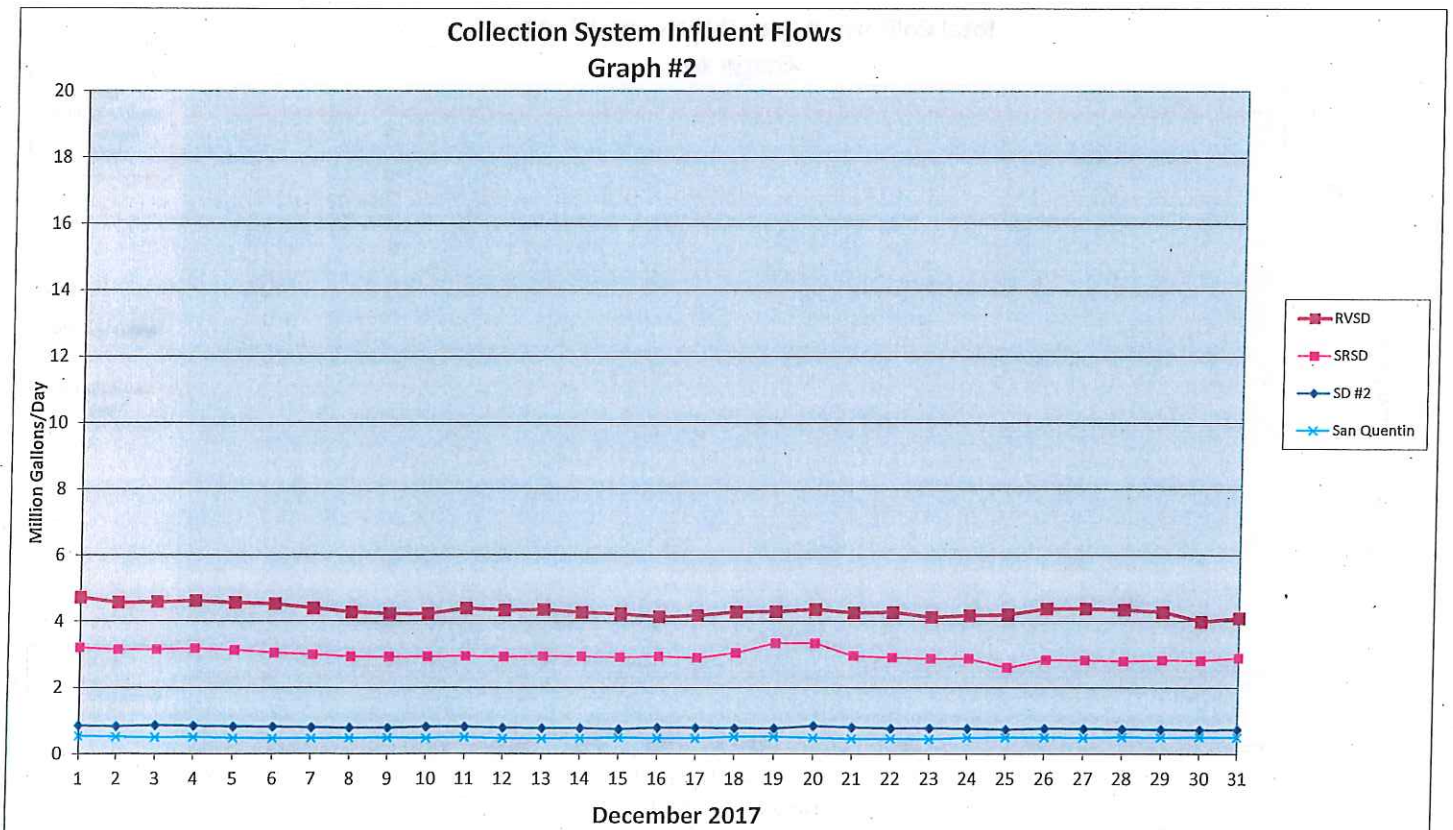
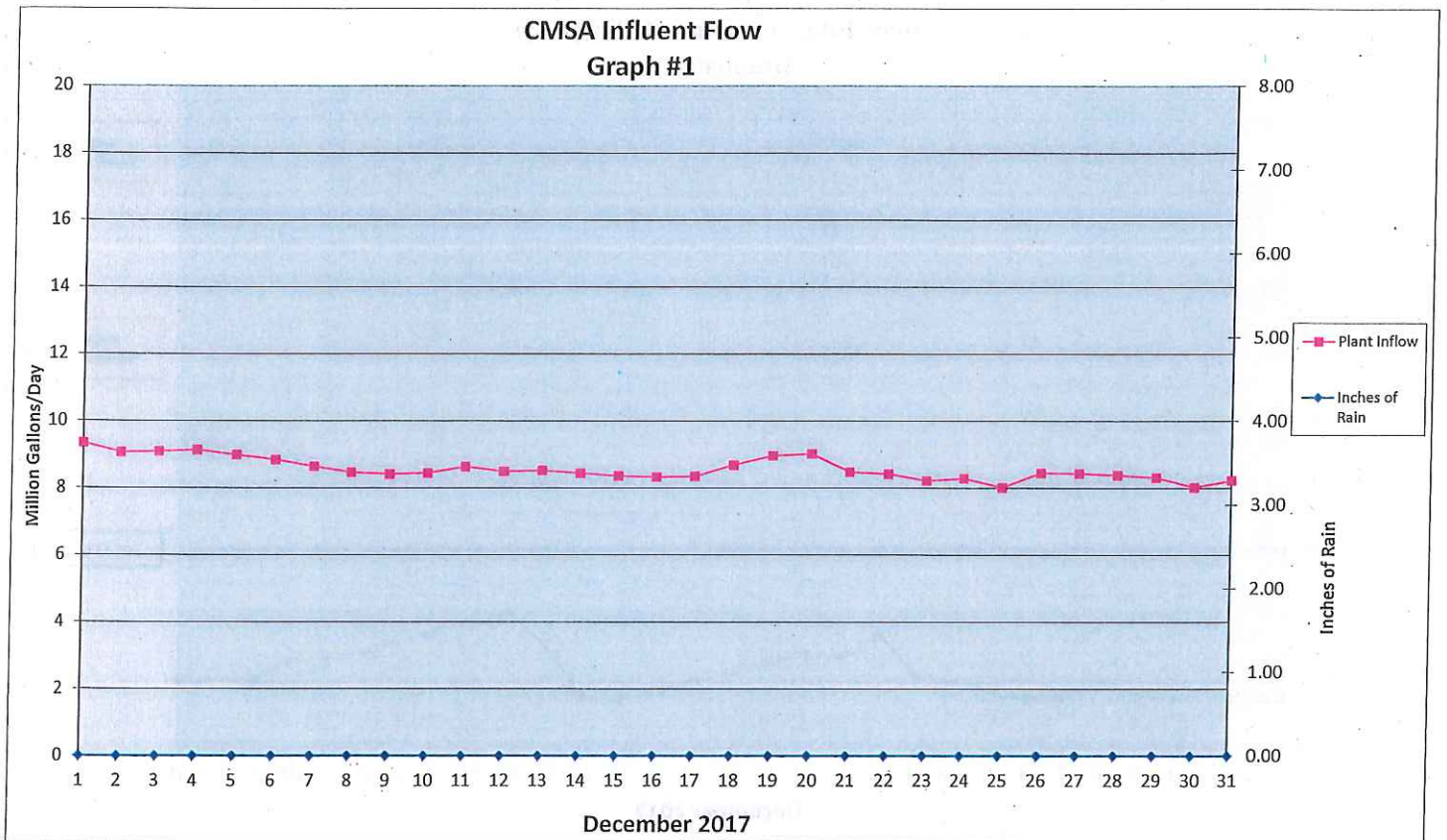
Glossary of Terms
Process Performance Data Sheet

- **Aeration Tanks:** A biological process that takes place after the biotowers, where biomass (microorganisms) is mixed with the wastewater to feed on dissolved and suspended organic material. High speed blowers are used to provide compressed air to mix the tank contents.
- **Anaerobic Digesters:** In the anaerobic digestion process, organic material removed in the primary and secondary clarifiers is digested by anaerobic bacteria. The end products are methane, carbon dioxide, water, stabilized organic matter, and some inorganic material.
- **Biosolids:** Anaerobically digested solids that are removed from the two-digesters, dewatered, and then beneficially reused. Beneficial reuse may include landfill alternate daily cover (ADC), land application in the summer as a soil amendment and fertilizer, or converted into a liquid fertilizer for agricultural applications.
- **Biotower:** A biological treatment process, occurring after the primary clarifiers and before the aeration tanks, in which the wastewater trickles over a biomass-covered media. The biomass feeds on the dissolved and suspended solids in the wastewater.
- **Centrifuge:** Process equipment used to dewater biosolids prior to beneficial reuse.
- **Cogeneration System:** A system comprised of a dual-fuel engine coupled to an electric generator that is used to produce energy to power the Agency facilities. Fuels the system uses are methane biogas produced in the anaerobic digesters and, when biogas is not available, purchased natural gas. As well as generating electricity, the system supplies heat for plant processes and building heating.
- **Chlorine Contact Tanks (CCTs):** The final treatment process is disinfection and de-chlorination. The CCTs allow contact time for injected chlorine solution to disinfect the wastewater. Sodium bisulfite, the de-chlorination chemical, is introduced at the end of the CCTs to neutralize any residual chlorine to protect the San Francisco Bay environment.
- **Rotary Drum Thickener (RDT):** Waste activated sludge removed from the secondary clarifiers is thickened in rotary drum thickeners before being transported to the anaerobic digesters. Thickening removes some of the sludge's water content, to decrease hydraulic loading to the digesters.
- **Final Effluent:** After all the treatment processes are completed, the final effluent is discharged into to central San Francisco Bay through a 10,000-foot-long deep-water outfall.
- **Mean Cell Residence Time (MCRT):** An expression of the average time that a microorganism will spend in the secondary treatment system.
- **Mixed Liquor Suspended Solids (MLSS):** The liquid in the aeration tanks is called MLSS and is a combination of water, solids, and microbes. Suspended solids in the MLSS measured in milligrams per liter (mg/l).

- **Most Probable Number (MPN):** Concentrations, or number of colonies, of total coliform bacteria are reported as the “most probable number.” The MPN is not the absolute count of the bacteria but a statistical estimate of their concentration.
- **Polymer:** Polymer is added to digested sludge prior to dewatering to improve solids coagulation and water separation.
- **Primary Clarifier:** A physical (as opposed to biological) treatment process where solids that settle or float are removed and sent to the digesters for further processing.
- **Return Activated Sludge (RAS):** The purpose of returning activated sludge (biomass) to the aeration tanks is to maintain a sufficient concentration of microbes to consume the wastewater’s dissolved solids.
- **Secondary Clarifiers:** Provides settling for the biomass after aeration. Most of the settled biomass is returned to the aeration tank as return activated sludge (RAS) and some is sent to the RDT unit as waste activated sludge.
- **Sludge Volume Index (SVI):** This is a calculation used to indicate the settling ability of the biomass in the secondary clarifiers.
- **Thickened Waste Activated Sludge (TWAS):** Waste activated sludge is thickened in the RDTs, and then the TWAS product is pumped to the digester for processing.
- **Volatile Solids:** Organic content of the wastewater suspended solids.
- **Waste Activated Sludge (WAS):** Biomass that is removed from the secondary clarifiers pumped to the RDTs for thickening.

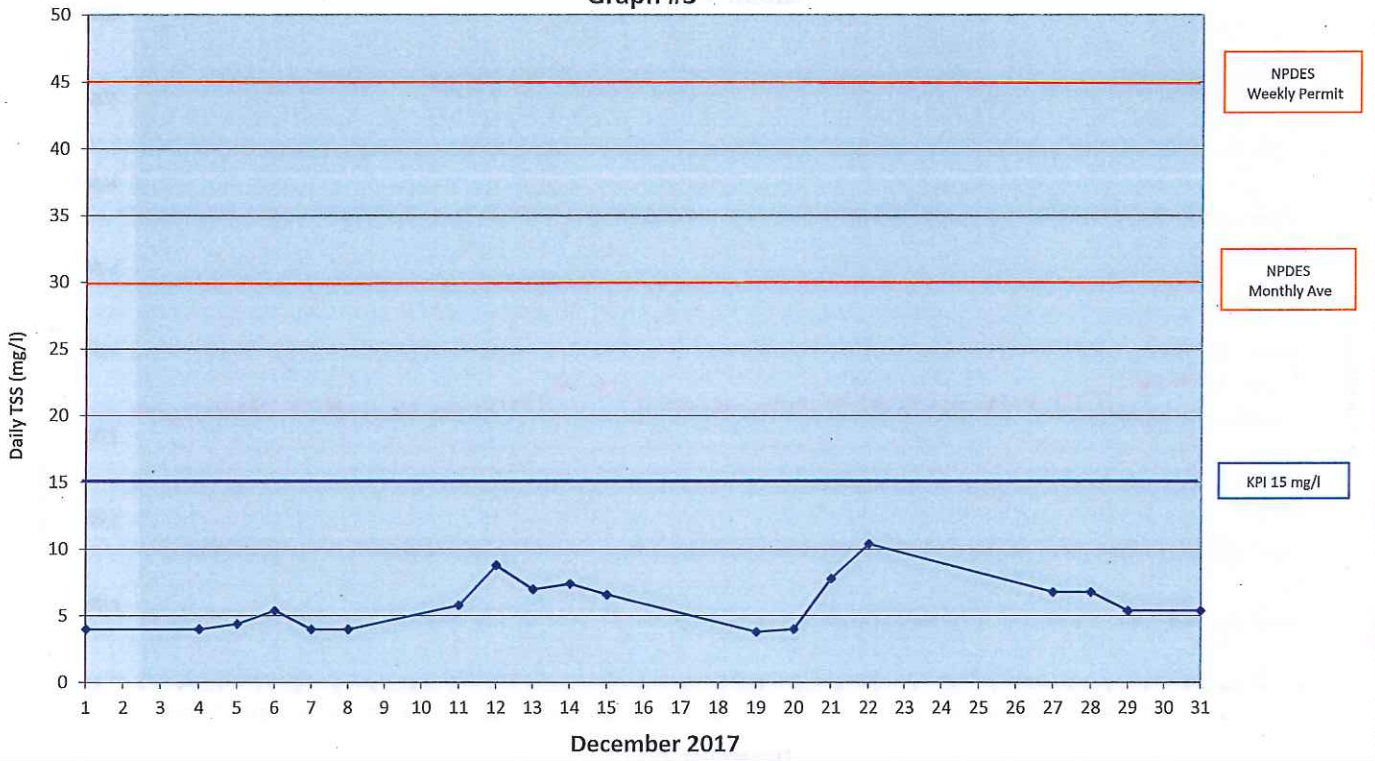
Units of Measurement

- **kg/month (Kilograms per Month):** 1 kilogram = 2.205 lbs.
- **KPI (Key Performance Indicators):** The Agency’s process performance goals.
- **Kwh (Kilowatt Hours):** A unit of electric power equal to using 1 Kw for 1 hour.
- **Milligrams per Liter (mg/L):** A measure of the concentration by weight of a substance per unit volume. For practical purposes, one mg/L is equal to one part per million (ppm).
- **MPN/100mL (Most Probable Number per 100 milliliters):** Statistical estimate of a number per 100 milliliters of a given solution.
- **Percent by Mass (% by mass):** A measure of the combined mass of a solute + solvent.
- **Percent by Volume (% by vol):** A measure of the volume of a solution.
- **ug/L (Micrograms per Liter of Solution):** Mass per unit volume.



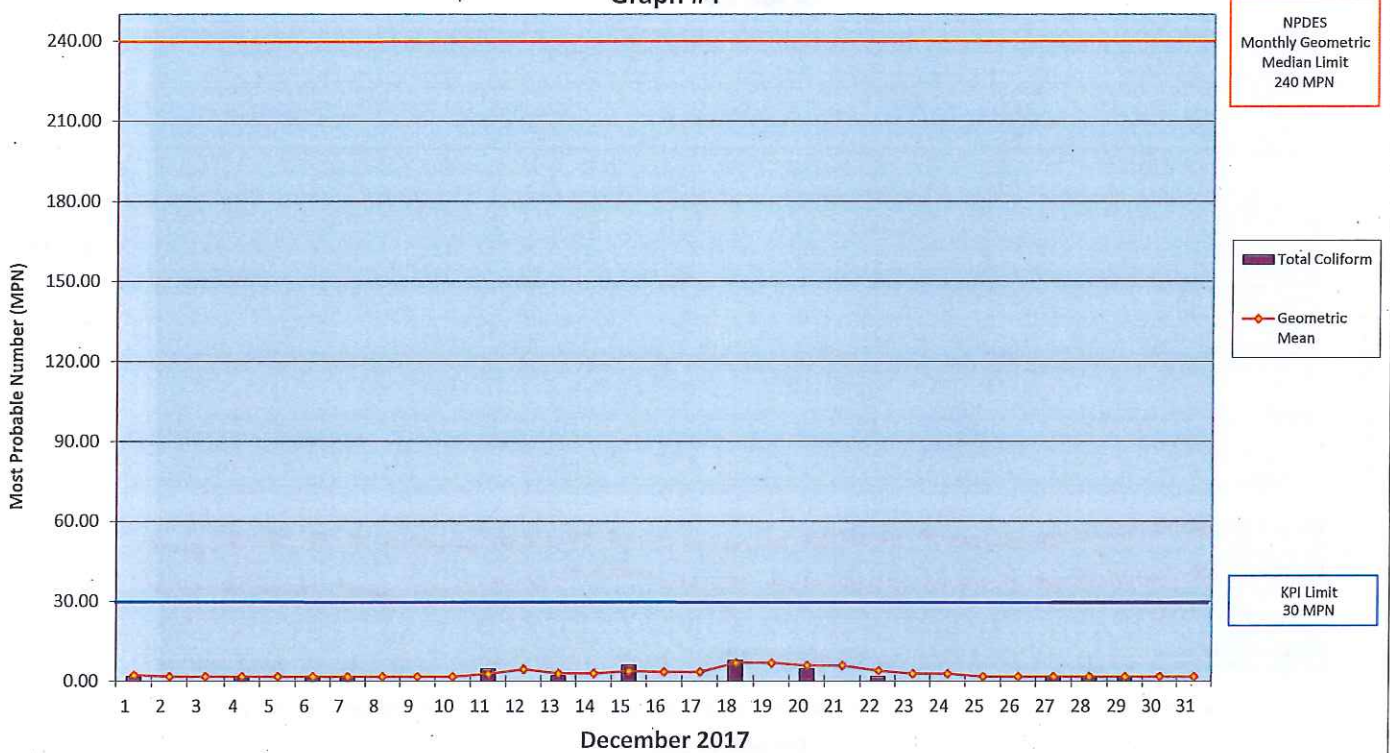
Effluent Total Suspended Solids (TSS)

Graph #3

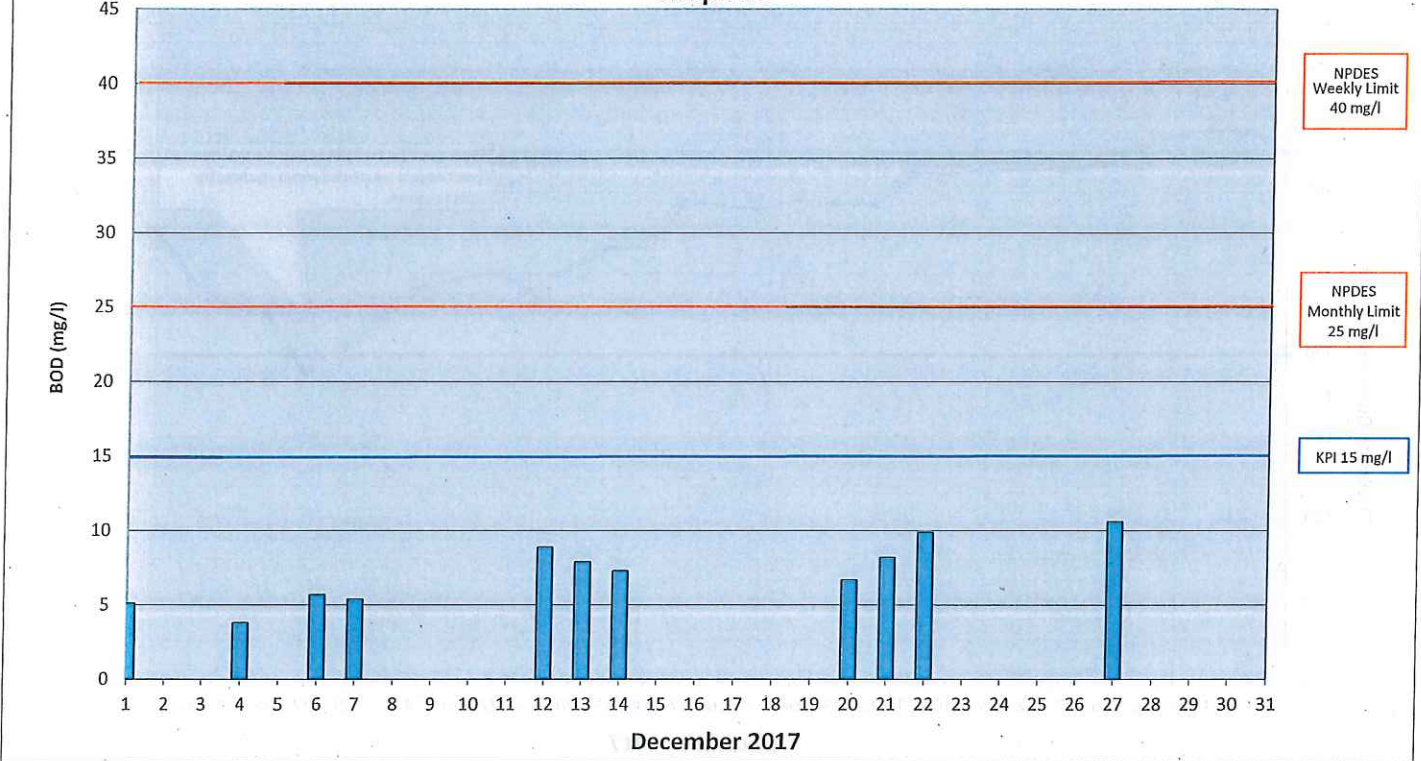


Total Coliform & Monthly Geometric Mean

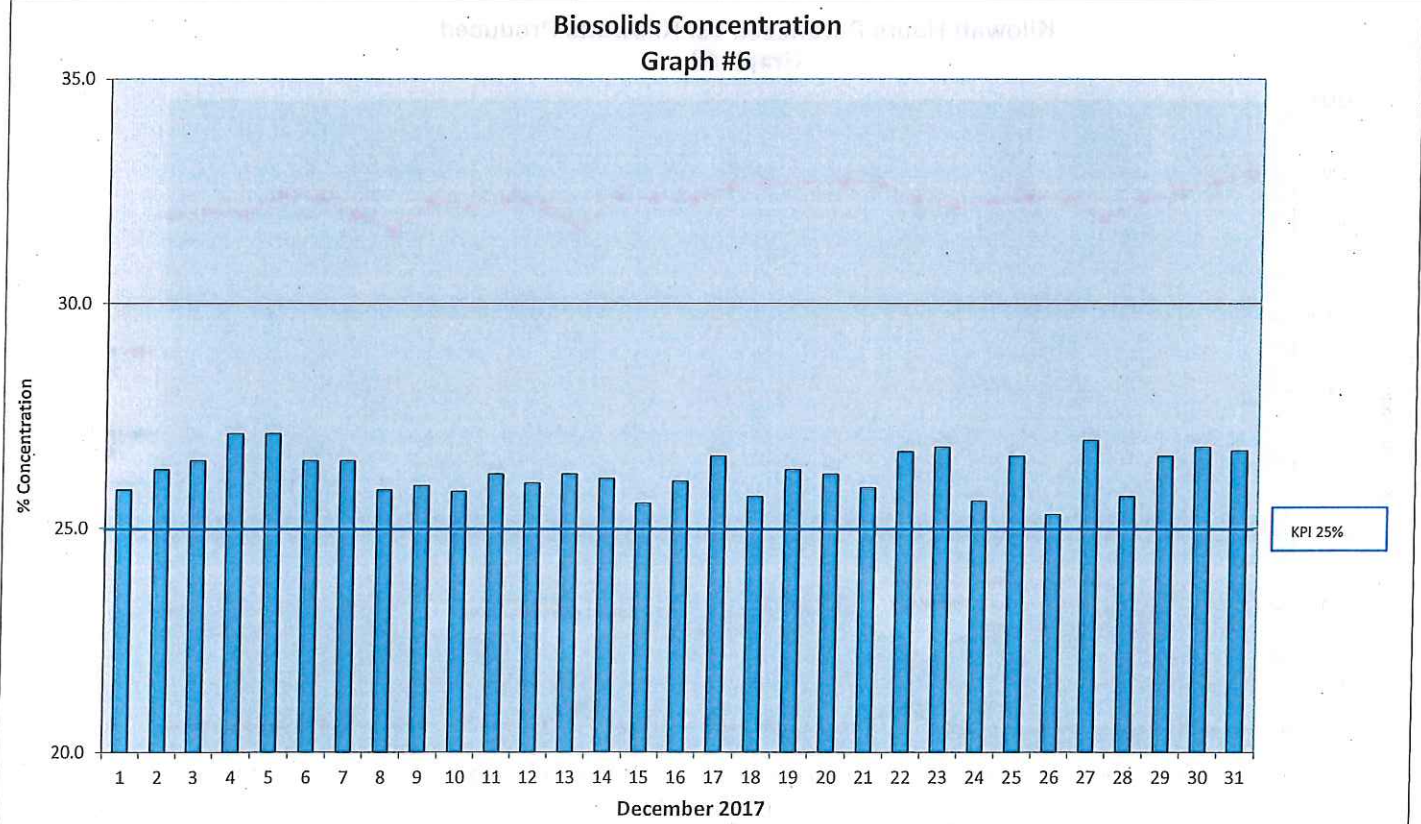
Graph #4



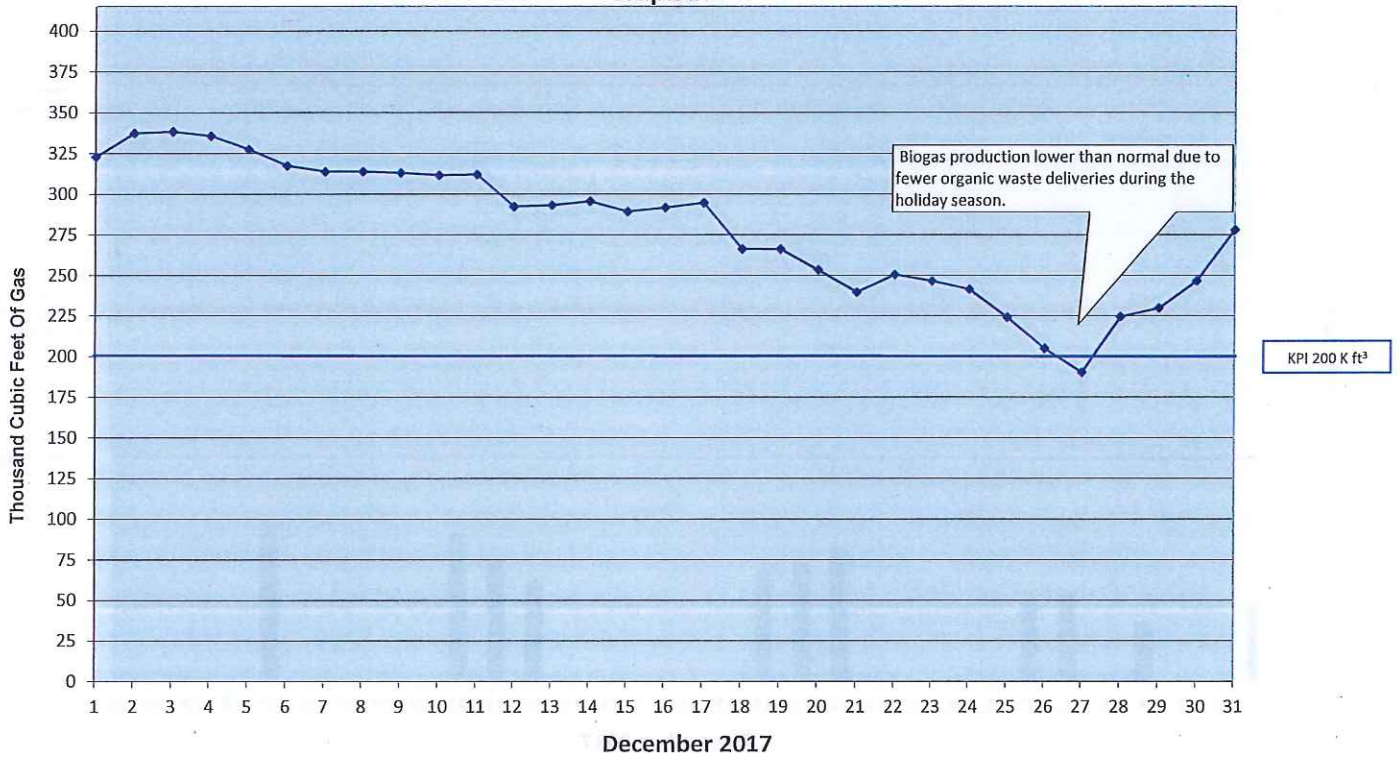
Effluent Carbonaceous Biological Oxygen Demand (CBOD)
Graph #5



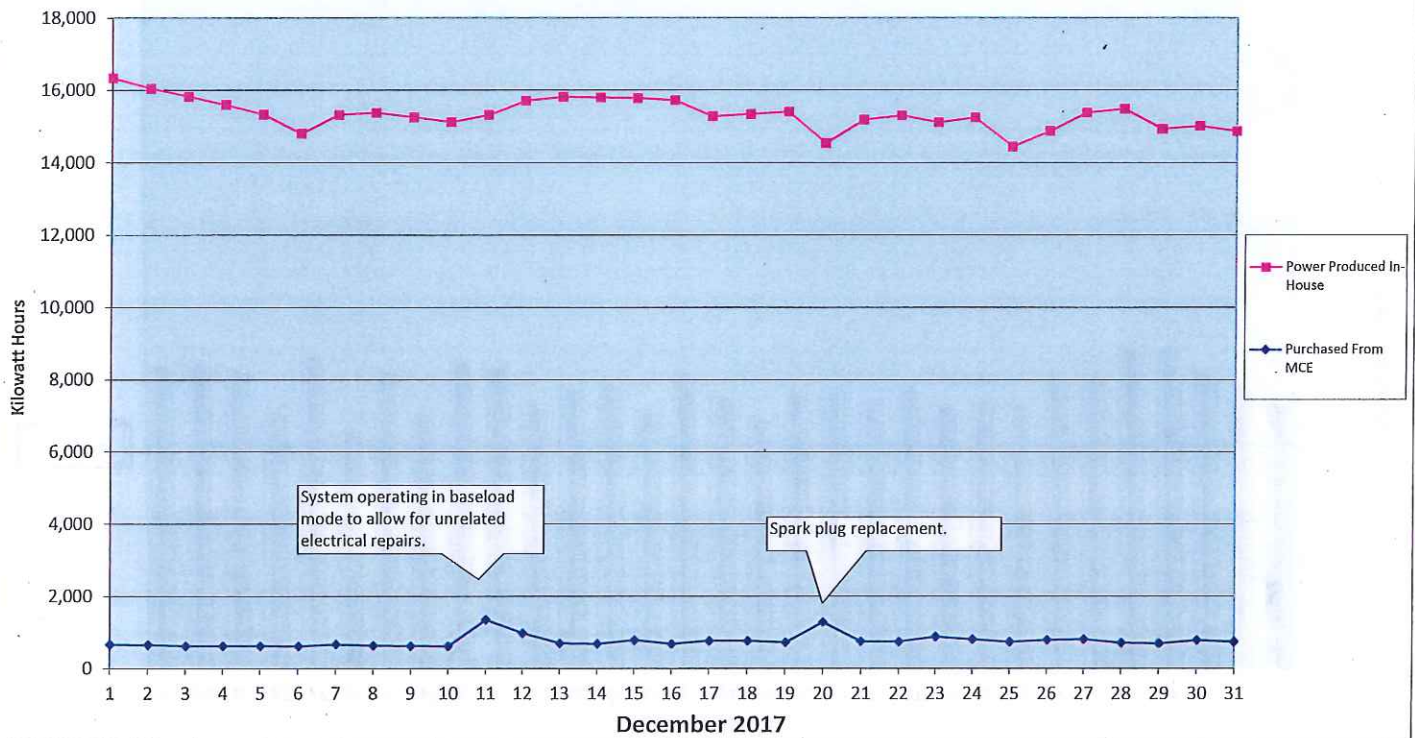
Biosolids Concentration
Graph #6



**Biogas Production
Graph #7**



**Kilowatt Hours Purchased vs. Kilowatts Produced
Graph #8**






BOARD MEMORANDUM

January 4, 2018

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager 

Subject: Performance Metric Report – December 2017

Recommendation: Accept the December 2017 Performance Metric report.

Performance Summary: The Agency's performance in operations and maintenance activities, regulatory and environmental compliance, and public education and outreach met or exceeded our metric goals/targets. Noteworthy metrics or variances are described below.

Table I – Treatment/Process Metrics

CMSA's treatment facilities are ready for wet weather operations and final effluent quality throughout the month has been very good.

Table II – Employee Metrics

Training highlights included operations and laboratory staff learning and populating the new Hach data management system; specific operations and maintenance staff development training; underground storage tank and dental amalgam regulatory training for technical services staff; and attendance at the annual California Public Employer Labor Relations Association (CalPELRA) training conference by the General, Treatment Plant, Administrative Services, and Technical Services Managers.

Table III - Environmental and Regulatory Compliance Metrics

There weren't any NPDES permit exceedances in December, and laboratory and Agency pollution prevention activities were performed as scheduled. Over 2017, the Agency had one permit exceedance, during a 121 MGD wet weather event in February, for not achieving the minimum 85% carbonaceous BOD removal requirement.

Table IV - Public Outreach

There were five odor alerts posted to the Agency website in December for taking process tanks out of service. One odor complaint was received in December from a business on the corner of Kerner Boulevard and Pelican Way in San Rafael. Operations staff completed an odor complaint form, met with the business owner to discuss the complaint, and has spent additional time in the vicinity for closer monitoring.

Public education events include staff attendance at public outreach events, school classroom and/or juggler show presentations, and Agency tours. Events over the past month are presented below with the event date and number of attendees.

Public Outreach Events

No events.

School Events – Juggler Show Presentation

Date	School	Students
12/1/17	Dixie Elementary School in San Rafael	200
10/11/17	Brandeis Marin School in San Rafael	120

CMSA Tours

No Agency tours.

Attachment:

- December 2017 Performance Metric Report

CMSA CY17 PERFORMANCE METRICS – December 2017

TABLE I - TREATMENT/PROCESS METRICS

Metric	Definition	Measurement	Range/Target/Goal
1) Wastewater Treated	Volume of wastewater influent treated and disposed, in million gallons (Mg)	266.9 Mg	165 – 820 Mg
2) Biosolids Reuse	Alternate Daily Cover (ADC) at the Redwood Landfill, in wet tons (wt) Fertilizer and soil amendment at land application sites, in wet tons (wt) Bio-Fertilizer production at the Lystek facility, in wet tons (wt)	409.2 wt 0 wt 135.6 wt	360 – 665 wt
3) Conventional Pollutant Removal	Removal of the conventional NPDES pollutants - Total Suspended Solids (TSS) and Carbonaceous Biological Oxygen Demand (cBOD) a. tons of TSS removed; % TSS removal b. tons of organics removed (cBOD); % cBOD removal	429.1 tons; 98.2% 376 tons; 97.9%	> 85% > 85%
4) Priority Pollutants Removal	Diversion of priority NPDES metals from discharge to the S.F. Bay: a. % Mercury b. % Copper	99% 88.4%	88 – 99% 84 – 98%
5) Biogas Production	Biogas generated in our anaerobic digesters, in million cubic feet (Mft ³) Natural gas (methane) equivalent of the biogas, in million cubic feet (Mft ³)	8.57 Mft ³ 5.48 Mft ³	6.0 to 9.5 Mft ³ 3.8 to 6.1 Mft ³
6) Energy Produced	Energy produced from cogeneration of generated biogas and purchased natural gas - in kilowatt hours Cogeneration system runtime on biogas, in hours (hrs.); % time during month Biogas value (natural gas cost equivalent)	475,905 kWh 639 hrs; 86.0% \$24,304	380 to 480,000 kWh 540 hrs.; 75% \$7,000 to \$24,000
7) Efficiency	The cost to operate and maintain the treatment plant per million gallons of wastewater treated, in dollars per million gallons Energy used, kilowatt hours, per million gallons treated	\$1,348 /Mg 1,872 kWh/Mg	\$451-\$1,830/Mg (wet - dry) 670 - 2,400 kWh/Mg

Table II – EMPLOYEE METRICS

Metric	Definition	Measurement	Target/Goal
1) Employee Training	Hours of internal training – safety, web-based, project, vendor, etc. Hours of external training – employment law, technical, regulatory, etc.	Internal = 226 External = 128	variable
2) Work Orders	Preventative maintenance (PM) labor hours Planned corrective maintenance (CM) labor hours; % of CM+UCM hrs. Unplanned corrective maintenance (UCM) labor hours; % of CM+PM hrs. Ratio of PM to total corrective maintenance (CM + UCM);	401 hrs 285 hrs (75.0%) 97 hrs (20.0%) 1.05	300 – 500 hrs ≥ 70% total CM hrs ≤ 30% total hours ≥ 0.45
3) Overtime Worked	Monthly hours of OT worked; Year to date hours of OT (YTD) % of normal hours worked; % Year to date (YTD)	142.5 hrs; (1,688.5) 2.1%; (1.9%)	< 5%

CMSA CY17 PERFORMANCE METRICS – December 2017

Table III - ENVIRONMENTAL AND REGULATORY COMPLIANCE METRICS

Metric	Definition	Measurement	Range/Target/Goal
1) Permit Exceedances	# of NPDES permit exceedances	0	0
2) NPDES Analyses	# samples analyzed by the CMSA laboratory for NPDES compliance monitoring	224	150-250
3) Process Analyses	# samples analyzed by the CMSA laboratory for process control reporting and monitoring	721	400-600
4) Quality Control Testing	# of CMSA performed laboratory analyses for QA/QC purposes Accuracy of QA/QC tests	330 99.5%	150-300 > 90%
5) Water Quality Sample Analyses	# of ammonia, coliform (total and fecal), enterococcus, and/or sulfide analyses performed for the CMSA member agencies (SSOs, etc.)	8	as-needed
6) Pollution Prevention Inspections	Inspections of industrial and commercial businesses in the Agency's pretreatment and pollution prevention programs and Novato Sanitary District's Mercury Reduction Program – 277 businesses regulated	61	variable
7) FOG Program Inspections	Inspections of food service establishments (FSEs) in the Almonte, TCSD, SD2, RVSD, SRSD, and LGVSD service areas – approx. 500 FSEs are in programs; 310 are regulated – either permitted or have waivers.	2	20 – 50
8) Permits Issued/Renewed	Permits issued for the pretreatment, pollution prevention, and FOG source control programs, and for groundwater discharge	2	variable

Table IV- PUBLIC OUTREACH


Metric	Definition	Measurement	Target/Goal
1) Public Education Events	Attendance at public education outreach events; # of booth visitors; (YTD)	0; (4,581)	3,000/year
2) School Events	Participation or sponsorship in school outreach events; attendees; (YTD)	320; (4,080)	variable
3) Agency Tours	Tours given to students and the public; # of people, (YTD)	0; (278)	variable
4) Odor Notifications	Number of odor alerts posted to the Agency website due to process or operational changes	5	1-10
5) Odor Complaints	Number of odor complaints received from the public	1	0




BOARD MEMORANDUM

January 5, 2018

To: CMSA Commissioners and Alternates

From: Kenneth Spray, Administrative Services Manager 
Heidi Lang, Financial Analyst

Approved: Jason Dow, General Manager 

Subject: FY 2018 Budget Status - Second Quarter Report

Recommendation: Review and accept the Agency's Second Quarter Budget Status Report for Fiscal Year 2017-18 (FY 18).

Summary: We are pleased to present the Agency's FY 2018 Budget Status - Second Quarter Report for FY 18. As of December 31, 2017, the Agency received 47.4% of budgeted operating revenues (Table I) and incurred 47.3% of budgeted operating expenses (Tables III & IV). Revenues and expenditures were within reasonable operating parameters with respect to 50% straight line year-to-date performance for the second quarter. Expenditures are measured by actual expenses and encumbrances for goods and services received or in the process of being procured.

Summarized Financial Performance Highlights

Revenues	FY 18 Budget	YTD Cash Received	Outstanding Receivables	Total Revenue	Total Received as % of Budget	Total Revenue Billed as % of Budget
Agency Revenues	12,654,365	6,002,059	73,476	6,075,535	47.4%	48.0%
Contributions for Debt Service	4,952,382	3,730,177	31,759	3,761,936	75.3%	76.0%
TOTAL REVENUE	17,606,747	9,732,237	105,235	9,837,472	55.3%	55.9%

Expenditures	FY 18 Budget	YTD Actual Expenditures	Encumbrances/ Pending Payments	Total Expenditures	% Spent
Total Operating Expenses	11,462,600	5,171,964	252,492	5,424,456	47.3%
Capital Improvement Program	3,817,600	1,204,252	603,033	1,807,285	47.3%

- JPA Member Agencies paid their first and second quarter Regional/Sewer Service Charges and first FY 18 semi-annual debt service installment for the Refunding Revenue Bonds,

Series 2015.

- The Agency retired \$2.25M in outstanding debt and paid \$872.8K in interest for the Refunding Revenue Bonds, Series 2015 that was due on September 1, 2017. An \$839K interest only payment is due on March 1, 2018.
- Total capital program expenditures and encumbrances were \$1.8M.

Table I – Agency Revenues

Description	FY 18 Budget	YTD Actual Received	Outstanding Receivables (Invoices)	Total Revenue	Budget Remaining	Total Received as % of Budget	Total Actual & Outstanding as % Budget
Sewer Service Charges	10,893,165	5,446,583	-	5,446,583	5,446,582	50.0%	50.0%
Contract Services	1,228,950	345,190	58,101	403,291	825,659	28.1%	32.8%
Capacity Charges	29,300	42,551	-	42,551	-	145.2%	145.2%
Program Revenues*	143,200	33,471	3,343	36,814	106,386	23.4%	25.7%
Haulers, Permits & Inspection Fees	226,250	89,254	12,031	101,285	124,965	39.4%	44.8%
Other Non-Operating Revenues	20,000	787	-	787	19,213	3.9%	3.9%
Interest Income	113,500	44,225	-	44,225	69,275	39.0%	39.0%
Total Agency Revenues	12,654,365	6,002,059	73,476	6,075,535	6,592,080	47.4%	48.0%
Contributions for Debt Service	4,952,382	3,730,177	31,759	3,761,936	1,190,446	75.3%	76.0%
TOTAL REVENUE	17,606,747	9,732,237	105,235	9,837,472	7,782,526	55.3%	55.9%

*Countywide Education Program participants have been invoiced and have paid the Agency 100% of the FY18 Budget. Revenue will be recognized each quarter as program expenditures are incurred.

The Agency received 55.3% of total budgeted revenues and budget performance was at 55.9% of budget when outstanding receivables were included. Table 1 - Agency Revenues identifies the sources of revenue received. Agency Revenues and Contributions for Debt Service received year-to-date total \$9.73M. Of this amount, \$5.44M represents two quarters service charges and \$3.73M debt service payments received from all JPA members and San Quentin Prison (SQP) with \$31.7K debt service outstanding from SQP.

The remaining \$555.4K in operating receipts and \$73.4K in operating revenues outstanding represents the following:

Contract Services: Receipts totaled \$345.1K and outstanding receivables totaled \$58.1K for services provided by the Agency under contract to sanitary districts and other government entities for pump station and collection system operations and maintenance, and for source control program services. Budget performance for revenues received was 28.1% and less than straight line year-to-date performance as it reflects five months of invoices to SD#2 and SQP pump stations, five months for San Quentin Village (SQV) wastewater services, and the first

quarter FOG program invoice activity. In January, staff will prepare and send out December's contract service invoices, and the second quarter FOG source control program invoices.

Capacity Charges: Capacity charges are a placeholder for one residential new connection from each member. Actual capacity charges received consist of residential and high density fixture units.

Program Revenues: Receipts totaled \$33.4K and there were \$3.3 outstanding receivables. CMSA administers the Health & Safety (H&SP) and Countywide Education (CWP) programs. Budget performance was at 23.3% and was less than straight line year-to-date. Revenue is lower because revenue for H&SP and CWP program expenses incurred each quarter is recognized in the subsequent month following each quarter.

Health & Safety Program: The Agency invoices Novato Sanitary District (NSD) for its share of the H&SP salary and benefit costs at the beginning of each quarter and invoices incidental program expenses and outside safety training costs the month following the end of each quarter. There were \$33.4K in receipts and no outstanding receivables. The third quarter invoice for salary and benefits and second quarter program expenditures will be sent out in January.

Countywide Education: Program participants are invoiced annually at the beginning of the fiscal year in accordance with each program participant agreement. The Agency invoiced 100% of the FY 18 budget and received \$51.7K in full pre-payment. The pre-paid deferred revenue received will be recognized the month following the end of each quarter for program expenses incurred during that quarter. The \$3.3K in the Outstanding Receivables column is the amount pending revenue recognition for program expenditures incurred through September. As of December 31st \$10.3K was spent on the Countywide Education program, \$1.9K had been allocated to CMSA, and the \$8.4K remaining will be allocated to all program participants in January. The frequency and amount of expenditures are a function of the events that are scheduled throughout the year. For example, promotional items are purchased in the third and fourth quarter of the prior fiscal year for the upcoming fiscal year's program events.

Haulers, Permits and Inspection Fees: There were \$89.2K in receipts and \$12K in outstanding invoiced revenues. Revenues are for septic receiving facility use charges, organic waste disposal, industrial waste discharge permit fees, reimbursement of costs for pollution prevention program inspections, and other services through November 2017.

Other Non-Operating Revenue: Placeholder for miscellaneous and infrequent items.

Interest Income: CAMP posts interest monthly at approximately 1.29% and LAIF posts interest quarterly at approximately 1.1%.

Debt Service: Debt service for the first half of the fiscal 2017-18 year consists of a principal and

interest payment that was due September 1, 2017. An interest only payment will be due March 1, 2018.

Table II – Revenues & Expenditures for Contracted Agency Services

Table II below consists of Contract Services and Program Revenues from Table I. The actual expense incurred by CMSA excludes the contract administration overhead charge that ranges from 5%-22% depending on each specific contract. The SQP wastewater service contract's treatment fee does not include an overhead charge as it is based on wastewater flow and strength; however, the SQP pump station maintenance operations fee does include an overhead charge. Invoices for services during the second quarter and the month of December will be prepared and mailed in January.

Service Contract	FY 18 Budgeted Revenue	Actual Revenue Received	Invoiced Outstanding	Total Revenue	Actual CMSA Expenses	Frequency of Invoicing
SQSP Wastewater Services	589,690	196,563	49,141	245,704	245,704	Monthly through November
SQSP Pump Station Maintenance	108,110	43,474	9,009	52,483	47,296	Monthly through November
SD#2 Pump Stations	403,400	93,523	-	93,523	76,341	Monthly through November
SQ Village Wastewater Services	49,950	6,144	(49)	6,095	5,131	Monthly through November
Revenue for Health & Safety Program	91,500	33,471	-	33,471	30,934	Quarterly through December
Countywide Education Program	51,700	-	3,343	3,343	2,841	Annual through June 2018*
LGVSD - FOG & Pollution Prevention	16,500	1,833	-	1,833	1,513	Quarterly through September
RVSD - FOG	21,500	1,058	-	1,058	964	Quarterly through September
SRSD - FOG	25,600	2,179	-	2,179	1,984	Quarterly through September
TCSD - FOG	2,200	-	-	-	-	Quarterly
SD #2 - FOG	7,500	416	-	416	380	Quarterly through September
NSD - Dental Amalgam	3,000	-	-	-	-	Quarterly
Almonte SD-FOG	1,500	-	-	-	-	Quarterly
TOTAL SERVICE CONTRACT REVENUE	1,372,150	378,661	61,444	440,105	413,088	

*Countywide Education Program participants have been invoiced and have paid the Agency 100% of the FY18 Budget. Revenue will be recognized as program expenditures are incurred.

Table III – Operating Expenditures by Category

Description	FY 18 Budget	2nd	Year- to-Date Actual Expenditures	Purchase Order Encumbrances & Pending Payments	Total Expenditures'	Budget Remaining	% Spent
		Quarter Budget (50%)					
Salaries & Wages	5,401,800	2,700,900	2,383,293	-	2,383,293	3,018,507	44.1%
Benefits	2,561,100	1,280,550	1,376,607	16,480	1,393,087	1,168,013	54.4%
Chemicals & Fuel	1,069,500	534,750	446,595	42,547	489,143	580,357	45.7%
Biosolids Disposal	387,700	193,850	143,612	-	143,612	244,088	37.0%
Permit Testing & Monitoring	179,500	89,750	68,583	19,262	87,844	91,656	48.9%
Repairs & Maintenance	382,500	191,250	114,144	45,390	159,534	222,966	41.7%
Insurance	261,200	130,600	184,608	19,201	203,809	57,391	78.0%
Utilities	350,500	175,250	113,645	4,507	118,152	232,348	33.7%
General & Administrative	868,800	434,400	340,877	105,104	445,982	422,818	51.3%
TOTAL OPERATING EXPENSES	11,462,600	5,731,300	5,171,964	252,492	5,424,456	6,038,144	47.3%

* Actual and Encumbered

Table IV – Operating Expenses by Department

Description	FY 18 Budget	2nd	Year- to-Date Actual Expenditures	Purchase Order Encumbrances & Pending Payments	Total Expenditures*	Budget Remaining	% Spent
		Quarter Budget (50%)					
Administration**	4,554,500	2,277,250	2,334,287	125,360	2,459,647	2,094,853	54.0%
Maintenance	2,008,700	1,004,350	796,137	47,390	843,527	1,165,173	42.0%
Operations	3,150,600	1,575,300	1,315,722	47,172	1,362,894	1,787,706	43.3%
Technical Services	1,748,800	874,400	725,818	32,569	758,388	990,412	43.4%
TOTAL OPERATING EXPENSES	11,462,600	5,731,300	5,171,964	252,492	5,424,456	6,038,144	47.3%

* Actual and Encumbered

** Fringe benefits for CMSA staff and the Agency's insurance expense are reflected in this department

Total operating expenditures were 47.3% of budget at the end of December 2017. This included \$5.17M for actual expenses and \$252.4K for open purchase orders, contracts, and other obligations. With the exception of Insurance, year-to-date expenditures for the other categories of expense were less than or within 5.4% of the straight-line projected budget performance target of 50% at the end of December. Budget performance by each department, except Administration, was less than or equal to the 50% performance target.

Salary & Wages and Benefits: Total salary and benefit expenses were respectively 44.1% and 54.4% of budget and represented expenditures through the pay period ending December 16, 2017 (13 of 26 payrolls or 50%). The Agency paid its FY 17 CalPERS \$481K employer unfunded accrued liability (UAL) in full at the beginning of the fiscal year. The annual lump sum prepayment option saved the Agency \$17.7K when compared to the

monthly remittance option.

Chemicals & Fuel: Expenditures are 45.7% of budget with \$446.5K of actual and \$42.5K in pending payments for chemicals delivered through December 31, 2017. Ferric is 67% of budget due to additional purchases to pre-load and fill the storage tank in preparation for winter storm conditions.

<u>Chemicals</u>	<u>Expenditures as % of Budget</u>	<u>Comments</u>
Ferric Chloride	67%	9 deliveries through December 2017
Polymer-Cationic	35%	1 delivery through August 2017
Odor Control	16%	1 delivery through August 2017
Nitrate	52%	17 deliveries through October 2017
Hydrogen Peroxide	54%	12 deliveries through December 2017
Sodium Hypochlorite	42%	24 deliveries through December 2017
Sodium Bisulfite	34%	12 deliveries through December 2017

Biosolids Management: Expenditures were 37% of budget and included \$143.6K actual expenditures and no purchase orders for hauling services and tipping fees at beneficial reuse sites through November 2017. Management expenses vary, and are primarily dependent upon seasonal weather-related circumstances: 1) land application during the months of May to November results in lower reuse tipping fee costs when compared to alternate daily cover at the Redwood Landfill, and 2) the volume for disposal is lower during the warmer weather spring and summer months.

Permit Testing & Monitoring: Expenditures were 48.9% of budget and included \$68.5K in actual expenditures and \$19.2K in purchase orders for NPDES permit sampling and other contract laboratory analyses costs. Expenditures for this category vary; sampling costs can range widely from \$150 to \$3,000 each based on the type and frequency of analyses performed. Billing delays often occur during the wet weather season when it takes longer to receive test analyses due to a work back-log at the contracting labs. When the outside laboratory does not provide test analyses in the timeframe specified in the contract, a fee reduction is received for the tests performed.

Repairs & Maintenance: Expenditures were 41.7% of budget and included \$114.1K in actual expenditures and \$45.3K in open PO encumbrances. Expenditures alone are not necessarily a good indicator of the repair and maintenance activities that are taking place. For example, periods of high expenditures reflect the purchasing of materials and supplies to prepare for upcoming planned maintenance, while periods of low expenditures can relate to staff performing planned maintenance utilizing available parts inventory.

Insurance: This category was at 78% of budget. The below schedule provides the payment status for insurance coverage. Insurance premiums are paid when policies are renewed and the expenses are prorated between fiscal years based on the policy's coverage time period.

Description	FY 18 Premium	Status
Property Insurance	49,921	FY 18 paid in full
General Liability & Auto	18,246	FY 18 paid through December 2017
Pollution Liability	809	FY 18 paid through April 2018
Employee/Commissioners Bond	2,200	FY 18 paid in full
Workers Compensation	133,593	FY 18 paid in full

Utilities: Expenditures were 33.7% of budget with \$113.6K in actual payments and \$4.5K of pending payables for electricity (purchased from MCE through PG&E), natural gas, water, and solid waste through November 2017.

General & Administrative (G&A): Expenditures were 51.3% of budget and included \$340.8K actual expenses and \$105.1K in open POs. The G&A expense category includes professional services (legal, financial, regulatory, etc.), operating permits, memberships in local, state and national wastewater organizations, employee certifications, conferences, training, telephone, and office expenses.

Table V – Capital Improvement Program

*Actual and Encumbered

Description	FY 17 Adopted Budget	Budget Transfers	FY 17 Adjusted Budget	Actual	Purchase Order & Contract Encum- brances	Total Expenditures	Budget Remaining	% Spent*
Salaries & Benefits	185,200	-	185,200	28,426	-	28,426	156,774	15.3%
Facility Improvements	1,740,600	(20,000)	1,720,600	775,134	345,268	1,120,402	600,198	65.1%
General Equipment	584,300	-	584,300	237,318	57,437	294,755	289,545	50.4%
Liquids Treatment Equipment & Systems	635,700	20,000	655,700	132,612	124,422	257,034	398,666	39.2%
Solids Treatment & Energy Generation Equipment & Systems	671,800	-	671,800	30,762	75,906	106,668	565,132	15.9%
TOTAL	3,817,600	-	3,817,600	1,204,252	603,033	1,807,285	2,010,315	47.3%

CIP expenditures* were 47.3% of budget. Expenditures totaled \$1.2M and encumbrances totaled \$603K for executed purchase orders and contracts for the following activities: Agency Facilities Master Plan, the Maintenance Facility Modification project, laboratory equipment, and for various other capital improvement activities. The attached second quarter Capital Improvement Program report includes project expenditures, encumbrances, and activity status.

		(CIP) CAPITAL IMPROVEMENT PROGRAM REPORT	Current FY 2017-18 CIP Tracking (Note A) Financial Data as of December 31, 2017							Multiyear Project Planning Financial Data as of December 31, 2017						Comments	
GL Account Number	PM	Project Title	FY18 Adopted Budget	Budget Transfers	FY18 Adjusted Budget	YTD Expenditures	PO & Contract Encumbrances (Note B)	Total Expended + Encumbered	Remaining Budget FY18	Percent Spent (YTD + PO)	Planned for Fiscal Year(s)	Prior Years' Expenditures	CIP 10-Year Forecast Totals FY 18 - FY 27	Prior and Future Multi-Year Project Totals	FY 18 Expended	Encumbered (Note B)	Remaining Planned Budget
Facility Improvements																	
7300-103-10	TSM	Effluent Storage Pond Rehabilitation	-	-	-	-	-	-	-	-	FY 22-23	-	1,221,800	1,221,800	-	-	1,221,800
7300-700-10	TSM	Agency Facilities Master Plan (3) (4)	260,000	-	260,000	105,060	201,062	306,122	(46,122)	117.74%	FY 17-18	188,316	260,000	448,316	105,060	201,062	(46,122)
7300-956-00	TSM	Industrial Coatings & Concrete Rehabilitation	65,000	-	65,000	-	-	-	65,000	0.00%							
7300-987-00	TSM	Outfall Inspection & Repairs	32,200	-	32,200	-	-	-	32,200	0.00%							
7400-103-10	TSM	Maintenance Facility Modifications (1)(3)	800,000	(26,238)	773,762	654,465	82,468	736,933	36,829	95.24%	FY 12-18	755,644	773,762	1,529,406	654,465	82,468	36,829
7400-600-00	TSM	Hillside Slope Stabilization	400,000	-	400,000	15,609	20,500	36,109	363,891	9.03%							
7400-956-00	TSM	Facility Paving/Site Work	148,400	-	148,400	-	-	-	148,400	0.00%							
7400-960-00	TSM	Facility Roofs Rehabilitation (1)	35,000	6,238	41,238	-	41,238	41,238	-	100.00%	FY 14-21	17,293	1,038,138	1,055,431	-	41,238	996,900
		Subtotal	1,740,600	(20,000)	1,720,600	775,134	345,268	1,120,402	600,198	65.12%							
General Equipment																	
7300-672-00	ISA	Process Control	37,900	-	37,900	2,234	3,562	5,796	32,104	15.29%							
7300-672-10	TSM	Security/Fire Systems	13,900	-	13,900	-	-	-	13,900	0.00%							
7300-683-00	TSM	Above Ground Fuel Storage Tanks	35,000	-	35,000	-	-	-	35,000	0.00%							
7410-851-00	ISA	IT Hardware and Communication Equip	56,900	-	56,900	14,833	-	14,833	42,067	26.07%							
7420-701-00	MS	Agency Vehicle Replacement	51,000	-	51,000	-	40,789	40,789	10,211	79.98%							
7430-958-00	LD	Laboratory Equipment	166,600	-	166,600	131,257	9,436	140,693	25,907	84.45%							
7450-002-00	MS	Electrical Equipment	120,100	-	120,100	42,342	2,834	45,176	74,924	37.62%							
7450-002-10	MS	Plant Lighting	26,000	-	26,000	25,090	-	25,090	910	96.50%							
7450-102-00	MS	Process Instrumentation	51,900	-	51,900	21,561	816	22,377	29,523	43.12%							
7450-105-00	MS	Electrical Distribution System Rehabilitation	25,000	-	25,000	-	-	-	25,000	0.00%							
		Subtotal	584,300	-	584,300	237,318	57,437	294,755	289,545	50.45%							
Liquids Treatment Equipment and Systems																	
7300-685-00	TSM	Bio-Tower Rotary Distributor Replacement (1)	-	-	-	-	-	-	-	-	FY 19	-	131,900	131,900	-	-	131,900
7300-700-00	MS	Plant Pumps	74,800	-	74,800	24,523	2,341	26,864	47,936	35.91%							
7300-719-00	MS	Chemical Pumps	113,000	-	113,000	29,938	1,493	31,431	81,569	27.82%							
7300-720-00	MS	Gates Rehabilitation	35,000	-	35,000	84	28,975	29,059	5,941	83.03%							
7300-727-00	MS	Headwork's Equipment	50,000	20,000	70,000	1,623	83,494	85,117	(15,117)	121.60%							
7300-981-00	TSM	Odor Control System Improvements (1)(3)	28,500	-	28,500	2,825	-	2,825	25,675	9.91%	FY 15-27	419,569	4,053,600	4,473,169	2,825	-	4,050,775
7300-983-00	MS	Process Tank Maintenance	85,000	-	85,000	7,125	647	7,772	77,228	9.14%							
7300-990-00	TSM	Secondary Clarifiers Rehabilitation	-	-	-	33,152	-	33,152	(33,152)	-							
7300-995-00	TPM	Aeration System Rehabilitation	20,100	-	20,100	18,061	405	18,466	1,634	91.87%							
7400-965-00	MS	Primary Clarifiers Rehabilitation	33,400	-	33,400	27	-	27	33,373	0.08%							
7400-966-00	TSM	Critical Buried Pipe Inspection/Repairs (1)	-	-	-	-	-	-	-	-							
7430-855-00	MS	Chemical Tanks	40,000	-	40,000	355	-	355	39,645	0.89%							
7430-857-00	MS	Piping, Valves & Operators	130,900	-	130,900	14,898	7,057	21,955	108,935	16.78%							
7450-104-10	MS	Influent Flow Meter Improvement	25,000	-	25,000	-	-	-	25,000	0.00%							
		Subtotal	635,700	20,000	655,700	132,612	124,422	257,034	398,666	39.20%							
Solids Treatment and Energy Generation Equipment and Systems																	
7300-660-00	TSM	PG&E Interconnection Agreement Modification	525,000	-	525,000	25,899	54,987	80,886	444,114	15.41%							
7300-661-00	TSM	FOG/FZE Vault Relining	-	-	-	-	-	-	-	-	FY 14-22	15,066	2,009,100	2,024,166	-	-	2,009,100
7300-678-00	TSM	Emergency Generator Assessment & Improvement (1)	-	-	-	-	-	-	-	-							
7300-714-00	MS	Spiral Heat Exchanger Rplcmnt EM	-	-	-	-	-	-	-	-	FY 19-22	-	2,100,000	2,100,000	-	-	2,100,000
7300-715-00	MS	Centrifuge Maintenance	-	-	-	-	-	-	-	-							
7300-722-00	MS	Cogeneration Maintenance	86,300	-	86,300	1,121	4,208	5,329	80,971	6.17%							
7300-724-00	MS	Hot Water Systems	34,000	-	34,000	3,741	16,711	20,452	13,548	60.15%							
7300-977-00	MS	Sludge Recirculating Pump Grinders	18,000	-	18,000	-	-	-	18,000	0.00%							
7300-978-00	MS	Bio Solids Hoppers Maintenance	8,500	-	8,500	-	-	-	8,500	0.00%							
		Subtotals	671,800	-	671,800	30,762	75,906	106,668	565,132	15.88%		1,395,888	11,588,300	12,984,188	762,350	324,768	10,501,182
		Grand Totals	3,632,400	-	3,632,400	1,175,826	603,033	1,778,859	1,853,541	48.97%							
		CMSA Staff Costs for CIP	185,200	-	185,200	28,426	-	28,426	156,774	15.35%							
		Annual Total	3,817,600	-	3,817,600	1,204,252	603,033	1,807,285	2,010,315	47.34%							

Notes:

- (1) BOLD items are individual Capital Improvement Projects, or larger, nonrecurring maintenance projects.
- (2) CMSA Staffing costs (compensation and benefits) for identified CIP Projects
- (3) CIP Projects in FY 17 that will have staff time charged to the CIP
- (4) Total balance remaining for Carollo CN 17-05 (including amendments #1 and #2) equals the amount in the PO & Contract Encumbrances column for Agency Facilities Master Plan account 7300-700-10

Notes:

- A Same financial data as Monthly Financial Report - Capital Improvement Program
- B Refer to Monthly Financial Report for PO/Contract Encumbrance Details



BOARD MEMORANDUM

January 4, 2018

To: CMSA Commissioners and Alternates

From: Kevin Lewis, Assistant Maintenance Supervisor
Chris Finton, Treatment Plant Manager *CF*

Approved: Jason Dow, General Manager

Subject: FY 2018 Asset Management Program – Second Quarter Report

Recommendation: Informational, provide comments or direction to the General Manager, as appropriate.

Summary: Staff prepares quarterly Asset Management (AM) reports to highlight the progress made on implementing the Agency's Asset Management Program (Program) in October, January, and April, and the annual report is presented in July.

Second Quarter Highlights

1. Outfall Sluice Gate Electric Actuator – An 84" motor operated valve (MOV), an integral component installed during the wet weather improvements project of 2010, was replaced this past quarter. During high flow and high tide events, this MOV closes off gravity flow to the 84" outfall and routes treated water through an effluent pump station, allowing the facility to handle large volumes of water that exceed the capacity of the gravity outfall. Functional testing on this asset is performed twice annually due to the corrosive environment in which it operates. Staff noted in FY 16 that the valve body required an industrial coating to prevent further oxidation and internal electrical components were also showing signs of exposure to moisture. In FY 17, funds were included in the budget to procure and install a new MOV. The replaced unit is scheduled to be sent back to its original manufacturer for refurbishment, and once this work is completed, the rehabilitated MOV will become a critical spare. Moving forward, this equipment will be placed on a two-year preventative maintenance cycle which includes a factory service.
2. Slurry Mixing Pumps – The organic waste receiving facility (OWRF) utilizes two pumps, typically one operating at a time, to mix the organic materials into slurry that can be pumped to the anaerobic digesters. This past quarter, during routine preventative

maintenance, technicians noted that internal wear and tear on both pieces of equipment had reached the point that replacement was warranted. CMSA receives organic wastes that include animal and plant based materials that are taxing on processing equipment and require regular maintenance. To address this, staff worked with the pump manufacturer to put together an equipment specific “replacement assembly” that allows removal and replacement of a targeted section of the pump, versus purchasing an entirely new pump and motor package. This cost-effective approach streamlines the equipment change-out process and reduces labor costs.

3. Expansion Joint Replacement Project – Expansion joints are short sections of molded rubber that connect piping together at various intervals to allow for movement or expansion. A majority of the Agency’s expansion joints can be found in the underground galleries connected to long runs of piping, most were installed as part of the facility’s original construction, and all of these joints were assessed and found to be nearing the end of their service lives. In FY 17, funds were included in the budget for a multi-year project to replace these joints as part of routine annual facility maintenance work. This past quarter, nine expansion joints, all within the gallery system, were replaced. Each joint was custom made to ensure a proper fit and proper application. This project will be ongoing for the next several years to replace over 100 joints throughout the treatment plant.

Asset Inventory

The Asset Parts Inventory is comprised of critical spare parts for Agency equipment, and consumable items designated for CMSA’s contract collection agencies—Sanitary District #2 (Corte Madera), San Quentin State Prison, and San Quentin Village Sewer Maintenance District. Spare parts for CMSA and San Quentin Village are kept at CMSA site-specific parts rooms, Sanitary District #2 parts and equipment are stored at Paradise pump station, and San Quentin State Prison parts and equipment are stored at the San Quentin pump station.

Staff conducted a thorough review of Agency assets tracked within the computerized maintenance management systems (CMMS). This quarterly exercise is performed to verify active assets within the system. As Agency-managed projects or regularly scheduled maintenance work is completed, both new and old assets must be accounted for in an asset inventory count. Along with entering new and removing obsolete assets from the asset tree, staff removed improperly grouped or classified assets, and removed additional non-critical assets valued under \$5,000, the Agency’s established tracking limit for assets within the CMMS system. In all, a total of 36 items were entered, reclassified, or removed from the CMMS asset tree this past quarter.

Asset Locations	Total Assets
CMSA	2,333
Sanitary District #2	241
San Quentin Prison	27
San Quentin Village	5

Parts Inventory	Parts Quantity	Total Value
CMSA	20,162	\$2,265,909
Sanitary District #2	1,442	\$112,710
San Quentin Prison	23	\$46,590
San Quentin Village	2	\$1,134

Asset Improvements, Repairs, and Refurbishment Work

1) CMSA Capital Improvement Project Work

Projects in the table below are capital projects that were completed or were in progress over the past quarter.

Project Name	CMSA Staff Cost	Total Cost	Status
Maintenance Facility Modifications	\$80,215	\$1,517,622	Complete
Expansion Joint Replacement Project	\$6,736	\$24,157	Complete
Headworks Odor scrubber Fan Replacement	\$2,456	\$2,943	Notice to Proceed Issued

2) CMSA Asset Management Improvements

Projects in the table below are considered routine, recurring, and usual maintenance work for the preservation and protection of Agency assets. CMSA labor and material costs are included to determine the overall cost to perform a specific task.

Area	Equipment	Improvement	Total Cost	Comments
Preliminary Treatment	Meter Vaults and South Francisco Junction Vault	Pump control panel replacements	\$16,461	Installed duplex control cabinets capable of managing a dual pump system if needed.
Headworks and Final Effluent Sample Vault	Composite Samplers	New programmable, refrigerated, and flow paced units	\$35,621	Installed samplers and stilling wells. Rerouted piping and moved PH meters.
Peroxide Odor Control Station	Chemical Injection Pumps	Installed precision gear metering pump	\$3,360	Installed pump, wiring, VFD, controls, and valves for onsite peroxide station.
Grit Removal System	Pumps and piping	Comprehensive condition assessment	\$6,882	Prepared report of findings for capital planning purposes.
Disinfection	Chemical Solution Mixer	Shaft replacement	\$3,501	Replaced failed shaft and propeller unit. Removed corroded metal and applied new coating.

Area	Equipment	Improvement	Total Cost	Comments
Bulk Chemical Storage Facility	Area Lighting	Automate exterior lighting	\$3,681	Replaced wiring, and added controllers and sensors.
Dechlorination	Chemical Induction Mixer (SBS)	New mixer and appurtenances	\$18,800	Replaced 10 HP mixing unit and flexible supply line.
Dechlorination	Solution Distribution Line	Line and heat trace element replaced	\$21,191	Replaced hose, heating wire, temperature controller, and improved valve access. Reinsulated connections.
Energy Generation	Cogenerator	2,000 hour maintenance procedure	\$2,559	Replaced oil, air filters, and lubricants. Replaced governor gasket.
Energy Generation	Boilers	Isolation valve replacement	\$5,011	Replaced six valves.
Chlorine Contact Tanks	Physical Structures and Ancillary Equipment	Annual preventative maintenance	\$3,700	Completed tank coating inspections and performed maintenance on mud valves, sluice gates, and scum skimmers.
Outfall	84" Sluice Gate	Annual preventative maintenance	\$18,547	Installed new electric actuator. Improved data communications.
Solids Handling	Odor Scrubber	Fan refurbishment	\$3,852	Replaced blade assembly and bearings. Adjusted motor, and modified belts and noise guard.
Solids Handling	Primary Sludge Feed Line No. 2	Plug valve and actuator replacement	\$12,901	Replaced eccentric plug valve and electric operator.
Solids Handling	Sludge Dewatering	VFD upgrades for centrifuge No's 2 and 3.	\$6,261	Replaced failed drive motor VFD's.
Solids Handling	TWAS Pump No. 2	Annual preventative maintenance	\$3,905	Replaced lobes, wear plates, housings, cartridge seals, and lubricants.
Solids Handling	Biogas Storage Membrane	Level indicating instrument	\$4,010	Replaced instrument with a more robust direct read unit.
Solids Handling	Ferric Chloride Metering Pump	New gear style metering pump	\$4,670	Replaced pump with a PalsaFeeder gear pump.

Area	Equipment	Improvement	Total Cost	Comments
Organic Waste Receiving Facility	Mixing Pumps	Six-month maintenance procedure	\$17,193	Replaced both pump wet ends consisting of impellers, cutter nuts, bearings, and cutting bar plates. Refreshed lubricants.
Organic Waste Receiving Station	Hose Pumps	New hose	\$2,285	Replaced EPDM hose and hose lubricant.

3) CMSA Maintained Assets (San Quentin Prison, Sanitary District #2, San Quentin Village)

Maintenance work performed over the quarter on collection agency assets by CMSA staff, an approved contractor, or service provider.

Asset Owner	Asset	Improvement	Total Cost	Comments
Sanitary District No. 2	Pixley Pump Station	Check valve replacement	\$2,426	Replacement of both station check valves.
Sanitary District No. 2	Lucky Pump Station	Check valve replacement	\$1,732	Replaced check valve on Pump No. 2.
San Quentin Village	Collection System	Hydro-Flush and root treatment	\$4,954	Hydro flushed lines and applied foaming root control treatment.

Work Orders – Second Quarter FY 2018

A work order is a written request that a preventive, planned corrective, or unplanned corrective maintenance task or project be performed. Work orders are typically generated and sent internally from one department to another. Shown in the table below are the types of work orders prepared by staff, the work orders completed, and the total labor hours, by type, to complete the work orders.


Work Order Type	# of WO's	% of Total WO's	Labor Hrs.	% of Total Hrs.
Preventative Maintenance (PM)	203	39.11%	1,042.25	11.64%
Corrective-Planned	145	27.94%	1,355.00	15.14%
Corrective-Unplanned	66	12.72%	332.50	3.71%
Improvement Project Work	6	1.16%	391.50	4.37%
Coating Projects	2	0.39%	36.25	0.40%
Safety	19	3.66%	89.50	1.00%
Professional Development/Staff Meetings	23	4.43%	276.25	3.09%
Facilities Administration/Housekeeping	27	5.20%	850.50	9.50%
Process Control and Facility Operations	28	5.39%	4,578.80	51.15%
Total	519	100%	8,952.55	100%



BOARD MEMORANDUM

January 4, 2018

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager 

Subject: **Resolutions of Appreciation for Byron Jones, Steve Schoenstein, and Ray Tiongson**

Recommendation: Adopt Resolutions of Appreciation for Byron Jones, Steve Schoenstein, and Ray Tiongson.

Discussion: When an employee retires from the Agency, staff prepares a Resolution of Appreciation for their service, and presents it to the Board at a subsequent meeting for adoption. Over the past several months, three employees retired and their department managers and peers collaborated to prepare the attached resolutions. Steve Schoenstein retired in June, Byron Jones retired in November, and Ray Tiongson retired at the end of December. These fine employees will be missed and the CMSA staff wish them well in retirement.

Attachments:

- 1) Resolution #325 – Resolution of Appreciation for Byron Jones
- 2) Resolution #326 – Resolution of Appreciation for Steve Schoenstein
- 3) Resolution #327 – Resolution of Appreciation for Ray Tiongson



CMSA Resolution No. 325

***Resolution of Appreciation for
Byron Jones***

WHEREAS, Byron "Snake" Jones was a professional Basketball player for the Boston Celtics and several international leagues, and is very well known in the Philippines for providing the U/Tex Wranglers with their first ever championship; and

WHEREAS, Byron began his career with the Central Marin Sanitation Agency as a Utility Worker on July 13, 1992, and advanced to his current position of Utility Worker III in 2013; and

WHEREAS, Byron always represented the Agency in a professional manner in his interactions with vendors, customers, and the public; and

WHEREAS, Byron brought a positive attitude and great work ethic to the Agency daily, and possessed an incredibly infectious laugh, which is how he was located throughout the facility for the majority of his career; and

WHEREAS, Byron was very thorough and meticulous and took great pride in ensuring that the appearance of CMSA was his first priority, which did not go unnoticed by both staff and visitors; and

WHEREAS, Byron tirelessly stocked the Agency vending machine and made sure there were with beverages and snacks to our liking always available; and

WHEREAS, Byron was a lover of the outdoors, and regaled co-workers with tales of his adventures, and was quick to relate less audacious stories of run-ins with skunks, possums, raccoons, and myriad other night-life roaming the Agency while he was carrying out his work.

NOW, THEREFORE, BE IT RESOLVED that the Commissioners for the Central Marin Sanitation Agency do express their appreciation to ***Byron*** for his dedication to the Agency and wish him a happy and eventful retirement.

PASSED AND ADOPTED at the meeting of the Central Marin Sanitation Agency Commissioners, County of Marin, State of California, on January 9, 2018, by the following vote:

AYES:

NAYS:

ABSTAIN:

ABSENT:

Diane Furst, Commission Chair

ATTEST:

By

Tom Gaffney, Commission Vice-Chair



CMSA Resolution No. 326

*Resolution of Appreciation for
Steve Schoenstein*

WHEREAS, Steve Schoenstein began his career with the Central Marin Sanitation Agency as a Maintenance Repair Trainee on October 7, 1986 and advanced to his current position of Maintenance Repair Worker III in 2015;

WHEREAS, Steve was recognized by the CWEA and his peers as a master fabricator, and the majority of his work, such as process area stairs, access ramps, and safe access gates, to name a few, remain in place today; and

WHEREAS, staff will not miss all the dang noise *Steve* made in the shop in completing all those needed repairs; and

WHEREAS, Steve always represented the Agency in a professional manner in his interactions with vendors, customers, and the public; and

WHEREAS, Steve so enjoyed employee-funded hot dog days, and as a waste-not-want-not kind of guy, after all the dogs were long gone, he would ensure nothing went to waste by using leftover buns to enjoy a condiment-only meal; and

WHEREAS, Steve's first mission daily was to conduct the shop's opening ceremony, and regardless of the weather or temperature, would open every door he could find, declaring "We're open for business!" and

WHEREAS, Steve truly reveled in the holiday season and insisted on playing holiday music the day after Thanksgiving all the way through New Year's, and this infectious holiday cheer was welcoming and would bring staff together, and he was famous for his bucket of "Kentucky Fried Chicken" he prepared especially for all Agency holiday parties.

NOW, THEREFORE, BE IT RESOLVED that the Commissioners for the Central Marin Sanitation Agency do express their appreciation to *Steve* for his dedication to the Agency and wish him a happy and eventful retirement.

PASSED AND ADOPTED at the meeting of the Central Marin Sanitation Agency Commissioners, County of Marin, State of California, on January 9, 2018, by the following vote:

AYES:

NAYS:

ABSTAIN:

ABSENT:

Diane Furst, Commission Chair

ATTEST:

By

Tom Gaffney, Commission Vice-Chair



CMSA Resolution No. 327

Resolution of Appreciation for Ray Tiongson

WHEREAS, Ray Tiongson completed twenty years of service to his country in the U.S. Navy prior to starting a second career as a Treatment Plant Operator; and

WHEREAS, Ray began his career with Central Marin Sanitation Agency as an Operator-in-Training on August 21, 2007, and advanced to his current position as a Grade III Operator on May 25, 2011; and

WHEREAS, Ray always represented the Agency in a professional manner in his interactions with vendors, customers, and the public; and

WHEREAS, Ray used his former skillset as a Navy Master Chief to teach less experienced staff how to effectively operate a treatment plant, write and follow standard operating procedures, and how to properly hold a coffee mug; and

WHEREAS, Ray worked a considerable amount of graveyard shifts, otherwise known as "third watch," for the Agency, and always managed to be upbeat and eager to engage in conversation every morning in spite of the demanding work schedule; and

WHEREAS, RAY was an avid photography buff, self-taught, and contributed many photos of Agency assets, equipment, and individual staff members to the CMSA newsletter and monthly reports, and intends to go back to school upon his retirement to study photography.

NOW, THEREFORE, BE IT RESOLVED that the Commissioners for the Central Marin Sanitation Agency do express their appreciation to ***Ray*** for his dedication to the Agency and wish him a happy and eventful retirement.

PASSED AND ADOPTED at the meeting of the Central Marin Sanitation Agency Commissioners, County of Marin, State of California, on January 9, 2018, by the following vote:

AYES:

NAYS:

ABSTAIN:

ABSENT:

Diane Furst, Commission Chair

ATTEST:

By

Tom Gaffney, Commission Vice-Chair



BOARD MEMORANDUM

January 4, 2018

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager 

Subject: Revised Health and Safety Program Agreement

Recommendation: Approve the revised Joint Health and Safety Program Agreement.

Summary: To align provisions in the Joint Health and Safety Program Agreement (Agreement) between CMSA and Novato Sanitary District (NSD) with recent changes to the Health and Safety Manager Job Description, staff is proposing several revisions to the Agreement. Revisions are shown as redline/strikeout text in the attached revised Agreement.

Discussion: In March 2017, the Agency hired a new Health and Safety (H&S) Manager to serve as the safety professional staff in CMSA and NSD's Health and Safety Program. Currently, under the Agreement, CMSA is the H&S Manager's employer and NSD's Safety Officer is the position's direct supervisor. Over the past several months, the NSD and CMSA managers have discussed minor changes to the Agreement to improve its effectiveness by allowing more flexibility in the H&S Manager's work schedule and by having each Agency supervise the H&S Manager while working at their respective agency; the H&S manager works at CMSA three days per week and at NSD twice per week. To implement these changes, minor revisions to the H&S Manager job description were approved at the December 2017 CMSA Board meeting, and similar revisions are being proposed to the Agreement. Besides minor editorial changes to improve the Agreement's readability, revisions include:

- The NSD Safety Officer, the Joint Health and Safety Program's Safety Director, will serve as the Health and Safety Manager's technical advisor, and participate in the annual performance appraisal process.
- While working at CMSA, the H&S Manager will be supervised by the CMSA General Manager or designee, and while working at NSD with position will be supervised by the NSD Safety Officer.
- Routine work status reports will be prepared and submitted to the CMSA and NSD supervisors, showing planned, in-progress, and completed activities.

Attachment:

- Revised Health and Safety Program Agreement

JOINT HEALTH AND SAFETY PROGRAM AGREEMENT

Recitals

- A. This Agreement is between the Central Marin Sanitation Agency (CMSA), and Novato Sanitary District (NSD), together known as "the Agencies".
- B. The Agencies agree to jointly fund a Health and Safety Program (Program) for the purpose of developing, implementing, and maintaining employee safety and injury management programs for each of the agencies in order to meet and maintain State and Federal requirements.
- C. The Program shall also develop and implement effective ongoing safety training, administer Return to Work, and Workers' Compensation programs, and providing provide recommendations to each Agency's management concerning safe working conditions, practices, and procedures.
- D. To the extent possible, related policies, programs, trainings, and procedures shall be developed and maintained in a standardized format for the benefit of each Agency.

Therefore, the Agencies hereto agree:

1.0 Purpose

The purpose of this Agreement is to jointly provide for the engagement of staffing resources to assist in developing, coordinating, and implementing employee safety and injury management programs meeting State and Federal requirements, developing and implementing on-going programs for instruction on work-related procedures, safety and professional development, developing policies and procedures, and making recommendations to Agency management relating to safe working conditions, practices, and procedures. This Agreement also serves to specify the administrative needs and decision-making process in regard to employment of necessary resources.

2.0 Term of Agreement

This agreement shall commence upon its effective date and shall continue in effect until it is terminated pursuant to Section 6.0 below.

3.0 Administration

3.1 The Program shall enlist the services of a Health and Safety Manager (H&S Manager) to be hosted by CMSA and Safety Director to be hosted by NSD.

3.2 As a full-time, regular employees of the respective host agency, each employee shall receive the same benefits, ~~and~~ be subject to all personnel, financial, and administrative policies and procedures, and receive salary and benefit modifications as other employees of the host agency unless modified by this agreement.

3.2.1 The H&S Manager shall receive a monthly car allowance of \$400.00.

JOINT HEALTH AND SAFETY PROGRAM AGREEMENT

3.2.2 The H&S Manager may request that a salary and/or benefit survey be performed at the same time as ~~the host agency~~CMSA's employees. CMSA and NSD's managers shall review such request by the H&S Manager, and if they both agree with the request, the survey shall be conducted. Approval of any salary or benefit changes based on the survey results shall require the affirmative vote of the CMSA and NSD managers, and must be approved by CMSA's Board of Commissioners~~the host agency's governing Board~~.

3.2.3 The H&S Manager shall be a full-time equivalent and -all costs associated with the H&S Manager's services shall be paid for by the Agencies using the following cost allocation formula: 50% of H&S Manager costs are to be shared equally, while the remaining 50% of the H&S Manager costs are to be apportioned according to the number of each Agency's employees over the total number of employees. The cost allocation shall be incorporated in the annual Program budget.

3.2.4 The Safety Director shall be a 25% full time equivalent and be responsible for overall Program direction and oversight, and ~~act-serve~~ as the H&S Manager's ~~direct supervisor~~technical advisor, providing health and safety program training and ~~conducting participating in the a formal~~performance review-appraisal of the H&S Manager on an annual basis.

3.2.4—CMSA's General Manager, or designee, shall provide general supervision of the H&S Manager while working at CMSA, and the Safety Director, or designee, shall provide general supervision while the H&S Manager is working at NSD. As host agency, CMSA will prepare the formal annual performance appraisal for the H&S Manager.

3.2.5 The Agencies shall apportion all costs associated with the Safety Director equally, and these costs shall be incorporated into the annual Program budget.

3.3 Payments or credits to each host agency shall be made in advance, on a quarterly basis, in January, April, July, and October of each year upon receipt of invoice from the host agency.

3.4 CMSA and NSD shall provide office space and a work station at their respective agencies for the H&S Manager, who shall spend two days per week at NSD and three days per week at CMSA.

3.5 The NSD and CMSA managers shall determine how to replace these staff resources, if the need should arise.

3.6 If for any reason, either agency decides it no longer wishes to serve as the host for its respective staff resource, it shall provide six months written notice, and the other Agency shall then have the option to serve as host agency.

JOINT HEALTH AND SAFETY PROGRAM AGREEMENT

3.7 Each host agency shall incur administrative and overhead costs and shall recover these costs by adding five percent (5%) of the respective salary for administrative support to the annual budget and each quarterly invoice. Each Agency shall provide their own administrative resources to support their respective Program activities and services.

3.8 The quarterly invoice shall include all budgeted Program expenses for the subsequent quarter, actual costs for outside safety training coordinated by the Program the prior quarter, and other approved expenses. Each Agency's training expenses for the prior quarter shall be based on the number of employees each Agency committed to attending the training, even if the actual number of attendees is less than the original commitment. In other words, committing to a training event is a financial commitment regardless of the actual number of employees who end up attending.

3.9 The Agencies' managers shall have the authority to extend the H&S Manager's probationary employment period up to an additional 12 months beyond the end of the host agency's regular probationary employment period to allow time for further evaluation.

4.0 H&S Manager Duties

4.1 The H&S Manager shall perform duties in accordance with the most current H&S Manager's job description.

4.2 The H&S Manager shall prepare an annual work plan, indicating training and other planned activities and their schedule for the upcoming three calendar years.

4.3 The H&S Manager shall prepare and submit to the **CMSA supervisor and the** Safety Director ~~and~~ routine reports on **planned, in-progress, and** accomplished work activities.

5.0 Indemnification and Insurance

5.1 It is the intent of the agencies that each shall bear the legal responsibility for any liability arising from the work performed within the purview of the Program, and each shall hold the other harmless with regard to any liability arising from such work.

5.2 Refer to Exhibit 1 for the Insurance Requirements of each Agency.

5.3 The H&S Manager shall provide automobile insurance for their personal vehicle with limits of at least \$300,000/\$300,000.

5.4 Any liability arising from the employment of the Safety Director or H&S Manager by the respective host agency or otherwise arising under this Agreement which is not addressed

**JOINT HEALTH AND SAFETY PROGRAM
AGREEMENT**

pursuant to Section 5.1 above shall be apportioned among the agencies in a pro rata fashion (based on the percentages established in Section 3 of this Agreement), including, but not limited to, liabilities or costs arising out of employment claims, disability retirement costs, and the costs associated with tendering or administering any such claims.

6.0 Termination

6.1 This Agreement may be terminated by the mutual written agreement of the Agencies. Either Agency may terminate its participation in this agreement at any time with six months' notice in writing to the other Agency.

6.2 If an Agency withdraws from this agreement, it is financially responsible for its proportionate share of the adopted Program budget for the then current fiscal year.

6.3 Additionally, the terminating party shall contribute its fair share of the Program's retiree medical benefit costs, based on an actuarial calculation of the current and past H&S Managers' and Directors' retiree medical expenses.

7.0 Effective Date

7.1 The effective date of this Agreement shall be when it is executed by both Agencies, and this Agreement shall supersede all previous Safety Director Program agreements.

CENTRAL MARIN SANITATION AGENCY

NOVATO SANITARY DISTRICT

By: _____

Jason Dow, General Manager

By: _____

Sandeep Karkal, General Manager - Chief Engineer



BOARD MEMORANDUM

January 4, 2018

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager

Subject: 2017 Performance Metric Report

Recommendation: Accept the Agency's 2017 Performance Metric Report.

Summary: Staff prepares monthly and annual performance metric reports for the Agency's core business and other provided services. These reports present performance metrics with their definition, measurement, and goals and target ranges in the areas of treatment and process, employee, environmental and regulatory compliance, and public outreach. Monthly reports are included in the Board meeting agenda packet and the annual report is presented in January.

2017 Performance Highlights: The Agency's staff and business operations continue to perform at a high level, with the highlights and comparison tables of selected metrics over the past several years shown below.

- ▶ CMSA exceeded its NPDES permit requirements for twelve consecutive years, from 2005 through 2016. During a major storm event in February 2017, when peak influent flows exceeded 121 MGD, the Agency did not meet its minimum 85% cBOD removal requirement. This unfortunate event did not impact effluent quality, but did end our noteworthy permit compliance record.
- ▶ Approximately *4.91 billion* gallons of wastewater was treated to a high level, with over 96% of the conventional pollutants removed. Annual wastewater volume variances are attributable to the number, duration, and intensity of wet weather events each year, which contribute a significant amount of stormwater and groundwater infiltration into the sewer collection system.

	2017	2016	2015	2014	2013	2012	2011
Billion Gallons Treated	4.91	4.33	3.31	4.25	3.44	4.45	4.35

- ▶ *6,324 wet tons* of biosolids were produced and beneficially reused either as soil amendment and fertilizer, or as alternate daily cover material (ADC) at the Redwood Landfill. Biosolids production variances can be due to the amount of settled material flushed from collection systems during major rain events, dewatering system performance, and digester draining and cleaning operations.

	2017	2016	2015	2014	2013	2012	2011
Wet Tons of Biosolids	6,324	6,702	5,867	5,947	5,458	6,483	6,344

- ▶ 102.6 million cubic feet of biogas was produced and had an equivalent natural gas procurement value of approximately \$306,521. The increase in biogas production since 2014 is a direct result of the Agency receiving additional quantities of organic waste materials each year. The reduction in gas production in 2017 was due to the organic waste receiving facility being off-line for several weeks during the storage tank recoating work.

	2017	2016	2015	2014	2013	2012	2011
Biogas Production – million cubic feet	102.6	104.7	82.2	79.9	64.5	57.6	53.7

- ▶ Operations and Maintenance staff completed 12,184 hours of preventative (PM) and planned and unplanned corrective (CM) maintenance related work. 2013 was the first year of tracking maintenance work order labor hours. The work order hour increases through 2016 are due to several factors, including increasing tracking accuracy, expanding the PM program, and tracking Operations Department work orders in the asset management program.

	2017	2016	2015	2014	2013
Work Order Hours	12,184	12,794	11,525	10,507	7,511
PM/CM ratio	0.87	0.78	0.84	0.69	0.69

- ▶ Overtime was only 1.9% of regular hours worked, well below the reported industry average of 5%. Various factors affect overtime authorization during a year, including number of significant wet weather events requiring additional staff, responding to after-hours system and equipment mechanical problems, and maintaining minimum operational staffing.

	2017	2016	2015	2014	2013	2012	2011
Overtime %	1.9%	1.6%	2.0%	2.4%	2.4%	2.3%	2.3%

- ▶ CMSA employees received 2,439 hours of safety, process control, work practice, leadership, mechanical/technical equipment, project related, employment law, and industry specific training. The increases since 2014 are the result of additional tracking of department specific job training for new employees and for existing employees preparing to meet advancement criteria.

	2017	2016	2015	2014	2013	2012	2011
Training Hours	2,439	3,099	2,354	1,898	1,965	1,569	1,579

- ▶ Environmental compliance staff performed 11,353 laboratory analyses for process control, NPDES permit reporting, quality assurance/quality control, and for member agency sanitary sewer overflows. The number of some analyses has decreased due to staff making adjustments to how the analyses measurements are tracked and reported.

- ▶ Environmental compliance staff performed 321 field inspections of businesses for compliance under our pretreatment, pollution prevention, mercury reduction, and FOG programs. The decrease in field inspections this year is directly attributed to the retirement of staff that managed the programs, training staff to administer the programs, and one staff member being on an extended medical leave for most of 2017. Inspections will increase in 2018.

	2017	2016	2015	2014	2013	2012	2011
Environmental Compliance Inspections	321	982	1,031	971	874	843	856

- ▶ Our public education activities reached 8,939 people – elementary school students at our Schools Program presentations, students and stakeholder groups that tour the Agency, and members of the public who visit the public education booth at environmentally focused events throughout the county. The significant decrease in 2015 and 2016 primarily were due to the cancellation of some county-wide events that we regularly attend and lower outreach booth attendance at the Marin County Fair.

	2017	2016	2015	2014	2013	2012	2011
Public Outreach – # of people	8,939	7,766	6,950	10,036	9,381	10,570	7,651

- ▶ Staff posted 53 odor alerts to our website, and the Agency received four odor complaints.

2016/2017 Organizational and Staff Awards: CMSA and its staff continue to receive recognition from regional, state, and national industry associations.

National Association of Clean Water Agencies (NACWA) Platinum Peak Performance Award - for not having any permit exceedances for *twelve* consecutive years. CMSA had one permit exceedance in 2017, and will be receiving the NACWA Silver Peak Performance award this summer.

Government Finance Officers Association (GFOA) Certificate of Achievement for Excellence in Financial Reporting - for our FY 15/16 Comprehensive Annual Financial Report. CMSA has received this award for *fourteen* consecutive years.

GFOA Popular Annual Financial Reporting Award – for our FY 15/16 Popular Annual Financial Report. This is the *sixth* consecutive year the Agency has received this award.

GFOA Distinguished Budget Presentation Award – for our FY 16/17 Adopted Budget. This is the *fifth* consecutive year the Agency has received this award.

2017 CWEA Redwood Empire Section awards:

- Engineering Achievement of the Year – *PG&E Interconnection Agreement Project*
- Public Education Program of the Year: *Marin Wastewater Agencies*
- Electrical/Instrumentation Person of the Year – *Russ Turbull*
- Mechanical Technician of the Year – *Abel Villareal*
- Supervisor of the Year – *Mark Koekemoer*
- Community Engagement and Outreach Person of the Year – *Jose Gutierrez*

Attachments:

- 2017 Performance Metric Report

CY2017 ANNUAL PERFORMANCE METRICS

TABLE I. TREATMENT/PROCESS METRICS

Metric	Definition	Measurement	Target/Goal
1) Wastewater Treated	Volume of wastewater influent treated and disposed; in billion gallons (Bg)	4.91 Bg	1.98 – 9.84 Bg
2) Biosolids Production	Reused as Alternate Daily Cover at the Redwood Landfill, in wet tons (wt) Reused at Land Application sites, in wet tons (wt) Delivered to Lystek's bio-fertilizer production facility (wt)	3,271.7 wt 1,103.5 wt 1,949.7 wt	4,320 – 7,980 wt
3) Conventional Pollutant Removal	Removal of the conventional NPDES pollutants - Total Suspended Solids (TSS) and Carbonaceous Biological Oxygen Demand (cBOD) a. tons of TSS removed b. % removal of solids (annual average) c. tons of organics removed (BOD) d. % removal of organics (annual average)	5,920 tons 97.1% 4,542 tons 95.4%	> 85% > 85%
4) Priority Pollutants Removal	Diversion of priority NPDES permit metals from discharge to the S.F. Bay: a. % Mercury (annual average) b. % Copper (annual average)	96.1% 91.8%	88 – 99 84 – 98
5) Biogas Production	Biogas generated in our anaerobic digesters - in million cubic feet (Mft ³) Natural gas (methane) equivalent of the biogas - in million cubic feet (Mft ³)	102.6 Mft ³ 65.6 Mft ³	72 to 114 Mft ³ 45.6 to 73.2 Mft ³
6) Energy Produced	Energy produced from cogeneration of generated biogas and purchased natural gas - in megawatt hours (MWh) Cogeneration system runtime on biogas – in hours (hrs); % time during year Biogas value (natural gas cost equivalent)	4,747 MWh 6,901 hr.; 79.0% \$306,521	4,560 to 5,760 MWh 6,480hr; 75% \$84,000 to \$288,000
7) Efficiency	The cost to operate and maintain the treatment facilities per million gallons of wastewater treated - in dollars per million gallons Energy used at CMSA, kilowatt hours, per million gallons treated	\$1,099/MG 1,436 kWh/MG	\$451-\$1,830/MG (wet - dry) 670 - 2,400 kWh/MG

Table II – EMPLOYEE METRICS

1) Employee Training	Hours of internal training – safety, web-based, project, vender, etc. Hours of external training – employment law, technical, regulatory, etc.	Internal = 1,355 hrs External = 1,084 hrs	variable
2) Work Orders	Preventative maintenance (PM) labor hours Planned corrective maintenance (CM) labor hours; % of CM+UCM hrs. Unplanned corrective maintenance (UCM) labor hours; % of CM+PM hrs. Ratio of PM to total corrective maintenance (CM + UCM)	5,659 hrs. 5,516 hrs. (85.0 %) 1,009 hrs. (15.0%) 0.87	3,600 – 6,000 hrs. ≥ 70% total CM hrs. ≤ 30% total hours. ≥ 0.45
3) Overtime Worked	Overtime hours worked % of regular work hours	1,688.5hrs 1.9%	< 5%

CY2017 ANNUAL PERFORMANCE METRICS

Table III - ENVIRONMENTAL AND REGULATORY COMPLIANCE METRICS

Metric	Definition	Measurement	Target/Goal
1) Permit Exceedances	# of NPDES permit exceedances	1	0
2) NPDES Analyses	# samples analyzed by the CMSA laboratory for NPDES compliance monitoring	2,122	1,800 – 3,000
3) Process Analyses	# samples analyzed by the CMSA laboratory for process control reporting and monitoring	6,345	4,800 – 7,200
4) Quality Control Testing	# of CMSA performed laboratory analyses for QA/QC purposes. Accuracy of QA/QC tests	2,829 98.5%	1,800 – 3,600 > 98%
5) Water Quality Sample Analyses	# of ammonia, coliform (total and fecal), enterococcus, and/or sulfide analyses performed for the CMSA member agencies (SSOs, etc.)	57	as-needed
6) Pollution Prevention Inspections	Inspections of industrial and commercial businesses in the Agency's pretreatment and pollution prevention programs and Novato Sanitary District's Mercury Reduction Program – 277 businesses regulated	107	variable
7) FOG Program Inspections	Inspections of food service establishments (FSEs) in the Almonte, TCSD, SD2, RVSD, SRSD, and LGVSD service areas – approx. 500 FSEs in program, 310 are regulated – either permitted or have waivers.	135	240 – 600
8) Permits Issued/Renewed	Permits issued for the pretreatment, pollution prevention, and FOG source control programs, and for groundwater discharge	79	variable

Table IV- Public Outreach


Metric	Definition	Measurement	Target/Goal
1) Public Education Events	Attendance at public education outreach events; # of booth visitors	4,581	3,500/year
2) School Events	Participation or sponsorship in school outreach events; # of attendees	4,080	variable
3) Agency Tours	Tours given to students and the public; # of people	278	variable
3) Odor Notifications	Number of odor alerts posted to the Agency website due to process or operational changes	53	12-120
4) Odor Complaints	Number of odor complaints received from the public	4	0



BOARD MEMORANDUM

January 4, 2018

To: CMSA Commissioners and Alternates

From: CMSA Finance Committee
Jason Dow, General Manager 

Subject: Employee Compensation and Benefit Adjustment Process

Recommendation: Discuss the Finance Committee's recommendation to approve employee compensation and benefit adjustments using a two-step process, and provide direction to staff as appropriate.

Discussion: Board consideration of employee compensation and benefit adjustments can take a few different forms. Adjustments are usually associated with infrequent labor relations negotiations with the Agency's represented and unrepresented employee groups, periodic personnel policy updates to comply with changes in state employment laws, and occasionally increasing an unrepresented job classification's salary range before a recruitment commences. Labor relations adjustments are negotiated with the employee groups, discussed and deliberated in closed session meetings, and the accepted adjustments are approved during a regular Board meeting. All other adjustments are brought to the Board at a regular meeting for presentation, discussion, and direction.

Late last year, the Board concluded labor relations negotiations with SEIU Local 1021 that resulted in a Board proposal being accepted by the SEIU membership and a Letter of Understanding (LoU) to the Agency's Collective Bargaining Agreement being approved by the Board. During a review of the LoU agenda item with Chair Diane Furst, she asked if the Board had ever considered a two-step review and approval process for employee compensation and benefit adjustments, similar to a practice used by the Town of Corte Madera to enhance the transparency of the process. I explained the above mentioned process used historically by the Board, and said I would include the two-step process to an upcoming Finance Committee meeting agenda.

At its November meeting, the Finance Committee discussed the two-step process idea, concluded it would be a good practice for the Agency, and is recommending the Board consider adopting it. If the Board concurs, staff will propose revisions to an existing policy for consideration at the February Board meeting. For the policy revision, staff needs direction if the two-step process, proposal review at one meeting and approval at the second meeting, would be applicable for any job classification compensation and benefit adjustment, or limited to only those associated with negotiated labor relations items.



BOARD MEMORANDUM

January 4, 2018

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager JD

Subject: Solar Power Generation Report – 2017 Facilities Master Plan

Recommendation: Informational, provide comments and/or direction to the General Manager, as appropriate.

Summary: Carollo Engineers has submitted the final draft Solar Power Generation Technical Memorandum (TM) for the 2017 Facilities Master Plan. Staff has reviewed the TM and provided comments to Carollo Engineers that will be incorporated into the final TM, after the Facilities Master Plan presentation to the Board. The TM identifies viable and realistic locations for solar photovoltaic (PV) arrays on CMSA’s property, sizes each array and determines its power output, estimates the procurement and installation cost for each, and determines the payback for CMSA and privately owned solar PV alternatives. In summary, it is not cost effective for CMSA to construct solar facilities, and may be cost effective if a private party constructed solar PV arrays and sold their power to CMSA.

Discussion: CMSA’s property has limited available space for the installation of solar PV arrays. To determine installation locations, Carollo considered the following criteria: no impact on Agency operations, array orientation to the south to southwest, sufficient space to achieve economies of scale, unshaded and unobstructed areas, and no future planned use. Areas that met these criteria are the employee and visitor parking lots, Administration and Maintenance Building roof tops, and a strip of land on the south side of the effluent storage pond. Attachments 1 and 2 show these viable solar PV installation areas, and Attachments 3-5 illustrate typical solar PV system installations.

Solar power generated from each array varies throughout the year, with the maximum power output during the summer months. Each array location with its area (ft²) and estimated capacity (kW) are shown in Table 1 below.

Array Location	Area (ft ²)	Capacity (kW)
Visitor and Employee Parking Area Canopies	15,600	220
Administration and Maintenance Building Roof Tops	8,600	100
Ground Mount by Effluent Storage Pond	13,000	180
Total	37,100	500

Table 1 – Solar PV Array Locations, Size, and Capacity

Financial Evaluation

The solar PV financial evaluation uses several performance and cost assumptions, and does not include the design and construction cost to interconnect each array into the nearest Agency building's power distribution system. Assumptions include a 20-year analysis period, system installation unit costs, annual operation and maintenance costs, power procurement by MCE at \$0.10/kWh, annual array performance degradation, and a 5% discount rate, and a federal tax incentive and accelerated depreciation for the third party ownership alternative. Table 2 below shows the results of the Agency Owned financial evaluation. With the annual cash flow and 20-year Net Present Value for each alternative being negative and each having a benefit-cost ratio less than 1.0, the Agency Ownership alternative is not economically viable.

Array Location	Estimate Installation Cost	Average Annual Cash Flow	20-year Net Present Value	Benefit-Cost Ratio
Rooftops	\$175,000	\$<3,700>	\$<63,400>	0.73
Ground Mount	\$345,000	\$<5,000>	\$<82,700>	0.79
Canopies	\$655,000	\$<23,700>	\$<429,600>	0.44
All Arrays	\$1,175,000	\$<29,200>	\$<513,300>	0.63

Table 2 – Agency Owned Evaluation

CMSA could consider requesting proposals from private developers to construct and own a solar PV array on Agency property, with CMSA entering into a long term agreement to purchase power for a fixed price. Carollo reports that third party transaction costs are higher for systems sized less than 500kW, and due to uncertainty in those costs the evaluation was performed on the most economical array locations, the rooftop and ground mount systems. Table 3 shows the results of the financial evaluation for the Agency and Third Party Owned alternatives, assuming the CMSA power purchase price is \$0.95/kWh.

Alternative	Estimate Cost	Average Annual Cash Flow	20-year Net Present Value	Benefit-Cost Ratio
Third Party Owned	\$0.095/kWh	\$3,100	\$59,000	1.07
Agency Owned	\$520,000	\$<8,800>	\$<146,100>	0.76

Table 3 – Agency and Third Party Owned Alternatives: rooftop and ground mount arrays

When the additional cost to interconnect the arrays to local power distribution systems is factored in to the financial evaluation, the third Party Alternative's benefit-cost ratio will be less than one and the Agency Owned benefit-cost ratios will decrease.

Attachments:

- 1) Figure 9.2 from the TM – Maintenance and Control Buildings and Solar Parking Areas.
- 2) Figure 9.3 from the TM – Effluent Pond Solar Areas
- 3) Figure 9.4 from the TM – Typical Solar Canopy in Parking Lot
- 4) Figure 9.5 from the TM – Typical Rooftop Solar on Standing Seam Metal Roof
- 5) Figure 9.6 from the TM – Typical Ground Mount Solar



LEGEND	
	Solar Areas

MAINTENANCE AND CONTROL BUILDINGS AND PARKING LOT SOLAR AREAS

FIGURE 9.2

CENTRAL MARIN SANITATION AGENCY
2017 FACILITIES MASTER PLAN





LEGEND	
	Solar Areas

EFFLUENT POND SOLAR AREAS

FIGURE 9.3

CENTRAL MARIN SANITATION AGENCY
2017 FACILITIES MASTER PLAN



Photo Courtesy of Sun Sentinel

**TYPICAL SOLAR CANOPY
IN PARKING LOT**

FIGURE 9.4

CENTRAL MARIN SANITATION AGENCY
2017 FACILITIES MASTER PLAN



Photo Courtesy of Mid South Construction

**TYPICAL ROOFTOP SOLAR
ON STANDING
SEAM METAL ROOF LOT**

FIGURE 9.5

CENTRAL MARIN SANITATION AGENCY
2017 FACILITIES MASTER PLAN



Photo Courtesy of Solar Panel Talk

TYPICAL GROUND MOUNT SOLAR

FIGURE 9.6

CENTRAL MARIN SANITATION AGENCY
2017 FACILITIES MASTER PLAN



BOARD MEMORANDUM

January 4, 2018

To: CMSA Commissioners and Alternates

From: CMSA Finance Committee
Jason Dow, General Manager *JD*

Subject: Preliminary 5-Year Revenue Plan

Recommendation: Discuss the preliminary 5-year revenue plan and provide direction to staff and the Finance Committee.

Summary: CMSA is in the final fiscal year of its current 5-year revenue program, and no revenue adjustments have been adopted by the Board for FY 19 and beyond. Since October, the Board's Finance Committee, comprised of Commissioners Tom Gaffney, Michael Boorstein, and Dean DiGiovanni, have met three times to work with staff to select guiding principles for the Agency's next multi-year revenue plan, provide direction on integrating future operating and capital expenses into the plan model, review plan funding alternatives, and select an alternative to present to the Board for discussion and direction. Below is the preliminary 5-year plan showing the Agency's average EDU rate with annual increases.

	Adopted FY18 Budget	FY19	FY20	FY21	FY22	FY23
Average EDU Rate	\$331	\$344	\$356	\$370	\$384	\$397
Increase From Prior Year		3.7%	3.7%	3.8%	3.9%	3.3%

Discussion: During development of the annual budget, staff updates the Agency's 10-year financial forecast, and at the June Board meeting staff presents it and the proposed annual budget. Over the past few years, staff has highlighted that at the end of the current 5-year revenue program, FY 18, if revenues are not increased the Agency will begin to utilize operating and capital reserves with both being exhausted in the FY 21 to FY 22 timeframe. This led the Board to direct staff to prepare a letter to the JPA member agencies notifying them of the projected financial situation and the Agency's plan to prepare its next revenue program.

The Board's Finance Committee began the revenue plan development work in October 2017 with the goal of presenting a new multi-year revenue plan to the Board by March 2018 for consideration of adoption, so the information can be provided to the JPA member agencies and

integrated into their respective financial plans and future budgets. Since then, the Committee has met four times and the preliminary plan is ready for Board review, comments, and direction. While preparing the preliminary plan, staff and the Committee discussed and made planning decisions on the operating expenses, capital improvement plan (CIP), and revenue plan guiding principles, and considered several revenue plan funding scenarios, each of which are briefly summarized below.

Operating Expenses: For the FY 18 budget, staff prepared a new proforma-based 10-year financial forecast model, part of which uses annual escalators for operating expense categories. During review of the budget documents, the Committee agreed with the escalator assumptions and at the October Committee meeting those were confirmed for use in the revenue plan model. Other operating expense decisions for the model were to use CalPERS' most recent projected future employer rate and unfunded liability increase assumptions, not to fund the Agency's pension liability since it is currently 80% funded according to CalPERS, and to hire a new Laboratory Analyst by FY 19 for the Agency to comply with the imminent Environmental Laboratory Accreditation Program (ELAP) requirements.

Capital Expenses: When staff presented the FY 18 budget and revised 10-year CIP to the Board, there were several developing initiatives, some beyond CMSA's influence and/or control that could impact the scope and total cost of the CIP. These included any new requirements in CMSA's renewed NPDES permit requiring new facilities to reduce wastewater blending or meet other regulatory requirements, new or modified facilities to comply with nutrient reduction requirements in the 2019 Regional Nutrient Water Shed Permit (Permit), and recommended asset management and capital projects from the 2017 Agency Master Plan.

Over the past six months, staff has received answers and clarification to many of these unknowns – CMSA's new permit does not have any new provisions requiring additional capital investment; BACWA has reported that the 2019 Permit will focus on additional water quality studies to better understand the nutrient impairment of the Bay and not include nutrient loading limits for SF Bay wastewater facilities; and several of the Masterplan's analyses are not recommending new projects or the projects are already planned by the Agency. One task in the Masterplan is for the consultant to perform a condition assessment of the Agency's facilities and equipment, and the findings and recommendations were reviewed by staff with some being incorporated into a revised CIP for use in the revenue plan model.

The attached revised 10-year CIP was used in the revenue plan model and includes \$9.5 million in additional projects and activities from the condition assessment findings that have been vetted by the Committee. Not included in the revised CIP are projects from the Organic Waste Receiving Facility Expansion, Solar Power Generation, and Biogas Utilization reports. Those reports will be submitted in early 2018. Changes to the FY 18 CIP are shown by different color highlighted cells – green represents new or expanded existing projects from the condition assessment report, red indicates projects that have been moved a couple years, and the blue cell is an allowance for any follow-up activities resulting from the influent flow meter study.

Guiding Principles: The Committee established the following guiding principles for staff to use when preparing the revenue plan model. The first five were selected at the October meeting, while the following two were added after the review of the funding scenarios in December.

- 1) Use a 5-year revenue planning period
- 2) Balance the operating budget over the planning period
- 3) Maintain the operating reserve at 25% of the annual operating expenses
- 4) Ensure adequate funding the capital improvement program during the planning period
- 5) Keep the JPA managers briefed on the Finance Committee's work
- 6) Issue debt to fund the larger CIP projects during the planning period
- 7) Target a CMSA average EDU rate increase of less than 4% per year.

Funding Scenarios: Using the first five guiding principles and the decisions on the future operating expenses and revised CIP, staff constructed the revenue plan model and generated four funding scenarios for the Committee to consider. Each is briefly explained and summarize below.

Alternative 1: Balance the operating budget each year and provide and provide an increasing \$250,000 per year in CIP funding. CIP shortfall off \$

	FY 19	FY 20	FY 21	FY 22	FY 23
EDU Rate Increase	3.1%	4.2%	4.9%	5.2%	5.3%

Alternative 2: Balance the operating budget each year, issue debt to fund the centrifuge replacement and cogeneration system installation projects, and provide an increasing \$325,000 per year to fully fund the CIP.

	FY 19	FY 20	FY 21	FY 22	FY 23
EDU Rate Increase	3.8%	4.8%	5.5%	5.6%	5.9%

Alternative 3: Balance the operating budget each year, move the centrifuge replacement project outside the planning period, and provide an increasing \$550,000 per year to fully fund the CIP.

	FY 19	FY 20	FY 21	FY 22	FY 23
EDU Rate Increase	7.2%	5.5%	7.1%	7.0%	7.1%

Alternative 4: Balance the operating budget each year, do not increase rates in FY 19, and provide an increasing \$1 million per year to fully fund the CIP.

	FY 19	FY 20	FY 21	FY 22	FY 23
EDU Rate Increase	0%	12.8%	10.2%	10.2%	9.7%

Preferred Scenario: Alternative 2 was selected as the preferred scenario as it results in fully funding the CIP with the lowest rate increase. Staff was directed to increase the debt issuance size to limit the rate increase to a maximum 4% per year. This was accomplished by adding all the larger projects in the revised CIP to the future debt issuance, using a 30 year term, 3.6% interest rate, and \$15.3 million issuance amount. The table below shows the regional charge, debt service, and capital fee components of the EDU rate, the total EDU amount and the percent increase per year. The debt service rate includes the 2015 revenue bond rate and that of a the future debt issuance, and both use the fixed 48,039 EDU used for the current revenue bond allocation.

	Adopted FY18 Budget	FY19	FY20	FY21	FY22	FY23
Regional Charge	215	217	222	228	236	246
Capital Fee	13	15	17	19	22	24
Debt Service	103	111	117	122	126	107
Total EDU rate	\$331	\$344	\$356	\$370	\$384	\$397
Increase From Prior Year		3.7%	3.7%	3.8%	3.9%	3.3%

Attachments:

- 1) Revised Draft 10-Year Capital Improvement Program
- 2) Preliminary 5-Year Revenue Plan Alternatives

Central Marin Sanitation Agency
Capital Improvement Program
FY 18 Adopted Budget and 10-Year Forecast

	Prior FYs' Costs	Adopted Budget For FY 17	Projected FY 17 Actuals	10-year CIP										Project Totals	
				1 Adopted FY 18	2 FY 19	3 FY 20	4 FY 21	5 FY 22	6 FY 23	7 FY 24	8 FY 25	9 FY 26	10 FY 27		Total FY 18 - FY 27
Effluent Storage Pond Rehabilitation		-		-	-	-	-	37,400	1,184,400	-	-	-	-	1,221,800	1,221,800
Agency Facilities Master Plan (3)		360,800	230,000	260,000	-	-	-	-	-	-	-	-	-	260,000	490,000
Industrial Coatings & Concrete Rehabilitation		16,900	839	65,000	177,000	187,600	95,900	20,300	142,100	23,700	24,300	25,000	135,600	896,506	
Outfall Inspection & Repairs		30,900	23,700	32,200	33,000	408,900	34,800	35,700	36,700	37,600	38,600	39,600	40,700	737,805	
Maintenance Facility Modifications (3)	161,740	786,300	627,000	800,000	-	-	-	-	-	-	-	-	-	800,000	1,588,740
Facility Paving/Site Work		130,600	5,000	148,400	10,300	131,300	10,800	11,100	140,200	11,700	12,000	162,100	12,600	650,503	
Hillside Slope Stabilization		-	32,321	400,000	-	-	-	-	-	-	-	-	-	400,000	
Facility Roofs Rehabilitation		10,000	3,992	35,000	-	75,500	921,400	-	9,600	-	-	-	-	1,041,501	1,045,493
SHB Elevator Control Replacement									100,000					100,000	
Seismic Study						200,000								200,002	
Subtotal - Facility Improvements		1,335,500	922,852	1,740,600	220,300	803,300	1,062,900	104,500	1,613,000	73,000	74,900	226,700	188,900	6,308,117	
Process Control		35,500	8,824	37,900	29,000	30,500	31,300	47,200	33,000	33,900	34,800	35,700	36,600	349,908	
Security / Fire Systems		-	1,400	13,900	-	4,000	-	4,200	-	4,400	-	4,700	-	31,205	
Fuel Storage Tanks		10,000	491	35,000	-	112,400	-	-	-	-	-	-	-	147,401	
IT Hardware and Communication Equip		54,400	48,231	56,900	13,700	14,400	14,800	15,200	45,000	16,000	16,400	16,900	17,300	226,608	
Agency Vehicle Replacement		59,000	36,260	51,000	43,000	72,000	73,000	67,300	40,000	70,600	52,600	175,400	79,300	724,206	
Laboratory Equipment		14,300	14,000	166,600	31,100	61,600	16,600	6,600	6,600	19,100	37,100	6,600	6,600	358,508	
Electrical Equipment		83,700	65,000	120,100	74,100	64,200	65,800	79,500	81,400	57,700	59,000	68,800	71,600	742,206	
Plant Lighting		26,000	26,000	26,000	18,800	19,300	19,700	20,200	20,600	21,100	-	-	-	145,702	
Process Instrumentation		60,000	52,000	51,900	51,200	43,800	44,800	45,700	46,800	47,800	48,400	50,100	52,100	482,606	
Electrical Distribution System Rehabilitation		25,500	1,687	25,000	-	-	1,164,200	-	187,900	-	196,900	-	-	1,574,000	
Subtotal - General Equipment		368,400	253,893	584,300	260,900	422,200	1,430,200	285,900	461,300	270,600	445,200	358,200	263,500	4,782,350	
Bio-Tower Rotary Distributor Replacement		126,700	-	-	-	-	-	-	988,000	-	-	-	-	988,000	988,000
Plant Pumps		160,000	27,421	74,800	61,200	62,500	63,900	65,300	66,800	68,300	69,100	71,400	182,300	785,610	
Chemical Pumps		40,000	35,125	113,000	48,900	75,000	150,000	65,000	175,000	54,500	55,300	57,200	59,500	853,408	
Gates Rehabilitation		87,900	111,110	35,000	421,635	74,900	76,700	78,400	10,000	422,900	82,900	85,700	89,200	1,377,341	
Headworks Equipment		70,000	13,022	50,000	26,500	27,900	31,000	29,400	348,965	31,000	247,000	1,020,600	33,500	1,845,871	
Odor Control System Improvements (3)	112,420	370,000	310,000	28,500	-	-	-	-	-	1,936,000	-	2,200,000	1,494,600	5,659,100	6,081,520
Process Tank Maintenance		35,000	33,500	85,000	79,800	81,800	517,700	61,200	62,700	64,100	65,700	68,400	71,200	1,157,606	
Primary Clarifiers Rehabilitation		10,000	10,000	33,400	20,800	-	-	430,600	433,600	436,400	438,400	155,800	162,100	2,111,102	
Secondary Clarifiers Rehabilitation		75,000	-	-	314,700	320,200	388,200	220,100	-	-	-	-	-	1,243,210	
RAS/WAS Pump Replacement							376,600	753,200	753,200					1,883,000	
Aeration System Rehabilitation		51,000	51,000	20,100	15,000	-	-	-	-	26,000	-	-	-	61,101	
Process Piping Inspection/Repairs/Replacement	97	100,000	121,552	-	183,600	-	-	-	-	753,000	110,000	157,900	1,204,502	1,326,151	
Chemical-Tanks		40,000	40,000	40,000	87,200	27,900	57,100	58,500	35,900	42,900	2,500	45,000	54,200	451,204	
Piping, Valves & Operators		95,700	77,000	130,900	70,100	56,300	57,600	58,800	60,100	61,500	62,200	68,700	71,500	697,708	
CCT Valve Rehabilitation													324,000	324,000	
Influent Flow Meter Improvement		22,500	9,000	25,000	-	200,000	-	-	-	-	-	-	-	225,003	
Subtotal - Liquids Treatment Equipment and Systems		1,283,800	838,730	635,700	1,329,435	926,500	1,718,800	1,820,500	2,934,265	3,143,600	1,776,100	3,882,800	2,700,000	20,867,766	
Emergency Generator Assessment & Improvement		-	-	-	-	-	-	-	-	-	77,600	1,931,500	-	2,009,100	
Digester Inspection, Cleaning & Cover Replacement		-	-	-	-	-	-	856,600	875,600	-	-	-	-	1,732,200	
Centrifuge Maintenance	3,139	235,300	-	-	150,000	-	250,000	1,700,000	-	-	-	-	-	2,100,002	2,103,141
Cogeneration Maintenance (3)		359,600	228,328	86,300	100,500	362,000	1,943,200	1,637,500	62,700	64,100	65,700	74,700	77,700	4,474,410	
Hot Water Systems		110,200	-	34,000	14,400	14,700	15,000	15,300	15,600	15,900	16,800	16,800	17,500	176,004	
Digester Mixing Pump Study					100,000									100,002	
Boilers Rehabilitation or Replacement		-	-	-	72,000	-	-	-	-	-	520,400	-	-	592,404	
Sludge Recirculating Pump Grinders		16,900	10,000	18,000	18,300	18,700	19,100	19,600	20,000	20,400	20,700	21,400	22,300	198,508	
Biosolids Hoppers Maintenance		-	-	8,500	-	9,000	-	9,300	-	9,700	-	10,500	-	47,004	
PG&E Interconnection Agreement Modification		130,000	130,000	525,000	-	-	-	-	-	-	-	-	-	525,000	
total - Solids Treatment and Energy Generation Equipment and Systems		977,000	464,846	671,800	455,200	404,400	2,227,300	4,238,300	973,900	110,100	701,200	2,054,900	117,500	11,954,634	
CMSA Staff Costs for CIP (2)		178,200	178,200	185,200	190,100	195,100	200,200	205,500	210,900	216,400	222,100	227,900	233,900	2,087,300	
Annual CIP Totals		4,142,900	2,658,521	3,817,600	2,455,935	2,751,500	6,639,400	6,654,700	6,193,365	3,813,700	3,219,500	6,750,500	3,503,800	46,000,167	

Central Marin Sanitation Agency
Capital Improvement Program
FY 18 Adopted Budget and 10-Year Forecast

Delivery Methods
Maintenance project, self performed
Maintenance Contract
Purchase Order, equipment only
Professional Services Agreement
Informally Bid
Formally Bid

Projected Annual Escalation Rate:	2.63%	(rolling 5-year average of ENR San Francisco Construction Cost Index (CCI) annual changes 12/2012-07/2016).							
Escalation Factors	1.0263	1.0533	1.0810	1.1094	1.1385	1.1685	1.1992	1.2307	1.2631

2015 to 2016 CCI % Change	4.07%
	1.0407

CENTRAL MARIN SANITATION AGENCY
SUMMARY TABLE FOR REVENUE PLAN ALTERNATIVES

Description	Alternative 1 - % to Balance Operating				
	FY 19	FY 20	FY 21	FY 22	FY 23
Operating \$ inc (dec)	92,368	217,467	327,763	392,427	440,435
CIP \$ inc (dec)	250,000	250,000	250,000	250,000	250,000
Total \$ inc (dec)	<u>342,368</u>	<u>467,467</u>	<u>577,763</u>	<u>642,427</u>	<u>690,435</u>
Total % inc (dec)	<u>3.1%</u>	<u>4.2%</u>	<u>4.9%</u>	<u>5.2%</u>	<u>5.3%</u>
Description	Alternative 2 - Debt Finance Cogen/Cent Plus Capital Amt to Balance				
	FY 19	FY 20	FY 21	FY 22	FY 23
Operating \$ inc (dec)	92,368	217,467	327,763	381,526	451,292
CIP \$ inc (dec)	325,000	325,000	325,000	325,000	325,000
Total \$ inc (dec)	<u>417,368</u>	<u>542,467</u>	<u>652,763</u>	<u>706,526</u>	<u>776,292</u>
Total % inc (dec)	<u>3.8%</u>	<u>4.8%</u>	<u>5.5%</u>	<u>5.6%</u>	<u>5.9%</u>
Description	Alternative 3 - Centrifuge to '24 with Pay-as-You-Go				
	FY 19	FY 20	FY 21	FY 22	FY 23
Operating \$ inc (dec)	230,921	94,447	328,245	371,170	451,518
CIP \$ inc (dec)	550,000	550,000	550,000	550,000	550,000
Total \$ inc (dec)	<u>780,921</u>	<u>644,447</u>	<u>878,245</u>	<u>921,170</u>	<u>1,001,518</u>
Total % inc (dec)	<u>7.2%</u>	<u>5.5%</u>	<u>7.1%</u>	<u>7.0%</u>	<u>7.1%</u>
Description	Alternative 4 - '19 Zero Increase, Then 4-Year Increase				
	FY 19	FY 20	FY 21	FY 22	FY 23
Operating \$ inc (dec)	0	390,000	255,676	381,810	451,626
CIP \$ inc (dec)	0	1,000,000	1,000,000	1,000,000	1,000,000
Total \$ inc (dec)	<u>0</u>	<u>1,390,000</u>	<u>1,255,676</u>	<u>1,381,810</u>	<u>1,451,626</u>
Total % inc (dec)	<u>0.0%</u>	<u>12.8%</u>	<u>10.2%</u>	<u>10.2%</u>	<u>9.7%</u>