Central Marin Sanitation Agency

COMMISSION REGULAR MEETING AGENDA
Tuesday, September 12, 2017
at the Agency Office
7:00 p.m.
Closed Session at 6:00 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. **6:00 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. **Adjourn to Closed Session**
   PUBLIC EMPLOYEE PERFORMANCE EVALUATION
   California Government Code Section 54957
   Title: General Manager

5. **7:00 p.m.: Reconvene in Open Session**
   Report on any action taken in closed session.

6. **Roll Call**

7. **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.

8. **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—Regular Board Meeting—July 11, 2017
   b) Minutes—Special Board Meeting—August 10, 2017
   c) Treasurer's Report—Operating Account—July 2017
   d) Treasurer's Report—Operating Account—August 2017
   e) Schedule of Investments—July 2017

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f) Schedule of Investments—August 2017
g) NPDES, Process, and Maintenance Report—July 2017
h) NPDES, Process, and Maintenance Report—August 2017
i) Performance Metric Reports—July and August 2017
j) Accept Completion of the Solids Handling Building Ventilation Improvements Construction Contract
k) Fiscal Year 2017 Green Business Report
l) Revised Central Marin Food-to-Energy Program Agreement with Marin Sanitary Service

9. Procurement of a Data Management System and a Laboratory Information Management System
Recommendations: Authorize the procurement of the Hach Water Data Management System for $51,781, and the Promium Element Laboratory Information Management System for $78,856.

10. Appointment of CMSA Representatives to the North Bay Watershed Association's Board of Directors
Recommendation: Nominate and appoint a CMSA representative and alternate to the North Bay Watershed Association's Board of Directors.

11. Renewable Energy Expansion Program – Clean Water State Revolving Fund Financial Assistance Agreement
Recommendation: Informational, provide comments or direction to the General Manager, as appropriate, regarding approval of the Clean Water State Revolving Fund Financial Assistance Agreement.

12. Agency Responses to the Marin County Civil Grand Jury Report – The Budget Squeeze: *How Will Marin Fund Its Public Employee Pensions?*
Recommendation: Approve the draft Agency responses to the Grand Jury's Budget Squeeze Report as presented or with edits, and authorize staff to submit them to the Grand Jury Foreperson and Presiding Judge.

13. Agency Responses to the Marin County Civil Grand Jury Report – Marin's Retirement Health Care Benefits: *The Money Still Isn't There*
Recommendation: Approve the draft Agency responses to the Grand Jury's Retirement Health Care Benefits Report as presented or with edits, and authorize staff to submit them to the Grand Jury Foreperson and Presiding Judge.

14. Ross Valley Sanitary District Field Operations Base Evaluation
Recommendation: Consider authorizing the General Manager to work with RVSD on evaluating the feasibility of utilizing a portion of the Agency's corporation yard as the RVSD Field Operations Base.

15. North Bay Watershed Association (NBWA) Report*

16. Oral Reports by Commissioners/General Manager*

17. Next Scheduled Meeting
Tuesday, October 10, 2017 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.

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Central Marin Sanitation Agency

COMMISSION REGULAR MEETING MINUTES
Tuesday, July 11, 2017
at the Agency Office

Note: The minutes are an official record of the Board meeting.
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The time stamps on these minutes refer to the items' start times on the audio recording of the meeting.
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1. **Call Meeting to Order/Pledge of Allegiance**
   Chair Hartzell called the meeting to order at 6:34 p.m. A quorum was present.

2. **Roll Call**

Present:	Vice-Chair Diane Furst; Commissioners Maribeth Bushey, Thomas Gaffney, and Michael Boorstein; Alternate Commissioner Kate Colin (for Al Boro).
Absent:	Secretary Al Boro, Commissioner Dan Hillmer
Staff present:	Jason Dow, General Manager; Kate Brouillet, Recording Secretary
Public present:	None

3. **Open Period for Public Participation**
   There were no comments from the public.

4. **Closed Session was convened at 6:35 p.m.**
   The recording secretary left the meeting.

   CONFERENCE WITH LABOR NEGOTIATOR
   California Government Code Section 54957.6
   Agency Negotiator: Jason Dow, General Manager
   Employee Organization: SEIU Local 1021; and Unrepresented Employees

5. **Open Session was reconvened at 7:05 p.m.** **00:00:00**
   Vice Chair Furst reported that there was no action taken in closed session, and direction was given to staff.

6. Roll Call **00:00:10**

Present:	Vice-Chair Diane Furst; Commissioners Maribeth Bushey, Thomas Gaffney, and Michael Boorstein; Alternate Commissioner Kate Colin (for Al Boro).
Absent:	Secretary Al Boro, Commissioner Dan Hillmer
Staff present:	Jason Dow, General Manager; Kate Brouillet, Recording Secretary; Al Fiore, Operations Supervisor
Public present:	Felicia Newhouse, Ross Valley Sanitary District

7. Open Period for Public Participation **00:00:30**

Operations Supervisor Al Fiore gave a statement regarding his CalPERS retirement benefits.

8. Consent Calendar **00:04:00**

a) Minutes—Regular Board Meeting—June 13, 2017
b) Treasurer's Report—Operating Account—June 2017
c) Schedule of Investments—June 2017
d) NPDES, Process, and Maintenance Report—June 2017
e) Performance Metric Reports—June 2017
f) CASA 2017 Annual Conference
g) National Association of Clean Water Agencies' 12-Year Platinum Peak Performance Award
h) FY 2017 Asset Management Program—Annual Report
i) Office Furniture Procurement
j) PG&E Interconnection Design Project Agreement

<u>Comments from the Public:</u>
There were no comments from the public.

There was no discussion by the Board.

Vice Chair Furst asked for a motion on the Consent Calendar.

ACTION:	Commissioner Gaffney moved to approve the Consent Calendar items; second, Commissioner Bushey.
Ayes:	BOORSTEIN, BUSHEY, COLIN, FURST, GAFFNEY
Nays:	NONE
Abstentions:	NONE

9. Selection of Commission Officers and Board/Committee Appointments for FY18 **00:04:40**

GM Dow stated that the Commission annually selects officers and makes appointments to its standing Finance Committee and the North Bay Watershed Association's (NBWA) Board of Directors, and that these appointments are for a one-year term and are normally made at the July Board meeting. He stated that Chair Kathy Hartzell retired from the Board at the end of June 2017, leaving a position on the Finance Committee vacant, and there is a second vacancy is due to Commissioner Maribeth Bushey's withdrawl from the committee in early 2017.

There was a brief discussion by the Board.

ACTION: Commissioner Gaffney moved to nominate Vice-Chair Furst for the Chair position; second, Commissioner Bushey.

Ayes: BOORSTEIN, BUSHEY, COLIN, FURST, GAFFNEY

Nays: NONE

Abstentions: NONE

ACTION: Commissioner Bushey moved to nominate Commissioner Gaffney for the Vice Chair position; second, Commissioner Colin.

Ayes: BOORSTEIN, BUSHEY, COLIN, FURST, GAFFNEY

Nays: NONE

Abstentions: NONE

ACTION: Commissioner Bushey moved to nominate Commissioner Boro for the Secretary position; second, Commissioner Colin.

Ayes: BOORSTEIN, BUSHEY, COLIN, FURST, GAFFNEY

Nays: NONE

Abstentions: NONE

ACTION: Commissioner Gaffney volunteered for the Standing Finance Committee; second, Commissioner Bushey.

Ayes: BOORSTEIN, BUSHEY, COLIN, FURST, GAFFNEY

Nays: NONE

Abstentions: NONE

ACTION:	Commissioner Bushey moved to nominate Alternate Commissioner DiGiovanni for the Standing Finance Committee; second, Commissioner Colin.
Ayes:	BOORSTEIN, BUSHEY, COLIN, FURST, GAFFNEY
Nays:	NONE
Abstentions:	NONE

ACTION:	Commissioner Bushey moved to nominate Commissioner Boorstein for the Standing Finance Committee; second, Commissioner Gaffney.
Ayes:	BOORSTEIN, BUSHEY, COLIN, FURST, GAFFNEY
Nays:	NONE
Abstentions:	NONE

Selection of the Northbay Watershed Association representative was tabled and is to be placed on the September agenda; GM Dow to attend as the alternate until a representative is selected.

DIRECTION:	Vice-Chair Gaffney to sign the Board meeting minutes in Secretary Boro's absence.
	NBWA representative selection to be placed on September agenda.

10. Cancel August Regular Board Meeting **00:13:45**

GM Dow stated that the Board periodically cancels a regular Board meeting if staff informs the Board that there are not any new, priority, or time sensitive business items planned for the regular meeting agenda. He stated that if the Board cancels the meeting, staff includes that month's routine business items – the prior meeting minutes, Treasurer's and Investment Reports, Performance Metric Report, and NPDES/Process/Maintenance Activity Report on the subsequent month's Board meeting agenda.

There was no discussion by the Board.

ACTION:	Commissioner Bushey moved to cancel the August regular Board meeting; second, Commissioner Boorstein.
Ayes:	BOORSTEIN, BUSHEY, COLIN, FURST, GAFFNEY
Nays:	NONE
Abstentions:	NONE

11. Proposed Fiscal Year 2017-18 Agency Business Plan **00:14:20**

GM Dow briefly described the FY 16-17 five-year Strategic Business Plan and the development of the second annual Business Plan for this fiscal year. He stated that over the past several months, concurrent with developing the Agency's FY18 budget and updating its 10-year Capital Improvement Program, the Agency's Strategic Planning Committee (ASPC) prepared the FY17 Business Plan Report and the proposed FY18 Business Plan. He stated that last month, the Board accepted the FY17 Report, and staff recommends that the proposed FY18 Business Plan be approved as presented or with Board revisions/edits.

Chair Furst suggested that the Board review the Objectives and Actions for each Goal as warranted.

The Board commented favorably on the layout of the Business Plan and reviewed and discussed some of the Goals, Objectives, and Actions.

Commissioner Boorstein requested that the Board consider adding an Objective or Action to the FY 17-18 Business Plan regarding RVSD's potential future rental or lease of some of CMSA property.

GM Dow provided some background regarding RVSD's prior occupation of part of CMSA's corporation yard. The Board discussed the matter and concurred that this item should be added to the September Board agenda for discussion.

Chair Furst commended CMSA on *Objective 3.2-Produce Recycled Water for Outside Use*, and stated it is an important project. She suggested that on Objective 5.4, a new Action be added to review Agency security policies and procedures and continually identify any improvements; and add an Action under Objective 6.3 to explore avenues for broader dissemination of Agency information.

The Board briefly discussed and concurred with Chair Furst's suggestions.

ACTION:	Commissioner Bushey moved to approve the proposed Fiscal Year 2017-18 Agency Business Plan with the two new Actions as stated above; second, Commissioner Boorstein.
Ayes:	BOORSTEIN, BUSHEY, COLIN, FURST, GAFFNEY
Nays:	NONE
Abstentions:	NONE

12. 2017 Agency Facilities Master Plan Status Report **00:44:18**

GM Dow described the background and the development of this project, and stated that in September 2016, the Board approved the 2017 Agency Facilities Master Plan contract with Carollo Engineers. He stated that the Plan's schedule showed substantial completion in spring 2017 and a Board presentation in August 2017. He stated that during the fall of 2016, the JPA managers informed staff that their respective agencies would not be raising sanitary sewer rates for FY18, and they did not need CMSA's future revenue figures until the spring of 2018. GM Dow stated that with this new timeframe, the completion dates for several of the Plan's major tasks were extended, which will allow additional time to prepare the plan's final reports, and gives the Board's Finance Committee adequate time to evaluate the plan projects and formulate recommendations for the Board to consider.

GM Dow referred to the staff memo and described the two Technical Memorandums (TM) that have been completed: #7, Blending Reduction Alternative Analysis, and #6, Biosolids Dewatering Evaluation; and reviewed TM #1, Facility Condition Assessment that has been substantially completed. GM Dow then stated he could review or answer any questions regarding any of the other TMs.

The Board briefly discussed the report and asked various questions relating to budget planning; the consultant's fees; the expanded timetable; risk analyses; work that is planned be done internally; and biosolids management and reuse opportunities.

GM Dow answered the Board's questions, and stated that the consultant is agreeable with the new timetable and their fee has not changed.

This item was informational and no action was taken.

15. North Bay Watershed Association (NBWA) Report **01:00:50**

Commissioner Boorstein stated that the July NBWA Board meeting was held at CMSA. He stated that GM Dow provided the Board with a presentation and tour, and the NBWA Board found the visit very informational and enjoyable. He stated that during the tour, RVSD took their first delivery of recycled water from CMSA's truck fill station.

16. Oral Reports by Commissioners/General Manager **01:02:55**

GM Dow reported:

- Solids Handling Building Ventilation Improvements project has been completed and the item is planned to be on the September agenda for Board acceptance.
- Underwater Resources has completed the inspection of the diffuser section of the marine outfall; a couple of diffuser assemblies were found to be damaged; maintenance staff built new ones and the contractor installed them. A potential new project may be to uncover some of the diffusers that have been buried under Bay mud.

Commissioner Gaffney referred to the July Informational Items and commented that the responses from the member agencies to LAFCO were thorough and covered the points very well.

Chair Furst commented favorably on Information Item #1, the article that GM Dow coauthored with Jeff Kuo for the Journal of the Air & Waste Management Association on biogas production from food waste.

17. Next Scheduled Meeting **01:07:50**

Tuesday, September 12, 2017 at 7:00 p.m. at the Agency office.

Chair Furst adjourned the meeting at 8:12 p.m.

Respectfully submitted,

Kate Brouillet, Recording Secretary

Tom Gaffney, Vice-Chair

Central Marin Sanitation Agency

COMMISSION SPECIAL MEETING MINUTES
Thursday, August 10, 2017
at the Agency Office

Note: The minutes are an official record of the Board meeting.
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1. **Call Meeting to Order/Pledge of Allegiance**
Vice-Chair Gaffney called the meeting to order at 11:45 a.m. A quorum was present.

2. **Roll Call** **00:00:25**

Present:	Vice-Chair Tom Gaffney; Commissioners Michael Boorstein and Dan Hillmer; Alternate Commissioner Dean DiGiovanni
Absent:	Chair Diane Furst, Secretary Al Boro, Commissioner Maribeth Bushey
Staff present:	Jason Dow, General Manager; Ken Spray, Administrative Services Manager; Kate Brouillet, Recording Secretary
Public present:	None

3. **Open Period for Public Participation** **00:00:45**
There were no comments from the public.

4. **Nationwide Retirement Solutions Post Employment Health Plans** **00:00:50**
GM Dow provided background on the Agency's existing Post-Employment Health Plan (PEHP) for Agency employees who have been receiving the Medical After Retirement Account (MARA) benefit, as administered by the Operating Engineers Local 3 Trust (OE3). GM Dow stated that staff has been working with Nationwide Retirement Solutions (Nationwide) to establish a new PEHP, and that Nationwide has provided the required documents which have been reviewed by staff and approved as to form by General Counsel Govi. He stated that Nationwide recently informed staff that the Board must approve a resolution adopting the PEHP program and authorizing staff to execute the program documents.

GM Dow stated that staff recommends that the Board adopt Resolutions No.315 and No.316 to establish Post-Employment Health Plans with Nationwide Retirement Solutions, and authorize him to sign the documents.

The Board had a brief discussion and asked various questions regarding the existing plan administered by OE3; details regarding the Nationwide plan; reporting that Nationwide will provide to the Agency; and future reporting on the PEHP to the Board.

GM Dow and Ken Spray answered the Board's questions. Mr. Spray stated that Nationwide will provide quarterly reports.

Comments from the Public:
There were no comments from the public.

ACTION: Commissioner Boorstein moved to adopt Resolution No.315 to establish Post-Employment Health Plans with Nationwide Retirement Solutions, and authorize the General Manager to sign the documents; second, Alternate Commissioner DiGiovanni.

Ayes:	BOORSTEIN, DiGIOVANNI, GAFFNEY, HILLMER
Nays:	NONE
Abstentions:	NONE

ACTION: Commissioner Boorstein moved to adopt Resolution No.316 to establish Post-Employment Health Plans with Nationwide Retirement Solutions, and authorize the General Manager to sign the documents; second, Alternate Commissioner DiGiovanni.

Ayes:	BOORSTEIN, DiGIOVANNI, GAFFNEY, HILLMER
Nays:	NONE
Abstentions:	NONE

DIRECTION: Staff to include Nationwide's quarterly reports to the Agency in the Board's Information Items.

5. Oral Reports by Commissioners/General Manager **00:15:30**

There were no reports by the Board commissioners.

GM Dow stated he would present his oral report to the full Board at the September meeting.

6. **Next Scheduled Meeting** **00:15:40**
Tuesday, September 12, 2017 at the Agency office: Closed Session at 6:00 p.m., Regular Meeting at 7:00 p.m.

Vice-Chair Gaffney adjourned the meeting at 12:00 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 July 2017

I. Accounts Summary: Bank & Investment Accounts

<u>Summary of Bank & Money Market Accounts</u>		
Westamerica Bank - Account Activity shown below	$	358,782.37
Local Agency Investment Fund (LAIF) - Refer to Schedule of Investments		18,990,878.76
California Asset Management Program (CAMP) - Refer to Schedule of Investments		360,513.81
Total Bank & Investment Accounts: Ending Balance on July 31, 2017	$	19,710,174.94

II. Account Activity for Westamerica Bank

Beginning Balance on July 1, 2017		149,818.11
<u>Cash Receipts (Deposits into Westamerica):</u>		
Transfers from LAIF		500,000.00
JPA Service Charges (FY18 Q1: SD#1, SD#2, SRSD)		2,723,291.25
Debt Service Charges (FY18 1st Payment: SD#1, SD#2, SRSD)		3,603,142.06
Connection Fees (Capacity Charges): FY17 SRSD - 1 Residential Connection & 44 Fixture Units		21,987.00
Permit and Inspection Fees		1,164.66
SD#2 FOG Program (FY17 4Q: April-June)		1,380.10
Revenue from Haulers & RVs		9,158.90
Revenue from Organic Waste Programs		13,873.34
County-wide Public Education Program Reimbursement (FY17 4Q: NSD, SASM)		6,103.99
SD 2 Operations & Maintenance Contract (FY17: June)		36,970.19
SQSP Wastewater Services Contract (FY17: May)		108,237.75
SQSP: Reimburse GHD Engineering additional work (FY17: April-June)		11,317.53
SQ Village Operations & Maintenance Contract (FY17: May)		922.98
Miscelleneous Reimbursements: CSRMA Health & Wellness Program		3,035.71
Total Cash Receipts	$	7,040,585.46
<u>Cash Disbursements (Withdrawals from WestAmerica):</u>		
July 2017 Operating account disbursements register (see attached)		$1,479,496.32
Regular Payroll paid 07/07/17		135,399.36
Regular Payroll paid 07/21/17		137,667.35
Transfers to EFTPS Federal Payroll Taxes (07/12, 07/19, 07/26)		73,566.55
Merit Pay (2)		5,362.19
Transfers to LAIF (FY18 Q1: JPA Payments)		5,000,000.00
Bank Fee		129.43
Total Cash Disbursements		$6,831,621.20
Ending Balance on July 31, 2017	$	358,782.37

Prepared by: [signature]
Kenneth Spray, Administrative Services Manager

Reviewed by: [signature]
Jason Dow, General Manager

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

Check Number	Date	Vendor/Payee	Amount	Description
15441				Last check # from prior month's register
15442	07/05/17	Cal Public Employee Retirement	64,433.66	Medical Insurance, July 2017
15443	07/05/17	Delta Dental Plan of Calif.	8,064.62	Dental Insurance, July 2017
15444	07/05/17	Lincoln Financial Group	1,828.24	Life Insurance, July 2017
15445	07/05/17	Vision Service Plan -(CA)	938.39	Vision Insurance, July 2017
15446	07/05/17	Phillip Frye	225.63	Reimbursement for retiree health benefits by check
15447	07/05/17	James L. Johnson	172.48	Reimbursement for retiree health benefits by check
15448	07/05/17	Glenn Thurkow	225.63	Reimbursement for retiree health benefits by check
15449	07/12/17	CalPERS	34,733.48	Retirement Pension Contribution: Agency and EPMC, PPE 07/01/2017 (Note C)
15450	07/12/17	California Public Employee	4,127.45	Contribution to Retiree Health Benefits Trust Fund, PPE 07/01/2017 (Note C)
15451	07/12/17	California State Disbursement	314.76	EE Garnishment, PPE 07/01/2017 (Note A)
15452	07/12/17	ICMA Retirement Trust-457	4,858.00	Deferred compensation contributions, PPE 07/01/2017 (Note A)
15453	07/12/17	Navia Benefit Solutions	540.19	Flexible spending account, PPE 07/01/2017
15454	07/12/17	Nationwide Retirement	4,469.30	Deferred compensation contributions, PPE 07/01/2017 (Note A)
15455	07/12/17	SEIU Local 1021	1,106.98	Union dues, PPE 07/01/2017
15456	07/12/17	Aramark Uniform Services	1,229.68	Uniform service, June 2017
15457	07/12/17	AT&T Dataplan	519.04	Wireless service, 06/01-07/01/2017
15458	07/12/17	Bailey Fence Co Inc	2,894.00	SQSP Maint: Installation of chainlink fence gate (Note B)
15459	07/12/17	Bob Bally	1,000.00	Employee expenses eligible for Agency dental reimbursement
15460	07/12/17	Caltest Analytical Laboratory	1,569.45	Lab analyses (5 invoices)
15461	07/12/17	Centrisys	291.94	Maintenance parts & supplies
15462	07/12/17	Dee Consultants LLC	13,800.00	Prof Svcs: Construction Management Support, June 2017
15463	07/12/17	Evoqua Water Tech LLC	18,721.31	Calcium Nitrate (2 deliveries)
15464	07/12/17	Grainger	1,064.39	Rotary laser level kit
15465	07/12/17	Hagel Supply Co.	593.55	Utility supplies, June 2017
15466	07/12/17	Jackson's Hardware	553.21	Utility supplies, June 2017
15467	07/12/17	Lystek International LTD	9,889.24	Biosolids beneficial reuse fee, June 2017
15468	07/12/17	Marin Independent Journal	1,052.50	Public Notice: Mechanical Technician recruitment
15469	07/12/17	Marin Office Supply	489.24	Office supplies, June 2017
15470	07/12/17	McMaster-Carr Supply Co.	67.75	SD2 PS Maint: Saddle clip (Note B)
15471	07/12/17	Monica Oakley	1,265.00	Prof Svcs: Regulatory consulting, 05/27-06/30/2017
15472	07/12/17	Navia Benefit Solutions	50.00	Monthly fee, June 2017
15473	07/12/17	Praxair Distribution, Inc.	98.13	Acetelyne cylinder rental
15474	07/12/17	Red Wing Brands of America Inc	207.18	Safety shoes (1 employee)
15475	07/12/17	Roy's Sewer Service, Inc.	7,500.00	SD2 PS Maint: Annual station wet well cleaning (Note B)
15476	07/12/17	Thomas Fish Company	139.50	Lab supplies
15477	07/12/17	Thatcher Company of	4,561.01	Ferric Chloride (1 delivery)
15478	07/12/17	Total Waste Systems, Inc.	9,625.96	Biosolids hauling fee, June 2017
15479	07/12/17	Univar USA Inc	4,495.93	Sodium Bisulfite (1 delivery)
15480	07/12/17	Waste Management	4,803.94	Redwood Landfill biosolids reuse fee, June 2017
15481	07/12/17	Woodland Center Auto Supply	72.46	Vehicle supplies
15482-15520	07/18/17	Award	19,500.00	NACWA Platinum 12 Peak Performance Award (42 employees)
15521	07/24/17	AAA	322.00	Annual life insurance premium, General Manager
15522	07/24/17	AICPA (Payment-Dues)	265.00	Membership renewal (1 employee)
15523	07/24/17	AireSpring	700.13	Telephone service, June 2017

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

Check Number	Date	Vendor/Payee	Amount	Description
15524	07/24/17	Airgas USA, LLC	48.52	Nitrogen gas tank rental
15525	07/24/17	Alliant Insurance Services	1,094.00	Auto policy monthly fee, July 2017
15526	07/24/17	Amazing Solutions, Inc.	75.00	Prof Svcs: Accounting software support, June 2017
15527	07/24/17	Amazon	930.93	Computer and maintenance parts & supplies, June 2017
15528	07/24/17	American Sentry Systems, Inc.	105.00	Alarm service, July to September 2017
15529	07/24/17	AT&T	320.19	Fax and emergency phone service, 07/07-08/06/2017
15530	07/24/17	Katherine Brouillet	75.94	Employee Expense Reimb: Meeting supplies
15531	07/24/17	CDW Government, Inc.	2,421.82	Annual software license for server backups
15532	07/24/17	Comcast	191.20	Internet service, 07/04-08/03/2017
15533	07/24/17	CSRMA	183,513.87	Property and Workers' Comp Insurance, FY 17-18
15534	07/24/17	CWEA TCP	105.00	CWEA monthly meeting fee, July 2017 (3 employees)
15535	07/24/17	DLT Solutions, Inc.	541.55	Annual AutoCAD maintenance license
15536	07/24/17	Dublin San Ramon	900.00	BACC Chemical bidding participation fee
15537	07/24/17	Endress + Hauser, Inc	869.63	Replacement radar level transmitter
15538	07/24/17	Evoqua Water Tech LLC	9,349.67	Calcium Nitrate (1 delivery)
15539	07/24/17	Fast Forward	4,000.00	Pub Ed Program: Sponsorship of environmental newsletter
15540	07/24/17	Fisher Scientific	519.66	Lab supplies
15541	07/24/17	Forge Architecture	6,321.42	Prof Svcs-ESDC: Maintenance Building Modifications Project, May and June 2017 (2 invoices)
15542	07/24/17	Industrial Heat Tech Inc	21,978.05	Cogeneration System Maintenance: Replacement heat exchanger
15543	07/24/17	Home Depot Credit Services	112.46	Maintenance parts & supplies, June 2017
15544	07/24/17	IEDA, Inc.	782.00	Labor relations consulting, July 2017
15545	07/24/17	Marin Color Service	404.98	Paint supplies, June 2017 (3 invoices); SD2 PS Maint: Paint supplies (1 invoice) (Note B)
15546	07/24/17	Marin Independent Journal	263.21	Newspaper renewal, 07/05/2017-01/02/2018
15547	07/24/17	Marin County Tax Collector	1,925.00	Legal services: General Counsel, April to June 2017
15548	07/24/17	Marin Sanitary Service	820.60	Yardwaste service, June 2017
15549	07/24/17	Miller Pacific	3,296.50	Prof Svcs: Maintenance Building Modifications Project, geotechnical services, 04/24-06/30/2017
15550	07/24/17	Modular Space Corporation	626.65	Rental fee for mobile office and storage containers
15551	07/24/17	MSDSonline Inc	2,400.00	Annual hazcom online database renewal fee
15552	07/24/17	Nexgen Utility Management	7,000.00	Nexgen asset management software annual support fee
15553	07/24/17	Northern Tool + Equipment	5,089.84	Wood chipper
15554	07/24/17	Platt	706.45	Maintenance parts & supplies, June 2017
15555	07/24/17	Ricoh USA Inc	317.99	Admin copier lease, 06/23-07/22/2017
15556	07/24/17	Safety Center Inc.	3,000.00	Safety training: Defensive Driving (Note B)
15557	07/24/17	Shamrock Materials, Inc.	100.85	Propane
15558	07/24/17	Teledyne Instruments Inc	11,605.23	San Rafael Interceptor meter replacement
15559	07/24/17	Thatcher Company of	4,350.64	Ferric Chloride (1 delivery)
15560	07/24/17	Underwater Resources Inc.	21,600.00	Prof Svcs: Outfall Inspection and Repair
15561	07/24/17	Univar USA Inc	8,203.03	Sodium Bisulfite (1 delivery); Sodium Hypochlorite (1 delivery)
15562	07/24/17	USP Technologies	20,100.82	Hydrogen Peroxide (2 deliveries)
15563	07/24/17	Valley Power Systems-North	1,805.32	Engine block heaters for effluent pump station
15564	07/24/17	Water Components & Bldg. Supp.	20.27	Maintenance parts & supplies
15565	07/24/17	Western Exterminator Co.,Inc.	163.50	Pest control, June 2017
15566	07/25/17	CAL-CARD	8,346.28	State of California Purchase Card, May and June 2017
15567	07/26/17	Airgas USA, LLC	129.67	Maintenance parts & supplies

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

Check Number	Date	Vendor/Payee	Amount	Description
15568	07/26/17	Burlingame Engineers, Inc.	35,233.63	Ross Valley Interceptor Hydrogen Peroxide tank replacement
15569	07/26/17	Caltest Analytical Laboratory	160.24	Lab analyses (2 invoices)
15570	07/26/17	Abraham Clark	149.98	Employee Expense Reimb: Safety shoes
15571	07/26/17	Cresco	276.58	SD2 PS Maint: Plastic fender (Note B)
15572	07/26/17	Evoqua Water Tech LLC	28,715.62	Tank rental (3 invoices); Calcium Nitrate (2 deliveries); Hydrogen Peroxide (1 delivery)
15573	07/26/17	Fluid Gauge Company	430.68	Maintenance parts & supplies
15574	07/26/17	Galco Industrial Electronics	288.54	Maintenance parts & supplies
15575	07/26/17	Nicholas Gaunt	178.26	Employee Expense Reimb: Activated Sludge PC Training
15576	07/26/17	Grainger	730.76	Maintenance parts & supplies (3 invoices)
15577	07/26/17	Hach Company	121.34	Lab supplies (2 invoices)
15578	07/26/17	Kone Inc	131.59	Elevator monthly maintenance, July 2017
15579	07/26/17	Marin Sanitary Service	2,531.23	Yardwaste and grit disposal service, June 2017
15580	07/26/17	Marin Recycling HHWF	70.00	Yardwaste disposal
15581	07/26/17	McMaster-Carr Supply Co.	1,031.85	Maintenance parts & supplies (3 invoices)
15582	07/26/17	MicroCool	321.81	Odor mister parts
15583	07/26/17	Northern Tool & Equipment	346.56	Maintenance parts & supplies
15584	07/26/17	Pacific Marine & Industrial	755.97	Greenbrae Nitrate Station hose reel replacement
15585	07/26/17	Rafael Lumber	432.16	Maintenance parts & supplies, June 2017
15586	07/26/17	Ryan Herco Flow Solutions	314.74	Lab supplies
15587	07/26/17	RMC	593.35	Admin printer annual service contract fee
15588	07/26/17	TNT Enterprises	1,500.00	Safety training: Traffic Control refresher (Note B)
15589	07/26/17	Univar USA Inc	11,059.86	Sodium Bisulfite (1 delivery); Sodium Hypochlorite (2 deliveries)
15590	07/26/17	Water Components & Bldg. Supp.	53.64	Maintenance parts & supplies (2 invoices)
15591	07/26/17	CalPERS	35,107.46	Retirement Pension Contribution: Agency and EPMC, PPE 07/15/2017 (Note C)
15592	07/26/17	California Public Employee	4,127.45	Contribution to Retiree Health Benefits Trust Fund, PPE 07/15/2017 (Note C)
15593	07/26/17	California State Disbursement	314.76	EE Garnishment, PPE 07/15/2017 (Note A)
15594	07/26/17	ICMA	4,968.00	Deferred compensation contributions, PPE 07/15/2017 (Note A)
15595	07/26/17	Navia Benefit Solutions	540.19	Flexible spending account, PPE 07/15/2017
15596	07/26/17	Nationwide Retirement	4,469.30	Deferred compensation contributions, PPE 07/15/2017 (Note A)
15597	07/26/17	SEIU Local 1021	1,072.06	Union dues, PPE 07/15/2017
15598	07/27/17	CWEA TCP	437.00	Membership renewal (3 employees)
15599	07/27/17	Orchard Business/SYNCB	390.46	Maintenance parts & supplies, June 2017
15600	07/27/17	SPURR	1,972.02	Natural gas, June 2017
15601	07/27/17	Russ Turnbull	849.50	Employee expenses eligible for Agency dental reimbursement
15602	07/28/17	Board of Equalization	427.00	Diesel fuel taxes, FY16-17
15603	07/28/17	HDR Engineering, Inc.	1,773.75	Prof Svcs: San Rafael and Ross Valley Interceptor Condition Assessment, 05/28-07/01/2017
15604	07/28/17	P.G.& E.	20,048.77	Electricity service, 06/15-07/16/2017
15605	07/28/17	Ricoh USA Inc	678.56	Lab copier lease, 07/09-08/08/2017

Payments by Automatic Clearing House:

	07/19/17	Buhler Commercial	232,077.88	Solids Handling Building Ventilation Improvements; Progress Payment No. 4
	07/05/17	Payments to 23 retirees	6,291.43	Reimbursement for retiree health benefits
	7/24/2017	CALPERS	481,158.00	Annual Accrued Liability, Classic and PEPRA

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

Check Number	Date	Vendor/Payee	Amount	Description
	7/11/2017	EDD	11,247.17	State & SDI Taxes, PPE 07/01/2017
	7/18/2017	EDD	294.32	State & SDI Taxes, Paid 07/14/2017
	7/20/2017	EDD	195.40	State & SDI 2nd quarter for 2017
	7/25/2017	EDD	15,114.36	State & SDI Taxes, PPE 07/15/2017
	7/17/2017	Michael Owen Boorstein	200.00	Stipend for 07/11/2017 Board meeting and NBWA meeting
	7/17/2017	Maribeth Bushey	100.00	Stipend for 07/11/2017 Board meeting
	7/17/2017	Dean DiGiovanni	100.00	Stipend for 07/11/2017 Board meeting
	7/17/2017	Diane L. Furst	100.00	Stipend for 07/11/2017 Board meeting
	7/17/2017	Thomas E Gaffney	100.00	Stipend for 07/11/2017 Board meeting
		Grand Total	1,479,496.32	

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.

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

I. Accounts Summary: Bank & Investment Accounts

Summary of Bank & Money Market Accounts		
Westamerica Bank - Account Activity shown below	$	626,225.72
Local Agency Investment Fund (LAIF) - Refer to Schedule of Investments		14,790,878.76
California Asset Management Program (CAMP) - Refer to Schedule of Investments		360,861.56
Total Bank & Investment Accounts: Ending Balance on August 31, 2017	$	15,777,966.04

II. Account Activity for Westamerica Bank

Beginning Balance on August 1, 2017		358,782.37
Cash Receipts (Deposits into Westamerica):		
Transfers from LAIF		4,200,000.00
Connection Fees (Capacity Charges): SRSD - 105 Fixure units; RVSD FY17 3 Residential		56,066.85
Permit and Inspection Fees		193.75
LGVSD - pollution prevention & FOG (FY17 4Q: Apr-Jun)		1,974.36
SRSD - FOG Program (FY17 4Q: Apr-Jun)		3,951.92
Revenue from Haulers & RVs		3,753.83
Revenue from Organic Waste Programs		12,737.37
Safety Director Revenue (NSD: FY17 4Q Expenses)		642.76
County-wide Public Education Program Reimbursement (FY18 Annual invoice: LGVSD, SD#5, SASM, SMCSD)		32,837.41
SD 2 Operations & Maintenance Contract (FY18: July)		21,562.73
Misc Revenue: MetLife Dividend, CalCARD Incentive Payment		358.81
COBRA Health Benefit Payments from separated employees/retirees		235.65
Expense Reimbursement from NSD for Defensive Driving and Traffic Control Training		1,708.31
Reimbursement from RVSD: Ross Valley Interceptor Condition Assessment (May - June 30, 2017)		10,798.25
Void check #15535 DLT Solutions lost check		541.55
Total Cash Receipts	$	4,347,363.55
Cash Disbursements (Withdrawals from WestAmerica):		
August 2017 Operating account disbursements register (see attached)		$622,113.49
Regular Payroll paid 08/04/17		132,555.23
Regular Payroll paid 08/18/17		132,006.62
Transfers to EFTPS Federal Payroll Taxes (08/09, 08/23)		66,072.06
Merit Pay (2)		4,322.69
Wire to US Bank 2015 Refunding Revenue Bonds principal and interest payment due September 1st		3,122,824.22
Bank Fee		25.89
Total Cash Disbursements		$4,079,920.20
Ending Balance on August 31, 2017	$	626,225.72

Prepared by: [signature]
Kenneth Spray, Administrative Services Manager

Reviewed by: [signature]
Jason Dow, General Manager

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

Check Number	Date	Vendor/Payee	Amount	Description
15605				Last check # from prior month's register
15606	08/02/17	Delta Dental Plan of Calif.	7,478.82	Dental Insurance, August 2017
15607	08/02/17	Lincoln Financial Group	1,879.07	Life Insurance, August 2017
15608	08/02/17	Vision Service Plan -(CA)	897.55	Vision Insurance, August 2017
15609	08/02/17	Phillip Frye	225.63	Reimbursement for retiree health benefits by check
15610	08/02/17	James L. Johnson	172.48	Reimbursement for retiree health benefits by check
15611	08/02/17	Dealers Industrial Equipment	1,596.00	SQPS Maint: Auger and grinder motors (4) (Note B)
15612	08/02/17	Marin Honda	448.25	Auto parts and supplies
15613	08/02/17	Michael D Brown	10,322.06	Prof Svcs: PG&E Interconnection Agreement Project, April - June 2017
15614	08/02/17	Navia Benefit Solutions	50.00	Monthly fee
15615	08/02/17	P.G.& E.	87.11	SF Drake facility electricity service, 06/20-07/19/2017
15616	08/02/17	R & B Company	264.05	Maintenance parts & supplies
15617	08/02/17	Synagro West, Inc.	3,753.75	Biosolids land application fee, July 2017
15618	08/03/17	California Public Employee	4,127.45	Contribution to Retiree Health Benefits Trust Fund, PPE 07/29/2017 (Note C)
15619	08/03/17	California State Disbursement	314.76	EE Garnishment, PPE 07/29/2017 (Note A)
15620	08/03/17	ICMA Retirement Trust-457	5,910.00	Deferred compensation contributions, PPE 07/29/2017 (Note A)
15621	08/03/17	Navia Benefit Solutions	540.19	Flexible spending account, PPE 07/29/2017
15622	08/03/17	Nationwide Retirement	4,469.30	Deferred compensation contributions, PPE 07/29/2017 (Note A)
15623	08/03/17	SEIU Local 1021	1,082.78	Union dues, PPE 07/29/2017
15624	08/09/17	CAL-CARD	7,345.51	State of California Purchase Card, June and July 2017
15625	08/09/17	Diamond Diesel and	5,279.41	Turbocharger rebuild (2) for cogeneration engine
15626	08/09/17	CSRMA	7,419.00	Workers' Comp Insurance, FY 16-17
15627	08/10/17	Amazing Solutions, Inc.	150.00	Prof Svcs: Accounting software support, July 2017
15628	08/10/17	Aramark Uniform Services	1,216.68	Uniform service, July 2017
15629	08/10/17	Chavan & Associates LLP	7,200.00	Prof Svcs: FY16-17 Financial Audit, progress payment #2
15630	08/10/17	Dee Consultants LLC	10,120.00	Prof Svcs: Construction Management Support, July 2017
15631	08/10/17	Evoqua Water Tech LLC	9,606.63	Tank rental (2 invoices); Calcium Nitrate (1 delivery)
15632	08/10/17	Jon Farr	316.00	Employee per diem advance: PLC workshop/training
15633	08/10/17	IEDA, Inc.	782.00	Labor relations consulting, August 2017
15634	08/10/17	Koff & Associates, Inc.	39.25	Utility Worker Recruitment: background check
15635	08/10/17	Lystek International LTD	9,549.96	Biosolids beneficial reuse fee, July 2017
15636	08/10/17	Marin Office Supply	585.81	Office supplies, July 2017
15637	08/10/17	Monica Oakley	3,300.00	Prof Svcs: Regulatory consulting, July 2017
15638	08/10/17	Modular Space Corporation	626.65	Rental fee for mobile office and storage containers
15639	08/10/17	Ben Northcroft	190.63	Employee Expense Reimb: Safety shoes
15640	08/10/17	Pipette.com	1,157.30	Auto-electronic pipette and supplies (2 invoices)
15641	08/10/17	Red Wing Brands of America Inc	3,059.54	Safety shoes (17 employees)
15642	08/10/17	Safety Center Inc.	800.00	Defensive Driving safety training, Note (B)
15643	08/10/17	Total Waste Systems, Inc.	9,045.15	Biosolids hauling fee, July 2017
15644	08/10/17	Univar USA Inc	2,843.05	Sodium Hypochlorite (1 delivery)
15645	08/10/17	Waste Management	4,264.53	Redwood Landfill biosolids reuse fee, July 2017
15646	08/15/17	AireSpring	699.41	Telephone service, July 2017
15647	08/15/17	Brandon Tire	352.50	Cart tires
15648	08/15/17	Caltest Analytical Laboratory	1,843.96	Lab analyses (4 invoices)
15649	08/15/17	CDW Government, Inc.	19,154.94	Microsoft Windows Server Datacenter Licenses (2)
15650	08/15/17	Comcast	191.20	Internet service, 08/04-09/03/2017
15651	08/15/17	DLT Solutions, Inc.	541.55	Reissue for lost check
15652	08/15/17	Fastenal Company	183.26	Maintenance parts & supplies
15653	08/15/17	Fisher Scientific	946.33	Lab supplies (4 invoices)
15654	08/15/17	Grainger	2,065.99	Electrical and maintenance parts & supplies (11 invoices)
15655	08/15/17	Hach Company	3,603.49	Lab supplies (4 invoices)

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

Check Number	Date	Vendor/Payee	Amount	Description
15656	08/15/17	Hagel Supply Co.	465.35	Utility supplies, July 2017
15657	08/15/17	IDEXX Distribution Inc	223.72	Lab supplies
15658	08/15/17	Marin Color Service	150.99	Paint supplies
15659	08/15/17	McMaster-Carr Supply Co.	2,679.56	Maintenance parts & supplies, July 2017
15660	08/15/17	Orchard Business/SYNCB	480.10	Maintenance parts & supplies, July 2017
15661	08/15/17	Platt	612.81	Electrical and maintenance parts & supplies, July 2017
15662	08/17/17	Jason Dow	188.00	Employee per diem advance: CASA Annual Conference
663-15676	08/21/17	Award	3,350.00	Safety Incentive Program Awards (14 employees)
15677	08/22/17	Airgas USA, LLC	50.24	Rental equipment
15678	08/22/17	Amazing Solutions, Inc.	2,179.28	Prof Svcs: Accounting software support, FY 17-18
15679	08/22/17	Amazon	228.19	Electrical supplies
15680	08/22/17	AT&T	325.61	Fax and emergency phone service, July 2017
15681	08/22/17	AT&T Dataplan	399.04	Wireless service, 07/02-08/01/2017
15682	08/22/17	CWEA TCP	90.00	Membership fee (1 employee)
15683	08/22/17	EPIC Compliance Systems, Inc	2,220.00	Prof Svcs: Underground Storage Tank inspection, FY 16-17 and FY 17-18
15684	08/22/17	Evoqua Water Tech LLC	37,222.32	Calcium Nitrate (1 delivery); Hydrogen Peroxide (3 deliveries)
15685	08/22/17	Frontier Analytical Lab.	900.00	Lab supplies
15686	08/22/17	Grainger	510.73	Maintenance parts & supplies (2 invoices)
15687	08/22/17	Kone Inc	131.59	Elevator maintenance, August 2017
15688	08/22/17	Marin Sanitary Service	5,657.72	Yardwaste and grit disposal service, July 2017
15689	08/22/17	McInerney & Dillon, P.C.	35.00	Legal services: Construction/contract law, August 2017
15690	08/22/17	McMaster-Carr Supply Co.	1,517.28	Maintenance parts & supplies (11 invoices)
15691	08/22/17	Marin Municipal Water District	1,973.18	Water service, 06/09-08/07/2017 (4 invoices)
15692	08/22/17	Polydyne, Inc.	36,146.71	Clarifloc Polymer (1 delivery)
15693	08/22/17	Ricoh USA Inc	1,384.06	Admin copier lease, 07/23-08/22/2017
15694	08/22/17	Rock Steady Juggling	500.00	Pub Ed Program: Outreach at 1 school (Note B)
15695	08/22/17	Mike Silva	275.00	Employee Expense Reimb: Safety glasses
15696	08/22/17	TAP Plastics, Inc.	124.02	Maintenance parts & supplies
15697	08/22/17	Thomas Fish Company	139.50	Lab supplies
15698	08/22/17	Thatcher Company of	4,595.39	Ferric Chloride (1 delivery)
15699	08/22/17	Renato Tiongson	217.24	Employee Expense Reimb: Safety glasses
15700	08/22/17	Titan Environmental Solutions	980.00	SQPS maint: PCB testing (Note B)
15701	08/22/17	Univar USA Inc	8,048.67	Sodium Bisulfite (1 delivery); Sodium Hypochlorite (1 delivery)
15702	08/22/17	VWR International	2,289.74	Lab supplies (9 invoices)
15703	08/23/17	California Public Employee	4127.45	Contribution to Retiree Health Benefits Trust Fund, PPE 08/12/2017 (Note C)
15704	08/23/17	California State Disbursement	314.76	EE Garnishment, PPE 08/12/2017 (Note A)
15705	08/23/17	ICMA Retirement Trust-457	5,910.00	Deferred compensation contributions, PPE 08/12/2017 (Note A)
15706	08/23/17	Navia Benefit Solutions	540.19	Flexible spending account, PPE 08/12/2017
15707	08/23/17	Nationwide Retirement	4,469.30	Deferred compensation contributions, PPE 08/12/2017 (Note A)
15708	08/23/17	SEIU Local 1021	1,082.78	Union dues, PPE 08/12/2017
15709	08/23/17	Battalion One Fire Protection	660.00	Quarterly fire sprinkler inspection
15710	08/23/17	City Electric Supply	330.74	Electrical supplies
15711	08/23/17	Dealers Industrial Equipment	2,510.40	VFD for Effluent Storage Pond drain pump
15712	08/23/17	Evoqua Water Tech LLC	9,091.32	Calcium Nitrate (1 delivery)
15713	08/23/17	Jon Farr	477.94	Employee Expense Reimb: PLC workshop/training
15714	08/23/17	Chris Finton	1,380.00	Employee Computer Loan Program (Note A)
15715	08/23/17	Fisher Scientific	1,059.83	Lab supplies (7 invoices)
15716	08/30/17	Give Something Back Inc	23,621.15	Maintenance Building Modifications Project: Deposit for office furniture and fixtures
15717	08/30/17	Hach Company	252.24	Lab supplies
15718	08/30/17	International Fire Inc.	11.00	Safety supplies

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

Check Number	Date	Vendor/Payee	Amount	Description
15719	08/30/17	Jackson's Hardware	74.64	Maintenance parts & supplies
15720	08/30/17	McMaster-Carr Supply Co.	134.99	Maintenance parts & supplies
15721	08/30/17	P.G.& E.	15,162.65	Electricity service, 07/17-08/15/2017
15722	08/30/17	Platt	64.68	Maintenance parts & supplies
15723	08/30/17	Praxair Distribution, Inc.	334.71	Maintenance parts & supplies (3 invoices)
15724	08/30/17	Rafael Lumber	89.73	Maintenance parts & supplies, July 2017
15725	08/30/17	Mary Jo Ramey	152.35	Employee Expense Reimb: Safety shoes
15726	08/30/17	Red Wing Brands of America Inc	183.16	Safety shoes (1 employee)
15727	08/30/17	Ricoh USA Inc	259.35	Lab copier lease, 08/09-09/08/2017
15728	08/30/17	Roy's Sewer Service, Inc.	6,250.00	1) SQPS maint: Vactoring (Note B) (1 invoice); 2) Quarterly OWRF tank vactoring (1 invoice)
15729	08/30/17	SPURR	1,729.28	Natural gas, July 2017
15730	08/30/17	Synagro West, Inc.	3,465.00	Biosolids land application fee, July 2017
15731	08/30/17	Teledyne Instruments Inc	21,902.46	Laboratory equipment: Influent sampler replacement (2) and effluent sampler (1)
15732	08/30/17	Univar USA Inc	2,989.66	Sodium Hypochlorite (1 delivery)
15733	08/30/17	Underground Service Alert	810.88	Annual fee
15734	08/30/17	V & A Consulting Engineers	1,476.28	Prof Svcs: Secondary Clarifier #3 Pipe Corrosion Assessment
15735	08/30/17	VWR International	931.44	Lab supplies (2 invoices)
15736	08/31/17	Evoqua Water Tech LLC	9,191.19	Hydrogen Peroxide (1 delivery)
15737	08/31/17	FactoryMation	376.00	Electrical supplies
15738	08/31/17	Marin Municipal Water District	939.10	Water service, 06/08-08/09/2017
15739	08/31/17	P.G.& E.	85.60	SF Drake facility electricity service, 07/20-08/19/2017
15740	08/31/17	Univar USA Inc	2,869.97	Sodium Hypochlorite (1 delivery)

Payments by Automatic Clearing House:

	Date	Vendor/Payee	Amount	Description
	08/10/17	Buhler Commercial	83,974.51	Solids Handling Building Ventilation Improvements; Progress Payment #5
	08/02/17	Payments to 23 retirees	7,122.45	Reimbursement for retiree health benefits
	8/2/2017	Cal Public Employee Retirement	61,934.20	Medical Insurance, August 2017
	8/8/2017	CalPERS	35,120.27	Retirement Pension Contribution: Agency and Employees, PPE 07/29/2017 (Note C)
	8/22/2017	CalPERS	700.00	Fees for GASB-68 reports and schedules
	8/28/2017	CalPERS	9,554.82	Retirement Pension Contribution: Agency and Employees, PPE 08/12/2017 (Note C)
	8/7/2017	EDD	12,045.90	State & SDI Taxes, PPE 07/29/2017
	8/23/2017	EDD	11,559.10	State & SDI Taxes, Paid 08/12/2017
	8/15/2017	Michael Owen Boorstein	100.00	Stipend for 08/10/2017 Special Board meeting
	8/15/2017	Dean DiGiovanni	100.00	Stipend for 08/10/2017 SpecialBoard meeting
	8/15/2017	Thomas E Gaffney	100.00	Stipend for 08/10/2017 Special Board meeting
	8/15/2017	Dan Hillmer	100.00	Stipend for 08/10/2017 Special Board meeting
		Grand Total	622,113.49	

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 July 31, 2017

Description (1)	Book Value (2)	Market Value (3)	Agency Reserve Target for July 31, 2017
I. Investments managed by California Asset Management Program (CAMP)			
Money Market Funds (< 1 year in maturity)			
CAMP Cash Reserve Pool, 1.12%			
b1. Agency Unrestricted Reserve: Operating	$ 10,513.81	$ 10,513.81	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	**$ 360,513.81**	**$ 360,513.81**	
II. Investments managed by Local Agency Investment Fund (LAIF)			
Money Market Funds (< 1 year in maturity)			
Local Agency Investment Fund (LAIF), 0.92% (estimate)			
a. Current Year Operating	$ 6,524,951.40	$ 6,524,951.40	
b1. Agency Unrestricted Reserve: Operating	$ 2,855,136.19	$ 2,855,136.19	$ 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)	$ 8,620,314.17	$ 8,620,314.17	$ 6,175,485
Total with LAIF	**$ 18,990,878.76**	**$ 18,990,878.76**	
TOTAL INVESTMENTS	**$ 19,351,392.57**	**$ 19,351,392.57**	
Amount designated for Capital Reserves			
1. CAMP	$ -	$ -	
2. LAIF	$ 9,610,791.17	$ 9,610,791.17	$ 7,165,962
Total	**$ 9,610,791.17**	**$ 9,610,791.17**	**$ 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 any 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.

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

Description (1)	Book Value (2)	Market Value (3)	Agency Reserve Target for August 31, 2017
I. Investments managed by California Asset Management Program (CAMP)			
Money Market Funds (< 1 year in maturity)			
CAMP Cash Reserve Pool, 1.14%			
b1. Agency Unrestricted Reserve: Operating	$ 10,861.56	$ 10,861.56	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	**$ 360,861.56**	**$ 360,861.56**	
II. Investments managed by Local Agency Investment Fund (LAIF)			
Money Market Funds (< 1 year in maturity)			
Local Agency Investment Fund (LAIF), 0.92% (estimate)			
a. Current Year Operating	$ 2,459,952.99	$ 2,459,952.99	
b1. Agency Unrestricted Reserve: Operating	$ 2,854,788.44	$ 2,854,788.44	$ 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)	$ 8,485,660.33	$ 8,485,660.33	$ 6,175,485
Total with LAIF	**$ 14,790,878.76**	**$ 14,790,878.76**	
TOTAL INVESTMENTS	**$ 15,151,740.32**	**$ 15,151,740.32**	
Amount designated for Capital Reserves			
1. CAMP	$ -	$ -	
2. LAIF	$ 9,476,137.33	$ 9,476,137.33	$ 7,165,962
Total	$ 9,476,137.33	**$ 9,476,137.33**	**$ 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 $38,477.25 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.

Central Marin Sanitation Agency

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BOARD MEMORANDUM

August 4, 2017

To: CMSA Commissioners and Alternates

From: Chris Finton, Treatment Plant Manager

Approved: Jason Dow, General Manager

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

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

I. NPDES Permit Compliance

Our NPDES permit testing for July 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 July 96-hour flow through bioassay test.

The Agency's NPDES permit specifies monitoring for enterococcus bacteria to verify compliance with established effluent limits. The enterococcus monthly geometric mean for July was <1.0 MPN, which is well below our monthly limit of 35 MPN.

As reported since March, staff is monitoring the Mercury Watershed Permit's limits for the San Francisco Bay and CMSA's effluent. Mercury loading to date as noted in this report's Monthly Compliance Summary Table is 0.12574 kg/yr. Although CMSA's annual mercury loading is slightly above the watershed mercury annual limit, historical annual loading of all the local dischargers has typically been well below the threshold limit of 11 kg/yr. As such, it is highly unlikely that the Agency's annual mercury loading will result in a permit exceedance.

II. Influent Flow

It was a typical July in central Marin County with daytime temperatures ranging from the mid-70's to mid-80's most days. It remained very dry with no precipitation recorded by the Agency's rain gauge.

The CMSA treatment plant and each satellite collection agency's daily average and total monthly influent flows are shown in the table below:

July Monthly Influent Flows	**San Rafael (SRSD)**	**Ross Valley (SD#1)**	**San Quentin (SQSP)**	**Corte Madera (SD#2)**	**CMSA Plant Total**
Average Daily (MGD)	3.1 MGD	4.0 MGD	0.36 MGD	0.73 MGD	8.2 MGD
Total for Month (MG)	95.3 MG	123.4 MG	11.1 MG	22.7 MG	252.5 MG
Percent of Flow	37.8 %	48.9 %	4.4 %	8.9 %	100 %

III. Treatment Process

The treatment plant is operating in the dry weather mode with a majority of its processing equipment offline for annual maintenance or waiting to be placed into service. The Mixed Liquor Suspended Solids (MLSS) inventory averaged 933 mg/l, a 15.1% decrease in biomass from last month. The decrease in biomass aligned with the process control decision to carry between 1,000 and 1,100 mg/L to manage our biomass and effectively meet our permit limits. This past month staff noted abnormally high biochemical oxygen demand (BOD) sample results from the Biotower's effluent samples. Upon further investigation, it was determined that the sampling location, due to poor mixing, was the sole contributor to the erroneous results. Sampling has been moved to a new location where a more consistent and representative sample can be collected.

Graph #3 shows the Total Suspended Solids (TSS), which is a good indicator of the effluent quality. The TSS monthly average in July was 3.5 mg/l, which is 23.3% of our Key Performance Indicator (KPI) of 15 mg/l, and is 11.7% 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 July were below our KPI range of 30 MPN, and well below our daily limit of 10,000 MPN. The total coliform monthly geometric mean for July was 3.0 MPN, well below our permit's monthly limit of 240 MPN.

IV. Maintenance Activities

The cogeneration system produced 98.9% of the Agency's power in July, and Marin Clean Energy (MCE) supplied the balance. The generator, as indicated on Graph #8, was in service and produced green power for the entire month. There was one occasion on July 22 when the cogeneration system was temporarily removed from service to perform a scheduled 2,000 hour preventative maintenance procedure.

In addition to the activities surrounding the cogeneration system, staff was also able to complete scheduled project work and monthly preventative maintenance tasks. Work included replacement of deteriorating tread plates on the secondary clarifier deck and process waste sump, replacement of worn drive belts on digester mix pump No. 2, repair of primary clarifier No. 4's broken scum skimmer, replacement of a broken centrifuge sludge feed pump with a spare from inventory; and the installation of a Total Solids meter for secondary system monitoring and process control.

Attachment

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

NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report

July 2017

Operator Nick Gaunt Verifies Instrumentation Accuracy during Daily Operational Checks

Monthly Compliance Summary Table

Central Marin Sanitation Agency

July 2017

Final Effluent Monitoring

Parameter	Frequency	Units	Results	Limit
Carbonaceous BOD Highest Weekly Average	Weekly	mg/L	5.9	Maximum 40
Carbonaceous BOD Monthly Average	Monthly	mg/L	5.7	Maximum 25
Carbonaceous BOD Monthly Removal Rate	Monthly	%	98.3	Minimum 85
Total Suspended Solids Highest Weekly Average	Weekly	mg/L	3.8	Maximum 45
Total Suspended Solids Monthly Average	Monthly	mg/L	3.5	Maximum 30
Total Suspended Solids Monthly Removal Rate	Monthly	%	99.2	Minimum 85
Chlorine Residual Instant Limit	Instant	mg/L	<0.1	Maximum 0.0
Ammonia Monthly Average	Monthly	mg/L	35.1	Maximum 60
Ammonia Maximum Daily	Daily	mg/L	37.9	Maximum 120
pH Lower Limit	Continuous		7.3	Minimum 6
pH Upper Limit	Continuous		7.7	Maximum 9
Bacteriological Analysis				
Total Coliform Monthly Geometric Mean	3 X Week	MPN/100mL	2.96	Maximum 240
Total Coliform Daily Maximum	3 X Week	MPN/100mL	23	Maximum 10,000
Enterococcus Monthly Geometric Mean	Monthly	MPN/100mL	1.0	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	4.8	Maximum 85
Copper Monthly Average	Monthly	ug/L	4.8	Maximum 49
Cyanide Daily Limit	Monthly	ug/L	DNQ (1.2)	Maximum 41
Cyanide Monthly Average	Monthly	ug/L	DNQ (1.2)	Maximum 21
Mercury Weekly Average	Weekly	ug/L	0.0022	Maximum 0.072
Mercury Monthly Average	Monthly	ug/L	0.0022	Maximum 0.066
Mercury Monthly Loading	Monthly	kg/mo	0.00186	
Mercury Annual Loading (watershed permit)	Jan-Dec	kg/yr	$0.12574_{(b)}$	Maximum 0.11
Permit Analysis				
Dioxin - Total Equivalents (TEQ) Daily Maximum	1/Permit Cycle	ug/L	*	Maximum 2.8E-08
Dioxin - Total Equivalents (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	every 3 mos	Tuc	*	Maximum 20
Chronic Bioassay Toxicity (3 sample median)	every 3 mos	Tuc	*	Maximum 10

Flow Analysis	Daily Max	Hourly Max	5 minute Max	Monthly Average
Effluent Flow $_{(a)}$	7.6	10.7	13.2	7.2
Influent Flow $_{(a)}$	8.5	11.3	16.7	8.2
# 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 this CMSA's annual mercury loading will result in a violation.

* Monitoring Not Required This Month

X Data not available at report time

ND = None Detected

DNQ = Detected but 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
July 2017

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

Primary Clarifier Performance

			Expected removal efficiencies as outlined in Metcalf & Eddy Wastewater Engineering Manual
Average Total Suspended Solids (TSS) in:	422	mg/l	
Average TSS out:	112	mg/l	
Average Percent Removal Achieved:	73.5	%	Design 50-70% Removal
Average Total Biochemical Oxygen Demand (BOD) in:	332	mg/l	
Average BOD out:	162	mg/l	
Average Percent Removal Achieved:	51.4	%	Design 25-40% Removal
Average Plant Influent Flows:	8.1	MGD	

Biotower Performance

Average TSS out:	129	mg/l	
Average BOD out:	117	mg/l	
Average Percent BOD Removal Achieved:	27.8	%	Design 25-30% Removal

Aeration Tanks/Activated sludge

Dissolved Oxygen set point:	2.0	mg/l
Average MLSS:	933	mg/l
Average MCRT:	3.7	Days
Average SVI:	153	

Secondary Clarifiers

Average WAS concentration:	6,496	mg/l

Final Effluent

Average Effluent TSS for the month was:	3.5	mg/l	(Maximum Limit: 30mg/l)
Week #1 weekly average	3.6		(Maximum Limit: 45mg/l)
Week #2 weekly average	3.2		"
Week #3 weekly average	3.6		"
Week #4 weekly average	3.4		"
Week #5 weekly average	3.8		
Monthly average TSS removal efficiency through the plant was:	99.2	%	(Minimum Limit: 85%)
Average Effluent BOD was:	5.7	mg/l	(Maximum Limit: 25mg/l)
Week #1 weekly average	4.9		(Maximum Limit: 40mg/l)
Week #2 weekly average	5.5		"
Week #3 weekly average	5.7		"
Week #4 weekly average	5.9		"
Week #5 weekly average	5.9		
Monthly average BOD removal efficiency through the plant was:	98.3	%	(Minimum Limit: 85%)

Disinfection Dosing Rate:		3.8	mg/l	monthly average
Total Coliform Monthly Geometric Mean:		3.0	MPN	(Maximum 240)
The Daily Maximum Total Coliform Count for the month was:		23.0	MPN	(Maximum 10,000)
Enterococcus Monthly Geometric Mean:		1.0	MPN	(Maximum 35 MPN)
Effluent pH for the month was:	Min	7.3		(Min 6.0)
	Max	7.4		(Max 9.0)

Digester Treatment

Average Thickened Waste Concentration from the RDT was:	6.6	%		
Average percent of Volatile Solids destroyed was:	71.2	%		
Cubic feet of biogas produced was:	8,504,379	(Total)	274,335	(Daily Average)
Average temperature of the digester was:	100.3	degrees Fahrenheit		

Executive Summary Process Performance Data
July 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:	2.6	%
The average Biosolids concentration was	27.7	%
Average TSS of the Centrate was:	0.030	%
Solids capture of the Centrifuge was:	98.81	%
Polymer use per Dry ton of biosolids was:	17.67	#/dry ton
Average polymer feed rate per run was:	3.75	gpm
Average concentration of the polymer batches was:	0.328	%
Average sludge feed rate per run was:	57.4	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 Agency's rain gauge recordings for the month.

Graph #2:

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

Graph #3:

Depicts the total suspended solids in the effluent.
Our monthly average was 3.5 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 performance of the disinfection system.
The monthly Total Coliform Geometric Mean was 3.0 MPN through July, which is less than our KPI median of 30 MPN and permit limit of 240 MPN.

Graph #5:

Depicts the effluent BOD which is measuring the oxygen demand of the wastewater.
The July effluent BOD average was 5.7 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 29 days in July. The lower than expected KPI value on July 16 was due to testing a centrifuge that was recently returned to service, and dewatering operations did not occur on July 21.

Graph #7:

Depicts the amount of Biogas that is produced in the digesters, and then used to produce electricity.
Biogas production in July averaged 274,335 cubic feet per day, which exceeded our monthly KPI of 200,000 cubic feet per day.

Graph #8:

This graph depicts the amount of energy produced through cogeneration versus the energy purchased from Marin Clean Energy (MCE) for Agency operations.
The cogeneration engine generated 98.9% of the Agency's power in July. As depicted on Graph #8, the cogeneration engine was offline on July 22 for a regularly scheduled 2,000 hour preventative maintenance procedure.

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.

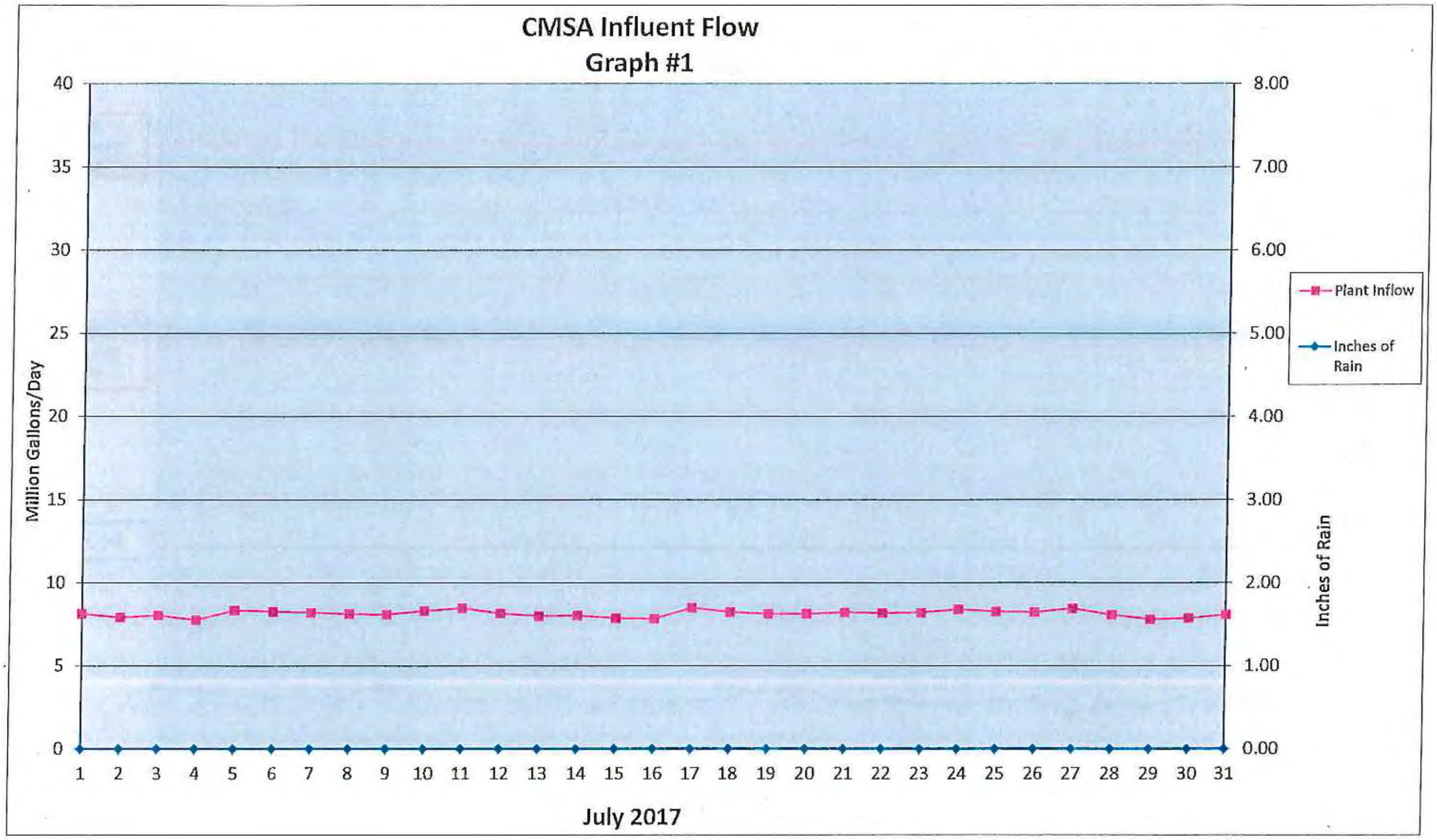
- **Thickened Waste Activated Sludge (TWAS):** Waste activated sludge is thickened in the RDTs, and then the TWAS product is pumped to the digester for processing.

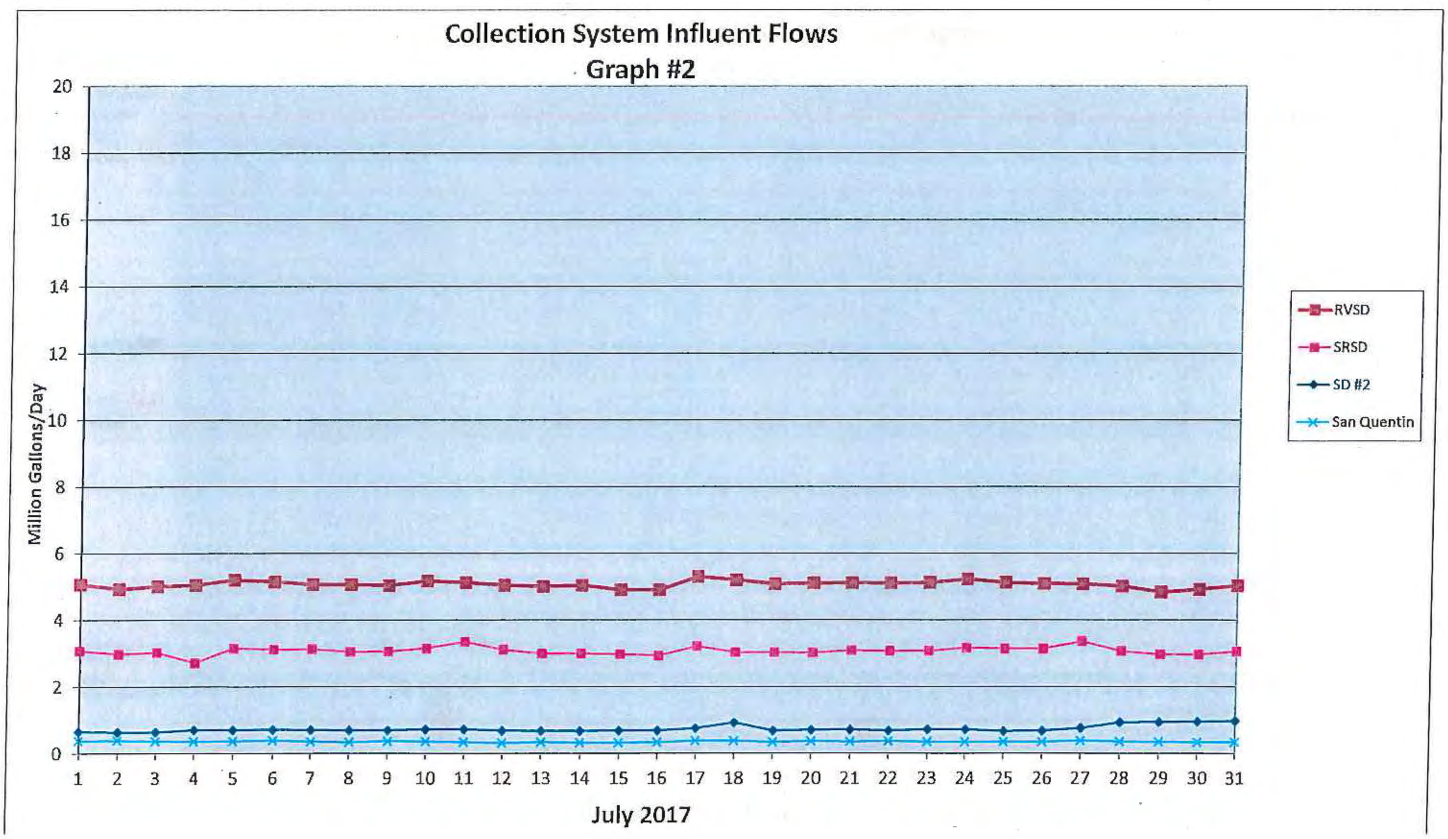
- **Volatile Solids:** Organic content of the wastewater suspended solids.

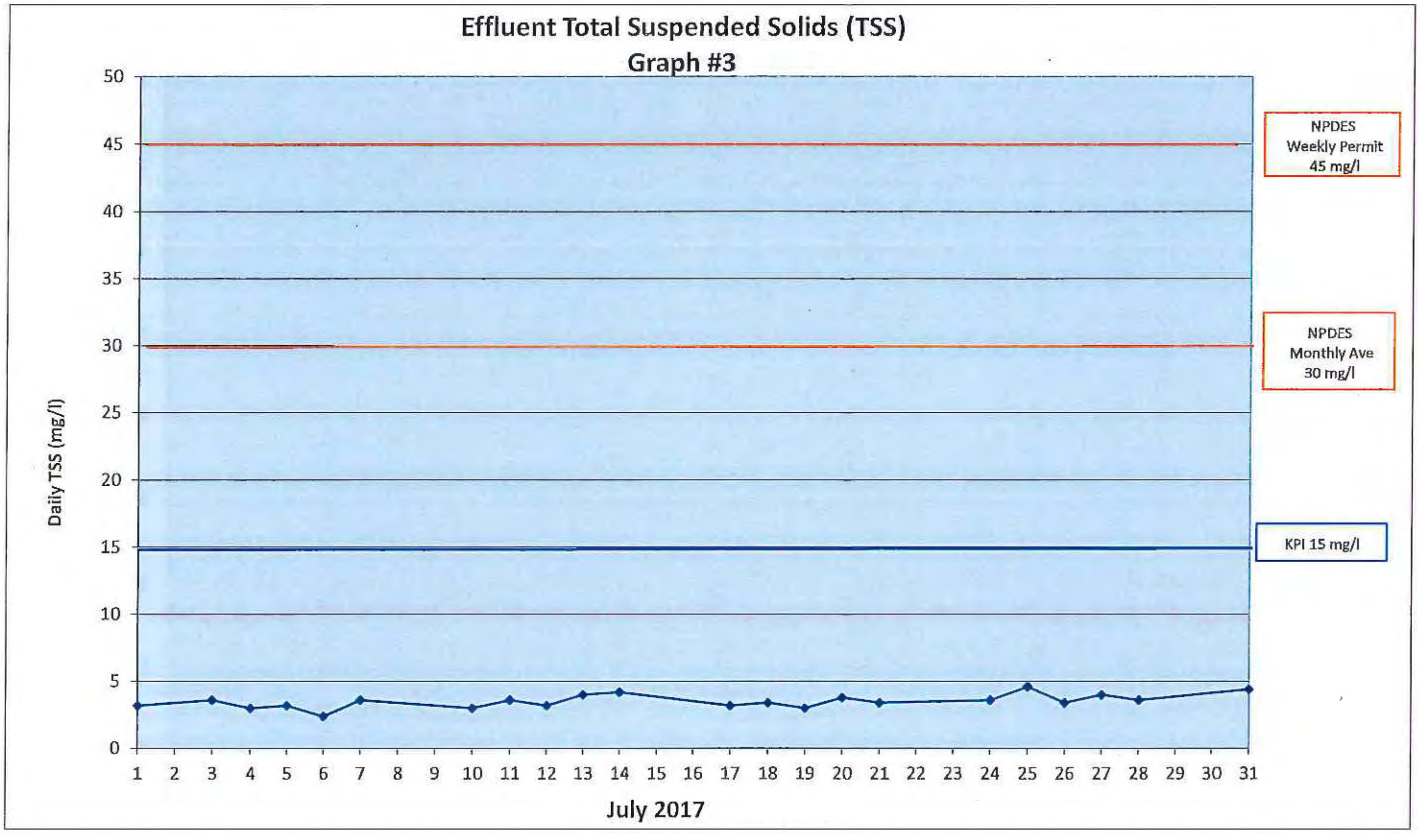
- **Waste Activated Sludge (WAS):** Biomass that is removed from the secondary clarifiers pumped to the RDTs for thickening.

Units of Measurement

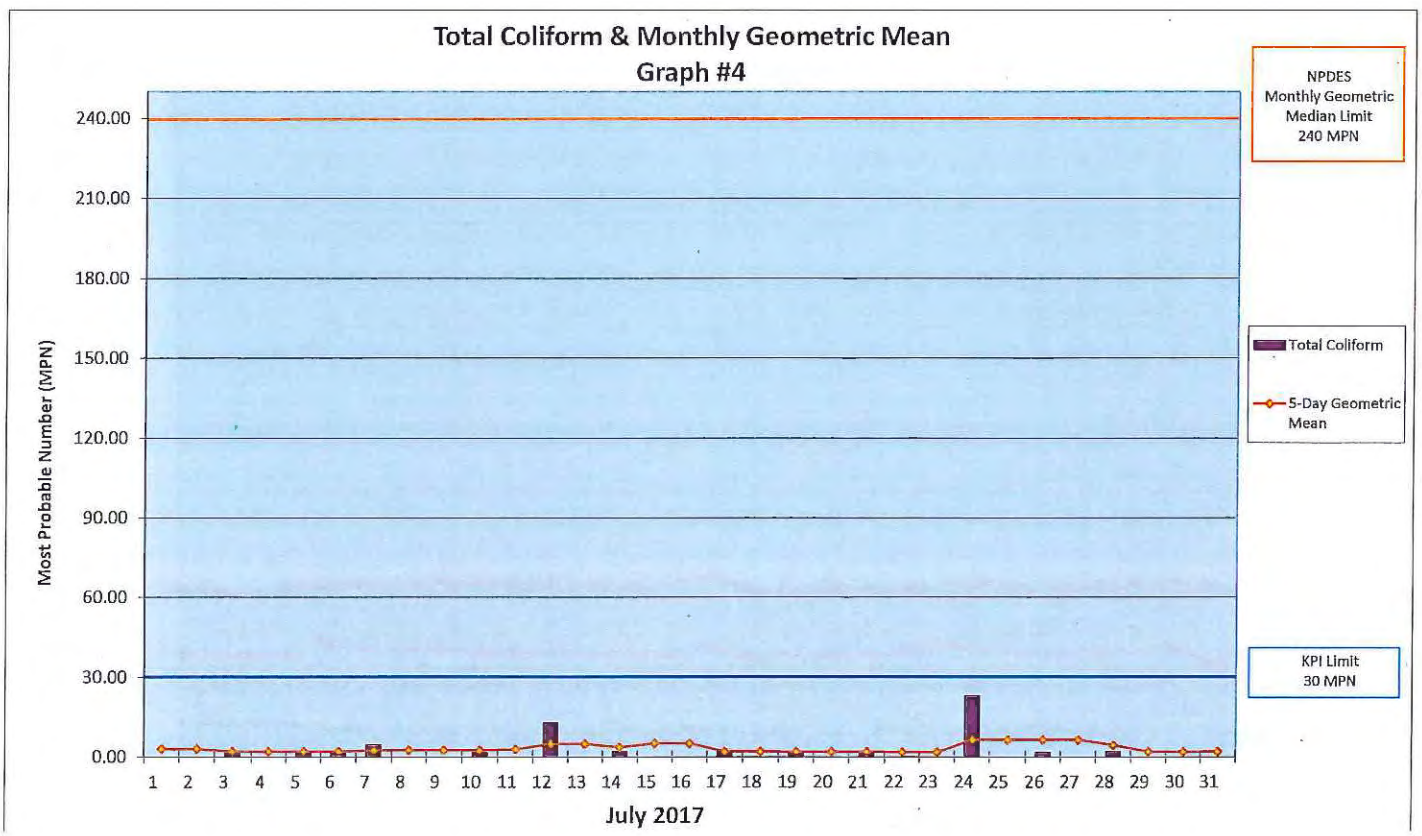
- kg/month (Kilograms per Month): 1 kilogram = 2.205 lbs.
- KPI (Key Performance Indicators): The Agency's process performance goals.
- Kwh (Kilowatt Hours): A unit of electric power equal to using 1 Kw for 1 hour.
- Milligrams per Liter (mg/L): A measure of the concentration by weight of a substance 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.


CMSA Influent Flow
Graph #1
Million Gallons/Day
Inches of Rain
July 2017
Plant Inflow
Inches of Rain
40
35
30
25
20
15
10
5
0
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

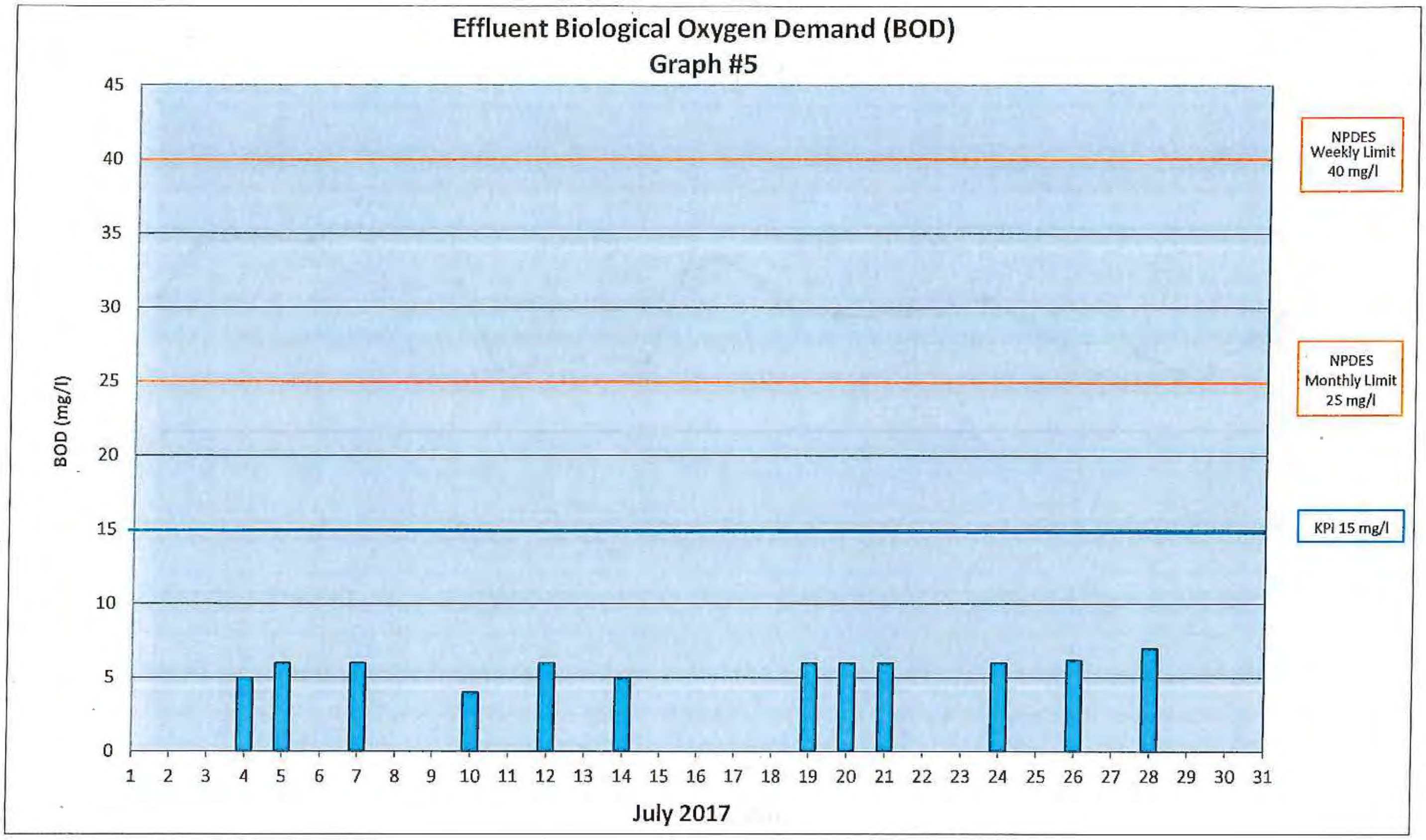

Collection System Influent Flows
Graph #2
Million Gallons/Day
July 2017
RVSD
SRSD
SD #2
San Quentin
20
18
16
14
12
10
8
6
4
2
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

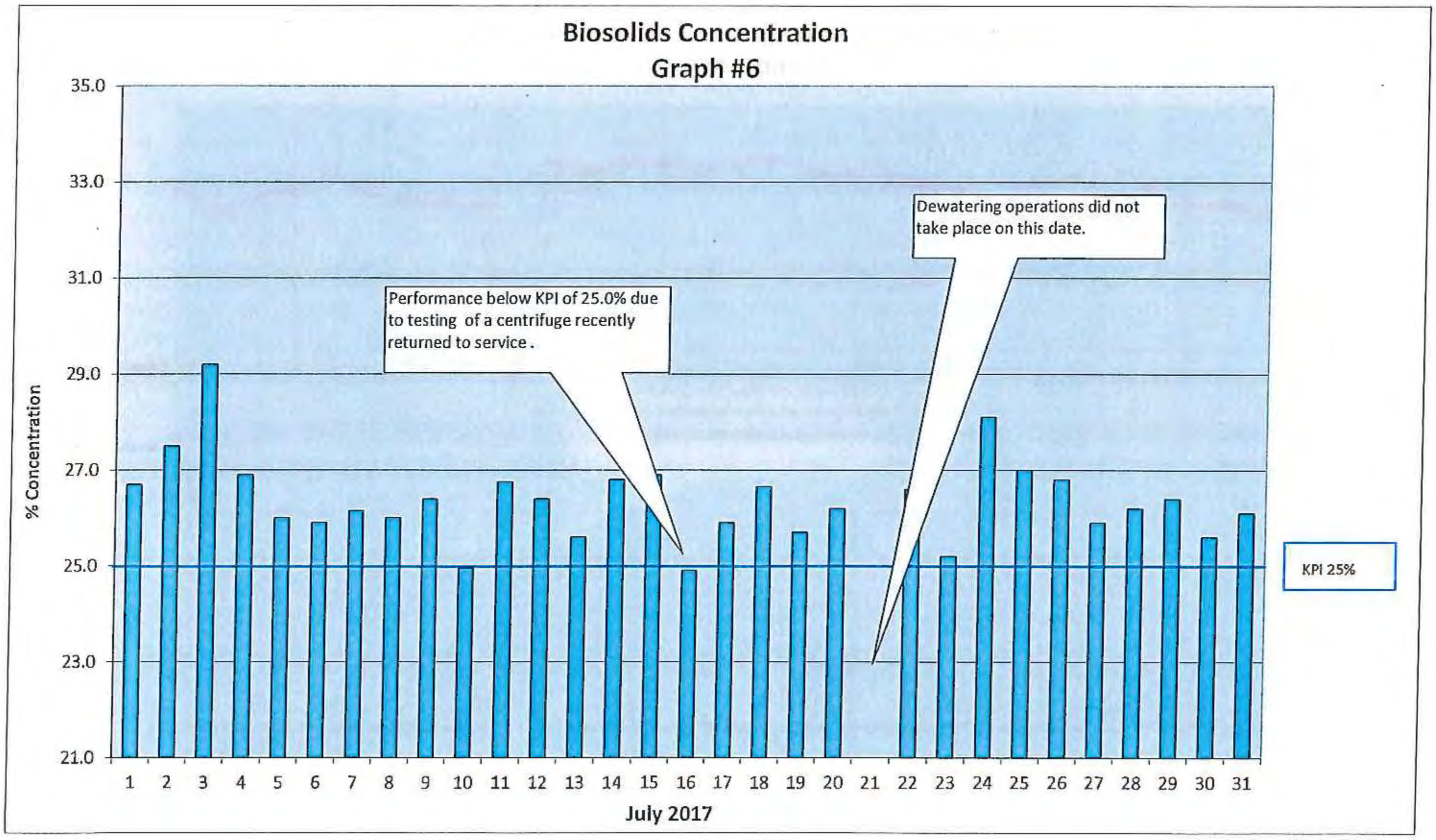


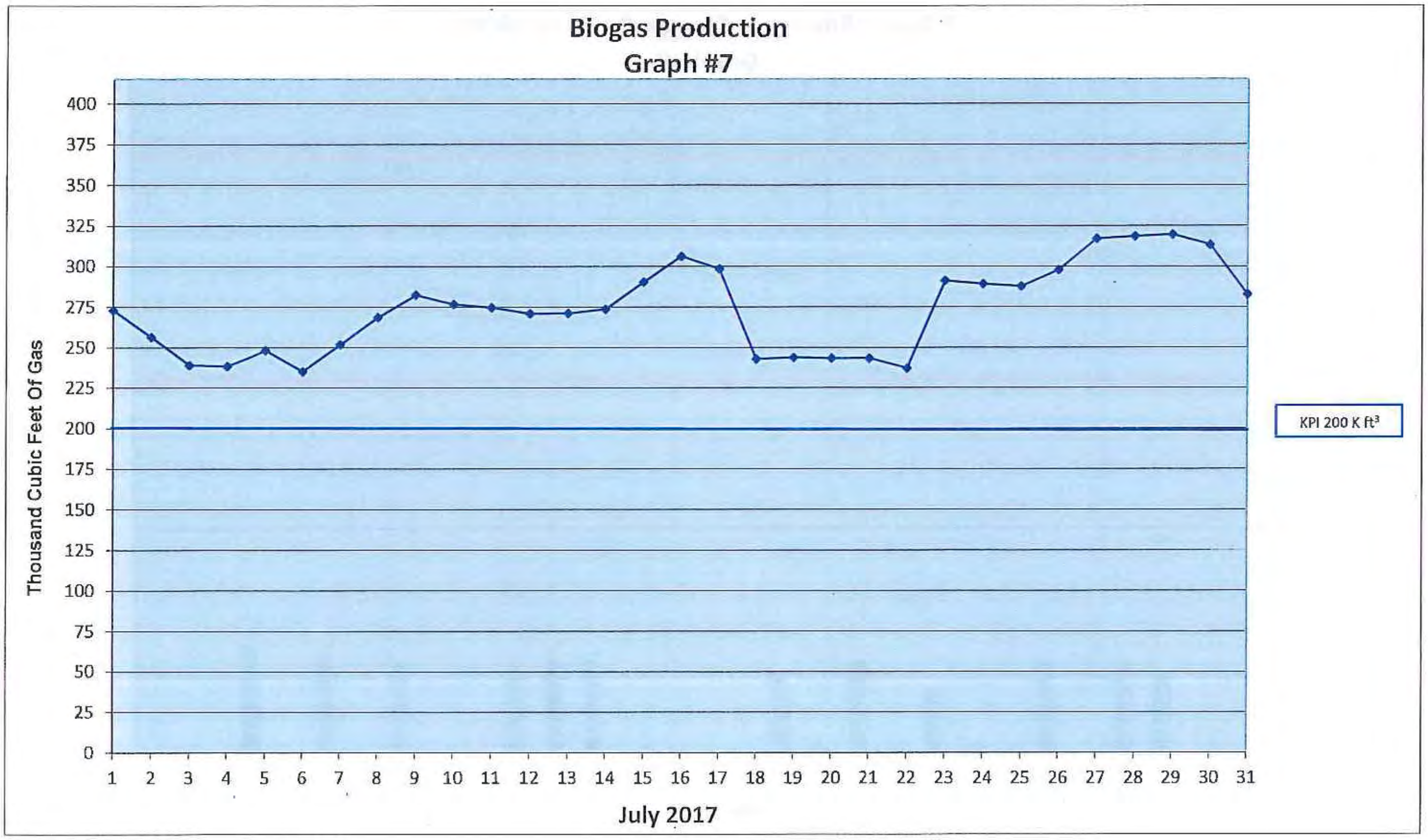
Effluent Total Suspended Solids (TSS)
Graph #3
Daily TSS (mg/l)
50
45
40
35
30
25
20
15
10
5
0
NPDES Weekly Permit 45 mg/l
NPDES Monthly Ave 30 mg/l
KPI 15 mg/l
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
July 2017



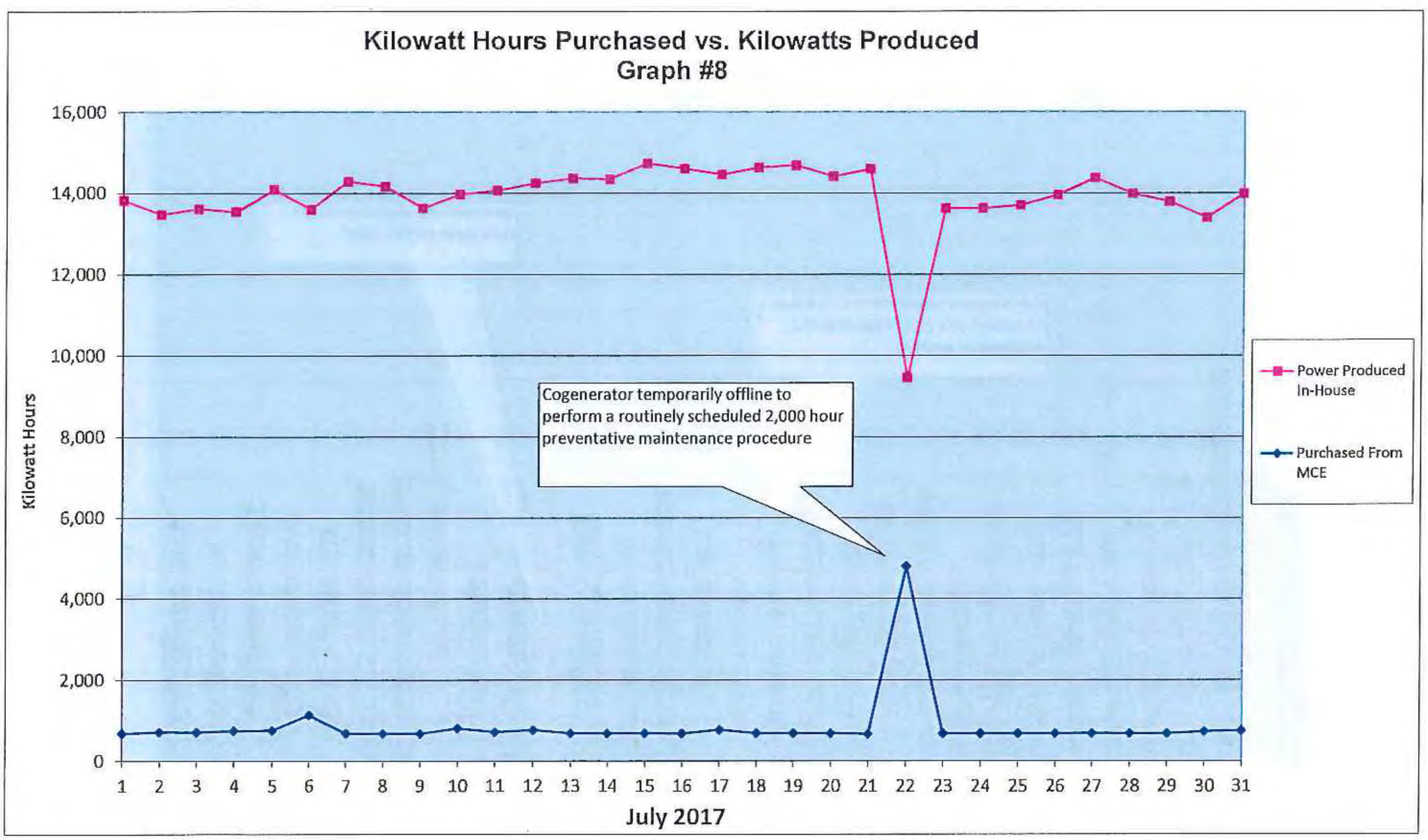
Total Coliform & Monthly Geometric Mean
Graph #4
Most Probable Number (MPN)
240.00
210.00
180.00
150.00
120.00
90.00
60.00
30.00
0.00
NPDES Monthly Geometric Median Limit 240 MPN
Total Coliform
5-Day Geometric Mean
KPI Limit 30 MPN
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
July 2017


Effluent Biological Oxygen Demand (BOD)
Graph #5
BOD (mg/l)
NPDES Weekly Limit 40 mg/l
NPDES Monthly Limit 25 mg/l
KPI 15 mg/l
July 2017


Biosolids Concentration
Graph #6
% Concentration
Performance below KPI of 25.0% due to testing of a centrifuge recently returned to service.
Dewatering operations did not take place on this date.
KPI 25%
July 2017



Biogas Production
Graph #7
Thousand Cubic Feet Of Gas
400
375
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
July 2017
KPI 200 K ft³



Kilowatt Hours Purchased vs. Kilowatts Produced
Graph #8
Kilowatt Hours
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Cogenerator temporarily offline to perform a routinely scheduled 2,000 hour preventative maintenance procedure
Power Produced In-House
Purchased From MCE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
July 2017

Central Marin Sanitation Agency

BOARD MEMORANDUM

September 7, 2017

To: CMSA Commissioners and Alternates

From: Chris Finton, Treatment Plant Manager CF

Approved: Jason Dow, General Manager

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

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

I. NPDES Permit Compliance

Our NPDES permit testing for August 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 August 96-hour flow through bioassay test.

The Agency's NPDES permit specifies monitoring for enterococcus bacteria to verify compliance with established effluent limits. The enterococcus monthly geometric mean for August was <1.0 MPN, which is well below our monthly limit of 35 MPN.

As reported since March, staff is monitoring the Mercury Watershed Permit's limits for the San Francisco Bay and CMSA's effluent. Mercury loading to date as noted in this report's Monthly Compliance Summary Table is 0.12752 kg/yr. Although CMSA's annual mercury loading is slightly above the watershed mercury annual limit, historical annual loading of all the local dischargers has typically been well below the threshold limit of 11 kg/yr. As such, it is highly unlikely that the Agency's annual mercury loading will result in a permit exceedance.

II. Influent Flow

In August, the daytime temperatures in central Marin County averaged 82°F. It remained very dry with no precipitation recorded by the Agency's rain gauge. The CMSA treatment plant and each satellite collection agency's daily average and total monthly influent flows are shown in the table below:

August Monthly Influent Flows	**San Rafael (SRSD)**	**Ross Valley (SD#1)**	**San Quentin (SQSP)**	**Corte Madera (SD#2)**	**CMSA Plant Total**
Average Daily (MGD)	3.2 MGD	3.9 MGD	0.42 MGD	0.80 MGD	8.3 MGD
Total for Month (MG)	98.8 MG	119.7 MG	13.1 MG	25.0 MG	256.6 MG
Percent of Flow	37.8 %	48.9 %	4.4 %	8.9 %	100 %

III. Treatment Process

The treatment plant is operating in the dry weather mode with a majority of its processing equipment offline for annual maintenance or ready to be placed into service. The Mixed Liquor Suspended Solids (MLSS) inventory averaged 1,021 mg/l, a 9.5% increase in biomass from last month. The increase in biomass aligned with the process control decision to carry between 1,000 and 1,100 mg/L to manage our biomass and effectively meet our permit limits. This past month three of the four secondary clarifiers were removed from service and received their annual preventative maintenance.

Graph #3 shows the Total Suspended Solids (TSS), which is a good indicator of the effluent quality. The TSS monthly average in August was 4.7 mg/l, which is 31.0% of our Key Performance Indicator (KPI) of 15 mg/l, and is 16.0% 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. One of the fourteen coliform samples collected in August was above our KPI range of 30 MPN (8/16, 79 MPN), but remained well below our daily limit of 10,000 MPN. The higher than normal coliform value on August 16 was attributed to an unscheduled disinfection system repair. The total coliform monthly geometric mean for August was 4.2 MPN, well below our permit's monthly limit of 240 MPN.

IV. Maintenance Activities

The cogeneration system produced 94.5% of the Agency's power in August, and Marin Clean Energy (MCE) supplied the balance. The generator, as indicated on Graph #8, was in service and produced green power for the entire month. There was one occasion on August 20 when the cogeneration system was temporarily removed from service to replace a faulty intake manifold pressure sensor.

In addition to the activities surrounding the cogeneration system, staff was also able to complete scheduled project work and monthly preventative maintenance tasks. Work included replacement of a deteriorating sanitary sump lid and grating, replacement of thickened waste activated sludge (TWAS) pump no. 1, replacement of diffuser membranes in aeration tank no. 1, assistance to onsite contractors with fire suppression system and back flow prevention device work, replacement of a deteriorating discharge elbow at the Organic Waste Receiving Facility; and the installation of a new effluent flow meter at the San Quentin Prison pump station.

Attachment

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

NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report

August 2017

Technicians Replacing Diffuser Membranes in Aeration Basin No. 1

Monthly Compliance Summary Table

Central Marin Sanitation Agency

August 2017

Final Effluent Monitoring

Parameter	Frequency	Units	Results	Limit
Carbonaceous BOD Highest Weekly Average	Weekly	mg/L	6.5	Maximum 40
Carbonaceous BOD Monthly Average	Monthly	mg/L	6.1	Maximum 25
Carbonaceous BOD Monthly Removal Rate	Monthly	%	98.2	Minimum 85
Total Suspended Solids Highest Weekly Average	Weekly	mg/L	5.4	Maximum 45
Total Suspended Solids Monthly Average	Monthly	mg/L	4.7	Maximum 30
Total Suspended Solids Monthly Removal Rate	Monthly	%	99.0	Minimum 85
Chlorine Residual Instant Limit	Instant	mg/L	<0.1	Maximum 0.0
Ammonia Monthly Average	Monthly	mg/L	37.4	Maximum 60
Ammonia Maximum Daily	Daily	mg/L	38.8	Maximum 120
pH Lower Limit	Continuous	SU	7.2	Minimum 6
pH Upper Limit	Continuous	SU	7.8	Maximum 9
Bacteriological Analysis				
Total Coliform Monthly Geometric Mean	3 X Week	MPN/100mL	4.2	Maximum 240
Total Coliform Daily Maximum	3 X Week	MPN/100mL	79	Maximum 10,000
Enterococcus Monthly Geometric Mean	Monthly	MPN/100mL	1.0	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	3.5	Maximum 85
Copper Monthly Average	Monthly	ug/L	3.5	Maximum 49
Cyanide Daily Limit	Monthly	ug/L	DNQ (1.2)	Maximum 41
Cyanide Monthly Average	Monthly	ug/L	DNQ (1.2)	Maximum 21
Mercury Weekly Average	Weekly	ug/L	0.0022	Maximum 0.072
Mercury Monthly Average	Monthly	ug/L	0.0022	Maximum 0.066
Mercury Monthly Loading	Monthly	kg/mo	0.00178	
Mercury Annual Loading (watershed permit)	Jan-Dec	kg/yr	0.12752 (b)	Maximum 0.11
Permit Analysis				
Dioxin - Total Equivalents (TEQ) Daily Maximum	1/Permit Cycle	ug/L	*	Maximum 2.8E-08
Dioxin - Total Equivalents (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	ND	Maximum 20
Oil and Grease Monthly Average	Quarterly	mg/L	ND	Maximum 10
Chronic Bioassay Toxicity	every 3 mos	Tuc	ND	Maximum 20
Chronic Bioassay Toxicity (3 sample median)	every 3 mos	Tuc	ND	Maximum 10

Flow Analysis	Daily Max	Hourly Max	5 minute Max	Monthly Average
Effluent Flow (a)	7.5	10.9	13.1	7.0
Influent Flow (a)	8.8	11.5	14.9	8.3
# 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 this CMSA's annual mercury loading will result in a violation.

* Monitoring Not Required This Month

X Data not available at report time

ND = None Detected

DNQ = Detected but 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
August 2017

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

Primary Clarifier Performance

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

Average Total Suspended Solids (TSS) in:	485	mg/l	
Average TSS out:	110	mg/l	
Average Percent Removal Achieved:	77.2	%	Design 50-70% Removal
Average Total Biochemical Oxygen Demand (BOD) in	342	mg/l	
Average BOD out:	175	mg/l	
Average Percent Removal Achieved:	48.9	%	Design 25-40% Removal
Average Plant Influent Flows:	8.3	MGD	

Biotower Performance

Average TSS out:	98	mg/l	
Average BOD out:	74	mg/l	
Average Percent BOD Removal Achieved:	57.7	%	Design 25-30% Removal

Aeration Tanks/Activated sludge

Dissolved Oxygen set point:	2.0	mg/l
Average MLSS:	1,021	mg/l
Average MCRT:	3.7	Days
Average SVI:	151	

Secondary Clarifiers

Average WAS concentration: 6,399 mg/l

Final Effluent

Average Effluent TSS for the month was:	4.7	mg/l	(Maximum Limit: 30mg/l)
Week #1 weekly average	3.7		(Maximum Limit: 45mg/l)
Week #2 weekly average	3.7		"
Week #3 weekly average	4.2		"
Week #4 weekly average	5.4		"
Monthly average TSS removal efficiency through the plant was:	99	%	(Minimum Limit: 85%)
Average Effluent BOD was:	6.1	mg/l	(Maximum Limit: 25mg/l)
Week #1 weekly average	6.5		(Maximum Limit: 40mg/l)
Week #2 weekly average	6.4		"
Week #3 weekly average	5.5		"
Week #4 weekly average	5.8		"
Monthly average BOD removal efficiency through the plant was:	98.2	%	(Minimum Limit: 85%)

Disinfection Dosing Rate:		3.8	mg/l	monthly average
Total Coliform Monthly Geometric Mean:		4.2	MPN	(Maximum 240)
The Daily Maximum Total Coliform Count for the month was:		79	MPN	(Maximum 10,000)
Enterococcus Monthly Geometric Mean:		1.0	MPN	(Maximum 35 MPN)
Effluent pH for the month was:	Min	7.2		(Min 6.0)
	Max	7.8		(Max 9.0)

Digester Treatment

Average Thickened Waste Concentration from the RDT was:	7.0	%		
Average percent of Volatile Solids destroyed was:	69.3	%		
Cubic feet of biogas produced was:	7,927,504	(Total)	255,726	(Daily Average)
Average temperature of the digester was:	100.5	degrees Fahrenheit		

Page 1 of 2

Executive Summary Process Performance Data
August 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:	2.60	%
Average Biosolids concentration was:	26.4	%
Average TSS of the Centrate was:	0.026	%
Solids capture of the Centrifuge was:	99.04	%
Polymer use per Dry ton of biosolids was:	15.49	#/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:	55.0	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 0-12 MGD.

Graph #3:

Depicts the total suspended solids in the effluent.
Our monthly average was 4.7 mg/l vs 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 performance of the disinfection system.
The monthly Total Coliform Geometric Mean was 4.2 MPN through August, which is less than our KPI median of 30 MPN and permit limit of 240 MPN. The higher than normal value on August 16 is described in the August staff report and as shown on the graph.

Graph #5:

Depicts the effluent BOD which is measuring the oxygen demand of the wastewater.
The August effluent BOD average was 6.1 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 all 31 days in August.

Graph #7:

Depicts the amount of Biogas that is produced in the digesters, and then used to produce electricity.
Biogas production in August averaged 255,726 cubic feet per day, which exceeded our monthly KPI of 200,000 cubic feet per day.

Graph #8:

This graph depicts the amount of energy produced through co-generation vs. the energy purchase from Marin Clean Energy (MCE) for agency operations.
The cogeneration engine was online for the entire month of August producing 94.5% of the facility's power needs. The engine was temporarily removed from service as described in the August 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.

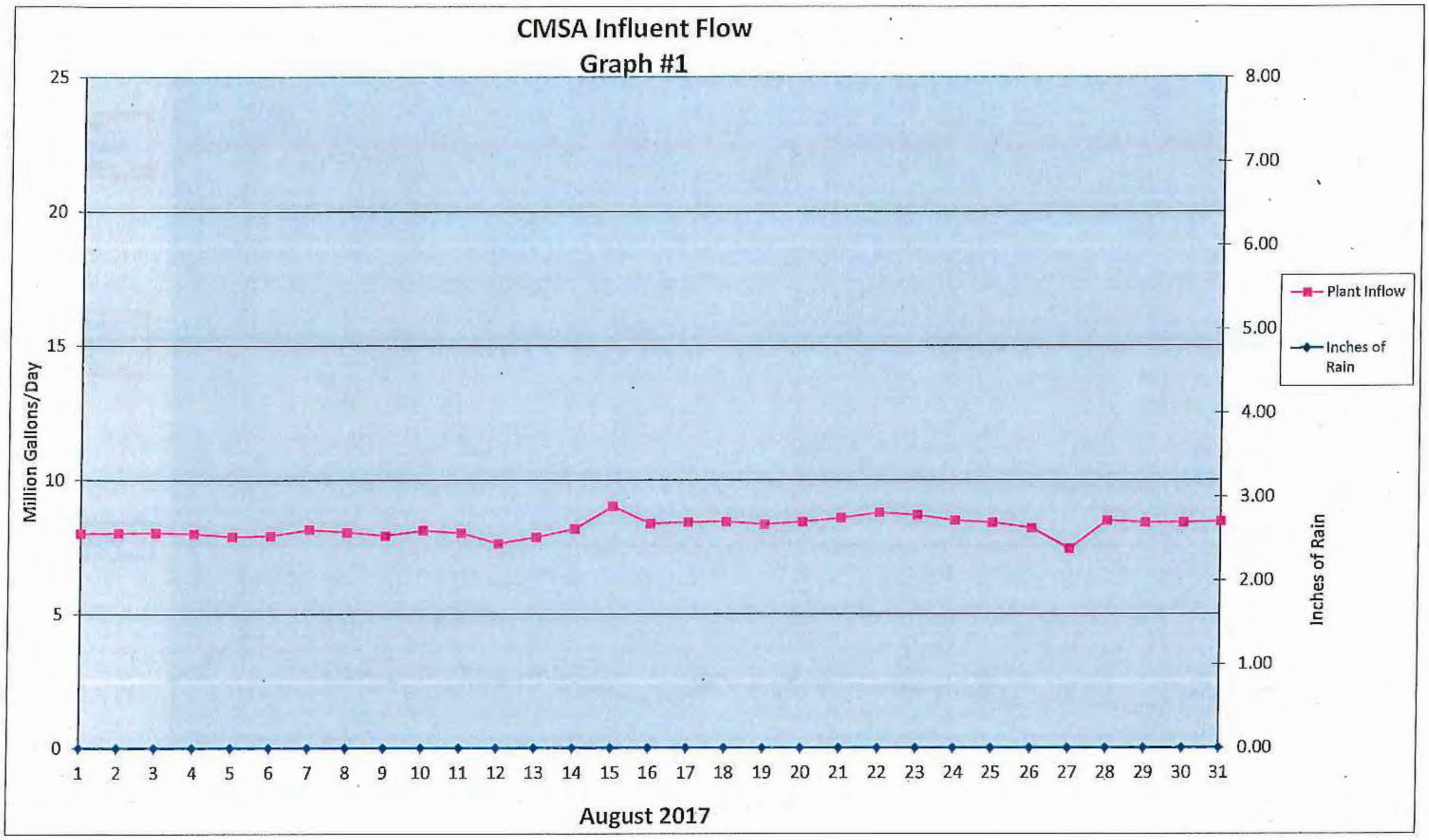
- **Thickened Waste Activated Sludge (TWAS):** Waste activated sludge is thickened in the RDTs, and then the TWAS product is pumped to the digester for processing.

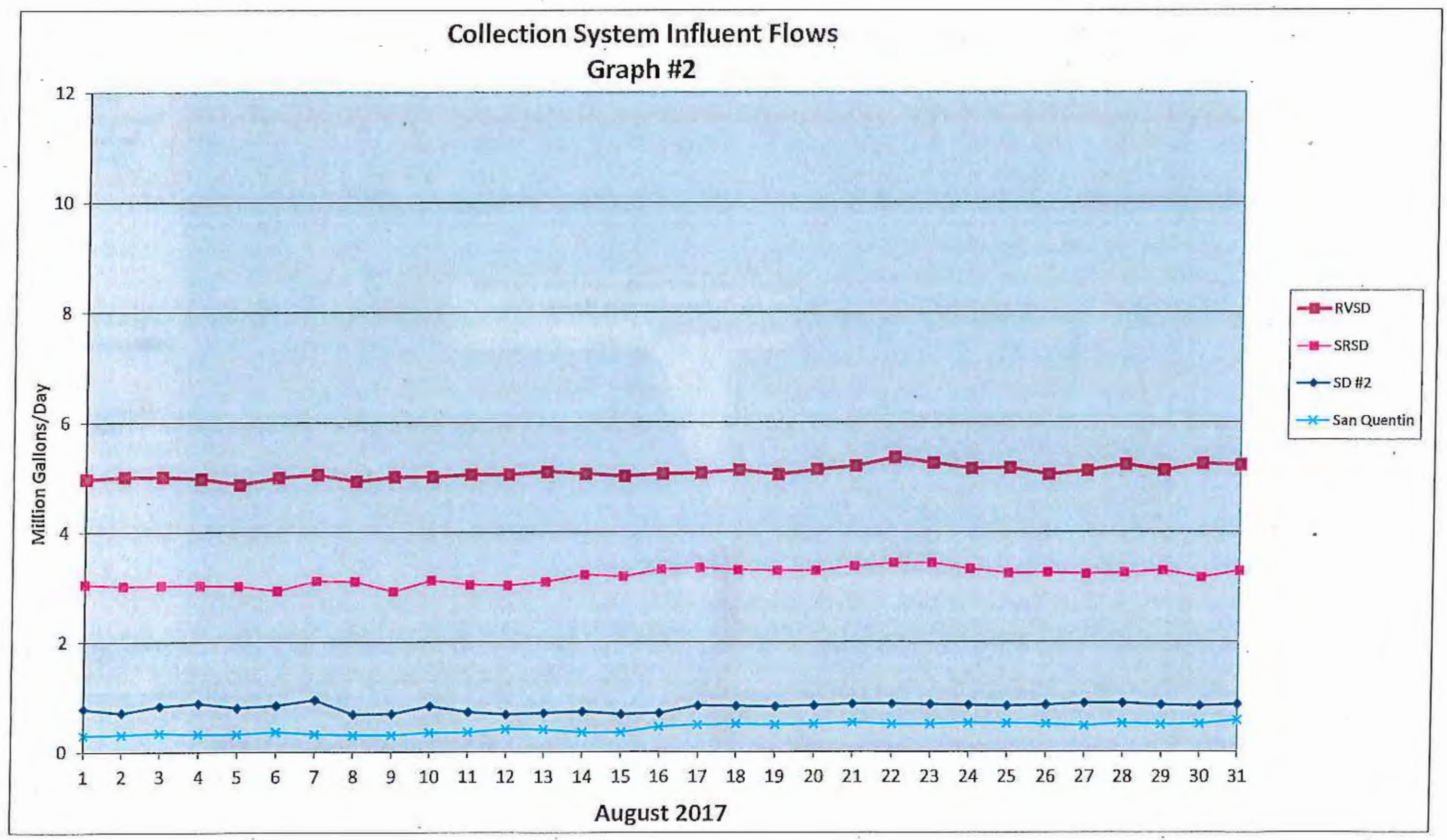
- **Volatile Solids:** Organic content of the wastewater suspended solids.

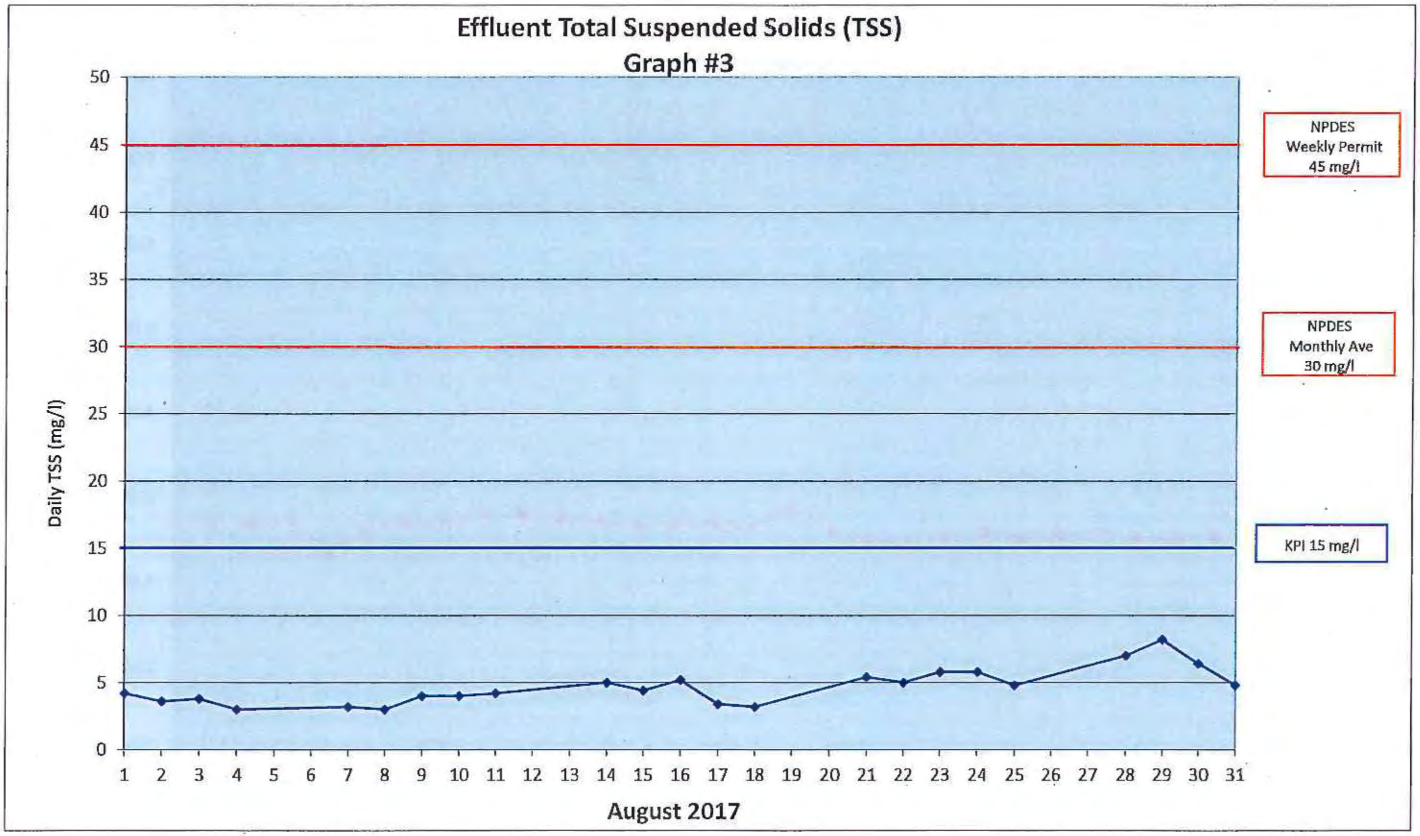
- **Waste Activated Sludge (WAS):** Biomass that is removed from the secondary clarifiers pumped to the RDTs for thickening.

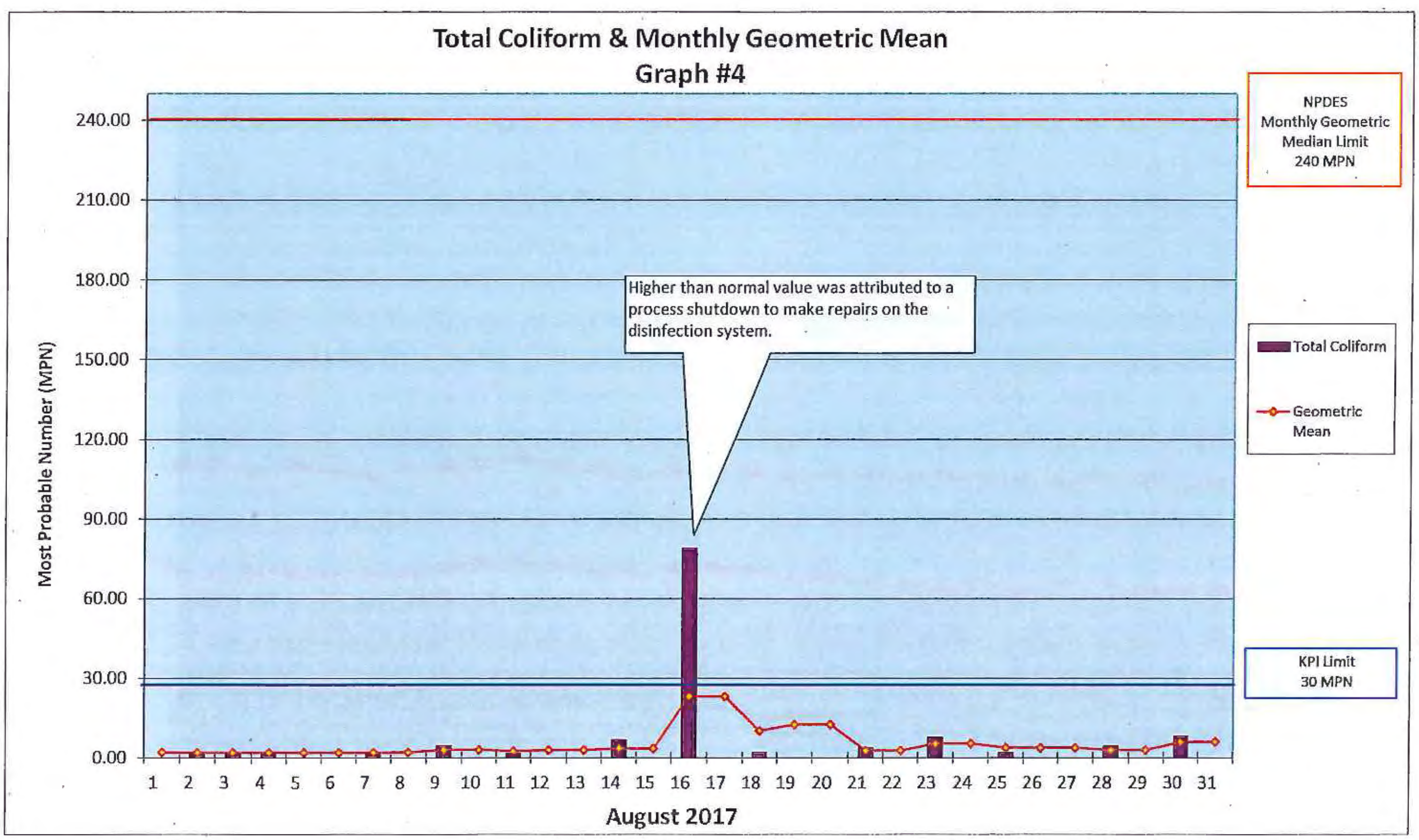
Units of Measurement

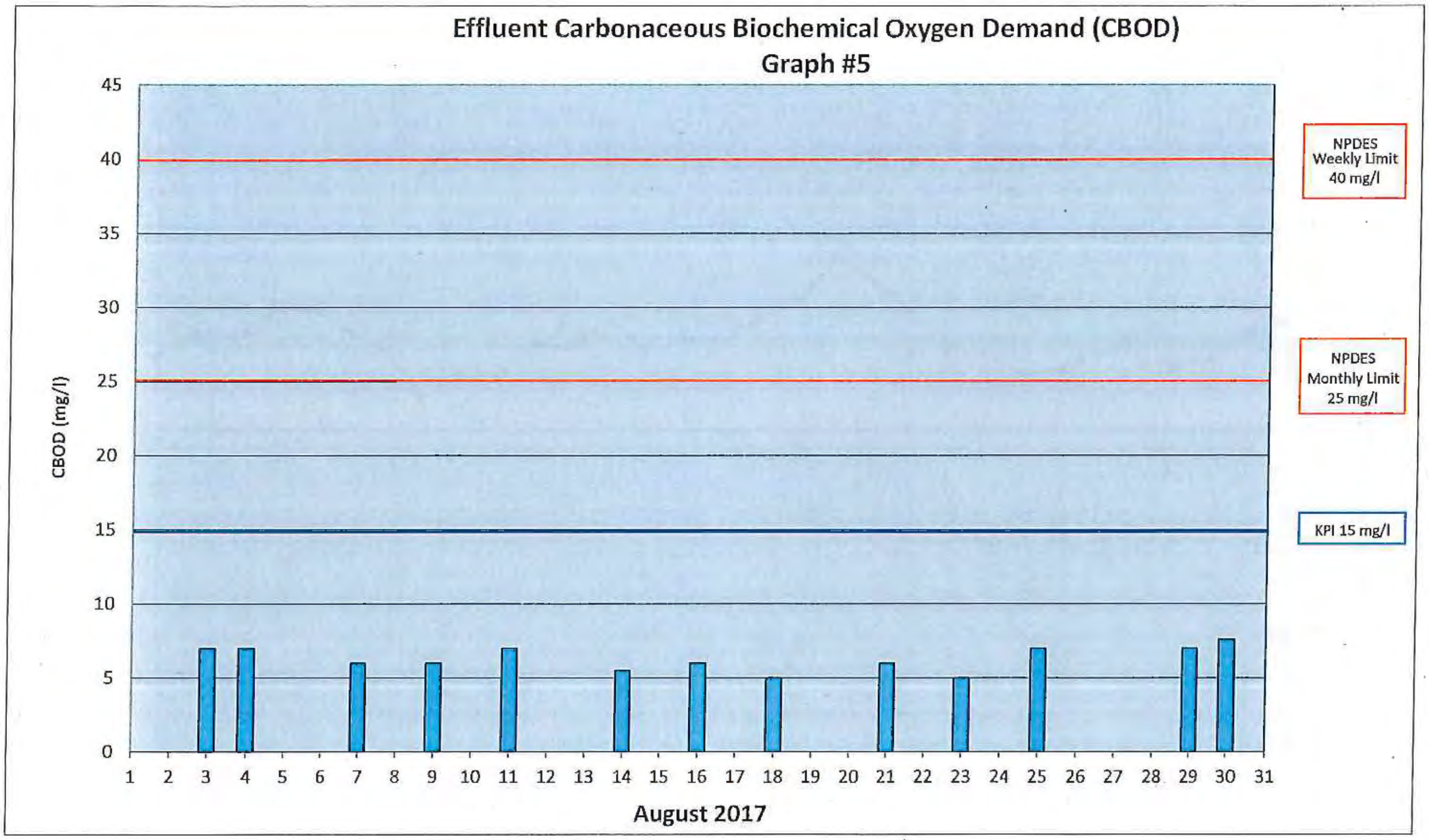
- kg/month (Kilograms per Month): 1 kilogram = 2.205 lbs.
- KPI (Key Performance Indicators): The Agency's process performance goals.
- Kwh (Kilowatt Hours): A unit of electric power equal to using 1 Kw for 1 hour.
- Milligrams per Liter (mg/L): A measure of the concentration by weight of a substance 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.


CMSA Influent Flow
Graph #1
Million Gallons/Day
Inches of Rain
Plant Inflow
Inches of Rain
August 2017

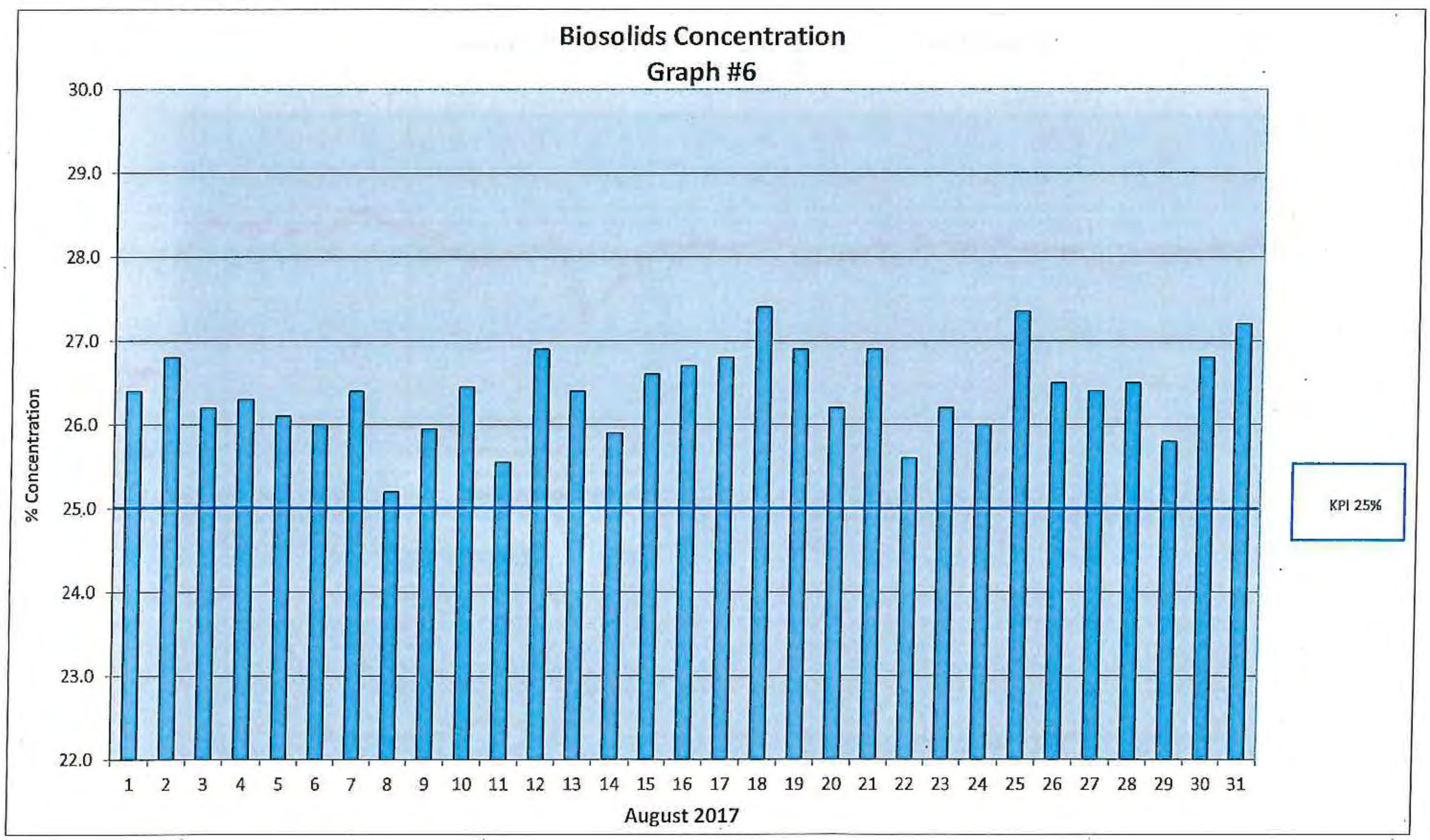

Collection System Influent Flows
Graph #2
Million Gallons/Day
RVSD
SRSD
SD #2
San Quentin
August 2017


Effluent Total Suspended Solids (TSS)
Graph #3
Daily TSS (mg/l)
50
45
40
35
30
25
20
15
10
5
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
August 2017
NPDES Weekly Permit 45 mg/l
NPDES Monthly Ave 30 mg/l
KPI 15 mg/l

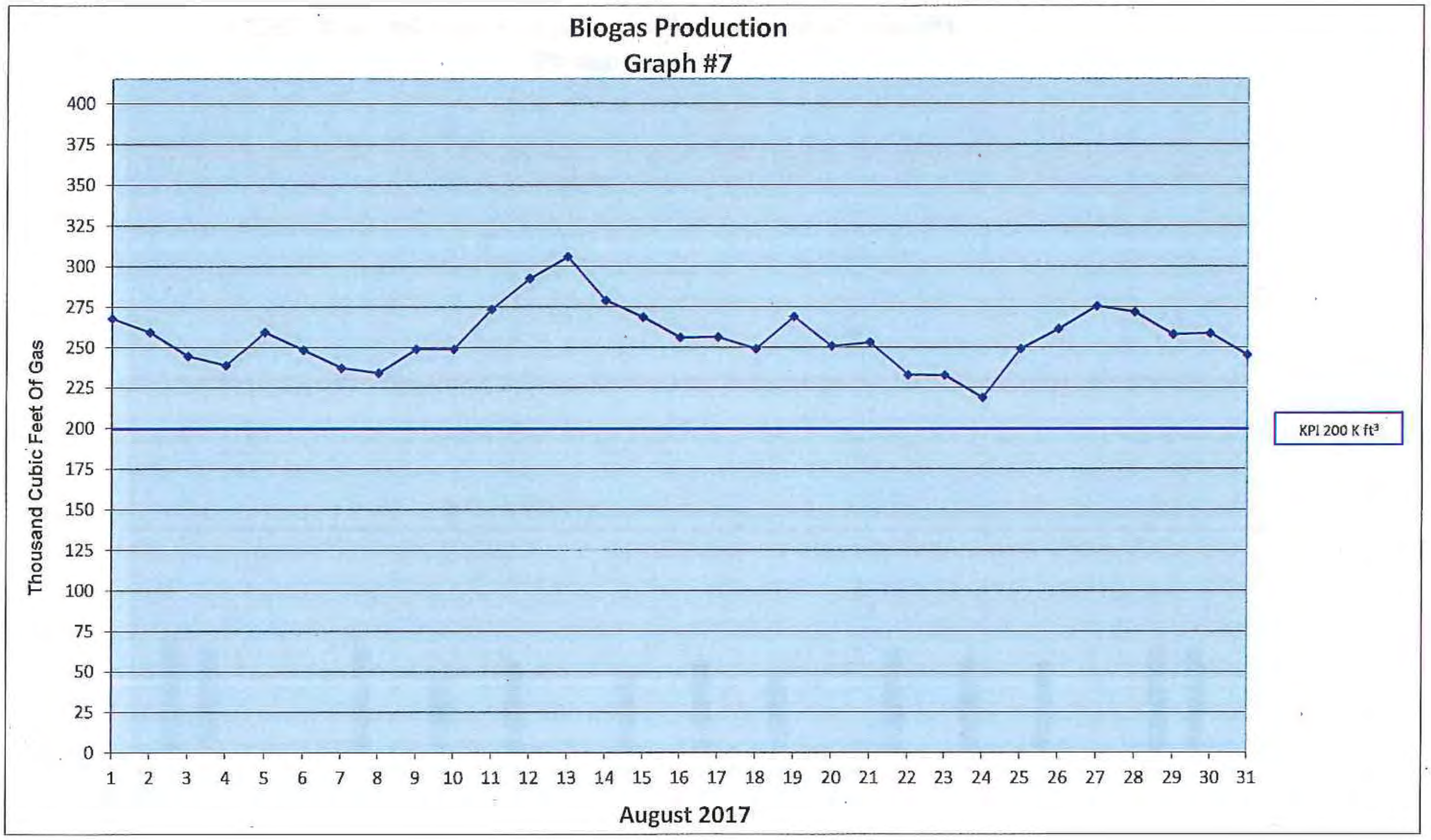

Total Coliform & Monthly Geometric Mean
Graph #4
Most Probable Number (MPN)
240.00
210.00
180.00
150.00
120.00
90.00
60.00
30.00
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
August 2017
Higher than normal value was attributed to a process shutdown to make repairs on the disinfection system.
NPDES Monthly Geometric Median Limit 240 MPN
Total Coliform
Geometric Mean
KPI Limit 30 MPN

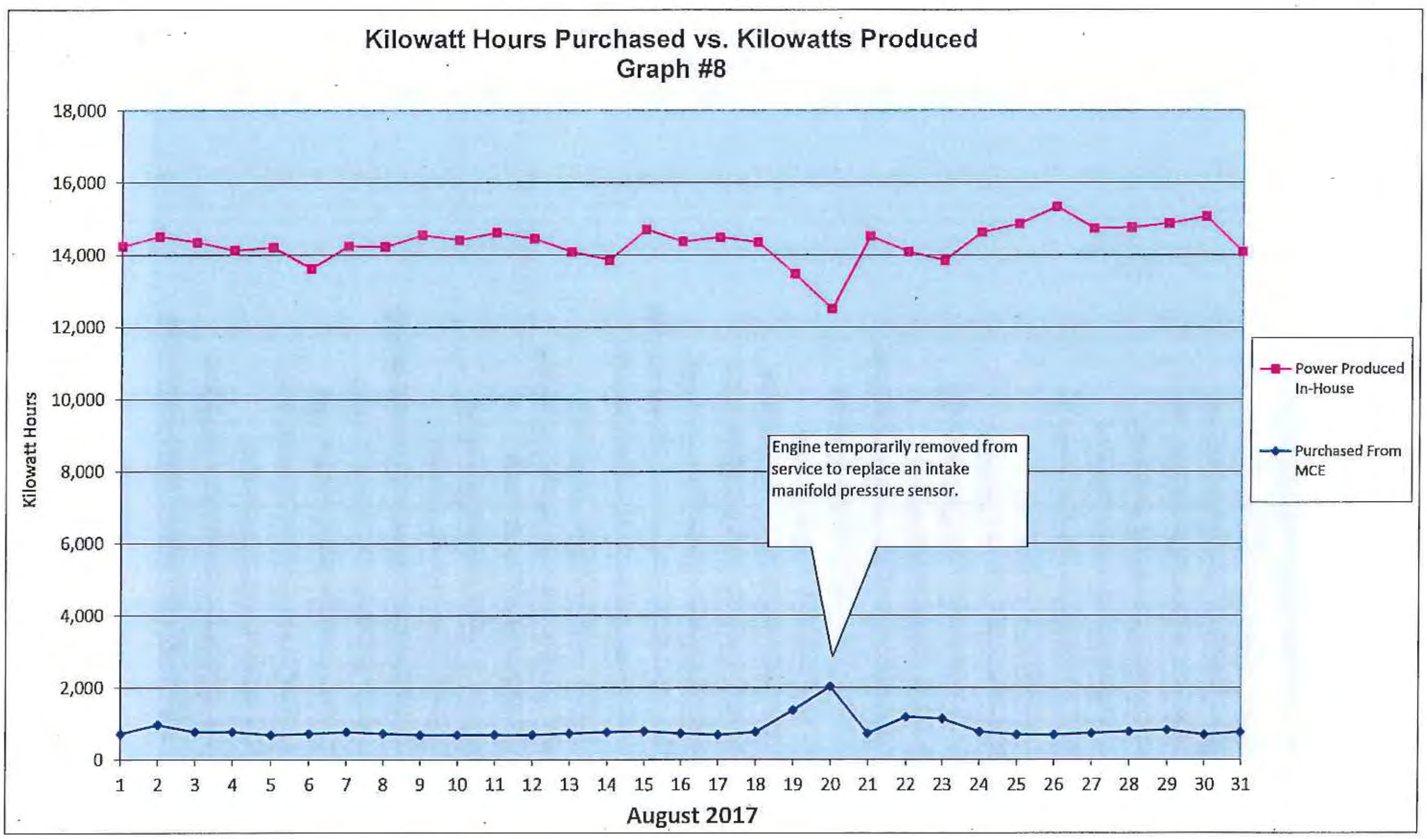


Effluent Carbonaceous Biochemical Oxygen Demand (CBOD)
Graph #5
CBOD (mg/l)
NPDES Weekly Limit 40 mg/l
NPDES Monthly Limit 25 mg/l
KPI 15 mg/l
August 2017



Biosolids Concentration
Graph #6
% Concentration
KPI 25%
August 2017


Biogas Production
Graph #7
Thousand Cubic Feet Of Gas
400
375
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
August 2017
KPI 200 K ft³


Kilowatt Hours Purchased vs. Kilowatts Produced
Graph #8
Kilowatt Hours
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
August 2017
Power Produced In-House
Purchased From MCE
Engine temporarily removed from service to replace an intake manifold pressure sensor.

Central Marin Sanitation Agency

BOARD MEMORANDUM

September 7, 2017

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager JD

Subject: Performance Metric Report – July and August 2017

Recommendation: Accept the July and August 2017 Performance Metric reports.

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
Effluent quality continues to be exceptional, process metrics were within normal ranges, and the treatment facility's processes are in the dry weather operational mode. Biosolids are beneficially reused at three locations during the dry weather season; two loads per week are transported to the Lystek biofertilizer facility in Fairfield, three loads are used for soil amendment and fertilizer at Solano County land application sites, and on Saturdays, when the land application site is closed, biosolids are used as alternate daily cover at the Redwood Landfill.

Table II – Employee Metrics
Training highlights included Defensive Driver, Traffic Control, and Confined Space safety training for most staff; an activated sludge process control class for operation and laboratory staff; and individual staff attendance at an ELAP Regulatory Workshop, a SCADA/PLC seminar, and North Bay Laboratory Committee meetings.

Table III - Environmental and Regulatory Compliance Metrics
There weren't any NPDES permit exceedances in July or August, and laboratory and pollution prevention activities were performed as scheduled.

Table IV - Public Outreach
There were eight odor alerts posted to the Agency website over the past two months, and there were no odor complaints. Alerts were for taking process tanks out of service for annual preventative maintenance, routine draining and cleaning the chlorine contact tanks, and the quarterly cleaning of the organic waste receiving facility.

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

Public Outreach Events
6/30 – 7/4 - Marin County Fair had 2,659 attendees take our environmental quiz

CMSA Tours
7/7 - North Bay Watershed Association Board of Directors and meeting attendees (46 people)
7/19 - San Domenico AP High School Teachers (20 people)
8/29 - City of Brentwood public works and solid waste staff and their consultants visited the Marin Sanitary Service and CMSA Food-to-Energy program facilities (6 people)

Attachments:
- July 2017 Performance Metric Report
- August 2017 Performance Metric Report

CMSA CY17 PERFORMANCE METRICS – July 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)	252.5 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)	96.7 wt 210 wt 136 wt	360 – 665 wt
3) Conventional Pollutant Removal	Removal of the conventional NPDES pollutants - Total Suspended Solids (TSS) and Biological Oxygen Demand (BOD) a. tons of TSS removed; % TSS removal b. tons of organics removed (BOD); % BOD removal	 434.1; 99.3% 338.9; 98.5%	 > 85% > 85%
4) Priority Pollutants Removal	Diversion of priority NPDES metals from discharge to the S.F. Bay: a. % Mercury b. % Copper	 97.9% 92.6%	 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)	8.50 Mft^3 5.44 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)	431,313 kWh 682 hrs; 91.6% $25,134	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	$1,425 /Mg 1,812 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 = 152 hrs. External = 57 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);	503 hrs 235 hrs (79.6%) 60 hrs (10.6%) 1.7	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)*	247.75 hrs.; *(1,089.5)* 2.5%; *(2.0%)*	< 5%

CMSA CY17 PERFORMANCE METRICS – July 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	178	150-250
3) Process Analyses	# samples analyzed by the CMSA laboratory for process control reporting and monitoring	465	400-600
4) Quality Control Testing	# of CMSA performed laboratory analyses for QA/QC purposes Accuracy of QA/QC tests	262 97.3%	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	3	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.	5	20 – 50
8) Permits Issued/Renewed	Permits issued for the pretreatment, pollution prevention, and FOG source control programs, and for groundwater discharge	10	variable

Table IV- PUBLIC OUTREACH

Metric	Definition	Measurement	Target/Goal
1) Public Education Events	Attendance at public education outreach events; # of booth visitors; *(YTD)*	2,659; *(3,473)*	3,000/year
2) School Events	Participation or sponsorship in school outreach events; attendees; *(YTD)*	0; *(1,033)*	variable
3) Agency Tours	Tours given to students and the public; # of people, *(YTD)*	56; *(229)*	variable
4) Odor Notifications	Number of odor alerts posted to the Agency website due to process or operational changes	3	1-10
5) Odor Complaints	Number of odor complaints received from the public	0	0

CMSA CY17 PERFORMANCE METRICS – August 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)	252.5 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)	94.2 wt 228 wt 180.2 wt	360 – 665 wt
3) Conventional Pollutant Removal	Removal of the conventional NPDES pollutants - Total Suspended Solids (TSS) and Biological Oxygen Demand (BOD) a. tons of TSS removed; % TSS removal b. tons of organics removed (BOD); % BOD removal	 505.9; 99.0% 354.1; 98.2%	 > 85% > 85%
4) Priority Pollutants Removal	Diversion of priority NPDES metals from discharge to the S.F. Bay: a. % Mercury b. % Copper	 96.1% 98.4%	 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)	7.92 Mft^3 5.07 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)	444,295 kWh 607 hrs; 81.6% $23,246	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	$1,402/Mg 1,831 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 = 16.5 hrs External = 3 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);	497 hrs 487 hrs (92.0%) 60 hrs (8.0%) 0.94	300 – 500 hrs ≥ 70% total CM hrs ≤ 30% total hours ≥ 0.45
3) Overtime Worked	Monthly hours of OT worked; *Year to dote hours of OT (YTD)* % of normal hours worked; *% Year to date (YTD)*	108.5; *(1,198)* 1.6%; *(2.0%)*	< 5%

CMSA CY17 PERFORMANCE METRICS – August 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	197	150-250
3) Process Analyses	# samples analyzed by the CMSA laboratory for process control reporting and monitoring	603	400-600
4) Quality Control Testing	# of CMSA performed laboratory analyses for QA/QC purposes Accuracy of QA/QC tests	294 97.3%	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	6	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.	12	20 – 50
8) Permits Issued/Renewed	Permits issued for the pretreatment, pollution prevention, and FOG source control programs, and for groundwater discharge	5	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; *(3,473)*	3,000/year
2) School Events	Participation or sponsorship in school outreach events; attendees; *(YTD)*	0; *(1,033)*	variable
3) Agency Tours	Tours given to students and the public; # of people, *(YTD)*	6; *(229)*	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	0	0

Central Marin Sanitation Agency **8j**

BOARD MEMORANDUM

September 7, 2017

To: CMSA Commissioners and Alternates

From: Jacky Wong, Assistant Engineer

Approved: Jason Dow, General Manger

Subject: Accept Completion of the Solids Handling Building Ventilation Improvements Construction Contract

Recommendation: Accept the Solids Handling Building Ventilation Improvements Project as complete, and authorize the General Manager to file the Notice of Completion with Marin County.

Summary: The Project scope of work included installation of supply and exhaust fans with distribution ducting in the Solids Handling Building, and integration of the supply fan operation into the existing fire alarm system.

The Project's construction contract was awarded to Buhler Commercial in January 2017, for a lump sum cost of $238,695. One contract change order was negotiated and executed totaling $2,733, or 1.1% of the construction contract amount. The final total Project cost, including consultant design and engineering services during construction, administrative expenses, and construction, is estimated to be $420,748.

Discussion: Buhler Commercial began onsite construction in March 2017 after taking delivery of the Project's major equipment, which included exhaust and supply fans, ducting, and controls. Construction was coordinated so that biosolids dewatering and hauling activities were not impacted. CMSA staff performed the construction management and inspection activities including negotiating the change order and ensuring all of the items on the construction punch list were addressed. Construction activities were completed on July 11, 2017.

The ventilation system improvements reduce operator exposure to the diesel fumes and biosolids dust when loading biosolids hauling trucks. They also minimize the potential for explosive atmospheric conditions to develop in the Solids Handling Building by increasing the air exchange rates in several areas to comply with NFPA 820 standards.

Economic Summary: The Project's design activities began in FY 16, and construction began in FY 17 and continued into FY 18. The total Project budget in the Capital Improvement Program was $450,920, and the total estimated Project expenditures are detailed in the table on the following page.

Total Project Budget	**$450,920**
Project Expenditures	
Engineering Design Services (Brown & Caldwell)	$175,091
Estimated Engineering Services During Construction (Brown & Caldwell)	$4,000
Original Construction Contract (Buhler Commercial)	$238,695
Construction Change Order (Buhler Commercial)	$2,733
Administrative Expenses (Printing, Mailing, Advertising, Etc.)	$229
Total Estimated Project Cost	**$420,748**

Alignment with Strategic Plan: This project supports the following value in the Agency's Strategic Business Plan "A safe and healthy workplace for its employees and stakeholders."

Project Photos: Construction photos below show the Solids Handling Building before and after the construction.

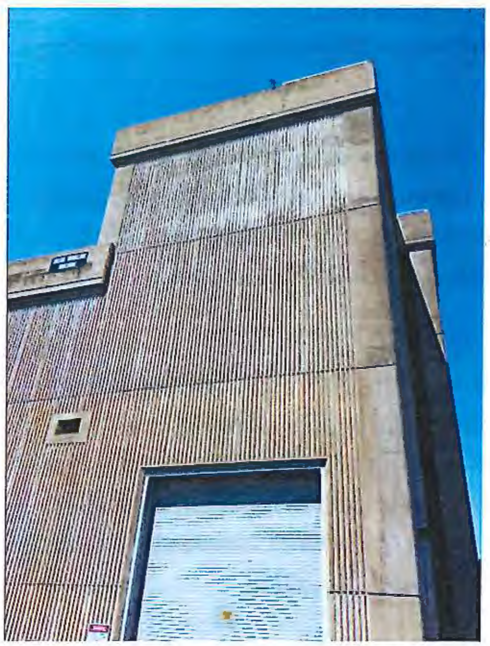


Figure 1 - Original SHB exterior (west view)

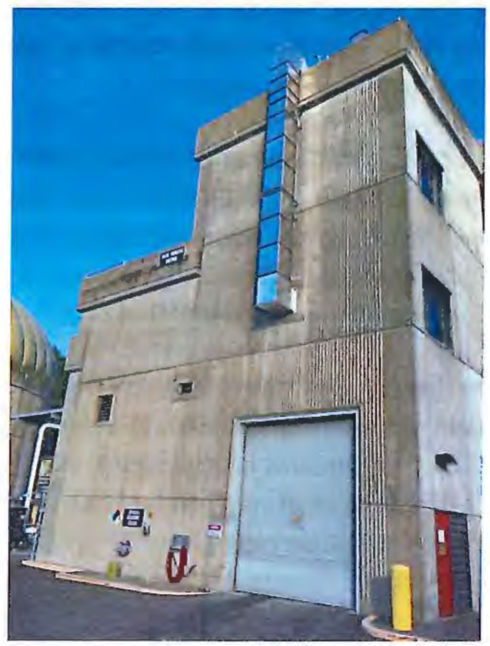


Figure 2 – New exhaust duct on SHB exterior

Figure 3 – Original SHB exterior (east view)

Figure 4 – New supply duct on SHB exterior

Figure 5 – New supply duct on SHB interior

Figure 6 – New exhaust duct on SHB interior

Figure 7 – New supply fan on SHB roof

Figure 8 – New exhaust fan on SHB roof

Central Marin Sanitation Agency

8k

BOARD MEMORANDUM

September 7, 2017

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager

Subject: Fiscal Year 2017 Green Business Report

Recommendation: Accept the Agency's FY 2017 Green Business Report.

Summary: After the close of the fiscal year, staff prepares and presents a Green Business Report (Report), to track, monitor, and create a record of our various recycling, disposal, product reuse, energy efficiency, and other green business activities. Agency staff members from different departments and work groups track the Agency's green business activities over the fiscal year and provide the metrics for the Report. The Report is posted on the Agency website, and is comprised of five distinct initiative areas that are briefly summarized below.

Table 1 - Agency Recycling: Materials and supplies that have been used by Agency staff or hired contractors, and are collected in separate containers for off-site recycling, such as paper and plastic products, green waste, aluminum, scrap metal, and cardboard.

Table 2 - Reused Agency Products: Reclaimed water, biogas, and biosolids that are renewable resources from the wastewater treatment processes.

Table 3 - Hazardous Material Collection and Disposal: Materials that are classified as hazardous substances by regulatory agencies that should be handled and disposed of properly to protect the environment, such as pharmaceuticals, lubricants, mercury-containing devices, and herbicides.

Table 4 - Green Activities: Programs and initiatives that provide an environmental benefit – reducing greenhouse gas emissions, potable water and fossil fuel use, and vehicle use.

Table 5 - Energy Saving Activities: Elements or components in recently completed or in-progress Agency projects and initiatives that increase energy efficiency.

Attachment

- FY17 Green Business Report

GREEN BUSINESS REPORT – FY 2017

I. Agency Recycling

Item	Description	Recycling Measurement	Quantity
1) Paper	Paper cups, plates, printer paper, newspaper, magazines, and other paper based materials are separately disposed of in office containers, collected by staff and transferred to 64 gallon bins that are picked up and recycled weekly by Marin Sanitary Service.	# of 64 gallon bins	62 *FY16 - 58*
2) Aluminum cans	Aluminum beverage cans, aluminum foil, and other aluminum materials are deposited by employees in bins outside the Agency lunch room. The bin contents are periodically transferred to a larger storage area, and the aluminum is sold at a Richmond recycling facility.	lbs. of aluminum	127 *FY16 - 273*
3) Plastics	Plastic food, beverage, and storage containers and other plastic materials (labeled #1-#7) are deposited by employees in bins outside the Agency lunch room. The bin contents are periodically transferred to a larger storage area, and the plastic is sold at the Marin Recycling Center.	# of 64 gallon bins	9 *FY16 - 8*
4) Scrap Metal	Iron, steel, and related metals are collected and sold for scrap at a recycling facility in Richmond.	lbs. of metal	134,650 FY16 -128,780
5) Cardboard	Waste cardboard boxes, packing, and similar material are collected in a 3-yard dumpster. Marin Sanitary Service picks up the dumpster and recycles the materials.	# of 3 yard bins	52 *FY16 - 50*
6) Green waste	Grass clippings, tree branches, and trimmings from pruning and landscaping activities are deposited in 3-yard dumpsters, and used by Marin Sanitary Service in a composting operation.	# of 3 yard bins	89 *FY16 - 78*

II. Reused Agency Products

Metric	Definition	Reuse Measurement	Quantity
1) Recycled water	Treated wastewater that is reused for Agency landscape irrigation, tank wash down, and cogeneration engine cooling, used offsite at the Remillard Pond, and delivered through the Agency's truck fill station.	million gallons/year % of effluent	273 5.8% *FY16 – 14.6%*
2) Biosolids	Treated biosolids that are beneficially reused as: - alternate daily cover at Redwood landfill - soil amendment/fertilizer for land application - biofertilizer production for agricultural use	 wet tons/year wet tons/year wet tons/year	 3,692 1,645 1,306
3) Biogas	Biogas generated in the Agency's anaerobic digesters is used for fuel in an engine-generator to produce on-site electricity.	Million ft^3 of biogas	104.7 *FY16 - 91.9*

CMSA GREEN BUSINESS REPORT – FY17

III. Hazardous Material Collection and Disposal

Metric	Description	Recycling Measurement	Quantity
1) Oils and Lubricants	Used oils and lubricants from CMSA equipment, vehicles, and engine-generators are collected and stored in a waste oil facility. The supplier periodically collects the materials for recycling.	gallons	Oil: 983 *FY16 – 700* Coolant: 200 *FY16 – 50*
2) Mercury	Collected mercury containing devices: - amalgam waste at dental offices is collected and disposed of by certified haulers - fluorescent tubes are collected by the public education program agencies - mercury thermometers exchanged for digital thermometers at CMSA	 kg linear feet # of thermometers	 3.7 1,288' 0
3) Pharmaceuticals	Old or unused pharmaceuticals are brought to pharmacies and police stations by the public for proper disposal. CMSA and the Marin County public education program agencies fund the collection and disposal expenses, and the program is administered by the Marin County Environmental Health Department.	lbs. of pharmaceuticals	7,413 *FY-16 – 7,073*
4) Batteries	Depleted, used, or damaged batteries collected by staff and brought to a Hazardous Waste facility and Interstate Battery. Sources of batteries include: - Agency vehicles - Devices (AA, C, D, 9V, etc.) and employee batteries brought from home	 # of batteries lbs.	 24 55
5) Electronic Waste	Electronic products that contain toxic materials, from Agency facilities and employees - cell phones, computers, computer monitors, process instrumentation, etc. – are collected and stored on-site, then periodically disposed of at the Marin Hazardous Household Waste Facility.	# of devices	341
6) Herbicides and Pesticides	The Agency uses the same types of herbicides and pesticide products utilized by the County of Marin as part of their Integrated Pest Management Program. Waste products are disposed of at the Marin Sanitary Service Household Hazardous Waste Facility.	gallons/lbs	Herbicide: 2.82 *FY16 – 2.3 gal* Insecticide: 0 *FY16 – 0.1 lb* Fungicide: 0 *FY16 – 8.1 gal*

CMSA GREEN BUSINESS REPORT – FY17

IV. Green Activities

Metric	Description	Environmental Benefit
1) Potable Water Conservation	High efficiency water fixtures have been installed in all Agency facilities and buildings. Staff records the Agency's daily potable water use.	Potable water use in FY17 was 169,048 gal *FY16 – 179,520 gallons*
2) Green Commuting	Programs encourage employees to use alternate commute methods such as carpool, biking, public transit, etc., when convenient and affordable for Agency employees. Administrative procedures are in place to assist in registering, tracking, and utilizing these modes of transportation.	In FY17, 11 Agency employees participated in the program, which reduces the number of vehicles on roads during commute hours, emissions and fossil fuel use.
3) Spare the Air Days	Participation in the Bay Area Air Quality Management District's Spare the Air Day program. The Agency does not use gasoline fueled landscape maintenance equipment on these specified days.	27 days in FY17 that resulted in lower emissions and GHG reduction
4) Increased Digital Document Management	Digital and email correspondence to replace hard copy mailing. Many agency documents are now posted on the Agency website for viewing.	Reduced use of paper, toner, and postage
5) Green vehicle fleet	Agency staff use bicycles and electric carts to travel around Agency property and within the treatment plant, and 40% of Agency vehicles are alternate fuel – Hybrids.	Fuel savings and reduced GHG emissions

V. Energy Saving Activities

Project/Initiative	Description of Energy Saving Aspect of initiative
1) PG&E Interconnection Agreement Modification Project	CMSA's electrical cogeneration system currently powers the Agency's facilities for an average 23 hours per day with biogas as its fuel source. There have been numerous days over the past year when CMSA could have generated enough electricity to meet the facility's power demand and supply excess power to the electrical grid. In May 2017, CMSA obtained a new utility interconnection agreement (IA) from PG&E that allows CMSA to supply power. The Agency is working with PG&E to upgrade on-site and off-site electrical systems to allow CMSA to supply excess generated power to the grid. The upgrades are expected to be completed by March 2018. CMSA is also negotiating a power sale agreement with Marin Clean Energy.
2) Power Monitoring Equipment	The Agency installed a power monitoring system in the switchgear building, which will track and record the facility's electricity usage at each distribution circuit breaker. The recorded power data provides the basic electrical characteristics and the data trends provide better knowledge of how energy is used within the facility. Data have been used for analyzing how to minimize waste, reduce energy consumption, and improve efficiency.

VI. Energy Saving Activities, cont.

Project/Initiative	Description of energy saving aspect of initiative
3) Lighting System Replacement	The Agency has a multi-year program to replace fluorescent, incandescent, and metal halide fixtures/bulbs throughout the Agency's facilities with energy-efficient lighting – electronic ballast fluorescents or LEDS. In FY 17, the Agency replaced seventy-two high-pressure sodium fixtures in the RAS Basement, Biotower Basement, Gallery B, Solids Handling Building Equipment Room, Centrifuge Room, Area 10 Basement, Digester Basement, and Aeration Blower Room with high-efficiency LED fixtures. These fixtures will save the Agency 40,953 kWh of electricity annually.
5) Energy Generation	The Agency uses a cogeneration system comprised of an internal combustion engine coupled to a generator to produce over 95% of the Agency's energy needs. The system is fueled by biogas generated in the Agency's anaerobic digesters and purchased natural gas; a small amount of utility electricity is purchased to minimize system disruptions when energy demand instantaneously changes. For FY17, metrics for energy generation and the resulting electricity procurement savings are: - Biogas generation (from Table 2): *104.7 million cubic feet ar 67.0 million cubic feet of NG (equivalent gas)* - *Natural gas purchase: 49,980 therms* - *Annual energy costs without cogeneration: $ 1,098,107 (assumes purchasing all electricity and 1/6 current NG for boiler fuel)* - *Electricity savings due to cogeneration: $ 908,282 (non-cogen energy costs less electric usage FY 16)* - *Electricity savings due to biogas use: $ 846,862 (value of biogas used as engine fuel used during peak and part-peak hours)*

Central Marin Sanitation Agency

BOARD MEMORANDUM

September 7, 2017

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager JD

Subject: Revised Central Marin Food-to-Energy Program Agreement with Marin Sanitary Service

Recommendation: Approve the revised Central Marin Food-to-Energy Program Agreement with Marin Sanitary Service.

Summary: CMSA and Marin Sanitary Service (MSS) entered into a Commercial Food Waste Processing and Disposal Services Agreement in May 2013 to support the Central Marin Food-to-Energy Program (Program). The agreement's term expires on September 30, 2017, and over the past several months CMSA and MSS staff have met to discuss various revisions to the agreement to reflect the current business relationship and Program activities. Staff recommends the Board approve the revised agreement for this successful Program and our public-private partnership with MSS.

Discussion: In January 2014, MSS began delivering pre-processed food waste to CMSA's organic waste receiving facility two days per week for pilot testing, and within a few months, began delivering food waste six days per week. Currently, CMSA is receiving upwards of eight tons of commercial food waste per day and 191 restaurants and markets in the MSS service area participate in the Program. The Program has been very successful, is the primary element in the Agency's organic waste receiving program, and has contributed to nearly tripling the Agency's biogas production. Currently, CMSA's cogeneration system is averaging over 23 hours per day of renewable power production for the Agency's operations.

There are numerous editorial and non-substantive revisions in the attached agreement, with noteworthy changes shown in red text and summarized below. Staff can provide Board members with a marked-up version of the agreement upon request.

1) Agreement retitled "Central Marin Food-to-Energy Program".
2) Whereas statement added to summarize the organic waste diversion goal and mandate requirements of AB 1383. (pg. 3)
3) Whereas statement about F2E Program initiation revised. (pg. 4)

4) CMSA, MSS, and Common Service Area definitions replace the general service area definition (pg 6)
5) Term is from the revised agreement execution date to June, 30, 2022. (pg. 13)
6) Food waste delivery and acceptance volumes increased from 15 tons/day and 75 tons/week to 20 tons/day and 75 tons/week. (pg. 14)
7) New section 6.04c added for cost sharing of the quarterly cleaning of the organic waste receiving facility's storage tank. (pg. 17)
8) CMSA monthly and annual reporting sections removed from Section 6 as we haven't provided those reports in the past. (pg. 18)
9) Disposal fee set at $22.50 per/ton delivered through 6/30/18, and increases by CPI each subsequent fiscal year. (pg. 19)
10) CMSA retains all Renewable Energy Credits associated with the energy generation resulting from the receiving and processing of the food waste. (pg. 19)

Attachment:

- Central Marin Food-to-Energy Program Agreement between CMSA and MSS

Marin Sanitary Service
CONSERVATION -- OUR EARTH, OUR MISSION, OUR JOB

AGREEMENT BETWEEN

THE CENTRAL MARIN SANITATION AGENCY

AND

MARIN SANITARY SERVICE

FOR THE

CENTRAL MARIN FOOD-TO-ENERGY PROGRAM

September 2017

TABLE OF CONTENTS

EXHIBITS

AGREEMENT BETWEEN
THE CENTRAL MARIN SANITATION AGENCY
AND
MARIN SANITARY SERVICE
FOR THE
CENTRAL MARIN FOOD-TO-ENERGY PROGRAM

This Agreement is entered into and executed as of the ___ day of September, 2017 (the "Effective Date"), by and between the Central Marin Sanitation Agency ("CMSA") a joint powers authority in Marin County, and Marin Sanitary Service ("MSS"), a corporation formed under the laws in the State of California, (together referred to as the "Parties" or "Party").

RECITALS

WHEREAS, the State of California ("State") through enactment of the California Integrated Waste Management Act of 1989, has directed all local agencies to promote recycling and to maximize the use of feasible source reduction, recycling, and composting options in order to reduce the amount of municipal solid waste that must be disposed of by landfill; and

WHEREAS, organic food waste is one of the largest components of landfilled material; and

WHEREAS, AB 1383 targets a 50% reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020, and a 75% reduction in the level of the statewide disposal of organic waste from the 2014 level by 2025;

WHEREAS, CMSA is a regional wastewater treatment agency located in San Rafael that provides wastewater, resource recovery, and environmental services to the residents and businesses in San Rafael, Larkspur, Corte Madera, Ross, Fairfax, San Anselmo, and unincorporated areas in the Central Marin County, including San Quentin State Prison; and

WHEREAS, MSS is the solid waste company that serves many residents and businesses in Central Marin County, and has a similar service area as CMSA; and

WHEREAS, CMSA has two anaerobic digesters that produce biogas for use as renewable fuel and a cogeneration engine to produce electricity to power CMSA's facilities and treatment plant; and

WHEREAS, CMSA and MSS partnered with the City of San Rafael in 2008 to conduct a Methane Capture Feasibility Study that showed MSS could then collect up to 15 tons of commercial food waste per day in the MSS Service Area (as defined below), and that food waste could be processed in the CMSA digesters to produce additional biogas; and

WHEREAS, in January 2014, CMSA and MSS implemented a Central Marin Food-to-Energy (F2E) program in accordance with that certain Agreement Between The Central Marin Sanitation Agency and Marin Sanitary Service, Inc. for Commercial Food Waste Processing and Disposal Services dated May 20, 2013 (the "Prior Agreement") that has successfully reduced greenhouse gas emissions, reduced use of landfill volume, and saved electricity and natural gas resources within Central Marin County; and

WHEREAS, CMSA wishes to accept, and CMSA's Facility has the capacity to accept commercially generated food waste from the MSS Service Area in accordance with the terms of this Agreement; and

WHEREAS, MSS wishes to deliver commercially generated food waste to CMSA's Facility; and

WHEREAS, the Parties agree to cooperate with each other in good faith to implement or amend this Agreement.

NOW, THEREFORE, in consideration of the mutual promises, covenants, guarantees and conditions contained in this Agreement and for other good and valuable consideration, CMSA and MSS agree as follows:

ARTICLE 1. DEFINITIONS

Accept (or **Acceptance** or other variations thereof) is the transfer of ownership of Food Waste from MSS to CMSA.

Agreement means this Agreement, including all exhibits and attachments that are incorporated herein by reference. This Agreement may be amended and supplemented pursuant to Section 12.06.

Applicable Law means all statutes, rules, regulations, permits, orders, or requirements of the Federal, State, County, and local government authorities and agencies having applicable jurisdiction, that apply to or govern the Facility, the Site, or the performance of the Parties' respective obligations hereunder in effect as of the Execution Date and as amended and/or enacted hereinafter.

Change in Law means the occurrence of any event or change in Applicable Law as follows:

(1) the adoption, promulgation, amendment, modification, rescission, revision or revocation of any Applicable Law or change in judicial or administrative interpretation thereof occurring after the Execution Date hereof; or

(2) any order or judgment of any Federal, State or local court, administrative agency or governmental body issued after the Execution Date hereof if:

(i) such order or judgment is not the result of the willful misconduct or negligent action or inaction of the Party relying thereon or of any third party for whom the Party relying thereon is directly responsible; and

(ii) the Party relying thereon, unless excused in writing from so doing by the other Party, shall make or have made, or shall cause or have caused to be made, Reasonable Business Efforts in good faith to contest such order or judgment (it being understood that the contesting in good faith of such an order or judgment shall not constitute or be construed as willful misconduct or negligent action of such Party); or

(3) the imposition by a governmental authority or agency of any new or different material conditions in connection with the issuance, renewal, or modification of any permit or approval after the Execution Date; or

(4) the failure of a governmental authority or agency to issue, or the suspension, termination or rejection of, any permit or approval after the Execution Date hereof.

CMSA Service Area the service area served by CMSA as outlined in green on Exhibit C attached hereto.

Collectors means MSS and those business entities engaged by MSS to collect Food Waste from commercial food waste generators.

Commercial Food Waste Generator means those restaurants and food processing businesses participating in MSS' Food-to-Energy program

Common Service Area means that portion of the CMSA Service Area that lies within the MSS Service Area.

Contract Year means CMSA's fiscal year of July 1 of one year to June 30 of the following year.

Delivery (Deliver or **Delivered** or other variations thereof) means arrival of MSS at the Site entrance during Facility Receiving Hours for the purposes of delivering Food Waste to CMSA.

Disposal means depositing of Pomace or Residual of Digested Food Solids for beneficial use, including, but not limited to composting, land application, alternative daily cover at authorized landfills, or dumping at an authorized landfill.

Facility means the CMSA's wastewater treatment plant located at 1301 Andersen Drive, San Rafael, California.

Facility Receiving Hours are hours when the CMSA will be open to Accept Food Waste at the Facility as defined in Section 6.03.

Food Waste means organic consumer food materials acceptable for Pre-processing that is collected from Commercial Food Waste Generators within the MSS Service Area, or within the respective service areas of other Marin County solid waste haulers that contract with MSS for Food Waste Pre-processing services. Food Waste includes fruits, vegetables, meat, seafood, small bones, dairy, eggs, breads, pastas, sauces, cooking oil, grease, tea bags, coffee grounds and filters, and other related food waste materials.

Force Majeure event includes but is not limited to floods, earthquakes, other extraordinary acts of nature, war or insurrection, riots, or other similar catastrophic events, not caused or maintained by the Party seeking relief, which event is not reasonably within the ability of that Party to intervene in or control to the extent that such event has a materially adverse effect on the ability of that Party to perform its obligations hereunder. No event, the effects of which could have been prevented by reasonable precautions, including compliance with Applicable Laws, shall be a Force Majeure event. No failure of performance by CMSA, MSS, their respective contractors or other Collectors shall be a Force Majeure event unless such failure is itself caused by a Force Majeure event as to CMSA, MSS, their respective contractors and/or other Collectors.

Hazardous Waste means materials that are hazardous, including but not limited to:

(1) "Hazardous Waste" pursuant to Section 40141 of the California Public Resources Code; all substances defined as Hazardous Waste, acutely Hazardous Waste, or extremely Hazardous Waste by Sections 25110.02, 25115, and 25117 of the California Health and Safety Code (the California Hazardous Waste Control Act), California Health and Safety Code Section 25100 et seq., and future amendments to or recodification of such statutes or regulations promulgated thereunder, including 23 California Code of Regulations Sections 2521 and 2522;

(2) materials regulated under the Resource Conservation and Recovery Act, 42 U.S.C. Section 6901 et seq., as amended (including, but not limited to, amendments thereto made by the Solid Waste Disposal Act Amendments of 1980), and related Federal, State and local laws and regulations;

(3) materials regulated under the Toxic Substances Control Act, 15 U.S.C. Section 2601 et seq., as amended, and related Federal, State of California, and local laws and regulations, including the California Toxic Substances Account Act, California Health and Safety Code Section 25300 et seq.;

(4) materials regulated under the Comprehensive Environmental Response, Compensation and Liability Act, 42 USC 9601, et seq., as amended, and regulations promulgated thereunder; and

(5) materials regulated under any future additional or substitute Federal, State or local laws and regulations pertaining to the identification, transportation, treatment, storage or disposal of toxic substances or Hazardous Waste; with the exception that Hazardous Waste, for the purpose of this Agreement, shall specifically exclude Household Hazardous Waste.

If two or more governmental agencies having concurrent or overlapping jurisdiction over Hazardous Waste adopt conflicting definitions of "Hazardous Waste," for purposes of collection, transportation, processing and/or disposal, the more restrictive definition shall be employed for purposes of this Agreement.

Holidays are New Year's Day, Martin Luther King's Birthday, President's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the day after Thanksgiving Day, and Christmas Day or any other day that CMSA gives MSS seventy-two (72) hours' prior written notice that the Facility will not be in operation that day.

Household Hazardous Waste are those wastes resulting from products used by the general public for household purposes which, because of their quantity, concentration, or physical or chemical characteristics, may pose a substantial known or potential hazard to human health or the environment when improperly treated, disposed, or otherwise managed.

Labor Action means labor unrest, including strike, work stoppage, lock-out, slowdown, sick-out, picketing, industrial disturbance, and any other concerted job action.

Notice (or **Notify** or other variation thereof) means written notice given by one Party to the other Party in relation to the execution of the various obligations of both Parties under this Agreement.

MSS Service Area means the geographical area where the residents and businesses that MSS serves are located as of the date this Agreement is executed by CMSA as outlined in red on Exhibit C attached hereto.

Permits means all Federal, State and local, statutory or regulatory approvals, or other measures or mechanisms necessary for either Party to be in full legal compliance in the performance of all their obligations, as renewed or amended from time to time.

Person includes any individual, firm, association, organization, partnership, corporation, trust, joint venture, the United States, the State, a county, a municipality or special district, or any other entity whatsoever.

Pomace means rejected material resulting from processing the Food Waste through the Facility's paddle finisher, after acceptance and prior to digestion, that requires recycling or Disposal.

Pre-process means the handling, removal of Unacceptable Materials, and grinding of the Food Waste by MSS at its Transfer Station prior to delivery to the Facility.

Process (or **Processing** or any other variation thereof) means the handling, digestion, and Disposal of Food Waste and Pomace and Residual of Digested Food Solids by CMSA at the Facility after Acceptance.

Reasonable Business Efforts means those efforts a reasonably prudent business Person would expend under the same or similar circumstances in the exercise of such Person's business judgment, intending in good faith to take steps calculated to satisfy the obligation that such Person has undertaken to satisfy.

Residual of Digested Food Solids means material remaining after digestion and dewatering of Food Waste that requires Disposal.

Site means the parcel of land on which the Facility is situated.

Ton means a unit of measure for weight equivalent to two thousand (2,000) standard pounds (where each pound contains 16 ounces).

Transfer Station means MSS' transfer station at 1050 Andersen Drive, San Rafael, at which the Food Waste is Pre-processed before it is transported to the Facility.

Unacceptable Material(s) means wastes or other materials that CMSA cannot Process as part of the Food Waste and is considered contamination, including but not limited to plastic, styrofoam, glass, metal, paper, cardboard, wood, yard waste, cans, straps, ropes, cords, wires, bottles or any other material in quantities that would impact CMSA's ability to process Food Waste or meet regulatory compliance. De minimis quantities of these wastes which under typical operating circumstances would not significantly disrupt Facility operations will not be considered Unacceptable Materials. This definition may evolve over time by mutual agreement of the Parties to reflect new methods that allow processing of additional materials.

Uncontrollable Circumstance(s) means any act, event, or condition outside either Party's control and not the result of willful or negligent action or inaction on the part of such Party, whether affecting the Facility, the Transfer Station or either Party, which materially and adversely affects the ability of either Party to perform any of its obligations under this Agreement, including:

(1) The failure of any appropriate Federal, State, or local public agency or private utility having operational jurisdiction in the area in which the Facility or the Transfer Station is located, to provide and maintain utilities, services, water, sewer or power transmission lines to the Facility or the Transfer Station which are required for Facility operations or Transfer Station operations; or

(2) A Change in Law; or

(3) The suspension or interruption of either Party's operations as a result of any release, spill, power outage, contamination, migration or presence of any Hazardous Waste, petroleum and petroleum products or as a result of any release, spill, contamination of toxic materials where the Party is not liable for the release, spill or contamination, or a potentially responsible party. The suspension of operations due to a release, spill or contamination where the Party's liability for the release, spill or contamination arises solely from Party's status as the operator of the facility or owner of the property will be considered an Uncontrollable Circumstance; or

(4) A process upset to the Facility or the Transfer Station due to a toxic load or similar event not related to Food Waste processing and that prevents the use of the digesters; or

(5) A Force Majeure event that temporarily or permanently interrupts Facility operations or Transfer Station operations; or

(6) A Facility equipment or control system failure that constitutes a Force Majeure event and that interrupts the ability of the Facility to receive and process the Food Waste; or

(7) A Transfer Station equipment failure that constitutes a Force Majeure event and that interrupts the ability of the Transfer Station to receive, preprocess, or transport Food Waste.

The following are excluded from Uncontrollable Circumstances, without limitation, unless caused by an Uncontrollable Circumstance listed above:

(1) Adverse changes in the financial condition of either Party or any Change in Law with respect to any taxes based on or measured by net income, or any unincorporated business, payroll, franchise or employment taxes;

(2) The consequences of errors on the part of either Party, its employees, agents, subcontractors or affiliates, including errors in plans and specifications that should reasonably have been identified;

(3) The failure of either Party to secure patents, technical licenses, trademarks, and the like necessary for delivery and processing of Food Waste;

(4) The lack of fitness for use, or the failure to comply with the plans and specifications, of any materials, equipment or parts constituting any portion of the Facility or the Transfer Station; and

(5) Labor Actions of or affecting the employees or contractors (including, in the case of MSS, other Collectors) of the Party that is asserting Uncontrollable Circumstances.

ARTICLE 2. REPRESENTATIONS AND WARRANTIES

2.01 Of CMSA. CMSA represents and warrants as of the date hereof:

a. Status. CMSA is a publicly owned utility formed under the California Joint Exercise of Powers Act.

b. Authority and Authorization. CMSA has full legal right, power, and authority to execute this Agreement and perform its obligations hereunder. This Agreement has been duly executed by CMSA and constitutes a legal, valid, and binding obligation of CMSA enforceable against CMSA in accordance with its terms. CMSA has complied with Applicable Law in entering into this Agreement.

c. No Conflicts. The execution by the CMSA of this Agreement, the performance by the CMSA of its obligations under, and the fulfillment by the CMSA of the terms and conditions of, this Agreement does not knowingly (1) conflict with, violate or result in a breach of any Applicable Law; or (2) conflict with, violate, or result in a breach of any term or condition of any judgment, order or decree of any court, administrative agency or other governmental authority, or any agreement or instrument to which CMSA is a Party or by which CMSA or any of its properties or assets are bound, or constitute a Default thereunder.

d. No Approvals. CMSA warrants that all legally required Permits, qualifications and approvals of whatsoever nature have been secured for CMSA to provide services hereunder and meet CMSA's obligations, and CMSA further warrants that it shall, at its sole cost and expense, keep in effect or obtain at all times during the Term all permits, and approvals which are legally required for CMSA to provide such services and meet its obligations.

e. No Litigation. There is no action, suit, proceeding or investigation, at law or in equity, before or by any court or governmental authority, commission, board, agency or instrumentality pending or, to the best of CMSA's knowledge, threatened, against CMSA wherein an unfavorable decision, ruling or finding, in any single case or in the aggregate, would materially adversely affect the performance by CMSA of its obligations hereunder or in connection with the transactions contemplated hereby, or which, in any way, would adversely affect the validity of, or the ability to enforce, this Agreement or any other agreement or instrument entered into by CMSA in connection with the transactions contemplated hereby.

f. Public Works. The services requested by CMSA under this Agreement do not constitute a "public work" and are not subject to any of the provisions of the Public Works law, Labor Code Sections 1720-1901, nor of the regulations promulgated thereunder.

2.02 Of MSS. MSS represents and warrants as of the date hereof:

a. Status. MSS is a corporation, duly organized and validly existing under the laws of the State of California.

b. Authority and Authorization. MSS has full legal right, power and authority to execute this Agreement, and perform its obligations hereunder. This Agreement has been duly executed by MSS and upon execution constitutes a legal, valid, and binding obligation of MSS enforceable against MSS in accordance with its terms and in accordance with MSS' corporate resolution. MSS has complied with Applicable Law in entering into this Agreement. Notwithstanding the foregoing, MSS does not have the authority to act for, or to waive any rights of, any of the jurisdictions in the MSS Service Area with respect to the Food Waste delivered to the Facility.

c. No Conflicts. Neither the execution by MSS of this Agreement, the performance by MSS of its obligations hereunder, nor the fulfillment by MSS of the terms and conditions hereof: (1) conflicts with, violates, or results in a breach of Applicable Law; or (2) conflicts with, violates or results in a breach of any term or condition of any judgment, order or decree of any court, administrative agency or other governmental authority, or any agreement or instrument to which MSS is a Party or by which MSS or any of its properties or assets are bound, or constitutes a Default thereunder.

d. No Approvals. No approval, authorization, license, permit, order or consent of, or declaration, registration or filing with any governmental or administrative authority, commission, board, agency or instrumentality is required for the valid execution and delivery of this Agreement by MSS.

f. No Litigation. There is no action, suit, proceeding or investigation, at law or in equity, before or by any court or governmental authority, commission, board, agency or instrumentality pending or, to the best of MSS's knowledge, threatened, against MSS that would materially adversely affect the performance by MSS of its obligations hereunder or in connection with the transactions contemplated hereby, or which, in any way, would adversely affect the validity of, or the ability to enforce this Agreement or any other agreement or instrument entered into by MSS in connection with the transactions contemplated hereby.

ARTICLE 3. THE PARTIES

3.01 Independent Contractor.

The Parties intend that each will perform its obligations as an independent contractor and neither as a partner of or joint venturer with the other. No agents, employees, contractors, consultants, licensees, agents or invitees of a Party will be deemed to be employees, contractors, licensees, agents or invitees or agents of the other Party.

3.02 Parties in Interest.

Nothing in this Agreement, whether express or implied, is intended to confer any rights on any Persons other than the Parties and their respective representatives, successors, and permitted assigns.

3.03 Binding on Successors.

Subject to Section 12.03 below, the provisions of this Agreement shall inure to the benefit of and be binding on the successors and permitted assigns of the Parties.

3.04 Confidentiality of Information.

The Parties acknowledge and agree that information submitted by either Party pursuant to this Agreement may be subject to compulsory disclosure upon request from a member of the public under the California Public Records Act, Government Code Section 6250 *et seq.*

3.05 Sole Responsibility.

Each Party shall be solely responsible for the acts and omissions of its officers, employees, contractors, and agents.

ARTICLE 4. TERM OF AGREEMENT

4.01 Term.

This Agreement shall become effective on the Effective Date and continue in effect for approximately five (5) years thereafter (the "Term") unless terminated earlier by either Party in accordance with Article 7 or 11. The first year of the Term will begin on the Effective Date and end on June 30, 2018 and the fifth year of the Term will end on June 30, 2022.

4.02 Term Extensions.

a. **Agreement to Extend.** The Parties may mutually agree in writing to extend this Agreement after the end of the initial Term. Each extension will be of at least 12 months in duration and will be part of the Term. The Parties shall endeavor to commit to an extension at least ninety (90) days before the expiration of the then-current Term.

b. Agreement in Full Effect. All provisions of this Agreement shall remain in effect during any extension.

4.03 Survival of Certain Provisions.

All indemnifications provided for herein and any other rights and obligations of the Parties expressly stated to survive the termination of this Agreement, shall survive such termination including, but not limited to, the following provisions: Section 6.05 (Records and Reports), Article 8 (Insurance) and Article 9 (Indemnity).

ARTICLE 5. PREPARATION, DELIVERY, AND ACCEPTANCE OF FOOD WASTE

5.01 Delivered Food Waste.

MSS will use Reasonable Business Efforts and will employ specified procedures to ensure that all Food Waste Delivered to CMSA's Facility has been Pre-processed, is free of Unacceptable Materials, and is acceptable based on CMSA's requirements for its Food Waste processes and its Facility processes as set forth in this Agreement.

a. Grinding of Food Waste. Before Delivery, the Food Waste must be ground into pieces approximately one inch square in size or smaller, through a hammermill or like equipment.

b. Preventing Contamination of Loads. MSS will use Reasonable Business Efforts to prevent Unacceptable Materials from being included in Food Waste Delivered to CMSA, including, but not limited to, the education of those Collectors and Commercial Food Waste Generators who utilize MSS' services, and the termination of the Delivery to the Facility of Food Waste collected from Commercial Food Waste Generators who fail to comply with the Unacceptable Waste requirements of this Agreement. MSS will require its Commercial Food Waste Generators to sign a Food Waste Program Participation Agreement (Exhibit B) that acknowledges both the requirements of this Agreement, as well as the Participant Assessment and Contamination Controls procedures which are attached to this Agreement as Exhibit A.

5.02 Acceptance of Food Waste.

a. Acceptance and Ownership of Food Waste. CMSA shall accept an aggregate of up to 20 tons per day, or 90 tons per week, of Food Waste from MSS during the Term. CMSA and MSS agree to discuss adjusting these maximum amounts based on actual program performance as the Food Waste program matures.

Notwithstanding the above, CMSA shall have the right but not the obligation to inspect each and every load of Food Waste to confirm that no Unacceptable Materials are contained therein. Food Waste will be deemed Accepted unless CMSA rejects the materials as they are being dumped or immediately after dumping at the Facility. If the Food Waste is contaminated in a manner that could not be ascertained upon visual inspection during dumping but CMSA notifies MSS prior to completion of processing that the Food Waste contains Unacceptable Materials, it shall have the right to reject the remainder of that load of Food Waste.

b. Rejection of Unacceptable Material.

(1) Inspection. CMSA may use Reasonable Business Efforts to detect and discover Unacceptable Material.

(2) Rejection of Contaminated Loads. CMSA may reject any loads containing Unacceptable Materials, if a qualified CMSA representative observes Unacceptable Materials discharged into the Food Waste receiving tank and believes, using his/her professional judgment, that the Unacceptable Materials are of a type or quantity that will disrupt Facility operations (e.g., by clogging pipelines or damaging equipment). CMSA has developed a standard operating procedure for receiving MSS deliveries that provides guidance to CMSA and MSS staff on the types and quantities of Unacceptable Materials that have the potential to disrupt Facility operations.

Should CMSA reject any Delivered loads of Food Waste at the Facility due to the presence of Unacceptable Materials, CMSA shall immediately upon discovery notify the delivery truck driver and the MSS authorized representative (as defined below) verbally, identifying CMSA's reason for rejection of the Delivered Food Waste and identifying the specific MSS truck that Delivered the rejected Food Waste, if possible. If CMSA rejects Food Waste Delivered to the Facility per Section 5.02.a, MSS will promptly remove the rejected Food Waste from the Facility at its own expense.

ARTICLE 6. OTHER PROGRAM COMMITMENTS

6.01 Facility Operations.

a. Operating Throughput Commitment. MSS estimates a maximum of twenty (20) tons of Food Waste per day or ninety (90) tons of Food Waste per week (after the required Pre-processing).

b. Vehicle Turnaround. CMSA will use Reasonable Business Efforts to allow MSS' vehicles to enter, position their vehicles for dumping, dump their load of Food Waste (including Facility clean up), turnaround and exit the Facility within an average of sixty (60) minutes or less after arriving at the Facility absent vehicle breakdown, driver negligence, lack of cooperation on the part of the driver, or driver parking to use restrooms, telephone or other driver or truck-related issues, and provided that the truck arrives at the Facility during Facility Receiving Hours.

c. Facility Clean-up. MSS will clean and wash down the Facility's Food Waste receiving area after each load of Food Waste is dumped into its underground receiving tank. Upon completion of the dumping and cleaning, all debris and liquid waste that may have spilled during the dumping operation shall be removed and the area left in a clean and orderly state. Washdown water, hoses, brooms, and a dumpster are located at the Facility's Food Waste receiving area and may be used by MSS for Facility clean-up. If MSS fails to clean up its debris and/or liquid waste, CMSA shall be entitled to charge MSS the sum of Fifty Dollars ($50.00) for each delivery that MSS fails to clean-up.

6.02 MSS Program Guarantee.

a. Quantity. MSS shall make Reasonable Business Efforts to deliver to CMSA one hundred percent (100%) of the Food Waste collected from Collectors and Commercial Food Waste Generators in the Common Service Area, not including loads which may have to be rejected due to the presence of Unacceptable Materials. MSS will not materially reduce the scope of the Food Waste program without the prior written agreement of CMSA, which agreement shall not be unreasonably withheld. The Parties acknowledge that some restaurants or food processors in the Common Service Area will not participate in the Food Waste program because they are either not interested in participating or are unable to provide Food Waste that meets the required quality specifications. MSS will be entitled to deliver Food Waste collected from Collectors and Commercial Food Waste Generators in portions of the MSS Service Area that are outside the Common Service Area, subject to the other provisions of this Agreement.

b. Expansion of Program. MSS further commits to expand its Food Waste collection program by encouraging other Marin County solid waste haulers to collect commercial food waste from their service areas, sharing education materials, and offering to

Pre-process their collected Food Waste at the Transfer Station for MSS' Pre-processing and Delivery to the Facility.

c. Permits. MSS will be responsible at its own expense for any and all permits required for the collection and Pre-processing of Food Waste, and delivery of Food Waste to the Facility as well as the disposal of rejected Food Waste and debris and liquid waste spilled during loading into the vehicles and transportation to the Facility.

6.03 General Operations.

a. Facility Receiving Hours. Unless otherwise agreed upon by the Parties in advance, CMSA shall receive Food Waste from MSS at the Facility between the hours of 6:00 a.m. and 4:00 p.m. each Monday through Friday, and between the hours of 9:00 a.m. and 12:00 p.m. on Saturdays, excluding Holidays.

b. Notification in Emergency. It is the responsibility of MSS to Notify CMSA of emergencies, and changes in scheduling of the delivery of Food Waste.

c. Scale Operation. The MSS Transfer Station operator will weigh each Food Waste delivery vehicle before and after loading for (1) CMSA billing purposes, and (2) to determine the amount of materials received. The scale weight information for each delivery vehicle will be provided to CMSA at the time of each Delivery to the Facility. Upon request, MSS will provide verification that the scales are routinely calibrated and certified by Marin County.

d. Continuous Operations. CMSA shall keep open and operate the Facility continuously and uninterruptedly, during Facility Receiving Hours, except when CMSA is prevented from doing so by any Uncontrollable Circumstance, rejection of Unacceptable Material, performing scheduled maintenance of the Food Waste processing equipment, or if a CMSA digester is out-of-service or has a processing disruption.

e. Traffic Flow. CMSA shall direct traffic upon entry to the Site so that MSS' vehicles travel, queue, unload, and exit in a safe manner.

6.04 Disposal of Pomace, Residual of Digested Food Solids, and Unacceptable Materials.

a. Pomace. So long as MSS is the only supplier of Food Waste to the Facility, MSS will legally dispose of all Pomace from the Facility processing at its own expense unless otherwise mutually agreed to in writing. CMSA will verbally notify the MSS authorized representative that the Facility's Pomace storage container needs to be emptied along with a written reminder sent to the MSS' email address set forth below in Section 12.01.

b. Residual of Digested Food Solids. CMSA at its own expense will dispose of the Residual of Digested Food Solids through compost, alternative daily cover at landfills, land application, landfill direct disposal, or any other disposal/reuse method consistent with CalRecycle regulations.

c. Unacceptable Materials. At its own expense, CMSA cleans the Facility's food waste storage tank quarterly and deposits debris and Unacceptable Materials into debris bins. So long as MSS is the only supplier of Food Waste to the Facility, MSS at its own expense will remove the storage bins from the Facility and dispose of the removed debris and Unacceptable Materials.

6.05 Records.

a. General Record Keeping. CMSA and MSS shall each maintain such records related to their individual performances under this Agreement as shall be reasonably necessary to develop the reports required by this Agreement. CMSA and MSS agree to receive input from the other if necessary on data collection, information and record keeping, and reporting activities required to comply with Applicable Laws and to meet their reporting and Food Waste program management needs. Each of CMSA and MSS shall provide the other with copies of all such records promptly upon request.

CMSA and MSS shall maintain records required to conduct their own operations, to support requests either may make of the other, and to respond to reasonable requests for information necessary to conduct of their respective businesses. Adequate record security shall be maintained to preserve records from events that can be reasonably anticipated such as fire, water damage, theft, and earthquake. Electronically maintained data/records shall be protected and backed up in order to ensure complete and accurate retrieval of information.

b. Retention of Records. Unless otherwise herein required, CMSA and MSS shall retain all documents required to be maintained by this Agreement for at least five (5) years after the expiration or earlier termination of this Agreement. Alternatively, either Party may send its records and data to the other Party after the normal retention period has expired. Records and data that are specifically directed to be retained shall be made available to either Party upon receipt of a written request.

c. CERCLA Disposal Records. MSS shall maintain, retain, and preserve records that can establish where all Pomace was Disposed. This provision shall survive the expiration or earlier termination of this Agreement. MSS shall maintain these records for a minimum of ten (10) years beyond expiration or earlier termination of the Agreement, in an organized and indexed manner, and either in physical (e.g. weigh tickets) and/or electronic form and provide these records to CMSA as requested. Alternatively, MSS shall send these records to CMSA after MSS's normal retention period has expired.

6.06 MSS Right to Tour and Inspect Facility.

MSS and its designated representative(s) have the right, to enter, observe, and tour the Facility on reasonable notice during Facility Receiving Hours. MSS can also be accompanied on such tours by county supervisors, city council members, regulators, representatives from educational organizations, and public relations or media representatives. MSS and its representatives or guests will comply with CMSA's safety and security rules at all times while on the Facility site.

6.07 CMSA Right to Tour, Inspect, and Monitor Transfer Station.

CMSA and its designated representative(s) have the right, to enter, observe, tour, inspect and monitor the Transfer Station and its operations on reasonable notice to MSS, Monday through Friday, during normal operating hours with legal holidays and weekends excluded. CMSA and its representatives will comply with MSS' safety and security rules at all times while on the Transfer Station site.

6.08 Ongoing Evolution of Program.

Periodically and when necessary during the Term, the Parties will meet to discuss the ongoing evolution of the Food-to-Energy program. The Parties agree to use good faith efforts to resolve issues that arise based on concerns or impacts identified during the Term.

ARTICLE 7. COMPENSATION

7.01 General.

CMSA's compensation provided for in this Article will be the full, entire and complete compensation due to CMSA pursuant to this Agreement for all labor, equipment, material and supplies, taxes, insurance, bonds, overhead, transport, Acceptance, Processing, Residual of Digested Food Solids Disposal, and all other things necessary to perform the services required by this Agreement in the manner and at the time prescribed. MSS is not obligated to reimburse CMSA for any losses that CMSA may incur due to fluctuations in the costs of processing Food Waste.

7.02 Disposal Fee and Fee Escalation.

The Delivery fee at the Facility will be $22.50 per ton of Food Waste from the Effective date until June 30, 2018. The Delivery fee shall be adjusted at the beginning of each Contract Year starting with July 1, 2018 by the amount of the annual percentage change in the Consumer Price Index, All Urban Consumers, San Francisco-Oakland-San Jose, CA, All Items (1982-1984=100), published by the United States Department of Labor, Bureau of Labor Statistics (the "CPI") for the previous year (using the CPI for the month most recently published for the immediately preceding year as compared with the CPI for the same month of the second preceding year).

7.03 Revenue Sharing.

The Parties agree that CMSA will retain all revenue and Renewable Energy Credits (RECs) realized from the sale of electricity generated by the digestion of Food Waste.

The Parties acknowledge that a potential revenue stream exists in the sale of Green House Gas Offsets (Credits), or other future instruments that attach monetary value to the capture of Green House Gas as a result of the digestion of Food Waste. The Parties also acknowledge that there will be costs associated with pursuing Credits, or other future instruments. The Parties' intent is to find a way to equitably share revenue created from the processing of the Food Waste received from MSS. CMSA reserves the right to determine whether to pursue Credits, or future instruments associated with that Food Waste and agrees to notify MSS in writing at the time it initiates actions to pursue those Credits, or future instruments. At that time, the Parties will meet to:

a. Determine revenue potential for Credits, or future instruments, based on factors such as current market value and market trends;

b. Agree on cost factors, such as validation, administration, operating, and other potential costs; and

c. Agree on allocation of costs and potential revenue.

These meetings will be held in a spirit of cooperation. At the time that these actions are completed, this Section 7.03 will be revised. Once the Parties agree on revenue potential and cost and revenue allocation, the allocation will retroactively apply to any applicable revenue received and costs incurred by CMSA from the date CMSA first notifies MSS that it is initiating the pursuit of Credits, or future instruments associated with Food Waste received from MSS. If the Parties are unable to reach agreement on (a) through (c), the Parties agree to mediate the dispute. If the Parties are unable to reach agreement after mediation, either Party may terminate this Agreement upon ninety (90) days' written notice to the other Party. MSS acknowledges that by entering into this Agreement, it does not obtain any right to or interest in any Credits, or future instruments created from anything other than Food Waste delivered, received and processed by CMSA pursuant to this Agreement.

ARTICLE 8. INSURANCE

8.01 Insurance Requirements.

a. Insurance. Each Party shall purchase and maintain, in full force and effect during the Term adequate insurance that shall be no less than the types and amounts of insurance coverage listed below. Each Party's insurers must provide the other Party with thirty (30) calendar days' Notice of any cancellation or reduction in coverage and name the other Party, and its Board of Commissioners or Directors and its employees as additional insureds. Each Party, for itself and its Collectors and contractors, shall supply certificates of insurance and additional insured endorsement to the other Party showing compliance with this Article 8 prior to the delivery of any Food Waste to the Facility. The terms and obligations of this Article shall survive termination of this Agreement.

b. Workers' Compensation Insurance. Each Party shall purchase and maintain during the Term, Workers' Compensation and Employer's Liability insurance policy for all of its employees working on this project. Each Party shall ensure that its Collectors and contractors performing any work pursuant to this Agreement for such Party shall procure and maintain at all times during this Agreement, Workers' Compensation and Employer's Liability insurance.

c. Comprehensive General Liability Insurance. Each Party shall purchase and maintain during the Term Comprehensive General Liability insurance policy in the amount of one million dollars ($1,000,000) for combined single limit coverage for bodily injury, personal injury, and property damage. Each Party shall ensure that its Collectors and contractors performing any work pursuant to this Agreement for such Party shall procure and maintain at all times during the Term, General Liability insurance that meets or exceeds the requirements of this Agreement.

The following coverages or endorsements must be indicated on the certificate:

(1) The other Party, its Commissioners or Directors, officers and employees are named as additional insureds in the policy;

(2) The coverage is primary to any other insurance carried by the other Party;

(3) The policy covers contractual liability for the assumption of liability of others;

(4) The policy is written on an occurrence basis;

(5) The policy covers broad form property damage liability

(6) The policy covers personal injury (libel, slander, and trespass) liability;

(7) The policy will not be canceled nor reduced without thirty (30) days' written notice to the other Party.

(8) The policy(ies) cover(s) products and completed operations.

d. Automobile Liability Insurance. Each Party shall purchase and maintain an Automobile Liability insurance policy that shall apply to all owned, hired, and non-owned autos, vehicles and trailers. The limits of liability shall not be less than $1,000,000 combined single limit each accident for bodily injury and property damage. Each Party shall ensure that its Collectors and contractors performing any work pursuant to this Agreement for such Party shall procure and maintain at all times during the Term, Automobile Liability insurance that meets or exceeds the requirements of this Agreement.

e. Pollution Liability Insurance. Each Party shall purchase and maintain a Pollution Liability insurance policy with limits not less than $1,000,000 per occurrence and in the aggregate for bodily injury and property damage. Each Party shall ensure that its Collectors and contractors performing any work pursuant to this Agreement for such Party shall procure and maintain at all times during the Term, Pollution Liability insurance that meets or exceeds the requirements of this Agreement.

f. Amounts of Insurance. The amounts of insurance shall not be less than the following:

General Liability – one million dollars ($1,000,000) per occurrence

Auto Liability – one million dollars ($1,000,000) per occurrence

Worker's Compensation – State statutory limit

Pollution Liability – one million dollars ($1,000,000) per occurrence

ARTICLE 9. INDEMNITY

9.01 MSS Indemnification.

MSS, to the greatest extent allowed by Applicable Law, will protect, hold free and harmless, defend and indemnify CMSA, including its Board of Commissioners, individual commissioners, employees, consultants, and agents (collectively "indemnitees" or individually "indemnitee") from all liabilities, penalties, costs, losses, damages, expenses, causes of action, claims or judgments, including reasonable attorney's fees, resulting from injury to or death sustained by any person (including MSS' or its subcontractors' employees) or damage to property of any kind, which injury, death or damage arises out of or is in any way connected with MSS', its Collectors' or its contractors' performance of any part of this Agreement. MSS' aforesaid indemnity, defense and save harmless agreement shall apply to any acts or omissions, or negligent conduct, whether active or passive, on the part of one or more of the indemnitees, except that said obligation of indemnity and hold harmless of an indemnitee shall not be applicable to injury, death or damage to property arising from the sole negligence or willful misconduct of that specific indemnitee. This indemnification, defense and hold harmless obligation shall extend to claims asserted after expiration or earlier termination, for whatever reason, of this Agreement.

9.02 CMSA Indemnification.

CMSA, to the greatest extent allowed by Applicable Law, will protect, hold free and harmless, defend and indemnify MSS, its Board of Directors, individual Directors, officers and employees (collectively "indemnitees" or individually "indemnitee") from all liabilities, penalties, costs, losses, damages, expenses, causes of action, claims or judgments, including reasonable attorney's fees, resulting from injury to or death sustained by any person (including CMSA's employees) or damage to property of any kind, which injury, death or damage arises out of or is in any way connected with CMSA's or its contractors' performance of any part of this Agreement. CMSA's aforesaid indemnity, defense and save harmless agreement shall apply to any acts or omissions, or negligent conduct, whether active or passive, on the part of one or more of the indemnitees, except that said obligation of indemnity and hold harmless of an indemnitee shall not be applicable to injury, death or damage to property arising from the sole negligence or willful misconduct of that specific indemnitee. This indemnification, defense and hold harmless obligation shall extend to claims asserted after expiration or earlier termination, for whatever reason, of this Agreement.

ARTICLE 10. BREACHES, DEFAULTS, MEET AND CONFER

10.01 Breaches.

a. Definition. A breach is a material failure to perform any of the material obligations set forth in this Agreement.

b. Notice of Breach. Either Party shall promptly Notify the other Party regarding the occurrence of a breach as soon as such breach becomes known to the Noticing Party. Such Notice shall be given in writing.

c. Cure of Breach. Each of MSS and CMSA shall begin cure of any breach that it commits as soon as possible after it becomes aware of its breach. Upon receiving written Notice of a breach, the breaching Party shall proceed to cure such breach as follows:

(1) Immediately, if the breach is such that in the determination of either CMSA or MSS, the health, welfare or safety of the public is endangered thereby, unless immediate cure is impossible, in which event the Party required to cure shall Notify the other Party, and the other Party may seek substitute services.

(2) Within thirty (30) calendar days of receiving Notice of the breach; provided that if the nature of the breach is such that it will reasonably require more than thirty (30) calendar days to cure, the breaching Party shall not be in default so long as it promptly commences to cure its breach, secures written agreement from the other Party to extend the thirty (30) calendar day cure period (which the other Party shall not unreasonably refuse), and provides the other Party, no less than weekly, written status of progress in curing such breach, and diligently proceeds to complete same.

10.02 Default.

a. Events of CMSA Default. Each of the following shall constitute an event of default by CMSA.

(1) Uncured Breach of Agreement. CMSA fails to cure any breach as specified in Section 10.01.

(2) Repeated Pattern of the same Breaches. CMSA commits the same breach at least three (3) times during any twelve-month period during the Term.

b. Notice of Default. CMSA shall be in default from the date of receipt of a Notice from the MSS identifying such default.

c. Events of MSS Default. Each of the following shall constitute an event of default by MSS.

(1) Uncured Breach of Agreement. MSS fails to cure any breach as specified in Section 10.01.

(2) Repeated Pattern of Breaches. MSS commits the same breach at least three (3) times during any twelve-month period during the Term.

d. Notice of Default. MSS shall be in default from the date of receipt of a Notice from CMSA identifying such default.

10.03 Request to Meet and Confer.

If any breach occurs that materially affects this Agreement or a Party's ability to perform under this Agreement or a change in Applicable law that affects either Party's ability to receive diversion credits under AB 939, either Party shall send Notice to the other Party describing the problem and requesting a meet and confer meeting. The Parties may choose to meet in person or by teleconference. The meet and confer process is intended to be a prerequisite to sending a Notice of Breach.

If either Party does not agree to meet and confer, does not appear at the meet and confer meeting, or if the Parties are not able to correct the breach or solve the problem resulting from a change in the Applicable Law within a reasonable period of time not to exceed thirty (30) days after the meet and confer, unless the time period is extended by mutual agreement, the aggrieved Party may send a Notice of Breach.

Notwithstanding the above, there is no requirement that the meet and confer process be used for a failure to pay, or for emergencies or urgent matters of public health.

10.04. Remedy for Breach, Other Remedies.

The Parties shall be entitled to all available monetary or equitable remedies, including specific performance and injunctive relief.

a. MSS Remedies in the Event of CMSA Default. Upon CMSA's failure to cure a breach pursuant to Section 10.01 or default pursuant to Section 10.02, MSS shall, in addition to its right to collect monetary damages, have the following rights:

(1) Waive Default. To, at its sole discretion, waive the CMSA breach or default in writing.

(2) Termination. Terminate the Agreement in accordance with Article 11, provided that no termination shall be effective until MSS has given written Notice to CMSA of its decision to terminate the Agreement.

(3) All Other Available Remedies. In addition to, or in lieu of termination, to exercise all of its remedies in accordance with this Article and any other remedies at law and in equity, to which MSS shall be entitled, according to proof.

(4) Damages Survive. If CMSA owes any damages upon MSS's termination of this Agreement, CMSA's liability under this Section 10.03 shall survive termination.

b. CMSA Remedies in the Event of MSS Default. Upon MSS' failure to cure a breach pursuant to Section 10.01 or default pursuant to Section 10.02, CMSA shall, in addition to its right to collect monetary damages, have the following rights:

(1) Waive Default. To, at its sole discretion, waive the MSS breach or default in writing.

(2) Termination. Terminate the Agreement in accordance with Article 11, provided that no termination shall be effective until CMSA shall have given written Notice to MSS of its decision to terminate the Agreement.

(3) All Other Available Remedies. In addition to, or in lieu of termination, to exercise all of its remedies in accordance with this Article and any other remedies at law and in equity, to which CMSA shall be entitled, according to proof.

(4) Damages Survive. If MSS owes any damages upon CMSA's termination of this Agreement, MSS's liability under this Section 10.03 shall survive termination.

10.05 Waiver.

A waiver by one Party of one breach or default by the other Party shall not be deemed to be a waiver of any other breach or default by that Party, including ones with respect to the same obligations hereunder, and including new incidents of the same breach or default. The subsequent acceptance of any damages or other money paid hereunder shall not be deemed to be a waiver of any pre-existing or concurrent breach or default.

10.06 Determination of Remedy or Cure of Breach or Default.

Upon request of either Party, an event of breach or default shall be considered remedied or cured upon signature by both Parties of a written agreement specifying the event and stating that remedy and/or cure of such event has been completed.

10.07 Uncontrollable Circumstances.

a. Performance Excused. Neither Party shall be in breach of its obligations hereunder in the event, and for so long as, it is impossible or extremely impracticable for it to perform such obligations due to an Uncontrollable Circumstance if such Party exerted

Reasonable Business Efforts to prevent such Uncontrollable Circumstance, and such Party expeditiously takes all actions within its control to end, or to ameliorate the effects of such Uncontrollable Circumstance as soon as possible.

b. Notice. The Party claiming excuse from performance of its obligations based on an Uncontrollable Circumstance shall Notify the other Party as soon as is reasonably possible, but in no event later than three (3) working days after the occurrence of the event constituting the Uncontrollable Circumstance. The Notice shall include a description of the event, the nature of the obligations for which the Party claiming Uncontrollable Circumstance seeks excuse from performance, the expected duration of the inability to perform and proposed mitigation measures.

ARTICLE 11. TERMINATION

11.01 Parties' Right to Suspend or Terminate.

a. Suspension. Either Party shall have the right to suspend this Agreement, in whole or in part, upon the occurrence of a default under Article 10 regarding an occurrence that endangers public health, welfare or safety, provided such suspension is for no longer than forty-five (45) calendar days.

b. Termination. The Parties shall have the rights to terminate this Agreement if one or more of the following events occur:

(1) Default. Occurrence of a default, or a breach which is not cured within the time frame specified, as set forth in Article 10.

(2) Criminal Activity. Either Party may terminate this Agreement if the other Party is found guilty of criminal conduct. The term "found guilty" shall be deemed to include any judicial determination that the Party or any of the Party's officers, directors, commissioners or employees is guilty, including any admission of guilt, including, but not limited to, the pleas of "guilty," "nolo contendere," "no contest," or "guilty to a lesser crime" entered as part of any plea bargain.

(3) Facility Damage or Destruction. Either Party may terminate this Agreement in the event the Facility or the Transfer Station is totally destroyed or is materially damaged and CMSA or MSS, as the case may be, either is unable to reconstruct or repair the Facility or Transfer Station or its Board of Commissioners or Directors decides it is not financially feasible to reconstruct or repair the Facility or Transfer Station.

c. Payments Upon Termination. Upon termination, CMSA shall accept as full payment for services rendered to the date of termination any payments required based on the portion of work actually performed. If MSS has made any payment for services that have not been performed, then CMSA shall promptly repay to MSS that amount.

ARTICLE 12. OTHER PROVISIONS

12.01 Notices.

Except as otherwise specified in this Agreement, all Notices, requests, acknowledgements, approvals, and other communications made hereunder to be sent pursuant to this Agreement shall be made in writing, and sent to the Parties at their respective addresses specified below or to such other address as a Party may designate by written notice delivered to the other parties in accordance with this Section. All such notices shall be sent by either: (i) personal delivery, in which case notice is effective upon delivery; (ii) certified or registered mail, return receipt requested, in which case notice shall be deemed delivered on receipt if delivery is confirmed by a return receipt; (iii) nationally recognized overnight courier, with charges prepaid or charged to the sender's account, in which case notice is effective on delivery if delivery is confirmed by the delivery service; (iv) facsimile transmission, in which case notice shall be deemed delivered upon transmittal, provided that (a) a duplicate copy of the notice is promptly delivered by first-class or certified mail or by overnight delivery, or (b) a transmission report is generated reflecting the accurate transmission thereof. Any notice given by facsimile shall be considered to have been received on the next business day if it is received after 5:00 p.m. or on a non-business day.

If to MSS:

MSS President
Attn: Patty Garbarino
1050 Andersen Drive
San Rafael, California 94901
Telephone: (415)
Fax: (415)
Email: Patty.Garbarino@marinsanitary.com

If to CMSA:

CMSA General Manager
Attn: Jason Dow
1301 Andersen Drive
San Rafael, California 94901
Telephone: (415) 459-1455
Fax: (415) 459-3971
Email: jdow@cmsa.us

12.02 Authorized Representatives.

a. MSS. For purposes of this Agreement, the MSS authorized representative will be its Director of Compliance or her/his designee.

b. CMSA. For purposes of this Agreement, CMSA's authorized representative will be its General Manager or her/his designee.

12.03 Assignment.

Neither Party may assign its rights or responsibilities under this Agreement to any other Person without the consent of the other Party, which consent will not be unreasonably withheld.

12.04 Conflicting Provisions.

In the event the provisions of this Agreement herein conflict with those of the Exhibits hereto, the provisions of this Agreement shall prevail.

12.05 Governing Law.

This Agreement shall be governed by, and construed and enforced in accordance with, the internal laws of the State of California, irrespective of choice of law principles.

12.06 Amendments.

The Parties may change, modify, supplement, or amend this Agreement only upon mutual written agreement duly authorized and executed by both Parties.

12.07 Venue; Attorneys' Fees.

The exclusive venue for any legal proceedings shall be Marin County, or, in case of federal jurisdiction, Federal District Court, Northern District. The prevailing Party in any dispute arising under or in connection with this Agreement shall be entitled to recover its reasonable attorneys' fees and costs from the other Party.

12.08 Entire Agreement.

This Agreement contains the entire Agreement between the Parties with respect to the transactions contemplated hereby. All Exhibits are hereby incorporated into this Agreement by reference. This Agreement shall completely and fully supersede all prior understandings and agreements between the Parties with respect to such transactions, including the Prior Agreement except with respect to periods prior to the Effective Date. However, nothing in this paragraph shall supersede or diminish the representations and warranties as contained in Article 2. This Agreement shall not be interpreted for or against either Party, it having been prepared with the participation of both Parties.

12.09 Savings Clause.

If any phrase, clause, section, subsection, paragraph, subdivision, sentence, term, or provision of this Agreement, or the application of any term or provision of this Agreement to a particular situation, is finally found to be void, invalid, illegal, or unenforceable by a court of competent jurisdiction, then notwithstanding such determination, such term or provision will remain in force and effect to the extent allowed by such ruling and all other terms and provisions of this Agreement or the application of this Agreement to other situations will remain in full force and effect.

IN WITNESS WHEREOF, the PARTIES hereto have executed this Agreement on the date first above written.

Marin Sanitary Service	**Central Marin Sanitation Agency**
____________________	____________________
Patty Garbarino, President	Diane Furst, Chair
____________________	____________________
Date	Date
____________________	____________________
MSS Secretary	Thomas Gaffney, Vice-Chair
____________________	____________________
Date	Date

Exhibit A

MSS Participant Assessment & Contamination Control Procedures for Food Waste Delivered to CMSA

Participant Assessment:

1) Potential participants for the food waste program include restaurants, assisted living facilities, grocery stores, schools, hospitals, and any other business or institutional facility that has food service.
2) Participants will be prescreened by MSS staff prior to enrollment. Management control over kitchen staff will be assessed and is key to the success of the program.

Program Requirements:

1) Source separation is required. Program participants will be required to separate acceptable food waste from non-acceptable materials and place the acceptable materials in designated containers. The ideal candidate for the program will have significant pre-served food waste available for collection and may be permitted to include post-consumer food waste if adequate practices are established to control contamination.
    a. Acceptable food waste includes: Fruits, Vegetables, Meat, Seafood, Small Bones, Dairy, Eggs, Breads, Pastas, Sauces, ~~Cooking Oil, Grease,~~ Tea Bags, Coffee Grounds and Paper Filters.
2) Zero Tolerance Rule for Contamination. The program will clearly establish zero tolerance for any unacceptable waste materials. Unacceptable waste materials considered contamination by this program includes: Styrofoam, all plastics including bags, glass, metal, liquids, paper, cardboard, wood, yard waste, and all other non-food waste materials. Contaminated carts are subject to fines and may result in discontinuation from the program.
3) Once the commercial entity has proven its ability to consistently deliver clean pre-consumer food scraps, the method of handling post-served/post-consumer food scraps will be reviewed to determine if this material can be included in the collection program.

Training:

Training will be conducted for all kitchen staff describing participation procedures, acceptable food scrap materials, and zero tolerance for contamination.

1) Training will be conducted in the predominant language spoken by kitchen staff.
2) Once participation has started, follow-up visits will be scheduled at regular intervals to no fewer than twice per year.
3) If deficiencies are noted, retraining of kitchen and management staff will be conducted by MSS.

Containers/Signage and Training Materials:

Each participant will receive the following program materials and services:

1) An appropriate number of internal collection containers, no larger than 23 gallons in capacity, for indoor use.

Exhibit A
MSS Participant Assessment & Contamination Control Procedures for Food Waste Delivered to CMSA

2) Clearly labeled curbside collection containers (32 and/or 64-gallon carts or 1-2 yard boxes) for outdoor storage of food scraps.
3) Outreach and training materials to instruct staff in proper participation procedures and maintain awareness:
    a. Posters displaying approved and prohibited food scraps for placement on walls.
    b. Signs displaying approved and prohibited food scraps for placement on walls or collection containers.
    c. "Bumper sticker" signage for differentiating food collection containers from refuse containers.
    d. Participation decal to display for public awareness.

Signs will be distributed in sufficient numbers to serve needs of new participants. Additional posters and signs will be provided upon request.

Oversight:

1) MSS Driver may check contents of collection carts regularly. In instances where contaminants are detected, food scraps will be left uncollected and a notice of non-collection left on the cart. The restaurant name and date will be recorded for follow-up by route supervisor/outreach coordinator.
2) Outreach staff may conduct spot checks of participants to assess participation, sufficient number of collection containers, fill levels of containers, and contamination. Outreach staff may use these spot check opportunities to update restaurants on procedural changes or other important information.
3) Repeated contamination incidents and/or or inability by management to correct the identified problem(s) may result in removal from program and a charge to have the contaminated materials removed.

Exhibit B

Food Waste Participant Agreement

Marin Sanitary Service

CONSERVATION — OUR EARTH, OUR MISSION, OUR JOB

Thank you for your interest in participating in the Commercial Food to Energy (F2E) Program. Participation in this program requires consistent effort and a dedicated team. You must meet the following criteria to participate in this program.

Program Requirements:

1. Source separation of food waste is required. Program participants will be required to separate acceptable food waste from non-acceptable materials and place the acceptable materials in designated containers.
   a. Acceptable food waste includes: Fruits, Vegetables, Meat, Seafood, Small Bones, Dairy, Eggs, Breads, Pastas, Sauces, ~~Cooking Oil, Grease,~~ Tea Bags, Coffee Grounds and Paper Filters.
2. Zero Tolerance Rule for Contamination. Curbside F2E containers must be free of ALL contamination.
   a. Unacceptable waste materials considered contamination by this program includes: Styrofoam, all plastics including bags, glass, metal, liquids, paper, cardboard, wood, yard waste, and all other non-food waste materials.
   ~~a.~~b. Contaminated carts are subject to fines and may result in discontinuation from the program.
3. Training of all kitchen staff and others who handle food waste trained on collection policies and procedures.

Marin Sanitary Service will provide the following:

1. Green carts and/or dumpsters to meet your food waste volume needs.
2. Education and training of staff.
3. Outreach materials including signs, posters, stickers, etc.
4. On-site assessment of your food waste and recycling practices.
5. Feedback to improve your program including recommendations for service levels and cart needs.

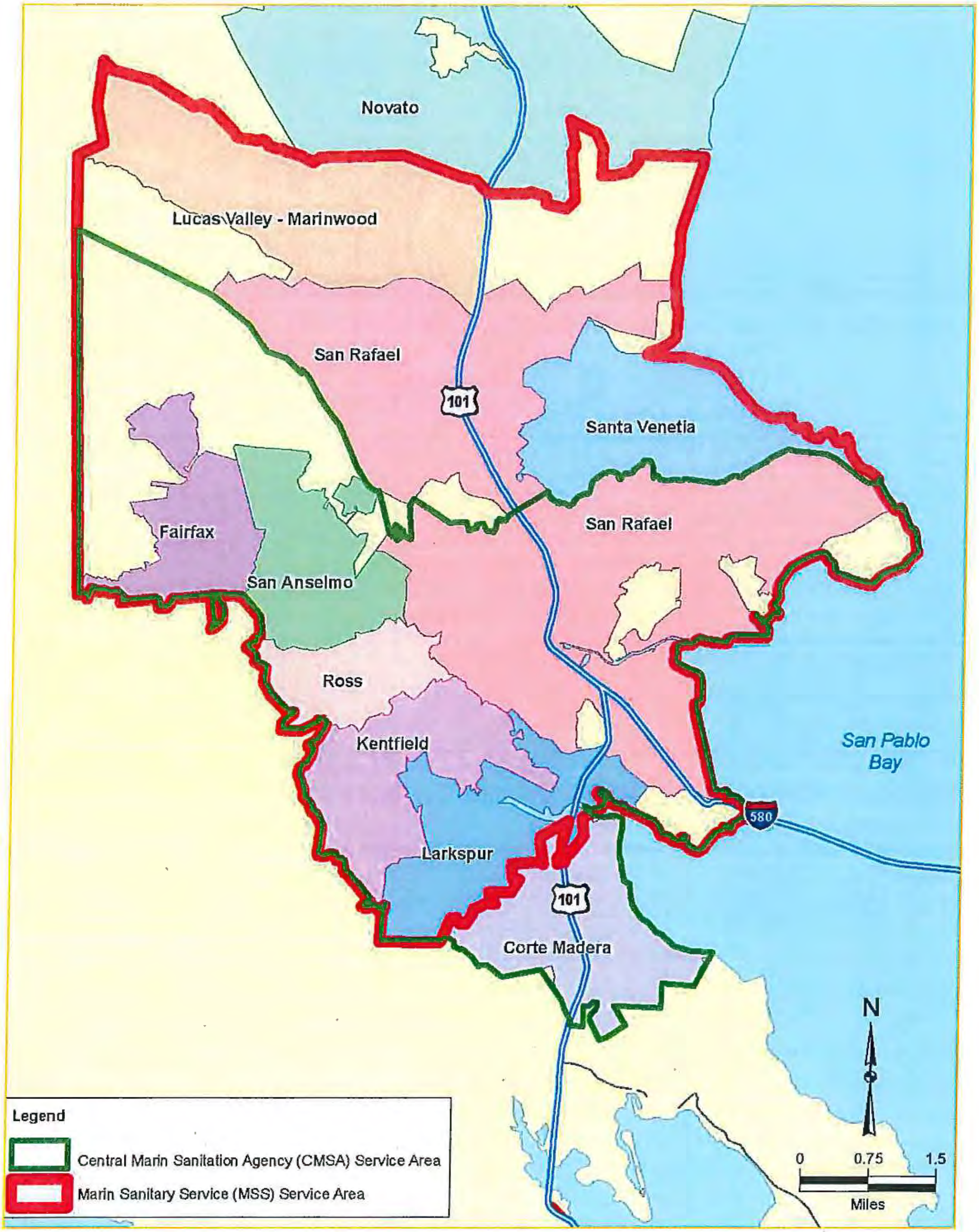
The undersigned has read, understands and agrees to the terms and conditions in this program as detailed in this agreement and in the attached Participant Assessment and Contamination Controls procedure.

______________________________	______________________________
Name of participating entity	For Marin Sanitary Service, Inc.
______________________________	______________________________
Printed name of person responsible for the program	Contact information: Email and Phone#
______________________________	______________________________
Signature	Date

Please mail, fax *or* scan and email this agreement to:

Kim Scheibly: Director of Compliance & Customer Relations
Marin Sanitary Service
1050 Andersen Drive, San Rafael, CA 94901
Fax: (415) 451-4741
Email kim.scheibly@marinsanitary.com

Food2Energy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Lucas Valley - Marinwood
San Rafael
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Santa Venetia
Fairfax
San Anselmo
San Rafael
Ross
Kentfield
San Pablo Bay
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Larkspur
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Central Marin Sanitation Agency (CMSA) Service Area
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Central Marin Sanitation Agency

BOARD MEMORANDUM

September 7, 2017

To: CMSA Commissioners and Alternates

From: Mark Koekemoer, Laboratory Director

Approved: Jason Dow, General Manger JD

Subject: Procurement of a Data Management System and a Laboratory Information Management System

Recommendations: Authorize the procurement of the Hach Water Data Management System for $51,781, and the Promium Element Laboratory Information Management System for $78,856.

Summary: A project in the Agency's FY18 Capital Improvement Program (CIP) is the purchase and implementation of two information management systems. Laboratory data and facility operational data have vastly different requirements related to data processing and reporting, and these differences necessitate the procurement of two information management systems that are specifically designed for each function. The Data Management System (DMS) and Laboratory Information Management System (LIMS) will each house data, perform calculations, and generate all future reports for process data and regulatory requirements.

In July, staff developed and distributed request for proposals (RFPs) outlining the Agency's data management system needs for the DMS and LIMS systems. One vendor submitted a proposal for a DMS system and two vendors submitted proposals for the LIMS system. Staff evaluated the proposals as described below and recommends the Board authorize the purchase of the Hach Water WIMS and Promium Element LIMS. If approved, purchase and implementation of these two systems will begin immediately and are currently scheduled to be fully operational in February 2018.

Mark Koekemoer, the Agency's Laboratory Director, will attend the September Board meeting to give a presentation on the DMS and LIMS.

Discussion: Technical Services staff investigated the functionality of various information management systems to determine their applicability to Agency and departmental needs. The laboratory requires detailed data assessments of method detection limits, chemical traceability, and method validation, whereas the facility data management requires detailed loading assessments, removal efficiency criteria, and trend analysis. Due to the complexity of these respective requirements, two RFPs were developed and sent to qualified vendors.

Data Management System: The DMS database will allow all Agency departments to actively enter data, review data, conduct data analysis, and generate reports. CMSA currently manages its treatment process operational data in multiple Excel spreadsheets that are maintained by various departments. At times, this approach has resulted in duplicate data entry, data accuracy issues due to transcription errors, calculation differences, and a general inefficiency associated with having to manually transfer data from one location to another. The Hach WIMS is specifically designed for wastewater utilities, and will provide CMSA with the resources it needs to optimally manage its operational data. The Hach WIMS software has built-in tools that will eliminate calculation variability between departments, and provides connectivity to CMSA's Supervisory Control and Data Acquisition (SCADA) system and LIMS, which will significantly reduce staff data entry requirements. It also will eliminate duplicate data entry and potential transcription errors. Hach WIMS has a customizable dashboard system that will allow users to set a home screen that displays live data and trends the user finds most useful. Finally, Hach WIMS will also provide various levels of authorized data accessibility and an audit trail analysis function. This functionality will meet CMSA's requirements to maintain a secure database while documenting authorized changes to the system. This system will interface with SCADA while maintaining the necessary firewall access to prevent unauthorized access to the SCADA system.

Staff sent the RFP to four interested DMS software vendors, and only one vendor submitted a proposal. Two vendors determined that their cost significantly exceeded CMSA's budget allocation and indicated concern over their capabilities to deliver a fully functional product within the RFP's schedule constraints. The remaining vendor did not respond to the RFP.

Laboratory Information Management System: The LIMS is a database specific to laboratory operational requirements related to documenting sample handling, method analysis requirements, standard traceability, workload analysis, and automated NPDES permit regulatory documentation and notification. The laboratory department data is currently housed in multiple Excel spreadsheet databases resulting in limited functionality, manual reporting, and data accuracy issues due to transcription errors and calculation differences. The Promium Element LIMS software is specifically designed for analytical laboratories, and will provide CMSA the functionality to optimally manage its laboratory operations and comply with potential future laboratory certification requirements.

The Promium Element LIMS software has built-in tools that are specifically designed for the laboratory industry that will greatly reduce potential differences in calculation variability between laboratory staff. Element LIMS also provides interface connectivity to other laboratory instrumentation, such as dissolved oxygen meters, pH meters, analytical balances, and other equipment, which will eliminate staff data entry related to these systems and potential transcription errors. Promium Element LIMS will also provide authorized data accessibility and audit trail analysis needed to maintain a secure database while documenting changes to the system.

Although the RFP was sent to four interested industry vendors, only two submitted a proposal. One vendor determined that its cost exceeded CMSA's budget allocation and chose not to submit a proposal. The remaining vendor did not respond to the RFP. Staff carefully reviewed the two proposals that were submitted to ensure the systems met CMSA's technical requirements. Each system met the basic requirements with slight variations in additional functionality that did not significantly differentiate the overall performance of the systems. Staff also performed a ten-year cost analysis and estimated the Promium Element LIMS cost to be $107,795, whereas Labworks LIMS was estimated at $148,370. Therefore, staff recommends procuring the Promium Element LIMS.

Economic Summary: The FY 18 CIP includes an allowance of $130,000 for both information management systems. The estimated expenditure for the Hach WIMS ($51,781) and Promium Element LIMS ($78,856) is $130,637. However, the training and implementation cost for the Hach WIMS system may be lower than the proposal cost due to the Laboratory Director's prior experience with both systems.

Alignment with Strategic Plan: This project supports Goal 6 – Objective 6.3 in the Agency's FY 18 Business Plan.

Goal One:	*CMSA will enhance its internal and external communications.*
Objective 6.3:	*Improve methods of communication*
Action C:	*Deployment of LIMS and DIMS database for more efficient use of lab and process control data*

Project Photos: Screen illustrations for the DMS and LIMS are shown on the following page

Data Management System Illustrations

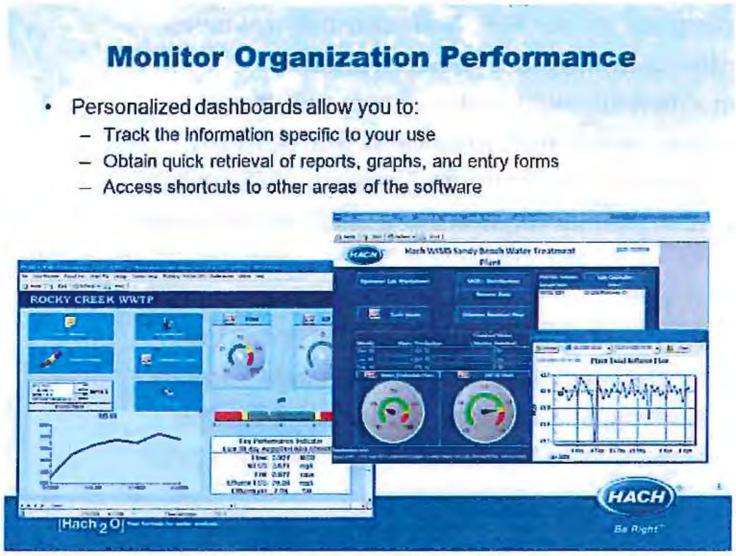

Figure 1 – DMS Dashboard & Trend Analysis

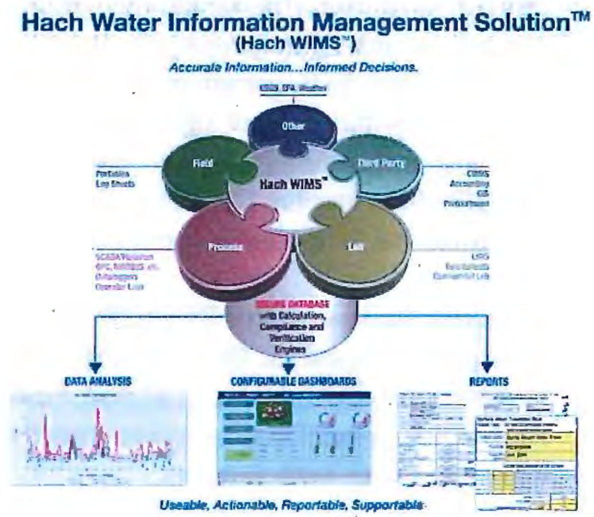

Figure 2 – DMS Facility Data Analysis

Laboratory Information Management System Illustrations

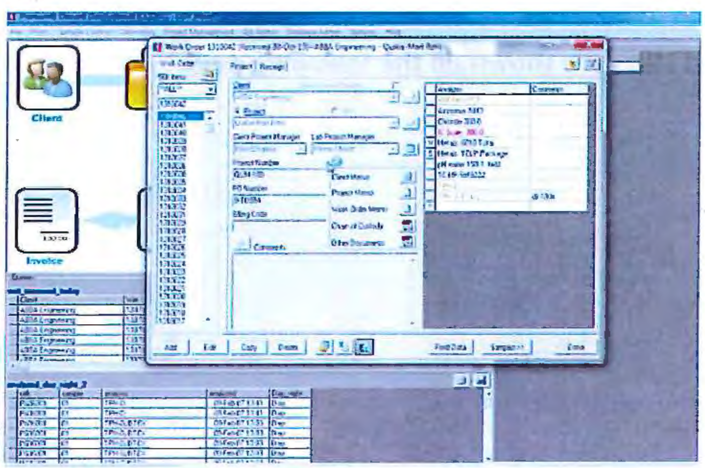

Figure 3 – LIMS Dashboard & Sample Entry

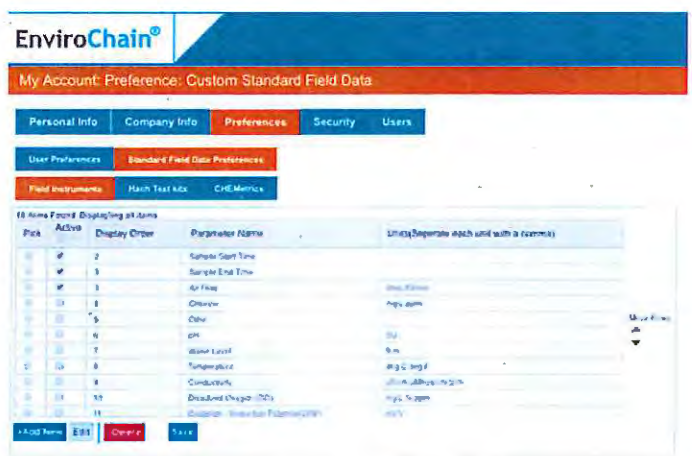

Figure 4 – LIMS Field & Client Data Analysis

Central Marin Sanitation Agency

BOARD MEMORANDUM

September 7, 2017

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager JD

Subject: Appointment of CMSA Representatives to the North Bay Watershed Association's Board of Directors

Recommendation: Nominate and appoint a CMSA representative and alternate to the North Bay Watershed Association's Board of Directors.

Summary: The Board annually appoints a representative and alternate to North Bay Watershed Association's (NBWA) Board of Directors. At the July 2017 meeting, the Board postponed these appointments to the September meeting due to the absence of two regular Board members and their current NBWA representative, Commissioner Boorstein, saying he may be appointed by the Ross Valley Sanitary District as their NBWA representative. CMSA's representative and alternate can be regular Board members, alternate Board members, and/or staff. General Manager Dow is currently the Board's alternate NBWA representative.

Background: The North Bay Watershed Association was created to help regulated local and regional public agencies work cooperatively on water resources issues that impact areas beyond traditional boundaries in order to promote stewardship of the North Bay watershed. Agencies participate in the NBWA in order to discuss issues of common interest, explore ways to work collaboratively on water resources projects of regional concern, and share information about projects, regulations, and technical issues.

The North Bay Watershed Association Board of Directors generally meets the first Friday of every month from 9:30 am to 11:30 am. Its meeting locations rotate between Novato Sanitary District, the Marin Community Foundation in the Hamilton area of Novato, and the Lucchesi Community Center in Petaluma.

CMSA has been a member of the North Bay Watershed Association since its formation in 2000. NBWA is comprised of 19 regular members and four associate members in the north San Francisco Bay, including Marin and Sonoma Counties, the cities of San Rafael, Petaluma, Novato, and Sonoma, and special districts. Each member agency appoints a representative and alternate to the NBWA Board of Directors.

Attachment: List of NBWA Board members

Agency	Delegate	Alternate
Bel Marin Keys Community Services District	Adrian Cormier	Carey Parent
Central Marin Sanitation Agency	**Vacant**	Jason Dow
City of American Canyon	Leon Garcia	
City of Novato	Pam Drew	Pat Eklund
City of Petaluma	Mike Healy	Teresa Barrett
City of San Rafael	Paul Jensen	
City of Sonoma	Madolyn Agrimonti	Colleen Ferguson
County of Marin	Damon Connolly	
County of Sonoma	Lynda Hopkins	David Rabbitt
Las Gallinas Valley Sanitary District	Megan Clark	Judy Schriebman
Marin County Stormwater Pollution Prevention Program	David Bracken	
Marin Municipal Water District	Jack Gibson	Larry Russell
Napa County Flood Control and Water Conservation District	Leon Garcia	Rick Thomasser
Napa Sanitation District	Ryan Gregory	Tim Healy
North Marin Water District	Rick Fraites	Jack Baker
Novato Sanitary District	Brant Miller	Sandeep Karkal
Ross Valley Sanitary District	Pamela Meigs	Michael Boorstein
Sonoma County Water Agency	David Rabbitt	Grant Davis
Sonoma Valley County Sanitation District	Madolyn Agrimonti	Colleen Ferguson
City of Mill Valley (Associate Member)	Bob Peterson	
Sewerage Agency of Southern Marin (Associate Member)	Mark Grushayev	
The Bay Institute (Associate Member)	Peter Vorster	
Tomales Bay Watershed Council (Associate Member)	Neysa King	Rob Carson

Central Marin Sanitation Agency

BOARD MEMORANDUM

September 7, 2017

To: CMSA Commissioners and Alternates

From: Brian Thomas, Technical Services Manager
Jason Dow, General Manager JD

Subject: Renewable Energy Expansion Program – Clean Water State Revolving Fund Financial Assistance Agreement

Recommendation: Informational, provide comments or direction to the General Manager, as appropriate, regarding approval of the Clean Water State Revolving Fund Financial Assistance Agreement.

Summary: Pursuant to the Board's direction at its September 2016 meeting, staff submitted an application for a Clean Water State Revolving Fund (CWSRF) Green Project Reserve (GPR) loan for the Renewable Energy Expansion Program (Project). The Project is primarily comprised of activities in the Agency's Facilities Master Plan and PG&E Interconnection Modification Agreement projects. Staff received the approved GPR Agreement from the State Water Resources Control Board in late August, and Legal Counsel Jack Govi has reviewed and approved it as to form and will submit a General Counsel Legal Opinion Letter with the executed Agreement. Staff intends to execute the Agreement in accordance with CMSA Resolution No. 311, adopted by the Board at the September 2016 Board meeting, granting the General Manager the authority to sign the Agreement.

The Agreement includes the Project's Plan of Study, funding provisions, and standard terms and conditions, and is available for review on the CMSA's website (www.cmsa.us/board/agendas-and-minutes). As previously reported, all Plan of Study related costs incurred after October 11, 2016 are eligible for reimbursement, and the final reimbursement disbursement request date is September 1, 2019.

Fiscal Impact: The cost estimate for the proposed Project is $667,385. Seventy-five percent (75%) of the loan principle ($500,000) will be forgiven after the final Project Report is approved by the State Water Board staff. The remaining $167,383 is CMSA's match funding responsibility and will be paid with capital funds and in-kind services such as staff time expended during the completion of the Plan of Study. If tasks within the Plan of Study do not require the full estimated amount to complete the work, the total loan amount will be reduced accordingly. This will result in a lower CMSA match funding amount.

Discussion: The GPR program is administered by the State Water Resources Control Board through the CWSRF. Planning projects receiving GPR financing are eligible to receive 75% loan (principle) forgiveness up to $500,000. To be eligible for GPR financing, a project must address water or energy efficiency, mitigate storm water runoff, or encourage sustainable project planning, design, and construction. CMSA's application for GPR financing is for planning activities from the Facilities Master Plan Project and the PG&E Interconnection Agreement (IA) Modification Project. The Project's approved Plan of Study includes the following tasks and activities:

- <u>Biogas Utilization (Facilities Master Plan)</u> – Biogas generation estimates will be verified and biogas usage alternatives will be identified and evaluated.

- <u>Biosolids Management Alternatives (Facilities Master Plan)</u> – In anticipation of potential regulatory changes, alternative biosolids reuse options will be identified and evaluated.

- <u>Solar Power Generation (Facilities Master Plan)</u> – Onsite solar power generation locations will be identified and funding options will be described.

- <u>Power/Biogas Sale Opportunities (PG&E IA Modification Project)</u> – Depending on the outcome of the Biogas Utilization task, a power or biogas sale strategy will be recommended.

- <u>Organic Waste Receiving Facility (OWRF) (Facilities Master Plan)</u> – Alternatives to expand the OWRF will be evaluated based on potential future organic wastes sources.

- <u>CEQA/NEPA Environment Review</u> – An environmental consultant will determine and prepare the appropriate environmental documentation to meet CWSRF requirements.

- <u>Air Quality and Other Permits</u> – Permitting requirements, if any, to expand the OWRF and construct the recommended biogas usage alternative will be identified.

- <u>PG&E Interconnection Agreement (PG&E IA Modification Project)</u> – An IA modification application was submitted and a new IA has been obtained allowing CMSA generated power to be supplied to the local energy grid.

- <u>Obtain California Energy Commission (CEC) Renewable Portfolio Standard Certification (PG&E IA Modification Project)</u> – In order to sell power to Marin Clean Energy under their preferred rate programs, CMSA's power must be certified by the CEC as "Renewable".

- <u>Reports, Meetings, Project Management, Cost Estimating, and Quality Control</u> – Several of the tasks above will require cost estimates. All of the task findings will be assembled into a final Project Report in a format that is required by the SRF program administrators.

The Agreement's Exhibit B shows the estimated costs for each of the above tasks.

Alignment with Strategic Plan: This project is a strategic action to support Goal 3 – Objective 3.1 in the Agency's FY18 Strategic Business Plan as shown below.

Goal Five: *CMSA will further incorporate green business principles and consider renewable resource opportunities in its short- and long-term planning.*

Objective 3.1: *Implement steps to supply the Agency's extra power.*

Action: *Receive a State Revolving Fund (SRF) Green Project Reserve loan with forgiveness.*

Attachments:
1) August 28, 2017 State Water Resources Control Board letter
2) General Counsel Legal Opinion Letter
3) Exhibit B from the CWSRF Agreement – Funding Provisions

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board

August 28, 2017

Jason Dow
Central Marin Sanitation District
130 Anderson Drive
San Rafael, CA 94901-5339

CENTRAL MARIN SANITATION DISTRICT, AGREEMENT NUMBER: D17-01005; PROJECT NUMBER: C-06-8285-110

Dear Mr. Dow,

Enclosed is your Planning Agreement for your approval and signature. This Agreement cannot be considered binding by either party until approved by the State Water Resources Control Board. The State is not obligated to make any payments for services performed prior to final approval of any Agreement.

If the District is in agreement with all terms and conditions of the Agreement, please sign and date two (2) signature pages. <u>In addition, please provide the executed General Counsel Legal Opinion letter, which must be dated on or after the District executes the Agreement and return no later than thirty (30) calendar days from the date of this letter to:</u>

<u>US Mail</u>

Ms. Amor Moskaira, Contract Analyst
State Water Resources Control Board
Division of Financial Assistance
P.O. Box 944212
Sacramento, CA 94244-2120

<u>Overnight Mail</u>

Ms. Amor Moskaira, Contract Analyst
State Water Resources Control Board
Division of Financial Assistance
1001 I Street, 16th Floor
Sacramento, CA 95814

Expeditious handling of this Agreement is appreciated. Please contact Ms. Moskaira at (916) 449-5627 or Amor.Moskaira@waterboards.ca.gov.

Once final approval is obtained, we will forward you an executed copy for your records.

Enclosure

Clean Water
State Revolving Fund

CENTRAL MARIN SANITATION DISTRICT

AND

CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

CALIFORNIA
Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

PLANNING LOAN (100% PF)

RENEWABLE ENERGY EXPANSION PROGRAM

PROJECT NO. C-06-8285-110
AGREEMENT NO. D17-01005

AMOUNT: $500,000

ELIGIBLE START DATE: OCTOBER 11, 2016
WORK COMPLETION DATE: MARCH 1, 2019
FINAL DISBURSEMENT REQUEST DATE: SEPTEMBER 1, 2019
END OF FUNDING PERIOD DATE: JUNE 1, 2019
RECORDS RETENTION END DATE: SEPTEMBER 1, 2055

CENTRAL MARIN SANITATION AGENCY

Jason R. Dow P.E.
General Manager

1301 Andersen Drive, San Rafael, CA 94901-5339 Phone (415) 459-1455 Fax (415) 459-3971 www.cmsa.us

September 13, 2017

State Water Resources Control Board
Division of Financial Assistance
Attn: Amor Moskaira
1001 I Street, 16th Floor
Sacramento, CA 95814

Subject: Central Marin Sanitation Agency ("Recipient") – Renewable Energy Expansion Program – Project No. C-06-8285-110 ("Project")

Dear Ms. Moskaira,

I am General Counsel of the Recipient in connection with the Project. This opinion is delivered to the State Water Resources Control Board ("State Water Board") at the request of the Recipient. In connection therewith, I have examined the laws pertaining to Recipient, originals of the Agreement, between the Recipient and the State Water Board ("Agreement"), Recipient's 5-year Revenue Program adopted on February 12, 2013, Recipient's authorized representative Resolution No. 311 adopted on September 14, 2016 , and such other documents, legal opinions, instruments and records, and have made such investigation of law, as I have considered necessary or appropriate for the purpose of this opinion.

General Authority

a. The Recipient, a joint powers authority of the State of California duly organized, validly existing under the laws of the State of California pursuant to Article 1, Chapter 5, Division 7, Title 1 of the Government Code of the State of California, has the requisite legal right, power, and authority to execute and deliver the Agreement and carry out and consummate all transactions contemplated therein.

   None of the Recipient's member agencies is prohibited, limited, or constrained in any way from adopting, requiring, or utilizing a project labor agreement that includes all taxpayer protection provisions of Public Contract Code section 2500.

b. The Recipient's Revenue Program and Resolution #311 were duly adopted at meetings of the Recipient which were called and held pursuant to law with all public notice required by law and at which a quorum was present and acting when the both were adopted. The Recipient Revenue Program and Resolution are in full force and effect and have not been amended, modified, supplemented, or rescinded, nor has the Revenue Program been challenged or become subject of a referendum or initiative or other similar process.

c. To the best of my knowledge and based upon a reasonable investigation, all proceedings required by law or under the ordinances of the Recipient to be taken by the Recipient in connection with the authorization of the Agreement and the transactions contemplated by and related thereto, and all such approvals, authorizations, consents or other orders of or filings or registrations with such public boards or bodies, if any, as may be legally required to be obtained by the Recipient prior to the date hereof with respect to all or any of such matters have been taken or obtained and are in full force and effect, except that no opinion is expressed as to any approvals, obligations or proceedings which may be required under any federal securities laws or state blue sky or securities laws.

d. To the best of my knowledge and based upon a reasonable investigation, the execution and delivery of the Agreement and the consummation of the transactions therein will not conflict with or constitute a breach of or default (with due notice or the passage of time or both) under (i) the statutes creating the Recipient or any amendments thereto, (ii) the ordinances of the Recipient, (iii) any bond, debenture, note or other evidence of indebtedness, or any material contract, agreement or lease to which the Recipient is a party or by which it or its properties are otherwise subject or bound or (iv) any applicable law or administrative regulation or any applicable court or administrative decree or order.

e. To the best of my knowledge and based upon a reasonable investigation, Recipient has sufficient property rights in the Project property for the purposes contemplated in the Agreement. This property right extends in perpetuity.

f. To the best of my knowledge and based upon a reasonable investigation, there is no action, suit, proceeding, inquiry or investigation before or by any court of federal, state, municipal or other governmental authority pending or threatened against or affecting the Recipient's wastewater system or the assets, properties or operations of the Recipient relating to its wastewater system which, if determined adversely to the Recipient or its interests would result in any material change in the assets or financial condition of the Recipient, the Recipient's wastewater system or the financial condition thereof, and the Recipient is not in default with respect to any order or decree of any court or any order, regulation, or demand of any federal, state, municipal, or other governmental agency which default might have consequences that would materially and adversely affect the financial condition of the Recipient or its wastewater system.

g. No facts have come to my attention which lead me to believe that the Recipient's authorized representative has made any untrue statement of a material fact or omitted or omits to state a material fact or has made misleading statements in the Agreement.

h. The Agreement has been duly authorized, executed, and delivered, and assuming due authorization, execution and delivery of the Agreement by the State Water Board, constitutes legal, valid, and binding obligation of the Recipient enforceable against the Recipient in accordance with its terms, subject to the laws relating to bankruptcy, insolvency, reorganization, or creditors' rights generally and to the application of equitable principles, if equitable remedies are sought.

Sincerely,

Jack Govi
Assistant Marin County Counsel
CMSA General Counsel

Central Marin Sanitation District
Agreement No.: D17-01005
Project No.: C-06-8285-110

EXHIBIT B – FUNDING PROVISIONS

B-6. Budget Summary

Task Number	Task Description	Budget Amount
1	Development of a Technical Memorandum summarizing biogas production rates and utilization options	$55,773
2	Develop Organic Waste Receiving Facility Report	$44,800
3	Develop Solar Power Generation Analysis Report	$23,143
4	Biosolids Management Alternative Analysis Report	$65,720
5	Power/Biogas Sales Opportunities Analysis Report	$49,500
6	Economic Modeling Analysis	$15,750
7	CEQA/NEPA Environmental Review Determination/Analysis	$93,500
8	Air Quality and Other Permit Analysis	$89,250
9	Financing Plan Analysis	$15,750
10	PG&E Interconnection Agreement Modification	$103,125
11	Obtain CEC Renewable Portfolio Standard (RPS) Certification for the Project	$15,750
12	Prepare Report of Findings, Conclusions, Recommendations & Action Plan	$21,200
13	Draft and Final Report for CWSRF on the Recommended Project	$73,598
	Total Estimated Costs	$666,859
	CWSRF Eligible Costs	$666,859
	CWSRF GPR @75% Principle Forgiveness	$500,144
	Total Eligible CWSRF Funding - Principle Forgiveness	$500,000*

B-7. Budget Flexibility.

Funds may be shifted between line items as approved by the Project Manager. The sum of adjusted line items shall not exceed the total budget amount.

B-8. Amounts Payable by the Recipient.

(a) Planning Costs. The Recipient agrees to pay any and all costs connected with the Planning including, without limitation, any and all Planning Costs. If the Planning Funds are not sufficient to pay the Planning Costs in full, the Recipient shall nonetheless complete the Planning and pay that portion of the Planning Costs in excess of available Planning Funds, and shall not be entitled to any reimbursement therefor from the State Water Board.

(b) Additional Payments. The Recipient shall also pay to the State Water Board the reasonable extraordinary fees and expenses of the State Water Board, and of any assignee of the State Water Board's right, title, and interest in and to this Agreement, in connection with this Agreement, including all expenses and fees of accountants, trustees, staff, consultants,

Central Marin Sanitation Agency

BOARD MEMORANDUM

September 7, 2017

To: CMSA Commissioners and Alternates

From: Ad Hoc Grand Jury Response Committee
Jason Dow, General Manager JD

Subject: **Agency Responses to the Marin County Civil Grand Jury Report – The Budget Squeeze: *How Will Marin Fund Its Public Employee Pensions?***

Recommendation: Approve the draft Agency responses to the Grand Jury's Budget Squeeze Report as presented or with edits, and authorize staff to submit them to the Grand Jury Foreperson and Presiding Judge.

Summary: Marin County's 2016/2017 Civil Grand Jury released a report on June 5, 2017, titled "The Budget Squeeze: *How Will Marin Fund Its Public Employee Pensions?*" At the June Board Meeting, the Board tasked its just formed ad hoc Grand Jury Response Committee to collaborate with staff on preparing draft responses for the Board's review and discussion at its September 12 meeting. GM Dow and the Committee met on August 10 and prepared the attached draft responses for the Board's consideration. CMSA must submit responses to the Grand Jury Foreperson, Jay Hamilton-Roth, and the Marin Superior Court Presiding Judge, Kelly Simmons, by September 30.

Discussion: The Budget Squeeze report is very informative, shows pension contributions as a percentage of revenues for each of Marin County's local agencies, and explains the obstacles confronting local agencies with moving to defined contribution pension programs. CMSA must respond to three of the Report's eight recommendations by completing the attached Agency Response to Grand Jury Report form, indicating if the Agency has 1) implemented the recommendations, 2) will implement in the future, 3) will not implement, or 4) requires additional analysis. In addition to completing the form, the Agency must provide a summary explanation for each response.

CMSA has partially implemented two recommendations and the third requires future analysis. For the partially implemented recommendations, they were noted as *"Will be Implemented in the Future"* in the Agency's response. Shown on the following page are the Committee's proposed implementation activities for recommendations #3 and #4, and a description of the future analysis for recommendation #8.

Recommendation 3: *"Agencies should publish long term budgets (i.e, covering at least five years), update them at least every other year and report what percent of total revenue they anticipate spending on pension contributions."*

Implementation Activity: One element in this recommendation that is not currently implemented is showing the percent of total revenue needed for CalPERS pension contributions. CMSA will include this pension information in its FY18/19 and future budgets.

Recommendation 4: *"Each agency should provide 10 years of audited financial statements and summary pension data for the same time period (or links to them) on the financial page of its website."*

Implementation Activity: Staff to include net Annual Required Contribution (ARC) amount in the Agency's annual operating budget.

Recommendation 8: *Public agency and public employee unions should begin to explore how introduction of defined contribution programs can reduce unfunded liabilities for public pensions."*

Future Analysis: CMSA will begin labor relations negotiations with its employee groups in 2020, and if state laws have changed by then to allow public agencies to offer defined contribution programs for new employees without triggering a CalPERS termination fee, we will explore options during those negotiations.

Attachments:
1) Draft Agency Responses
2) Grand Jury Response Form
3) Marin County Civil Grand Jury Report – The Budget Squeeze

2016/2017 MARIN COUNTY CIVIL GRAND JURY
The Budget Squeeze: *How will Marin Fund Its Public Employee Pensions?*

Report Date – May 25, 2017
Public Release Date – June 5, 2017
CMSA Response Date – September 13, 2017

CMSA'S RESPONSES TO RECOMMENDATIONS

R3. Agencies should publish long term budgets (i.e, covering at least five years), update them at least every other year and report what percent of total revenue they anticipate spending on pension contributions.

<u>Will be Implemented in Future</u> (Partially Implemented): CMSA publishes a Board adopted annual budget every fiscal year, for July 1 – June 30. That budget document includes the annual operating revenue and expense budgets with account descriptions, a 10-year Capital Improvement Program (CIP), and a 10-year Financial Forecast. During the development of each subsequent fiscal year's budget, the CIP and Forecasts are updated to reflect prior year's actual revenues and expenses and changes in future projections.

The budget's 10-year Financial Forecast includes information on prior, current, and future year revenues, operating and capital expenses, debt service payments, and reserve account balances and uses. CMSA's Board uses the Forecast as a decision making tool to adjust revenue and reserve levels to balance the operating budget, maintain a policy based level of operating reserves, and fund future capital activities. CMSA believes the annual budget document with CIP and Forecast aligns with the intent of this recommendation.

One element in this recommendation that is not currently implemented is showing the percent of total revenue needed for CalPERS pension contributions. CMSA will include this pension information in its FY18/19 and future budgets.

R4. Each agency should provide 10 years of audited financial statements and summary pension data for the same time period (or links to them) on the financial page of its website.

<u>Will Be Implemented in the Future</u> (Partially Implemented): CMSA annually prepares and publishes a Comprehensive Annual Financial Report (CAFR) that includes the Agency's audited financial statements. The current and prior nine CAFR documents are available for viewing and downloading from the Financial Page on CMSA's website. By the end of 2017, CMSA will add a link on the website's Financial Page to a table or graph that shows 10-years of summary pension information.

R8. Public agency and public employee unions should begin to explore how introduction of defined contribution programs can reduce unfunded liabilities for public pensions.

<u>Requires further analysis</u>: *CMSA agrees that defined contribution programs can reduce public agencies' unfunded future pension liabilities. However, as reported in the Report, CalPERS would not approve of a member agency providing a defined contribution plan for all employees or new employees, and would consider that action a termination of the agency's membership in CalPERS. Under the termination, the agency would be required to pay the net unfunded pension liability at a lower discount rate, between 2%-3.5%. For CMSA, a termination to implement some form of a defined contribution program may result in termination fee ranging from $33 million (3.5% rate) to $45 million (2% rate).* *CMSA will begin labor relations negotiations with its employee groups in 2020, and if state laws have changed by then to allow public agencies to offer defined contribution programs for new employees, without triggering a CalPERS termination fee, we will explore options during those negotiations.*

AGENCY RESPONSE TO GRAND JURY REPORT

Report Title: **The Budget Squeeze:** ***How Will Marin Fund Its Public Employee Pensions?***

Report Date: **June 5, 2017** Response Date: **September 5, 2017**

Agency Name: ______________________________ Agenda Date: ________________

Response by: ______________________________ Title: ________________________

FINDINGS

- I (we) agree with the findings numbered: __________________________
- I (we) disagree *partially* with the findings numbered: _______________
- I (we) disagree *wholly* with the findings numbered: _______________

  (Attach a statement specifying any portions of the findings that are disputed; include an explanation of the reasons therefor.)

RECOMMENDATIONS

- Recommendations numbered ____________________ have been implemented.

  (Attach a summary describing the implemented actions.)

- Recommendations numbered ____________________ have not yet been implemented, but will be implemented in the future.

  (Attach a timeframe for the implementation.)

- Recommendations numbered ____________________ require further analysis.

  (Attach an explanation and the scope and parameters of an analysis or study, and a timeframe for the matter to be prepared for discussion by the officer or director of the agency or department being investigated or reviewed, including the governing body of the public agency when applicable. This timeframe shall not exceed six months from the date of publication of the grand jury report.)

- Recommendations numbered____________________ will not be implemented because they are not warranted or are not reasonable.

  (Attach an explanation.)

Date:___________ Signed:____

Number of pages attached____

2016–2017 MARIN COUNTY CIVIL GRAND JURY

The Budget Squeeze

How Will Marin Fund Its Public Employee Pensions?

Report Date: May 25, 2017

Public Release Date: June 5, 2017

COUNTY OF MARIN

The Budget Squeeze
How Will Marin Fund Its Public Employee Pensions?

SUMMARY

Twenty years ago, the only people who cared about public employee pensions were public employees. Today, taxpayers are keenly aware of the financial burden they face as unfunded pension liabilities continue to escalate. The Grand Jury estimates that the unfunded liability for public agencies in Marin County is approximately $1 billion.

In 2012, the state passed the California Public Employees' Pension Reform Act of 2013 (PEPRA), which reduced pension benefits for new employees hired after January 1, 2013. PEPRA was intended to produce a modest reduction in the growth rate of these obligations but it will take years to realize the full impact of PEPRA. In the meantime, pension obligations already accumulated are undiminished.

This report will explore several aspects of this issue:

It's Worse than You Thought – While a net pension liability of $1 billion may be disturbing, the true economic measure of the obligation is significantly greater than this estimate.

The Thing That Ate My Budget – The annual expense of funding pensions for current and future retirees has risen sharply over the past decade and this trend will continue; for many agencies, it is likely to accelerate over the next five years. This will lead to budgetary squeezes. While virtually every public agency in Marin has unfunded pension obligations, some appear to have adequate resources to meet them, while many do not. We will look at what agencies are currently doing to address the issues and what additional steps they should take.

The Exit Doors are Locked – Although there are no easy solutions, one way to reduce and eliminate unfunded pension liabilities in future years would be transitioning from the current system of *defined benefit pension* plans to *defined contribution pension* plans, similar to a 401(k). However, this approach is largely precluded by existing statutes and made impractical by the imposition of termination fees by the pension funds that manage public agency retirement assets.

The Grand Jury's aim is to offer some clarity to a complex issue and to encourage public agencies to provide greater transparency to their constituents.

BACKGROUND

Defined benefit pension plans are a significant component of public employee compensation. These plans provide the employee with a predictable future income stream in retirement that is protected by California Law.[1] However, the promise made by an employer today creates a liability that the employer cannot ignore until the future payments are due. The employer must contribute and invest funds today so that future obligations can be met when its employees retire. Failing to set aside adequate funds or investing in underperforming assets results in a funding gap often referred to as an *unfunded pension liability*. In order to be consistent with Governmental Accounting Standards Board's (GASB) terminology, this paper will refer to the funding gap as the *Net Pension Liability* (NPL).

Actuaries utilize complicated financial models to estimate the *Total Pension Liability*, the present value of the liabilities resulting from pension plan obligations. Pension plan administrators employ sophisticated asset management strategies in an effort to meet targeted returns required to fund future obligations. Nevertheless, the logic behind pension math can be summed up in a simple equation: Total Pension Liability (TPL) - *Market Value of Assets* (MVA) = The Net Pension Liability (NPL). The NPL represents the funding gap between the future obligations and the funds available to meet those obligations. Conceptually, it is an attempt to answer the question: "How much would it be necessary to contribute to the plan today in order to satisfy all existing pension obligations?"

California is in the midst of an active public discussion about funding the retirement benefits owed to public employees. These retirement benefits have accumulated over decades and are now coming due as an aging workforce feeds a growing wave of retirements. The resulting financial demands will place stress on the budgets of public agencies and likely lead to reduced services, increased taxes or both.

The roots of the current crisis in California stretch back to the late 1990's, when the California Public Employees Retirement System (CalPERS) held assets well in excess of its future pension obligations. The legislature approved and Governor Davis signed SB 400, which provided a retroactive increase in retirement benefits and retirement eligibility at earlier ages for many state employees. These enhancements were not expected to impose any cost on taxpayers because of the surplus assets held by the retirement fund. However, the value of those assets fell sharply as a consequence of the bursting of the dotcom bubble in the early 2000s and the Great Recession starting in 2008. (CalPERS suffered a 24% decline in the value of its holdings in 2009 alone.[2]) Where there had been surplus assets, the state now has large unfunded liabilities.

The following graph illustrates the problem. If you had invested $1,000 in 1999, when the decision to enhance retirement benefits was made, and received a return of 7.50% annually — a

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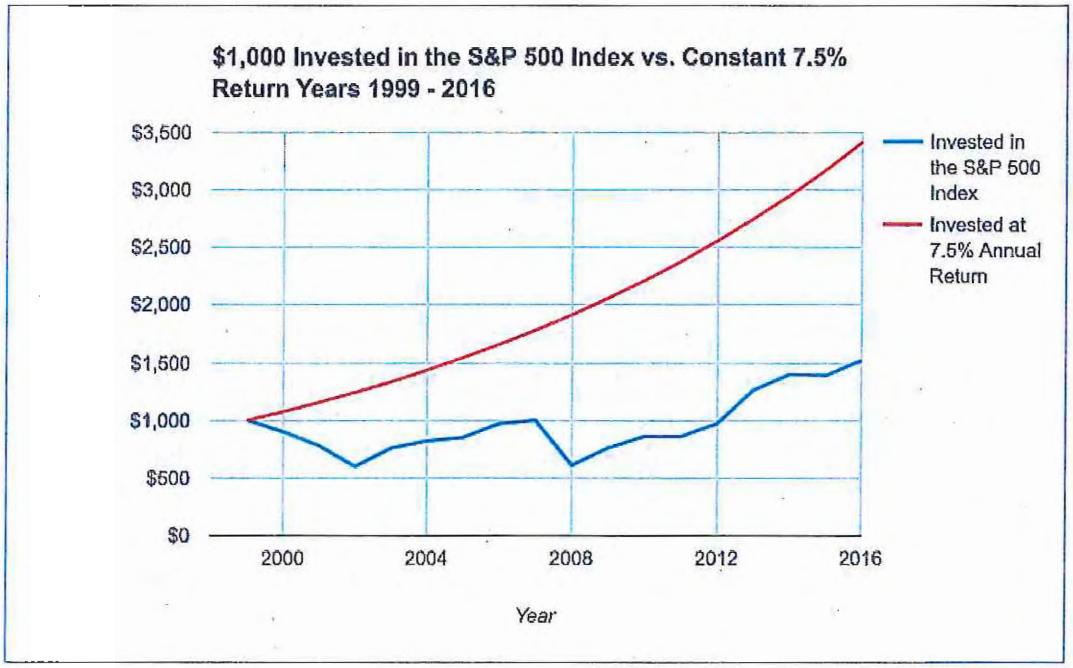
[1] "California Public Employee Retirement Law (PERL) January 1, 2016." *CalPERS.*
[2] Dolan, Jack. "The Pension Gap." *LATimes.com.* 18 Sept. 2016.

commonly used assumption of California's pension fund administrators — your investment would have grown to about $3,500 by the end of 2016. By contrast, had you received the returns of the S&P 500 over that same period, you would have only about $1,500, less than half of what had been assumed.



Last year, Moody's Investors Service reported that the unfunded pension liabilities of federal, state and local governments totaled $7 trillion.[3] Closer to home, the California Pension Tracker, published by the Stanford Institute for Economic Policy Research, places the state's aggregate unfunded pension liability at just under $1 trillion.[4]

Marin has not been exempt. Recent published estimates put the NPL for public agencies in Marin at about $1 billion. This is confirmed by our research.

The vast majority of employees of public agencies in Marin are covered by a pension plan. Three agencies administer these plans:

- California Public Employees Retirement System (CalPERS), a pension fund with $300 billion in assets that covers employees of many public agencies, excluding teachers.
- California State Teachers Retirement System (CalSTRS), a pension fund with $200 billion in assets that covers teachers.
- Marin County Employees' Retirement Agency (MCERA), a pension fund with $2 billion in assets that provides services to a number of Marin public agencies, the largest being the County of Marin and the City of San Rafael.

[3] Kilroy, Meaghan,. "Moody's: U.S. Pension Liabilities Moderate in Relation to Social Security, Medicare." *Pension & Investments*. 6 April 2016.
[4] Nation, Joe. "Pension Tracker." *Stanford Institute for Economic Policy Research*. Accessed 5 March 2017.

The Grand Jury chose to address public employee pensions not because it is a new problem, but because it is so large that it is likely to have a material future impact on Marin's taxpayers, its public agencies and their employees.

METHODOLOGY

The Grand Jury chose to review and analyze the audited financial statements of the 46 agencies included in this report for the fiscal years (FY) 2012-2016 (see Appendix B, Methodology Detail). We captured a snapshot of the current financial picture as well as changes over this five-year period. In addition to reviewing net pension liabilities and yearly contributions of each agency, we collected key financial data from their balance sheets and income statements. We present all of this data both individually and in aggregate in the appendices.

The agencies were organized into three main types: municipalities, school districts and special districts. The special districts were further separated into safety (fire and police) and all other, which includes sanitary and water districts and the Marin/Sonoma Mosquito and Vector Control District. Evaluating the agencies in this way provided insight into which types of agencies were most impacted by pensions. Comparing agencies within those designations provided further clarity on which agencies may need to take specific action sooner rather than later. The school districts, which have some unique characteristics, require a separate discussion.

Financial Data and Standards

The Grand Jury analyzed data from the Comprehensive Annual Financial Reports (CAFR), Audited Financial Reports and actuarial reports from the pension fund administrators.

The Grand Jury analyzed the annual reports for each agency for the five fiscal years 2012 through 2016. A listing of the financial reports upon which the Grand Jury relied is presented in Appendix A, Public Sector Agencies.

Additional scrutiny was paid to the fiscal years 2015 and 2016 due to reporting changes required by the Governmental Accounting Standards Board (GASB),[5] described in detail later in this report. For further information, see Appendix C.

The Grand Jury interviewed staff and management from selected public agencies and selected pension fund administrators.

The Grand Jury reviewed current law related to pensions.

Our investigation was to determine only the pension obligations of each agency. The Grand Jury

[5] "GASB 68." *Governmental Accounting Standards Board.*

did not attempt to analyze the details of individual pension plans for any of the public agencies. The Grand Jury did not analyze the mix of pension fund investments; the investments for each public agency are managed by the appropriate pension fund according to standards and objectives established by that fund as contracted by their customers.

The Grand Jury did not investigate other employee benefits such as deferred compensation or inducements to early retirement.

Financial Data Consistency

The following agencies did NOT publish audited financial reports for FY 2016 in time for the Grand Jury to include those financial data in this report:

- City of Larkspur
- Town of Fairfax
- Central Marin Police Authority

The lack of a complete set of financial data for the fiscal years under investigation is reflected in this report in the following ways:

The financial tables below include an asterisk (*) next to the name of agencies for which financial data is missing. Table cells with data which is *Not Available* are marked as **N/A**.

Summary financial data totals do not include data for missing agencies for FY 2016. Percentages presented are calculated only with available data.

One agency, the Central Marin Police Authority (CMPA), presents other complications. The predecessor agency of CMPA, the Twin Cities Police Authority (TCPA), was a Joint Powers Authority of the City of Larkspur and the Town of Corte Madera. Subsequent to the publication of the TCPA FY 2012 audit report, a new Joint Powers Authority was created consisting of the former TCPA members plus the Town of San Anselmo. Thus, a strict comparison of financial condition over the full five year term of this report is not possible. The FY 2012 audit report for TCPA is included in the CMPA statistics as the predecessor agency.

DISCUSSION

It's Even Worse than You Thought

The Governmental Accounting Standards Board (GASB) establishes accounting rules that public agencies must follow when presenting their financial results. The recent implementation of GASB Statement 68 requires public agencies to report NPL as a liability on the balance sheet in their audited financial statements beginning with the fiscal year ended June 30, 2015.[6] Prior to this accounting rule change, agencies only reported required yearly contributions to pension plans on the income statement, but NPL was not reflected on the balance sheet. The new method of reporting has provided greater transparency into the future impact of pension promises on current agency financials.

The addition of NPL as a liability on the balance sheet of government agencies has resulted in dramatic reductions to most agencies' *net positions*. The net position (assets minus liabilities, which is referred to as net worth in the private sector) is one metric used to evaluate the financial health of an organization. In the private sector, when net worth is negative, a company is considered insolvent, which is a signal to the investment community of potential financial distress. During the course of our research, the Grand Jury discovered many agencies that now have negative net positions following the addition of NPL to their balance sheets. We will discuss the possible implications of this new reality in the section entitled *The Thing That Ate My Budget.*

The calculation of the NPL involves complex actuarial modeling including many variables. Specific to each agency are the number of retirees, the number of employees, their compensation, their age and length of service, and expected retirement dates. Also included in the evaluation are general economic and demographic data such as prevailing interest rates, life expectancy and inflation. Actuaries base their assumptions on statistical models. But these assumptions can change over time as economic or demographic conditions change, which make regular updates to actuarial calculations essential. The total of all present and future obligations is calculated based on these assumptions. A discount rate is then applied to calculate the present value of the obligations and account for the time value of money.[7] This calculation yields the Total Pension Liability (TPL). Put simply, the total pension liability is the total value of the pension benefits contractually due to employees by employers.

Agencies are required to make annual contributions to the pension plan administrator. A portion of the yearly contributions is used to make payments to current retirees and a portion is invested into a diversified portfolio of stocks, bonds, real estate and other investments. The investments are accounted for at market value (i.e. the current market price rather than book value or acquisition price.) In the calculation of NPL, the value of this investment portfolio is referred to

[6] "GASB 68." *Governmental Accounting Standards Board*
[7] See Appendix C

as Market Value of Assets (MVA). Consequently the NPL = TPL - MVA. The net pension liability is simply the difference between how much an entity should be saving to cover its future pension obligations and how much it has actually saved.

Although the NPL calculation depends on many variables, it is extremely sensitive to changes in the discount rate, the rate used to calculate the present value of future retiree obligations.[8] The discount rate has an inverse relationship to the net pension liability (i.e. the higher the discount rate, the lower the NPL). GASB requires pension plan administrators to use a discount rate that reflects either the long-term expected returns on their investment portfolios or a tax-exempt municipal bond rate.[9] It is common practice for government pension administrators to choose the higher discount rates associated with the expected return on their investment portfolios. Choosing the higher discount rate produces a lower NPL, which requires lower contributions from agencies today with the expectation that investment returns will provide the balance. While a portfolio mix that contains stocks and other alternative assets might produce a higher expected return, these portfolios are inherently more risky and will experience significantly more volatility, potentially leading to underfunding of the pension plans.

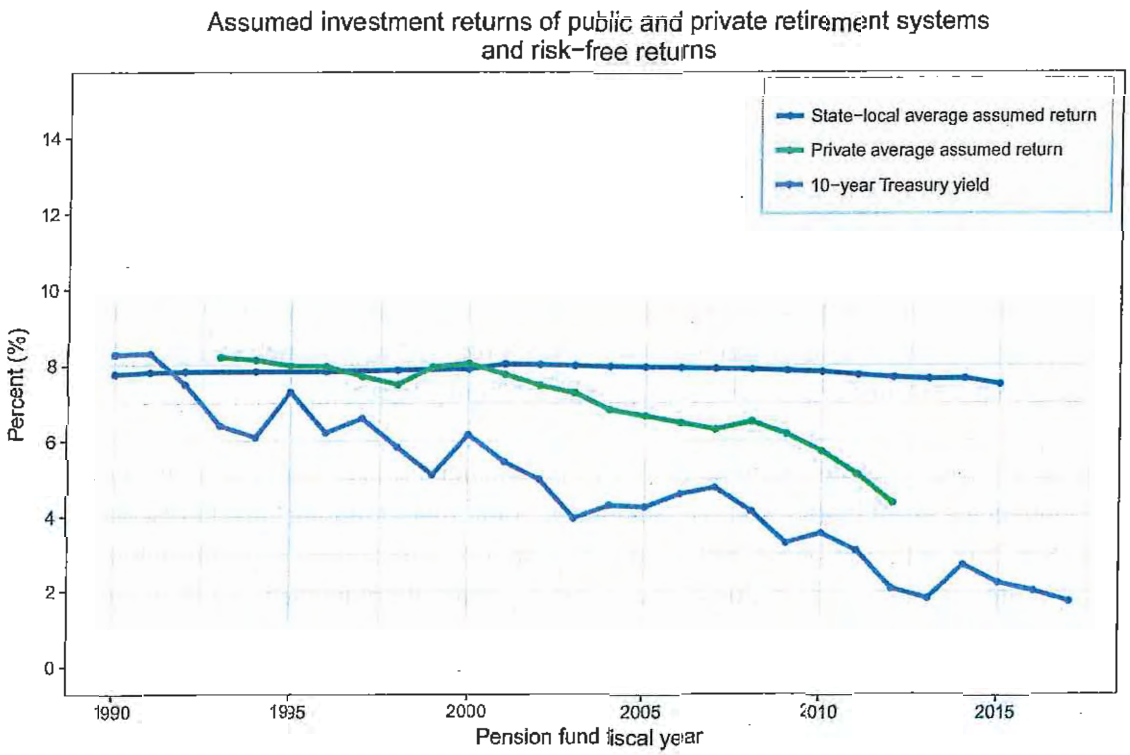
Until recently, the three pension administrators (CalPERS, CalSTRS and MCERA) that manage the assets on behalf of all of Marin's current employees and retirees used discount rates between 7.50% and 7.60%. Prolonged weak performance in financial markets has resulted in the long-term historical returns of pension funds falling below the discount rate. For example, CalPERS 20-year returns dropped to 7.00% following a few years of very poor investment performance, falling under the 7.50% discount rate.[10] In response, CalPERS announced in December 2016 that it would cut its discount rate to 7.00% over the course of the next three years.[11] CalSTRS will cut its rate first to 7.25% and then to 7.00% by 2018.[12] In early 2015, MCERA cut its discount rate from 7.50% to 7.25%. As noted before, a lower discount rate results in a higher NPL. A higher NPL leads to increasing yearly contributions. So you see, it's worse than you thought. But keep reading, because it may be even worse than that.

Discount rates may yet be too high even at the new, lower 7.00-7.25% range.

At this point, it is helpful to provide some historical context. The risk-free rate,[13] typically the US 10-Year Treasury note, yielded 2.37% as this report is written. (Real-time rates are available on Bloomberg.com.[14]) US Treasury securities are considered risk free because the probability of

[8] "Measuring Pension Obligations." *American Academy of Actuaries Issue Brief.* November 2013, pg 1
[9] "GASB 68." *Government Accounting Standards Board*
[10] Gittelsohn, John. "CalPERS Earns 0.6% as Long-Term Returns Trail Fund's Target." *Bloomberg.com.* 18 July 2016.
[11] Pacheco, Brad and Davis, Wayne and White, Megan. "CalPERS to Lower Discount Rate to Seven Percent Over the Next Three Years." *CalPERS.ca.gov.* 21 Dec. 2016.
[12] Myers, John. "California Teacher-Pension Fund Lowers its Investment Predictions, Sending a Bigger Invoice to State Lawmakers." *LA Times.com.* 1 Feb. 2017.
[13] "*Risk Free Rate of Return.*" *Investopedia.com*
[14] "Treasury Yields." *Bloomberg.com*

default by the US government is considered to be zero. Investment returns in the range of 7.00% - 8.00% were attainable with little volatility in the past because the risk-free rate was much higher. Between 1990 and 2016, risk-free rates have declined substantially, by around six percentage points.[15] Discount rates in public sector pension plans have not declined proportionally. The following chart illustrates how the public sector has failed to reduce its assumed rates of return in response to the decline in risk-free rates.



From: "The Pension Simulation Project: How Public Plan Investment Risk Affects Funding and Contribution Risk." *Rockefeller Institute*. Accessed on 23 March 17. pg.3.

In the aftermath of the 2008 financial crisis, central banks around the world engaged in the artificial support of lower interest rates through *quantitative easing* to boost global growth.[16] Record-low interest rates followed, with interest rates on some sovereign debt even falling into negative territory. While easy monetary policy aided in spurring global growth, the prolonged period of low interest rates and weak investment returns has contributed to the dramatic underfunding of pension plans around the world.

[15] Boyd, Donald J. and Yin, Yimeng. "How Public Pension Plan Investment Risk Affects Funding and Contribution Risk." *The Rockefeller Institute of Government State University of New York*. Jan. 2017.
[16] Martin, Timothy W. and Kantchev, Georgi and Narioka, Kosaku. "Era of Low Interest Rates Hammers Millions of Pensions Around World." *WSJ.com* 13 Nov. 2016.

Pension plans in the private sector have lowered their discount rates in tandem with declining yields in the bond market. The Financial Accounting Standards Board (FASB) is the accounting rule-maker for for-profit corporations. FASB takes the view that, because there is a contractual requirement for the plan to make pension payments, the rate used to discount them should be comparable to the rate on a similar obligation. FASB Statement 87 says, "...employers may also look to rates of return on high-quality fixed-income investments in determining assumed discount rates."[17] The effect is that pension obligations in the private sector are valued using a much lower discount rate than those used in the public sector. We looked at the ten largest pension funds of US corporations. Based on their 2015 annual reports, the average discount rate on pension assets was 4.30%.[18]

A significant body of research written by economists, actuaries and policy analysts has been devoted to the topic of whether discount rates used in public sector pensions are too high. Some suggest that the FASB approach is more appropriate, others believe the risk-free rate should be used, while still others contend that the current approach is perfectly reasonable. The Grand Jury cannot opine on which is the best and most accurate approach. Our research can only illuminate the financial impact of lower discount rates on Marin County agencies.

An additional reporting requirement of GASB 68 is the calculation of the NPL using a discount rate one percentage point higher and one percentage point lower than the current discount rate in order to show the sensitivity of the NPL to this assumption. The current financial statements reflect the following rates, which, due to the recent discount rate reductions noted above, are already outdated:

Pension Fund	Discount Rate	+ 1 Percentage Point	-1 Percentage Point
CalPERS	7.50%	8.50%	6.50%
CalSTRS	7.60%	8.60%	6.60%
MCERA	7.25%	8.25%	6.25%

Because of this new disclosure requirement, the Grand Jury compiled the NPLs of the agencies at a discount rate range of between 6.25% - 6.60%. The individual results are presented in Appendix E; the total amount for the Marin agencies included in this report is $1.659 billion.

In this discussion, we have focused on the risk of lower rates of return, but there is a possibility that investment returns could exceed the discount rates assumed by the pension administrators.

[17] "Statement of Financial Accounting Standards No. 87, Employers' Accounting for Pensions" *Financial Accounting Standards Board*. paragraph 44.
[18] See Appendix F

However, this possibility appears to be unlikely in that it would constitute a dramatic reversal of a decades-long trend. (See graph on page 7.) If that occurred, the effect would be lower NPLs and lower required contributions by employers. Regardless of investment returns, employers would still be required to make some contributions.

While the discussion of growing NPLs and lower discount rates may seem abstract, ultimately they lead to higher required contributions by public agencies to their pension plans. Because these payments are contractually required, they are not a discretionary item in the agency's budgeting process. Consequently, steadily increasing pension payments will squeeze other items in the budget. In the next section, we discuss the impact on Marin's public agencies' budgets.

The Thing That Ate My Budget

A budget serves the same purpose in a public agency as it does in a for-profit enterprise or a household. It is a statement of priorities in a world of finite resources. As growing pension expenses demand an increasing share of available funding, agencies must figure out how to stretch and allocate their resources.

This budgetary conundrum is not unique to Marin. A recent article in the *Los Angeles Times*[19] discusses what can happen at the end stage of rising pension expenses. The City of Richmond has laid off 20% of its workforce since 2008 and projects pension expenses rising to 40% of revenue by 2021.

The explosion of pension expenses played a key role in three California cities that have filed for bankruptcy protection since 2008: Vallejo,[20] Stockton,[21] and San Bernardino.[22] Several factors played a role in these California bankruptcies. In the case of Vallejo, booming property tax revenues during the real estate bubble led city officials to offer generous salary and benefit increases. Property taxes plummeted after a wave of foreclosures during the financial crisis and city officials could not cut enough of the budget to meet obligations. In particular, the city's leadership was unable to negotiate cuts to pension benefits. This lack of flexibility forced Vallejo into bankruptcy. Further threats of litigation from CalPERS during the bankruptcy process kept the City from negotiating cuts to pension benefits as part of its bankruptcy plan. Despite exiting bankruptcy, Vallejo remains on unstable financial footing. Stockton and San Bernardino have similar stories: overly generous salary and benefits offered during boom times, some fiscal mismanagement (i.e. ill-timed bond offerings, failed redevelopment plans, etc.) followed by the inability to cut benefits when revenues declined.

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[19] Lin, Judy. "Cutting jobs, street repairs, library books to keep up with pension costs." *Los Angeles Times* 6 Feb. 2017.
[20] Hicken, Melanie. "Once bankrupt, Vallejo still can't afford its pricey pensions." *Cnn.com* 10 March 2014.
[21] Stech, Katie. "Stockton Calif., To Exit Bankruptcy Protection Wednesday." *WSJ.com* 24 Feb. 2015.
[22] Christie, Jim. "Judge Confirms San Bernardino, California's Plan to Exit Bankruptcy." *Reuters.com* 27 Jan 2017.

In budgeting for pension expense, agencies have two types of contributions to consider: the *Normal Cost* and the amortization of the NPL. The Normal Cost is the amount of pension benefits earned by active employees during a fiscal year. In addition, agencies must make a payment toward the NPL. A pension liability is created in every year the fund's investments underperform the discount rate. The liability for each underfunded year is typically amortized over an extended period, which may be as long as 30 years.

While the passage of PEPRA has reduced the Normal Cost somewhat, the payments needed to amortize the NPL have been rising and will continue to rise in the coming years. This trend will only be exacerbated by the recent decisions of CalPERS and CalSTRS to lower their discount rates. In this section, we will discuss the stress this is placing on the budgets of Marin public agencies.

Revenues of public agencies come from defined sources, including property taxes, sales taxes, parcel taxes, assessments and fees for services. Cash flow may be supplemented by the issuance of general obligation bonds, but these require repayment of principal along with interest.

The budgeting process of public agencies is not always transparent. Although final budgets are made public, the choices made along the way — specifically, which spending priorities did not make it into the final budget — are usually not disclosed.

In 2016, the Marin/Sonoma Mosquito and Vector Control District commissioned a study of the district's financial situation over a projected ten-year time frame, which concluded:

> *In addition to the basic level of incurred and approved expenditures modeled .., the District has long term pension liabilities. Budgets have been reduced in recent years, but without additional revenues, the District would be forced to implement severe cutbacks in services and staffing.*[23]

The report concludes that expenses will exceed revenues beginning in FY 2018, with a deficit widening through FY 2027, the final year of the study, and that the district's reserves will be exhausted by FY 2024.

The Grand Jury commends the district for taking the responsible step of investigating its future financial obligations. We believe that a long term budgeting exercise — whether done internally or by an outside consultant — should be completed and made public by every agency every few years.

The Grand Jury chose several balance sheet and income statement items to provide context in calculating the relative burden that pension obligations placed on each agency. We felt a more

[23] Cover letter from NBS to the Board of Trustees and Phil Smith, Manager, Marin/Sonoma Mosquito Vector Control District dated November 9, 2016.

meaningful analysis could be gleaned from examining ratios rather than absolute numbers. For example, the $48 million dollar pension contribution that the County made in 2016 might sound less shocking when presented as 8% of the county's revenues. The County's $203 million NPL might be perceived as extraordinary, but not necessarily so when presented with a balance sheet that held $400 million in cash.

We focused on two metrics: 1) The percentage of revenue spent on pension contributions each year over a five-year period, and 2) The percentage of NPL to cash on the balance sheet to for fiscal years 2015 and 2016. The first metric was an attempt to answer the question of how much of an agency's budget is spent on yearly pension contributions. The second metric addressed the question of whether an agency had financial resources to pay down pension liabilities in order to reduce their future yearly contributions.

The recent announcements of discount rate reductions at both CalPERS and CalSTRS will lead to increases in NPL, resulting in increasing coutributions for their participating agencies. As CalPERS and CalSTRS have not yet implemented the discount rate reductions, the financial statistics we have used in the following discussion do not reflect these pending increases and, therefore, somewhat understate the budgetary impact.

Given the wide scope of public missions, responsibilities and funding sources of the agencies investigated in this report, it is not easy to generalize about the consequences of budgetary shortfalls for individual agencies. However, we found similarities among agencies with similar missions.

School Districts

School districts share many characteristics: They are included in a single pool (i.e., identical contribution rates for all districts) for both CalSTRS and CalPERS; they have similar missions and similar financial structures and are, therefore, homogeneous. This is the only category where the agencies contribute to two pensions administrators: CalSTRS for certificated employees and CalPERS for classified staff. Both CalSTRS and CalPERS place eligible school-district employees into a single pool for purposes of determining the annual required contribution. Consequently, we see that pension contributions as a percentage of revenue are fairly consistent across districts.

School District	FY 2016	FY 2015	FY 2014	FY 2013	FY 2012
Bolinas-Stinson Union School District	6.2%	5.1%	5.3%	4.4%	5.0%
Dixie Elementary School District	5.8%	5.7%	5.2%	5.4%	5.3%
Kentfield School District	5.4%	5.2%	4.9%	4.9%	5.1%
Larkspur-Corte Madera School District	5.5%	5.3%	5.0%	4.6%	5.0%
Marin Community College District	5.8%	6.0%	4.7%	3.9%	3.6%
Marin County Office of Education	3.3%	2.9%	2.8%	2.8%	2.7%
Mill Valley School District	5.1%	4.8%	4.4%	4.5%	4.8%
Novato Unified School District	4.4%	4.4%	4.9%	4.8%	4.8%
Reed Union School District	5.2%	4.8%	4.7%	4.6%	4.4%
Ross School District	5.0%	4.7%	4.6%	4.6%	4.3%
Ross Valley School District	5.5%	5.1%	4.8%	4.8%	4.6%
San Rafael City Schools - Elementary	4.6%	4.4%	4.1%	4.1%	4.0%
San Rafael City Schools - High School	5.3%	4.8%	4.4%	4.5%	4.4%
Sausalito Marin City School District	3.4%	3.7%	3.3%	3.0%	2.7%
Shoreline Unified School District	4.9%	5.0%	5.0%	3.8%	4.1%
Tamalpais Union High School District	5.7%	4.6%	4.9%	5.0%	4.9%
Total	**5.0%**	**4.7%**	**4.5%**	**4.3%**	**4.3%**

■ < 5% ■ 5% - 10% ■ 10% - 15% ■ > 15%

Pension contributions as a percentage of revenue for Marin's school districts have increased from 4.3% in FY 2012 to 5.0% in FY 2016. Increases will continue over the next five years, but at a much higher rate. CalSTRS contribution rates are governed by law and, under AB 1469[24], contribution rates are scheduled to increase from 10.73% of certificated payroll in FY 2016 to 19.10% in FY 2021 (and remain at that level for the next 25 years), an increase of 78%.[25] For classified employees, the CalPERS contribution rates will be increasing from 11.847% of payroll in FY 2016 to 21.50% in FY 2022, an increase of over 81%.[26] This implies that school districts will be spending 9% of their revenues on pension contributions within the next five years.

[24] AB-1469 State teachers' retirement: Defined Benefit Program: funding., *California Legislative Informative*
[25] "CalSTRS Fact Sheet, CalSTRS 2014 Funding Plan." *CalSTRS.* July 8, 2014.
[26] "CalPERS Schools Pool Actuarial Valuation as of June 30, 2015." *CalPERS.* April 19, 2016.

School districts are already running on tight budgets, with the average Marin school district expenses having slightly exceeded revenues in fiscal year 2016. Thus, increases in outlays for pensions will necessitate service reductions, tax increases or a combination of the two.

Many of the school districts have General Obligation (GO) bonds outstanding, which contributes to their precarious financial position. With the recent addition of NPL to their balance sheets, most of the school districts have negative net positions. As discussed earlier, in the private sector a negative net position is considered a sign of financial distress and possible insolvency. When we asked whether the rating agencies had expressed concerns or threatened to downgrade their existing debt, the responses from several districts were that they had no difficulties refinancing their bonds and had all maintained their high credit ratings.

The Grand Jury found this particular issue perplexing. A healthy balance sheet is essential in the private sector to attaining a high credit rating. We learned, however, that this is not how rating agencies view a Marin County agency's credit worthiness. In addition to looking at a particular agency's financials, the rating firms also evaluate the likelihood of getting paid back in the event of a default from other resources, more specifically Marin taxpayers. GO bonds have a provision where, in the event of a shortfall or default on a bond, the agency can direct the tax assessor to increase property taxes to satisfy the obligation.[27] Consequently, a rating agency is really assessing the ability to collect directly from Marin County taxpayers. Given Marin's relatively high home values and incomes, collection from Marin taxpayers is a safe bet in the eyes of the rating agencies, thereby making it completely defensible to assign a AAA rating on a GO bond from an agency with a negative net worth. Thus, taxpayers, and uot bondholders, bear the risk of an individual agency's insolvency.

Another concern for school districts is their reliance on parcel taxes to supplement revenue. Most Marin school districts have parcel taxes, which run as high as 20% of revenue in some districts and average 9.7%.[28] This important source of revenue is subject to periodic voter approval and requires a two-thirds vote to pass. Historically, parcel tax measures have seldom failed in Marin. In November 2016, both Kentfield and Mill Valley had ballot measures to renew existing parcel taxes. Kentfield failed to get the required two-thirds and Mill Valley's measure barely passed. This raises two concerns: 1) that parcel tax measures will face greater opposition if voters believe the money is going for pensions; and 2) that districts' already tight finances will be substantially worsened if this source of funding is reduced.

[27] "California Debt Issuance Primer Handbook." *California Debt and Investment Advisory Commission.* pg 134.
[28] Sources: parcel tax data from ed-data.org, revenue data from audit reports (see Appendix A)

K-12 School District	Parcel Tax Revenue as % of Total Revenue
Bolinas-Stinson Union School District	13.3%
Dixie Elementary School District	7.6%
Kentfield School District	20.0%
Larkspur-Corte Madera School District	11.9%
Mill Valley School District	20.0%
Novato Unified School District	4.4%
Reed Union School District	8.6%
Ross School District	8.9%
Ross Valley School District	12.5%
San Rafael City Schools - Elementary	4.4%
San Rafael City Schools - High School	7.0%
Sausalito Marin City School District	0.0%
Shoreline Unified School District	6.2%
Tamalpais Union High School District	10.2%
Average	**9.3%**

Given these budget pressures, it is difficult to imagine how the impact of increasing pension contributions will not ultimately be felt in the classroom.

Municipalities & the County

The County and the 11 towns and cities in Marin County (we will refer to them collectively as the "municipalities") have broad responsibilities. Within this group, however, there are important differences. Populations differ widely, from Belvedere at about 2,000 to San Rafael at 57,000. In some municipalities, police and/or fire protection services are provided by a separate agency. In others they fall under the municipality's auspices. These factors lead to some variation among this category.

Unlike school districts, municipalities (and special districts, which we will discuss next) have individualized schedules for amortization of their NPLs. Although we can make overall statements about recent and expected increases in pension expense, there can be substantial variation among jurisdictions.. The following table shows the pension contribution as a percent of revenue for each municipality over the past 5 years.

Municipality	FY 2016	FY 2015	FY 2014	FY 2013	FY 2012
City of Belvedere	4.2%	3.8%	3.9%	5.2%	5.7%
City of Larkspur*	N/A	3.8%	5.0%	6.0%	7.0%
City of Mill Valley	6.4%	5.5%	5.2%	5.1%	6.3%
City of Novato	5.4%	5.2%	9.1%	8.4%	8.3%
City of San Rafael	19.2%	18.8%	18.8%	15.9%	16.8%
City of Sausalito	6.6%	9.7%	6.9%	10.8%	12.3%
County of Marin	7.9%	6.9%	8.1%	15.2%	10.5%
Town of Corte Madera	7.7%	7.8%	8.5%	8.4%	11.0%
Town of Fairfax*	N/A	13.9%	9.8%	10.5%	9.8%
Town of Ross	14.5%	2.2%	3.9%	7.2%	13.0%
Town of San Anselmo	2.4%	1.9%	2.5%	4.3%	7.2%
Town of Tiburon	6.6%	3.8%	4.1%	4.7%	5.8%
Total	**8.8%**	**7.9%**	**8.9%**	**13.6%**	**10.7%**

< 5% 5% - 10% 10% - 15% > 15%

In FY 2016, the City of San Rafael and the Town of Ross had the highest contribution percentages, 19.2% and 14.5% respectively. The City of San Rafael's contribution rate has been consistently high for the last five years. MCERA, San Rafael's pension administrator, projects that contributions will remain high with only a slight decline over the next 15 years.[29]

In contrast, the Town of Ross had a relatively low contribution percentage through FY 2014 & FY 2015. The contribution rate would have remained low in FY 2016 but for a $1 million voluntary contribution to pay down its NPL. Nevertheless, the Town's pension administrator (CalPERS), projects that pension contributions will rise sharply from FY 2014/FY 2015 levels over the next five years.[30]

[29] "Actuarial Valuation Report as of June 30, 2016." *Marin County Employees' Retirement Association*. p.15.
[30] "Annual Valuation Report as of June 30, 2015." California Public Employees' Retirement System. Reports for Town of Ross - Miscellaneous Plan, Town of Ross - Miscellaneous Second Tier Plan, Town of Ross - PEPRA Miscellaneous Plan & Town of Ross - Safety Plan

Although Fairfax has not yet produced an audit report for FY 2016, we expect its required contributions will experience an increase over the next four to five years after which they are projected to decline somewhat over the following decade.[31]

Belvedere and San Anselmo had the lowest contribution percentages of 4.2% and 2.4% respectively.

Examining NPL as a percentage of cash (see Appendix E), Tiburon and Ross were in the best position, with Tiburon having 25.2% of NPL to cash and Ross having 33.7% of NPL to cash. The Grand Jury recommends that cash-rich agencies evaluate their reserve policies and discuss whether a contribution to pay down the NPL (as Ross did in FY 2016), should be prioritized. Conversely, San Rafael and Fairfax (based on FY 2015) are also in the worst position based on our balance sheet metric with a NPL that is more than double both municipalities' respective cash positions.

The County is in a strong financial position, spending 7.9% of its revenues on pension contributions. The County of Marin's balance sheet has assets of nearly $2 billion, yearly revenues of over $600 million and cash of over $400 million. When viewed in the context of its ample financial resources, the County does not currently appear to be financially strained by its pension obligations. Furthermore, the county's significant assets and ample cash cushion should protect it from further pressure caused by increasing pension contributions. In 2013, the County made a significant extra contribution ($30 million) to pay down its NPL and could do the same in future years to offset increasing contribution requirements from MCERA.

Special Districts

The Special Districts illustrate the stark differences among agencies. The safety districts (police and fire), out of all the agencies, spent the highest percentage of their revenues on pension contributions. The primary reason that safety agencies have high pension expenses relative to other agencies is that they are inherently labor intensive, with some of the most highly compensated public employees with the highest pension benefits (in terms of percentage of compensation for each year of service) and the earliest retirement ages. Other than some equipment, such as a fire engine, the bulk of the revenues are spent on employee compensation and benefits.

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[31] "Annual Valuation Report as of June 30, 2015." California Public Employees' Retirement System. Reports for Town of Fairfax - Miscellaneous First Tier Plan, Town of Fairfax - Miscellaneous Second Tier Plan, Town of Fairfax - PEPRA Miscellaneous Plan, Town of Fairfax - PEPRA Safety Plan, Town of Fairfax - Safety First Tier Plan & Town of Fairfax - Safety Second Tier Plan

Safety District	**FY 2016**	**FY 2015**	**FY 2014**	**FY 2013**	**FY 2012**
Central Marin Police Authority*	N/A	13.4%	20.1%	17.7%	16.8%
Kentfield Fire Protection District	19.0%	16.7%	14.7%	16.9%	17.5%
Novato Fire Protection District	17.4%	18.2%	17.5%	18.1%	19.1%
Ross Valley Fire Department	11.7%	10.9%	9.1%	16.3%	61.8%
Southern Marin Fire Protection District	13.9%	5.4%	12.6%	13.8%	13.9%
Tiburon Fire Protection District	20.5%	31.0%	14.2%	14.2%	15.8%
Total	16.2%	15.2%	15.5%	16.5%	22.2%

< 5% 5% - 10% 10% - 15% > 15%

The highest pension to revenue rates were in the Tiburon, Kentfield and Novato fire districts, which each spent more than 17% of their revenues on pension payments in FY 2016. Using the metric of NPL to cash on the balance sheet, the Ross Valley Fire Department had the highest ratio of nearly 600% (see Appendix E). However, Ross Valley Fire spent only 11.7% of its revenues on pension contributions in 2016.

The ratios for Tiburon Fire in FY 2015 and FY 2016 are inflated by the voluntary contributions it made, totaling approximately $2 million over those two years.

Sanitary districts as a group appeared to be in the best financial condition based on both balance sheet and income statement data. Sanitary districts tend to have few employees and own significant assets that require capital investments to maintain. A capital-intensive business requires cash, but not many employees. Consequently, their pension plans appear not to be a financial burden on the agencies.

Utility District	FY2016	FY2015	FY2014	FY2013	FY2012
Central Marin Sanitation Agency	5.5%	13.0%	16.6%	7.6%	7.4%
Las Gallinas Valley Sanitary District	2.3%	2.3%	2.3%	3.6%	3.5%
Marin Municipal Water District	9.2%	7.5%	6.5%	5.7%	6.4%
Marin/Sonoma Mosquito & Vector Control	11.2%	10.2%	11.0%	11.2%	24.0%
Marinwood Community Services District	5.5%	5.2%	8.0%	8.7%	10.7%
North Marin Water District	4.6%	3.6%	3.9%	8.6%	6.5%
Novato Sanitary District	1.5%	0.9%	1.4%	1.8%	1.3%
Richardson Bay Sanitary District	2.6%	2.4%	3.2%	2.3%	2.3%
Ross Valley Sanitary District	2.3%	2.0%	3.8%	3.8%	3.2%
Sanitary District # 5 Tiburon-Belvedere	28.4%	25.3%	2.9%	3.5%	4.9%
Sausalito Marin City Sanitation District	3.3%	4.0%	3.4%	2.4%	5.0%
Tamalpais Community Services District	5.9%	5.9%	6.4%	5.8%	5.1%
Total	**6.5%**	**6.4%**	**6.0%**	**5.5%**	**6.1%**

< 5% 5% - 10% 10% - 15% > 15%

Sanitary District #5 had a very high level of pension contributions at over 25% for each of the two most recent years. However, this is the result of large voluntary contributions. Further, the district had cash equal to three times its NPL. The Novato Sanitary District stood out as being in particularly good financial condition in that it spends less than 2% of its revenues on pension contributions and has a NPL that is 18% of its cash position.

The real question for Marin County taxpayers is not whether we are in dire straits because of pensions — for now, most of the agencies appear to be able to meet their pension obligations — but which services are going to be squeezed, which roads aren't going to be paved, which buildings aren't going to be updated because of growing pension contribution requirements. Alternatively, how many more parcel taxes, sales tax increases and fee hikes will be required because pension contributions continue to spiral upwards? In the next section, we will discuss possible alternatives to the current system of retiree pay.

The Exit Doors Are Locked

In 2011, Governor Jerry Brown announced a 12-point plan for pension reform. This plan included raising the retirement age for new employees, increasing employee contribution rates, eliminating "spiking" (where an employee uses special bonuses, unused vacation time and other pay perquisites to increase artificially the compensation used to calculate their future retirement benefit) and prohibiting retroactive pension increases. Most of these proposals were incorporated into the Public Employees Pension Reform Act of 2013 (PEPRA).[32] One that was not was Governor Brown's proposal for "hybrid" plans for new employees.

The hybrid proposal consisted of three components:

1. New employees would be offered pensions but with reduced benefits requiring lower contributions by both employer and employee.
2. New employees would also be offered defined contribution plans.
3. Most new employees would be eligible for Social Security. (Currently, employees not eligible for CalPERS or CalSTRS -- generally, part-time, seasonal and temporary employees -- are covered by Social Security.)

The Governor's proposal was for each of these three components to make up approximately equal parts of retirement income. (For those not eligible for Social Security, the pension would provide two-thirds and the defined contribution plan one-third.)

It may be helpful at this point to pause and define our terms. A traditional pension — like the plans covering public employees in Marin — is a *defined benefit* (DB) plan. Under a DB plan, the employee is eligible for a pension that pays a defined amount, typically a formula based on retirement age, years of service and average compensation. Because the benefit is defined, the contributions by employer and employee will be uncertain; they, along with the investment returns on the contributed assets, must be sufficient to fund the defined benefit.

Under a *defined contribution* (DC) plan, such as a 401(k), both employer and employee make an annual contribution. Typically, the employee chooses a portion of pre-tax salary that is contributed to the plan and the employer matches a percentage of the employee's contribution. The funds are placed in an investment account and the employee chooses how the funds are invested (usually from a range of choices established by the employer). What is undefined is the value of the account at the time the employee retires as this depends upon the total of contributions and the rates of return over the life of the account. By law, 401(k) plans are "portable"; they permit the employee to move the account to an Individual Retirement Account (IRA) should he/she change employers.

The primary difference between DB and DC plans is who assumes the risk of lower investment returns and greater longevity. In a DB plan, it is the employer; in a DC plan, it is the employee. Furthermore, a DB plan poses some risk to the employee: If the employer does not make the required contributions, the pension administrator will be required to reduce pension benefits to the retirees of the employer. In November 2016, CalPERS announced that it would cut benefits for the first time in its history. Loyalton, California was declared in default by CalPERS after failing to make required contributions towards its pension plans. The CalPERS board voted to

[32] "Twelve Point Pension Reform Plan." *Governor of the State of California*. 27 Oct. 2011.

reduce benefits to Loyalton retirees.[33] More recently, in March of 2017, CalPERS voted again to cut benefits for retirees of the East San Gabriel Valley Human Services Agency when it began missing required payments in 2015.[34]

Over the past several decades, private industry in the US has moved decidedly toward DC and away from DB. In 1980, 83% of employees in private industry were eligible for a DB plan (either alone or in combination with a DC plan).[35] By March 2016, the Bureau of Labor Statistics reported that among workers in private industry, 62% had access to a DC plan while only 18% had access to a DB plan. This compares with workers in state and local government, where 85% had access to DB plans and 33% to DC plans (some workers are eligible for both).[36]

Eliminating the risk of an underfunded plan is the primary reason that private employers have been moving away from DB plans, but there are several others. In a traditional DB plan, the employer is responsible for managing the assets held in trust for future retirees. This leads to costs for both investment management and oversight of their fiduciary duties. In addition, as the economy has shifted from manufacturing toward service and high technology, new firms have sprung up that did not have unionized work forces or legacy DB plans and chose the simplicity and lack of risk of DC. The shift from DB to DC may also reflect the preference of younger employees for the portability and transparency of DC.[37]

In public employment, which has fewer competitive pressures and a higher percentage of workers represented by unions, these same trends have not occurred, leaving more DB plans in place.

Under PEPRA, new employees hired after January 1, 2013 are still eligible for DB plans, but at a lower percentage of average compensation and a later retirement age (generally two years later). These important steps reduced the annual cost of employee pensions but still leave the employer with the administrative cost and fiduciary duty. While PEPRA prohibits retroactive increases, which prevents the state from making the same mistake it made in the late 1990's, investment performance that is significantly below target could again produce a large unfunded liability.

It is argued by some[38] that everyone would benefit from a more secure retirement; rather than taking DB plans away from public employees, they should be made available to all workers.

[33] "CalPERS Finds the City of Loyalton in Default for Non-Payment of Pension Obligation." *CalPERS.ca.gov* 16 November, 2016.
[34] Dang, Sheila "CalPERS Cuts Pension Benefits for East San Gabriel Valley Human Services." *Institutionalinvestor.com* 16 March, 2017.
[35] "Pensions: 1980 vs. Today." *New York Times*, 3 Sep. 2009
[36] "National Compensation Survey." *Bureau of Labor Statistics*, March 2016
[37] Barbara A. Butrica and Howard M. Iams and Karen E. Smith & Eric J. Toder. "The Disappearing Defined Benefit Pension and Its Potential Impact on the Retirement Incomes of Baby Boomers." *Social Security Bulletin*, Vol. 69, No. 3, 2009
[38] Aaronson, Mel and March, Sandra and Romain, Mona. "Everyone Should Have a Defined- Benefit Pension." *New York Teacher*. 17 Feb. 2011.

While this argument has some appeal, it ignores the fact that US commerce has adopted DC plans as the de facto standard. Further, as DB plans for public employees exhibit significant unfunded liabilities, it stands to reason that DB programs for private employees with comparable benefits would suffer the same financial difficulties.

It is easy to understand why taxpayers, who have to manage the risks of their own retirements using DC plans, would object to guaranteeing the retirement income of public employees with DB plans. In a February 2015 nationwide poll, 67% of respondents favored requiring new public employees to have DC instead of DB plans.[39] A California poll in September 2015 put that number at 70%.[40]

As noted above, the changes to state retirement law under PEPRA did not make DC or hybrid plans an option for public employees. While existing DC plans were grandfathered by PEPRA, any agency proposing to offer a new DC or hybrid plan in place of an existing DB plan would face a series of hurdles:

- According to the County Employees Retirement Law of 1937, the County of Marin would require specific legislative approval to amend the law to allow the introduction of a DC or hybrid DC/DB plan.
- For other public agencies, PEPRA did not create any approved DC or hybrid models; although neither did it explicitly prohibit them. Any changes by agencies that are participants in CalPERS would require approval of the CalPERS board. It appears likely that CalPERS would disapprove such a request under PEPRA section 20502, as an impermissible exclusion of a class of employees. (Some differentiations — by job classification, for example — are permissible.)

In addition, negotiations with the relevant collective bargaining unit would need to take place, a requirement that is made explicit in PEPRA section 20469.

An additional obstacle is termination fees. If a CalPERS participating agency chooses to terminate its DB plan, it must make a payment to CalPERS to satisfy any unfunded liability. This fee would be calculated by discounting the liability using a risk-free rate (see Glossary for definition), which might be four to five percentage points lower than the rate normally used to calculate the NPL.

The actual calculation of the termination liability is done at the time of the termination, but in its annual actuarial valuation reports CalPERS provides two estimates intended to describe the range in which the liability is likely to fall. While CalPERS has used a 7.50% discount rate to calculate NPL for active plans, it uses a combination of the yields on 10-year and 30-year

[39] "Pension Poll 2015 Topline Result," *Reason-Rupe Public Opinion Survey*, 6 February 2015
[40] "Californians and Their Government," *Public Policy Institute of California Statewide Survey*, September 2015

Treasury securities — which respectively yield 2.19% and 3.02% as this report is written — to calculate the termination liability. In its most recent actuarial reports, it provided estimates of agencies' termination liability using discount rates of 2.00% and 3.25%. To illustrate, at June 30, 2015 (reports for fiscal 2016 were not yet available as this was written), the City of Larkspur had a NPL of just over $9 million, but Larkspur's termination liability was estimated at between $46.8 million and $64.1 million, or between five and seven times its NPL. This range is very typical.

Here, again, we should define our terms. When a pension plan is terminated, the claims of all eligible participants are satisfied, either through a lump-sum payment or through the purchase by the plan of annuities that pay all benefits to which the participants are entitled. The plan is then liquidated; no further benefits accrue to employees and retirees and no further contributions are required from the employer.

A pension plan freeze is different from a termination. A plan can be frozen in a variety of ways. A plan might terminate all future activity so that any benefits earned prior to the freeze are still due but no further benefits are earned by any employees. Alternatively, a pension plan might choose to keep all terms in place — including benefit accruals for future service and required future contributions — for existing employees and retirees but enroll all new hires in DC plans. Other variations are possible.

Currently, CalPERS does not distinguish between a termination and a freeze. If an employer were to propose converting new employees to a DC plan, CalPERS would treat it as a termination because it is impermissible for a CalPERS plan to differentiate between groups of employees on the basis of when they were hired.

Absent legislative action, an agency that wanted to freeze its current DB plan and make all new employees eligible for a DC-only or hybrid plan would make an application to CalPERS. The CalPERS board would conclude that excluding employees from the existing DB plan on this basis was impermissible and declare the plan terminated, triggering the imposition of a fee five to seven times the amount of the NPL. For an agency that wishes to take better control of its financial position, this would be a counter-productive endeavor.

CONCLUSION

The net pension liability of Marin's public agencies cannot be made to disappear. It represents benefits earned over several decades by public employees and constitutes a legal and ethical obligation. Some progress has been made to reduce growing liabilities (such as PEPRA's anti-spiking provisions, which are the subject of a lawsuit currently under appeal at the state Supreme Court).[41] However, the vast bulk of this liability will need to be paid.

The recommendations proposed by the Grand Jury are intended to achieve three objectives:

1. Avoid further increasing the pension liabilities of Marin's public agencies by shifting from DB to DC-only and/or hybrid retirement plans.
2. Increase the rigor and extend the planning horizon of fiscal management by Marin's public agencies.
3. Improve the depth and quality of information provided to the public.

In the course of its investigation, the Grand Jury found two models that may help achieve these objectives, one from right next door and one from across the country.

In September 2015, Sonoma County empanelled the Independent Citizens Advisory Committee on Pension Matters consisting of seven members, "none of whom are members or beneficiaries of the County pension system."[42] The panel conducted an investigation and published in June 2016 a comprehensive and highly readable report with recommendations for containing pension costs, public reporting and improving fiscal management.[43]

In 2012, New York State Office of the State Controller introduced a Fiscal Monitoring System, which is intended to be an early-warning system for financial stress among the state's municipalities and school districts. It takes financial data from reports filed by the agencies and economic and demographic data to produce scores to identify fiscal stress. The OSC also offers advisory services to assist those agencies in developing plans to alleviate their financial stress.[44]

We believe that these two models could be helpful as Marin's public agencies come to terms with the fiscal realities of the years ahead.

One final point: As bad as this report may make things look, they will almost certainly look worse in the next few years because of the lowering of discount rates by pension administrators. We believe that these actions by CalPERS, CalSTRS and MCERA are well founded and prudent, but they will result in increases to the NPLs of every agency, necessitating higher payments in

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[41] *Marin Association of Public Employees v. Marin County Employees* Retirement Association

[42] "Independent Citizens's Advisory Committee on Pension Matters." *County of Sonoma.*

[43] "Report of Independent Citizens Advisory Committee on Pension Matters." *County of Sonoma.* June 2016.

[44] "Three Years of the Fiscal Stress Monitoring System," New York State Office of the State Controller, September 2015

the near term to amortize the higher NPLs. The result will be that budgets, already under pressure, will be squeezed further.

FINDINGS

F1. All of the agencies investigated in this report had pension liabilities in excess of pension assets as of FY 2016.

F2. A prolonged period of declining global investment returns has led pension plan assets to underperform their targeted expected returns.

F3. MCERA, CalPERS and CalSTRS have lowered their discount rates, which will result in significantly higher required contributions by Marin County agencies in the next few years.

F4. If pension plan administrators discounted net pension liabilities according to accounting rules used for the private sector, increases in required contributions would be vastly larger than those required by the recent lowering of discount rates.

F5. Most Marin County school districts have a negative net position due in part to the addition of net pension liabilities to their balance sheets.

F6. The required contributions of Marin school districts to CalSTRS and CalPERS will nearly double within the next five to six years due to legislatively (CalSTRS) and administratively (CalPERS) mandated contribution increases.

F7. Pension contribution increases will strain Marin County agency budgets, requiring either cutbacks in services, new sources of revenue or both.

F8. The private sector has largely moved away from defined benefit plans primarily due to the risk of underfunding, offering instead defined contribution plans to its employees.

F9. Taxpayers bear most of the risk of Marin County employee pension plan assets underperforming their expected targets.

F10. Retirees' pension benefits would be reduced if an agency was unable to meet its contribution obligations.

RECOMMENDATIONS

R1. The Marin Board of Supervisors should empanel a commission to investigate methods to reduce pension debt and to find ways to keep the public informed. The panel should be comprised of Marin citizens with no financial interest in any public employee pension plan and should be allowed to engage legal and actuarial consultants to develop and propose alternatives to the current system.

R2. CalSTRS and MCERA should provide actuarial calculations based on the risk-free rate as CalPERS does in its termination calculations.

R3. Agencies should publish long-term budgets (i.e., covering at least five years), update them at least every other year and report what percent of total revenue they anticipate spending on pension contributions.

R4. Each agency should provide 10 years of audited financial statements and summary pension data for the same period (or links to them) on the financial page of its public website.

R5. For the purposes of transparency, MCERA, CalSTRS and CalPERS should publish an actuarial analysis of the effect of Cost of Living Allowances (COLA) on unfunded pension liabilities on an annual basis.

R6. Elected state officials should support legislation to permit public agencies to offer defined contribution plans for new employees.

R7. Elected state officials should support legislation to implement a statewide financial economic health oversight committee of all public entities similar to that implemented in NY.

R8. Public agencies and public employee unions should begin to explore how introduction of defined contribution programs can reduce unfunded liabilities for public pensions.

REQUEST FOR RESPONSES

Pursuant to Penal code section 933.05, the grand jury requests responses as follows:

From the following governing bodies:

- Bolinas-Stinson Union School District (R3, R4, R8)
- Central Marin Police Authority (R3, R4, R8)
- Central Marin Sanitation Agency(R3, R4, R8)
- City of Belvedere (R3, R4, R8)
- City of Larkspur (R3, R4, R8)
- City of Mill Valley (R3, R4, R8)
- City of Novato (R3, R4, R8)
- City of San Rafael (R3, R4, R8)
- City of Sausalito (R3, R4, R8)

- Marin Community College District (R3, R4, R8)
- Dixie Elementary School District (R3, R4, R8)
- Kentfield Fire Protection District (R3, R4, R8)
- Kentfield School District (R3, R4, R5, R8)
- Larkspur-Corte Madera School District (R3, R4, R8)
- Las Gallinas Valley Sanitary District (R3, R4, R8)
- Marin County (R1, R3, R4, R8)
- MCERA (R2, R5, R8)
- Marin County Office of Education (R3, R4, R8)
- Marin Municipal Water District (R3, R4, R8)
- Marin/Sonoma Mosquito & Vector Control (R3, R4, R8)
- Marinwood Community Services District (R3, R4, R8)
- Mill Valley School District (R3, R4, R8)
- North Marin Water District (R3, R4, R8)
- Novato Fire Protection District (R3, R4, R8)
- Novato Sanitary District (R3, R4, R8)
- Novato Unified School District (R3, R4, R8)
- Reed Union School District (R3, R4, R8)
- Richardson Bay Sanitary District (R3, R4, R8)
- Ross School District (R3, R4, R8)
- Ross Valley Fire Department (R3, R4, R8)
- Ross Valley Sanitary District (R3, R4, R8)
- Ross Valley School District (R3, R4, R8)
- San Rafael City Schools - Elementary (R3, R4, R8)
- San Rafael City Schools - Secondary (R3, R4, R8)
- Sanitary District # 5 (R3, R4, R8)
- Sausalito Marin City Sanitation District (R3, R4, R8)
- Sausalito Marin City School District (R3, R4, R8)
- Shoreline Unified School District (R3, R4, R8)
- Southern Marin Fire Protection District (R3, R4, R8)
- Tamalpais Community Services District (R3, R4, R8)
- Tamalpais Union High School District (R3, R4, R8)
- Tiburon Fire Protection District (R3, R4, R8)
- Town of Corte Madera (R3, R4, R8)
- Town of Fairfax (R3, R4, R8)
- Town of Ross (R3, R4, R8)
- Town of San Anselmo (R3, R4, R8)
- Town of Tiburon (R3, R4, R8)

The governing bodies indicated above should be aware that the comment or response of the governing body must be conducted in accordance with Penal Code section 933 (c) and subject to the notice, agenda and open meeting requirements of the Brown Act.

The following individuals are invited to respond:

- California State Assemblymember Marc Levine (R6, R7)
- California State Senator Mike McGuire (R6, R7)
- California Governor Edmund G. Brown, Jr. (R6, R7)
- CalPERS Chief Executive Officer Marcie Frost (R5, R8)
- CalSTRS Chief Executive Officer Jack Ehnes (R2, R5, R8)

Note: At the time this report was prepared information was available at the websites listed.

Reports issued by the Civil Grand Jury do not identify individuals interviewed. Penal Code Section 929 requires that reports of the Grand Jury not contain the name of any person or facts leading to the identity of any person who provides information to the Civil Grand Jury. The California State Legislature has stated that it intends the provisions of Penal Code Section 929 prohibiting disclosure of witness identities to encourage full candor in testimony in Grand Jury investigations by protecting the privacy and confidentiality of those who participate in any Civil Grand Jury investigation.

GLOSSARY

401(k): A retirement savings plan sponsored by an employer. A 401(k) allows workers to save and invest a piece of their paycheck before taxes are deducted. Taxes aren't paid until the amounts are withdrawn.[45]

Actuary: A professional specially trained in mathematics and statistics that gathers and analyzes data and estimate the probabilities of various risks, typically for insurance companies.[46]

California Bill SB 400: A California statute[47] passed by the legislature and signed by then Governor Grey Davis in 1999 retroactively raising the pension benefits for public employees.

California Public Employees' Retirement System (CalPERS): An agency in the California executive branch that serves more than 1.7 million members in its retirement system and administers benefits for nearly 1.4 million members and their families in its health program.[48]

California State Teachers' Retirement System: A pension fund in California established in 1913 to manage the retirement benefits of public school educators.

Cost of Living Allowance (COLA): An annual increase in pension benefits granted to retirees, typically based upon the rate of inflation in a specific geographic area.

Comprehensive Annual Financial Report (CAFR): A report issued by a government entity that includes the entity's audited financial statements for the fiscal year as well as other information about the entity. The report must meet accounting standards established by the Governmental Accounting Standards Board (GASB)."[49] Audited financial reports may be referred to as "audit reports" or "financial statements" by various public agencies.

Defined Benefit (DB): A type of retirement plan in which an employer/sponsor promises a specified payments (or payments) on retirement that is predetermined by a formula based on factors including an employee's earnings history, tenure of service and age.[50]

Defined Contribution (DC): A type of retirement plan in which the employer, employee or both contribute on a regular basis into an account where the funds may be invested. At retirement, the employee receives a benefit whose size depends on the accumulated value of the funds in the retirement account.[51]

Discount Rate: The interest rate used in present value calculations.

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[45] "What is a 401(k)?" *WSJ.com*. Accessed 25 March 2017.
[46] Bodie, Zvi and Merton, Robert C. *Finance*. Upper Saddle River. Prentice-Hall Inc. 1998. Pg. 223
[47] Senate Bill No. 400, *California Law*
[48] "CalPERS Story." *CalPERS*. Accessed March 2017.
[49] "Comprehensive Annual Financial Report (CAFR)." *Municipal Securities Rulemaking Board*.
[50] Bodie, Zvi and Merton, Robert C. *Finance*. Upper Saddle River. Prentice-Hall Inc. 1998. Pg. 50.
[51] Ibid.

Financial Accounting Standards Board (FASB): "Established in 1973, the Financial Accounting Standards Board (FASB) is the independent, private-sector, not-for-profit organization based in Norwalk, Connecticut, that establishes financial accounting and reporting standards for public and private companies and not-for-profit organizations that follow Generally Accepted Accounting Principles (GAAP)."[52]

Fiduciary Duty: A legal obligation of one party to act in the best interest of another. Typically, a fiduciary is entrusted with the care of money or other asset for another person.[53]

Fiscal Year (FY): A term of one year, typically beginning on the 1st day of July extending through the last day of June.

Governmental Accounting Standards Board (GASB): "The independent organization that establishes and improves standards of accounting and financial reporting for U.S. state and local governments. Established in 1984 by agreement of the Financial Accounting Foundation (FAF) and ten national associations of state and local government officials, the GASB is recognized by governments, the accounting industry, and the capital markets as the official source of generally accepted accounting principles (GAAP) for state and local governments."[54]

Hybrid Plan: A pension plan that contains both defined benefit and defined contribution options.

Independent Retirement Account (IRA): Retirement accounts that permit and encourage savings by individuals through the pre-tax investment of wages and salaries. Such investment accounts accumulate returns that are not taxed until withdrawals at a later date.

Market Value of Assets (MVA): The value of accumulated assets at the current value of individual assets as opposed to the original cost.

Marin County Employees Retirement Association (MCERA): A pension fund in Marin County, CA that manages the retirement assets and benefits of several municipalities and public agencies.

Net Pension Liability (NPL): The total pension obligation of an organization for its employees less the value of assets held to fund those benefits.

Normal Cost: The present value of future pension benefits earned during the current accounting period.

[52] About the FASB, *Financial Accounting Standards Board.*
[53] "Fiduciary Duty" *Businessdictionary.com.*
[54] "FACTS about GASB." *Governmental Accounting Standards Board.* 2012–2014.

Present Value (PV): The current worth of a future sum of money or stream of cash flows given a specified rate of return.[55]

Public Employees Pension Reform Act of 2013 (PEPRA): An act of State Legislature, which imposes certain limits on pension benefits for public employees hired after 2013.

Quantitative Easing: A monetary policy whereby a central bank, such as the Federal Reserve, creates money to fund the purchase of government securities - e.g. US Treasury Bonds - with the objective of stimulating the economy.

Risk-Free Rate: A discount rate considered to have no risk of default over time, typically a United States Treasury obligation backed by the full faith and credit of the United States.

Sensitivity Analysis: An analysis of the impact of different discount rates on unfunded liabilities. Typically, the discount rates used in the analysis are minus 1% and plus 1% of the stated discount rate of the liability.

Termination Fee: The fee levied by a pension fund against an agency for terminating the contract between the two parties. The fee amounts to the difference between the total liabilities calculated at the nominal discount rate versus the risk-free rate, typically a mix of 10-year and 30-year US Treasury bonds. The rationale for the fee is that as no additional contributions will be forthcoming from the agency to fund existing liabilities, a basket of securities without risk is required to prevent reductions of benefits.

Time value of money: The core principal of finance holds that money in hand today is worth more than the expectation of the same amount to be received in the future. First, money may be invested and earn interest, resulting in a larger amount in the future. Second, the purchasing power of money may decline over time due to inflation. Third, the receipt of money expected in the future is uncertain.[56]

Total Pension Liability: The total obligation of an agency to fund pension benefits for active and retired employees.

Unfunded Actuarial Accrued Liability (UAAL): The excess of the Actuarial Accrued Liability (AAL) over the actuarial value of assets.[57]

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[55] Bodie, Zvi and Merton, Robert C. *Finance*. Upper Saddle River. Prentice-Hall Inc. 1998. Pg. 89.
[56] Bodie, Zvi and Merton, Robert C. *Finance*. Upper Saddle River. Prentice-Hall Inc. 1998. Pg. 82.
[57] "Other Postemployment Benefits: A Plain-Language Summary of GASB Statements No. 43 and No. 45." *Governmental Accounting Standards Board*.

Appendix A: Public Sector Agencies

The table below contains the list of public agencies, school districts and municipalities investigated in this report, the corresponding pension fund(s) for each and the source of audited financial statements used in this report.

For each agency, the five fiscal years from 2012 through 2016 were examined. All agencies reviewed in this report use the calendar dates of July 1 through June 30 for the fiscal year. (Note: San Rafael City Schools is a single district, but it produces separate financial statements for the elementary schools and the high schools. This report presents them separately.)

Municipality	Pension Funds	Audit Reports
County of Marin	MCERA	Comprehensive Annual Financial Report www.marincounty.org
City of Belvedere	CalPERS	Audited Financial Report www.ci.belb
City of Larkspur*	CalPERS	Audited Financial Report www.ci.larkspur.ca.us
City of Mill Valley	CalPERS	Audited Financial Report www.cityofmillvalley.org
City of Novato	CalPERS	Comprehensive Annual Financial Report www.novato.org
City of San Rafael	MCERA	Comprehensive Annual Financial Report www.cityofsanrafael.org
City of Sausalito	CalPERS	Comprehensive Annual Financial Report www.ci.sausalito.ca.us
Town of Corte Madera	CalPERS	Comprehensive Annual Financial Report www.ci.corte-madera.ca.us
Town of Fairfax*	CalPERS	Basic Financial Statements and Independent Auditor's Report www.town-of-fairfax.org
Town of Ross	CalPERS	Financial Report www.townofross.org
Town of San Anselmo	CalPERS	Annual Financial Report www.townofsananselmo.org
Town of Tiburon	CalPERS	Annual Financial Report www.townoftiburon.org

Appendix A: Public Sector Agencies (cont'd)

School District	Pension Funds	Audit Reports
Bolinas-Stinson Union School District	CalSTRS CalPERS	Audit Report July 1, 2012 - June 30, 2016 www.bolinas-stinson.org
College of Marin	CalSTRS CalPERS	Financial Statements www.marin.edu
Dixie Elementary School District	CalSTRS CalPERS	Audit Report www.dixieschool.com
Kentfield School District	CalSTRS CalPERS	Audit Report http://www.kentfieldschools.org/pages/Kentfield_School_District
Larkspur-Corte Madera School District	CalSTRS CalPERS	Audit Report www.lcmschools.org
Marin County Office of Education	CalSTRS CalPERS	Audit Report www.marinschools.org
Mill Valley School District	CalSTRS CalPERS	Audit Report www.mvschools.org
Novato Unified School District	CalSTRS CalPERS	Audit Report www.nusd.org
Reed Union School District	CalSTRS CalPERS	Audit Report www.reedschools.org
Ross School District	CalSTRS CalPERS	Audit Report www.rossbears.org
Ross Valley School District	CalSTRS CalPERS	Audit Report www.rossvalleyschools.org
San Rafael City Schools - Elementary	CalSTRS CalPERS	Audit Report www.srcs.org
San Rafael City Schools - High School	CalSTRS CalPERS	Audit Report www.srcs.org
Sausalito Marin City School District	CalSTRS CalPERS	Audit Report www.smcsd.org
Shoreline Unified School District	CalSTRS CalPERS	Annual Financial www.shorelineunified.org
Tamalpais Union High School District	CalSTRS CalPERS	Audit Report www.tamdistrict.org

Safety District	Pension Funds	Audit Reports
Central Marin Police Authority*	CalPERS	Twin Cities Police Authority (FY 2012) Financial Statements and Independent Auditor's Report http://centralmarinpolice.org
Kentfield Fire Protection District	CalPERS	Basic Financial Statements www.kentfieldfire.org
Novato Fire Protection District	CalPERS	Independent Auditor's Report www.novato.org
Ross Valley Fire Department	CalPERS	Basic Financial Statements www.rossvalleyfire.org
Southern Marin Fire Protection District	MCERA	Basic Financial Statements southernmarinfire.org
Tiburon Fire Protection District	CalPERS	Comprehensive Financial Report www.tiburonfire.org

Utility District	Pension Funds	Audit Reports
Central Marin Sanitation Agency	CalPERS	Financial Statements and Independent Auditor's Report www.cmsa.us
Las Gallinas Valley Sanitary District	CalPERS	Comprehensive Annual Financial Report www.lgvsd.org
Marin Municipal Water District	CalPERS	Comprehensive Annual Financial Report www.marinwater.org
Marin/Sonoma Mosquito & Vector Control District	MCERA	Basic Financial Statements www.msmosquito.com
Marinwood Community Services District	CalPERS	Basic Financial Statements www.marinwood.org
North Marin Water District	MCERA	Comprehensive Annual Financial Report www.nmwd.com
Novato Sanitary District	CalPERS	Comprehensive Annual Financial Report www.novatosan.com
Richardson Bay Sanitary District	CalPERS	Financial Statements www.richardsonbaysd.org
Ross Valley Sanitary District	CalPERS	Basic Financial Statements www.rvsd.org
Sanitary District # 5 Tiburon-Belvedere	CalPERS	Financial Statements www.sani5.org
Sausalito Marin City Sanitation District	CalPERS	Financial Statements and Independent Auditor's Report www.sausalitomarincitysanitarydistrict.com
Tamalpais Community Services District	CalPERS	Financial Statements and Independent Auditor's Report www.tcsd.us

Appendix B: Methodology Detail

The Grand Jury collected data from the sources described above: over 200 audited financial reports alone published by the entities (see Appendix A). Multiple jurors participated in the collection and review of all financial data items according to the process and methods described above.

The collected data were entered into spreadsheets to allow the Grand Jury to analyze relevant financial statistics. In order to assure a consistent interpretation of the financial data from these audited reports, and to ensure the correct transcription of the data to spreadsheets used for the analysis, multiple jurors participated in validation of each data item. In those cases where data was provided in separate portions of the report (i.e. a school district's CalPERS and CalSTRS pensions reported separately), the Grand Jury performed the appropriate summations to aid in our analysis.

In examining the audited financial reports of the public entities, the Grand Jury captured basic financial data from multiple fiscal years to determine the relative health of the entities with regard to pensions. Audited reports tend to have a similar structure, containing the following four major sections:

- The Independent Auditors Report
- Management's Discussion and Analysis (MD&A)
- Basic Financial Statements
- Notes to Financial Statements

Specific financial data was retrieved from these sections as follows:

Basic Financial Statements

Total Revenue

Revenues are taken from the Statement of Revenues, Expenditures and Changes in Fund Balances using the Total Governmental Funds column. Revenue used in this investigation includes both operating revenue and non-operating revenue.

In some instances, non-operating revenue was stated net of interest expense. In those cases, the appropriate calculations were performed to reverse the reduction of non-operating revenue to provide a true total of revenue from all sources. Revenue totals were then reconciled with statistics provided in the Basic Financial Statements.

In the case of municipalities, which have diverse sources of revenue, we used revenue as stated in the MD&A section of the relevant audit report.

Total Expenses

Total Expenses came from the Statement of Activities. Expenses cited in this investigation include both operating expenses and non-operating expenses.

Financial data used in this investigation are derived primarily from balance sheets and statements of revenue and expenses.

In the case of municipalities, which have diverse expenses, we used expenses as stated in the MD&A section of the relevant audit report.

Total Assets

The total assets of each entity were collected. Total assets include both short-term assets, long-term assets and capital assets.

Cash Position

Cash positions were considered to include cash and cash equivalents, the standard method of reporting.

Net Position

Net position is the excess of total assets of an entity minus the total liabilities. In the instance where liabilities exceed assets, the net position is negative.

Net Pension Liability

The net pension liability is provided in the Notes section of the audit reports.

Net Pension Liability Sensitivity, +1%

The net pension liability sensitivity for +1% is provided in the Notes section of the audit reports.

Net Pension Liability Sensitivity, -1%

The net pension liability sensitivity for -1% is provided in the Notes section of the audit reports.

These statistics are provided in the Notes section of the audit report in compliance with GASB 68 requirements.

Pension contribution

The total contribution for pensions is included in the Notes section of the audit reports. The Grand Jury chose to use pension contributions, rather than pension expense (a new GASB 68 requirement) for comparison purposes with older financial reports.

Total pension contributions for municipalities were stated in at least three separate sections of the CAFR: as a contribution in the Notes section on pensions, in the table labeled "Contributions subsequent to measurement date" and in the supplementary notes section. In most cases, the pension contribution was identical throughout the report. In some cases there were small differences among the values, and in one case (Town of Fairfax) there were material differences. In all of these cases the Grand Jury chose to use the "Contributions subsequent to measurement date" number and did not attempt to reconcile the differences.

The County of Marin changed its pension contribution reporting methodology in 2015 due to GASB 68. Prior to FY 2015, the County reported its pension contributions with a one-year lag. (For example, the FY 2014 report showed contributions for FY 2013). The result was that FY 2014 pension contributions were not included in either the FY 2014 or FY 2015 CAFR. Accordingly, the Grand Jury obtained FY 2014 pension contributions directly from the County Department of Finance. To address the one-year lag in reporting, the Grand Jury chose to use the contributions made in FY 2013 as provided by the Department of Finance rather than the number reported in the audit reports for FY 2012 & FY 2013.

An explanation of discount rates and present value calculations is presented as Appendix C, Discount Rate Primer.

Termination Statistics

<u>Risk Free Liability of Termination</u>
CalPERS provides to its participating agencies on an annual basis the one-time contribution required for the entity to terminate the pension plan. Under those circumstances, which are rare, CalPERS is no longer able to rely upon annual contributions by the entity to fund retirees and current employees.

CalPERS has determined under these circumstances that the discount rate for a termination must be "risk-free." That is, CalPERS is not willing to assume the risk normally associated with investment of an entity's assets in a balanced portfolio. Accordingly, CalPERS will price the termination discount rate using a combination of the 10-year and 30-year US Treasury obligations.

Neither CalSTRS nor MCERA provide a similar calculation.

Derived Statistics

The Grand Jury created several statistics from the basic financial data to assist in the evaluation of pension liabilities.

<u>Pension Contributions as a Percentage of Revenue</u>

<u>Net Pension Liability as a Percentage of Cash</u>

Net Pension Liability as a Percentage of Assets

Fiscal Year 2015 to Fiscal Year 2016 % Change in Net Pension Liabilities

Appendix C: Discount Rate Primer

Calculating Present Value of an Annuity[58]

The calculation of the value of pension benefits offered to employees can be viewed simply as the present value of an annuity: how much should be paid for an investment at present to produce an expected payment stream in the future. The concept of present value is based on the idea that money has time value. For example, if an investor were offered $1 today or $1 in the future, the investor would choose the dollar today because it can be invested to earn interest and produce more than $1 in the future. When determining how much should be paid today for an investment that is expected to produce income in the future, an adjustment, or discounting, must be applied to income received in the future to reflect the time value of money.

The calculation of present value (PV) for one time period is:

$$PV = FV \frac{1}{(1+i)n}$$

Where:

FV = Future value
i = interest rate
n = number of years

Example: How much should an investor put into a savings account today, with a 5% expected return, in order to receive $100 in a year?

$$PV = 100 \frac{1}{(1+.05)1}$$
$$PV = 95.24$$

Answer: $95.24

Expanding on this principle, the calculation of an annuity, which spans multiple years, follows:

$$PVA = R\frac{1}{(1+i)1} + R\frac{1}{(1+i)2} + R\frac{1}{(1+i)3} \ldots + R\frac{1}{(1+i)n}$$

[58] Brueggeman, William B. and Fisher, Jeffrey D. (2005) Real Estate Finance and Investments. New York, NY McGraw Hill.

Alternatively:

$$PVA = R\sum_{t=1}^{n} \frac{1}{(1+i)t}$$

Where:

PVA = Present value of an annuity
R = payment
i = interest rate
n = number of years

Example: How much would an investor need to set aside today in order to receive $100 a year for five years if the interest rate was 5%?

$$PVA = 100\frac{1}{(1+.05)1} + 100\frac{1}{(1+.05)2} + 100\frac{1}{(1+.05)3} + 100\frac{1}{(1+.05)4} + 100\frac{1}{(1+.05)5}$$

Answer: $432.95

Example: If the interest rate was 10%?

Answer: $379.08

This simple example illustrates how a higher discount rate results in a much lower required initial investment to meet a particular future need.

Appendix D: GASB Primer

The Governmental Accounting Standards Board (GASB), founded in 1984, is an independent, nonprofit, non-governmental regulatory body charged with setting accounting and financial reporting standards for state and local governments. Prior to its founding, accounting standards for all types of enterprises were set by the Financial Accounting Standards Board (FASB).

In November 1994, GASB issued Statement 27, which established standards for accounting and financial reporting of pension benefits. Some of the key parts of GASB 27 were:

- The employer's expense for pensions was equal to the annual required contribution (ARC) as determined by the actuary in accordance with certain parameters, including the frequency of actuarial valuations and the methods and assumptions used.

- If the employer's actual contributions were different than the ARC, the accumulated difference plus interest was reported as the Net Pension Obligation in the employer's financial statements.

- Actuarial trend information was reported as Required Supplementary Information (RSI) to the financial statements, including note disclosures to the RSI.[59]

In June 2012, GASB 68 extensively amended GASB 27:

- Net Pension Liability on the Balance Sheet – Government employers that sponsor DB plans will now recognize a net pension liability [on their] balance sheet.

- New Discount Rate – The discount rate can continue to be the expected long-term rate of return on plan investments where current assets plus future contributions are projected to cover all future benefit payments. However, plans where current assets plus future contributions are projected not to cover all future benefit payments must use a municipal bond rate to discount the noncovered payments.

- More Variable Pension Expense – Pension expense will now be based on the net pension liability change between reporting dates, with some sources of the change recognized immediately in expense and others amortized over years. Service cost, interest on net pension liability, and expected investment earnings — as well as liability for any plan benefit change related to past service since the last reporting period — must also be expensed immediately.

[59] Findlay, Gary. "GASB's Pension Accounting Standards: Déjà vu all over again.", *Pensions & Investments*, October 22, 2012

- Changes in actuarial assumptions and experience gains and losses must be amortized over a closed period equal to the average remaining service of active and inactive plan members (who have no future service) — a much shorter than typical period. Investment gains and losses must be recognized in pension expense over closed 5-year periods.

- Cost-sharing Employers (those in plans where assets are pooled and can be used to pay benefits of any employer in the pool) Report a Proportionate Liability – These employers will now report a net pension liability and pension expense equal to their proportionate share of the cost-sharing plan.

- More Extensive Disclosures and Required Supplementary Information – More extensive note disclosures are required, including types of benefits and covered employees, how plan contributions are determined, and assumptions/methods used to calculate the pension liability. [60]

GASB 68 was effective for fiscal years beginning after June 15, 2014, which means that FY 2014-2015 was the first year for which it was reflected in the financial statements of the agencies that are the subject of this report.

[60] "GASB Approves New Pension Accounting Standards.", *Bartel Associates, LLC*, August 5, 2012

Appendix E: Public Agency Balance Sheet Data

FY 2016

Municipalities	Assets	Cash	Net Position	NPL	NPL -1%	NPL +1%	NPL% of Assets	NPL % of Cash
City of Belvedere	$10,054,000	$3,595,630	$5,678,000	$3,080,855	$5,057,618	$1,451,306	30.6%	85.7%
City of Larkspur*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
City of Mill Valley	$61,952,000	$17,919,732	$4,017,000	$25,010,100	$42,044,314	$10,993,085	40.4%	139.6%
City of Novato	$375,695,895	$59,936,536	$291,122,782	$32,111,535	$54,651,732	$13,464,873	8.5%	53.6%
City of San Rafael	$300,378,000	$66,009,979	$141,542,000	$142,323,127	$263,741,368	$42,614,784	47.4%	215.6%
City of Sausalito	$93,777,974	$28,955,501	$27,987,699	$19,635,621	$31,512,817	$9,872,158	20.9%	67.8%
County of Marin	$1,992,947,827	$408,896,116	$1,390,055,902	$203,688,484	$377,458,682	$60,988,969	10.2%	49.8%
Town of Corte Madera	$78,944,247	$15,323,517	$47,275,642	$14,263,877	$22,204,244	$7,732,353	18.1%	93.1%
Town of Fairfax*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Town of Ross	$19,557,803	$10,528,331	$13,434,401	$3,548,143	$5,793,448	$1,701,623	18.1%	33.7%
Town of San Anselmo	$29,217,215	$6,606,250	$10,925,168	$5,299,442	$8,601,144	$2,573,504	18.1%	80.2%
Town of Tiburon	$63,662,493	$21,441,460	$52,944,160	$5,412,997	$10,066,334	$2,805,016	8.5%	25.2%
Totals	**$3,026,187,454**	**$639,213,052**	**$1,984,982,754**	**$454,374,181**	**$821,131,701**	**$154,197,671**	**15.0%**	**71.1%**

School Districts	Assets	Cash	Net Position	NPL	NPL -1%	NPL +1%	NPL% of Assets	NPL % of Cash
Bolinas-Stinson Union School District	$4,810,121	$2,828,769	$1,406,313	$3,039,017	$4,710,035	$1,649,952	63.2%	107.4%
Dixie Elementary School District	$32,522,470	$18,194,342	-$11,279,305	$18,296,623	$28,111,026	$10,138,805	56.3%	100.6%
Kentfield School District	$36,650,017	$16,899,110	-$6,602,777	$13,427,307	$20,538,517	$7,516,633	36.6%	79.5%
Larkspur-Corte Madera School District	$63,370,037	$6,262,719	-$20,314,913	$15,695,360	$24,040,435	$8,759,042	24.8%	250.6%
Marin Community College District	$297,031,000	$17,857,000	-$5,569,000	$45,723,000	$74,506,000	$24,466,000	15.4%	256.1%
Marin County Office of Education	$71,319,233	$44,767,583	$39,274,235	$21,263,747	$33,325,302	$11,236,462	29.8%	47.5%
Mill Valley School District	$90,032,772	$21,001,383	-$22,426,359	$33,102,435	$50,864,259	$18,356,989	36.8%	157.6%
Novato Unified School District	$144,877,763	$29,605,956	-$7,019,803	$60,585,951	$93,087,454	$33,570,412	41.8%	204.6%
Reed Union School District	$52,162,124	$10,224,426	-$650,150	$17,787,987	$27,309,547	$9,873,631	34.1%	174.0%
Ross School District	$35,969,694	$4,473,827	$7,390,298	$5,578,419	$8,558,914	$3,101,035	15.5%	124.7%
Ross Valley School District	$64,424,216	$18,159,492	-$13,237,323	$20,577,136	$31,530,697	$11,472,647	31.9%	113.3%
San Rafael City Schools - Elementary	$123,144,010	$50,000,124	-$15,195,483	$33,037,132	$50,443,688	$28,569,426	26.8%	66.1%
San Rafael City Schools - High School	$109,218,754	$54,037,304	-$17,227,292	$28,004,648	$43,124,257	$15,436,855	25.6%	51.8%
Sausalito Marin City School District	$27,255,480	$4,092,629	$2,360,366	$3,502,310	$5,426,137	$1,903,098	12.8%	85.6%
Shoreline Unified School District	$22,411,328	$7,043,760	-$2,374,726	$10,009,533	$15,448,543	$5,488,410	44.7%	142.1%
Tamalpais Union High School District	$203,339,657	$42,522,717	$7,712,183	$57,699,928	$88,683,304	$31,946,196	28.4%	135.7%
Totals	**$1,378,538,676**	**$347,971,141**	**-$63,753,736**	**$387,330,533**	**$599,708,115**	**$223,485,593**	**28.1%**	**111.3%**

Appendix E: Public Agency Balance Sheet Data (cont'd)

Special Districts Safety	Assets	Cash	Net Position	NPL	NPL -1%	NPL +1%	NPL % of Assets	NPL % of Cash
Central Marin Police Authority*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Kentfield Fire Protection District	$9,789,704	$3,507,855	$2,947,286	$4,310,797	$7,233,383	$1,913,867	44.0%	122.9%
Novato Fire Protection District	$35,403,303	$15,930,859	$10,305,465	$17,430,800	$32,301,320	$5,219,178	49.2%	109.4%
Ross Valley Fire Department	$3,008,924	$1,338,192	-$6,955,625	$7,800,931	$13,770,507	$2,905,473	259.3%	582.9%
Southern Marin Fire Protection District	$13,349,870	$9,102,154	$7,896,367	$6,033,143	$11,180,122	$1,806,460	45.2%	66.3%
Tiburon Fire Protection District	$11,652,619	$5,564,687	$5,444,495	$5,232,050	$10,007,964	$1,314,991	44.9%	94.0%
Total	**$73,204,420**	**$35,443,747**	**$19,637,988**	**$40,807,721**	**$74,493,296**	**$13,159,969**	**55.7%**	**115.1%**

Special Districts Utility	Assets	Cash	Net Position	NPL	NPL -1%	NPL +1%	NPL % of Assets	NPL % of Cash
Central Marin Sanitation Agency	$106,391,299	$14,974,538	$45,625,458	$6,643,602	$11,141,784	$2,929,830	6.2%	14.6%
Las Gallinas Valley Sanitary District	$81,480,447	$20,316,117	$63,883,215	$2,098,373	$3,571,571	$882,077	2.6%	10.3%
Marin Municipal Water District	$460,030,200	$16,947,252	$243,058,604	$69,753,895	$96,972,537	$47,010,300	15.2%	411.6%
Marin/Sonoma Mosquito & Vector Control District	$19,472,738	$11,634,371	$8,780,059	$4,135,340	$7,663,272	$1,238,215	21.2%	35.5%
Marinwood Community Services District	$6,784,666	$2,387,836	-$470,389	$3,322,116	$5,238,798	$1,624,470	49.0%	139.1%
North Marin Water District	$136,897,391	$5,411,426	$92,672,784	$8,619,837	$14,579,649	$3,833,847	6.3%	159.3%
Novato Sanitary District	$201,851,460	$19,742,079	$108,547,505	$3,528,249	$6,180,933	$1,338,148	1.7%	17.9%
Richardson Bay Sanitary District	$17,826,465	$1,595,379	$16,376,465	$1,101,797	$1,847,790	$485,893	6.2%	69.1%
Ross Valley Sanitary District	$122,064,345	$18,937,993	$66,824,699	$4,506,476	$7,557,675	$1,987,357	3.7%	23.8%
Sanitary District # 5 Tiburon-Belvedere	$30,527,780	$5,434,555	$20,083,181	$1,786,666	$2,996,362	$787,920	5.9%	32.9%
Sausalito Marin City Sanitary District	$46,001,842	$11,215,025	$39,986,927	$1,863,054	$3,124,472	$821,607	4.0%	16.6%
Tamalpais Community Services District	$8,062,948	$1,575,641	$1,239,870	$1,756,793	$3,255,545	$526,054	21.8%	111.5%
Total	**$1,237,391,581**	**$130,172,212**	**$706,608,378**	**$109,116,198**	**$164,130,388**	**$63,465,718**	**8.8%**	**83.8%**

Appendix E: Public Agency Balance Sheet Data (cont'd)

FY 2015

Municipalities	Assets	Cash	Net Position	NPL	NPL -1%	NPL +1%	NPL % of Assets	NPL% of Cash
City of Belvedere	$9,635,000	$2,981,537	$5,341,000	$2,821,673	$5,039,427	$986,027	29.3%	94.6%
City of Larkspur*	$45,030,851	$14,151,668	$24,277,367	$9,046,789	$15,797,243	$3,467,207	20.1%	63.9%
City of Mill Valley	$61,653,195	$20,419,625	$2,336,678	$21,174,403	$37,076,950	$8,022,272	34.3%	103.7%
City of Novato	$372,235,251	$60,646,987	$284,150,160	$29,915,448	$51,486,548	$11,986,247	8.0%	49.3%
City of San Rafael	$290,551,982	$65,829,733	$151,480,204	$74,253,787	$159,506,132	$3,692,492	25.6%	112.8%
City of Sausalito	$65,193,649	$11,696,520	$17,106,631	$17,741,671	$29,127,780	$8,335,668	27.2%	151.7%
County of Marin	$1,947,970,000	$367,440,909	$1,342,737,000	$142,013,491	$304,297,935	$7,062,046	7.3%	38.6%
Town of Corte Madera	$74,019,098	$9,073,608	$42,936,160	$12,146,336	$19,631,470	$5,958,264	16.4%	133.9%
Town of Fairfax*	$11,962,960	$2,463,991	-$1,376,349	$6,078,042	$9,422,128	$3,314,672	50.8%	246.7%
Town of Ross	$18,236,166	$10,234,934	$11,490,464	$3,465,264	$5,999,505	$1,374,389	19.0%	33.9%
Town of San Anselmo	$28,956,896	$5,822,276	$11,059,337	$4,002,434	$7,131,100	$1,405,939	13.8%	68.7%
Town of Tiburon	$62,234,833	$21,280,864	$52,632,219	$5,232,395	$9,162,200	$1,982,334	8.4%	24.6%
Totals	**$2,987,679,881**	**$592,042,652**	**$1,944,170,871**	**$327,891,733**	**$653,678,418**	**$57,587,557**	**11.0%**	**55.4%**

School Districts	Assets	Cash	Net Position	NPL	NPL -1%	NPL +1%	NPL % of Assets	NPL% of Cash
Bolinas-Stinson Union School District	$4,866,633	$2,865,817	$1,587,636	$2,499,021	$4,063,986	$1,192,965	51.4%	87.2%
Dixie Elementary School District	$32,345,802	$20,512,452	-$12,361,898	$14,791,102	$23,752,949	$7,405,888	45.7%	72.1%
Kentfield School District	$36,671,347	$16,481,560	-$7,350,022	$11,241,124	$17,845,987	$5,731,639	30.7%	68.2%
Larkspur-Corte Madera School District	$67,710,441	$20,180,460	-$18,662,067	$13,339,460	$21,229,928	$6,757,236	19.7%	66.1%
Marin Community College District	$296,646,697	$16,563,890	-$1,453,534	$35,165,000	$57,576,000	$16,323,000	11.9%	212.3%
Marin County Office of Education	$65,200,872	$40,080,879	$35,148,165	$18,141,000	$29,793,000	$8,340,000	27.8%	45.3%
Mill Valley School District	$88,076,729	$17,389,526	-$25,517,249	$26,623,202	$42,487,967	$13,316,095	30.2%	153.1%
Novato Unified School District	$147,677,796	$30,810,042	-$9,238,177	$51,786,928	$82,735,169	$25,967,877	35.1%	168.1%
Reed Union School District	$52,705,559	$9,360,996	-$1,378,282	$13,830,041	$22,131,664	$6,904,029	26.2%	147.7%
Ross School District	$36,049,201	$3,875,832	$7,486,041	$4,733,569	$7,568,886	$2,368,118	13.1%	122.1%
Ross Valley School District	$58,186,120	$12,864,248	-$12,811,202	$16,841,437	$26,841,518	$8,499,130	28.9%	130.9%
San Rafael City Schools - Elementary	$90,671,410	$18,526,824	-$21,324,673	$26,576,187	$42,069,163	$13,668,565	29.3%	143.4%
San Rafael City Schools - High School	$57,092,257	$17,649,236	-$32,610,889	$21,868,291	$35,163,300	$10,775,267	38.3%	123.9%
Sausalito Marin City School District	$27,343,812	$3,879,729	$2,795,062	$2,990,897	$4,824,034	$1,461,280	10.9%	77.1%
Shoreline Unified School District	$22,894,320	$6,451,291	-$2,544,996	$8,800,020	$14,190,098	$4,302,465	38.4%	136.4%
Tamalpais Union High School District	$207,432,180	$44,567,689	$3,702,851	$46,266,492	$74,079,210	$23,062,248	22.3%	103.8%
Totals	**$1,291,571,176**	**$282,060,471**	**-$94,533,234**	**$315,493,771**	**$506,352,859**	**$156,075,802**	**24.4%**	**111.9%**

Appendix E: Public Agency Balance Sheet Data (cont'd)

Special Districts Safety	Assets	Cash	Net Position	NPL	NPL -1%	NPL +1%	NPL % of Assets	NPL % of Cash
Central Marin Police Authority*	$16,470,963	$178,725	-$1,124,490	$11,532,085	$18,375,103	$5,889,395	70.0%	6452.4%
Kentfield Fire Protection District	$9,630,272	$3,261,202	$1,651,848	$5,202,429	$8,026,436	$2,875,079	54.0%	159.5%
Novato Fire Protection District	$37,252,657	$17,461,022	$3,778,037	$15,014,710	$32,172,613	$746,651	40.3%	86.0%
Ross Valley Fire Department	$2,499,767	$912,212	-$8,316,114	$7,679,794	$13,318,349	$3,033,390	307.2%	841.9%
Southern Marin Fire Protection District	$12,413,494	$7,865,476	$5,848,381	$3,845,243	$8,239,354	$191,216	31.0%	48.9%
Tiburon Fire Protection District	$11,338,453	$5,938,906	$4,874,704	$6,315,892	$10,889,109	$2,546,208	55.7%	106.3%
Total	**$89,605,606**	**$35,617,543**	**$6,712,366**	**$49,590,153**	**$91,020,964**	**$15,281,939**	**55.3%**	**139.2%**

Special Districts Utility	Assets	Cash	Net Position	NPL	NPL -1%	NPL +1%	NPL % of Assets	NPL % of Cash
Central Marin Sanitation Agency	$109,050,874	$15,998,126	$45,345,155	$6,024,473	$10,784,954	$2,073,726	5.5%	37.7%
Las Gallinas Valley Sanitary District	$77,052,295	$19,742,483	$58,063,598	$1,693,868	$3,065,929	$555,188	2.2%	8.6%
Marin Municipal Water District	$462,338,812	$19,959,569	$243,685,640	$62,139,077	$87,637,727	$40,725,228	13.4%	311.3%
Marin/Sonoma Mosquito & Vector Control District	$18,321,390	$10,672,765	$7,632,034	$3,378,396	$7,239,023	$168,001	18.4%	31.7%
Marinwood Community Services District	$6,030,417	$1,858,999	-$294,365	$3,142,286	$4,975,627	$1,628,944	52.1%	169.0%
North Marin Water District	$134,483,309	$4,943,414	$88,155,270	$6,701,264	$12,079,630	$2,237,730	5.0%	135.6%
Novato Sanitary District	$203,141,502	$18,102,303	$105,599,405	$3,335,896	$5,943,534	$1,171,804	1.6%	18.4%
Richardson Bay Sanitary District	$17,887,393	$1,303,363	$16,613,138	$901,425	$1,793,212	$161,327	5.0%	69.2%
Ross Valley Sanitary District	$119,157,291	$14,295,359	$62,983,772	$3,708,693	$6,068,264	$1,750,473	3.1%	25.9%
Sanitary District # 5 Tiburon-Belvedere	$30,993,246	$3,622,532	$18,117,614	$2,757,064	$3,943,406	$1,772,512	8.9%	76.1%
Sausalito Marin City Sanitary District	$39,718,939	$9,218,762	$32,797,172	$1,759,386	$3,134,682	$618,021	4.4%	19.1%
Tamalpais Community Services District	$8,676,425	$1,662,061	$1,698,672	$1,028,347	$2,203,480	$51,138	11.9%	61.9%
Total	**$1,226,851,893**	**$121,379,736**	**$680,397,105**	**$96,570,175**	**$148,869,468**	**$52,914,092**	**7.9%**	**79.6%**

Appendix E: Public Agency Balance Sheet Data (cont'd)

2016 Totals

Agencies	Assets	Cash	Net Position	NPL	NPL -1%	NPL +1%	NPL % of Assets	NPL % of Cash
Municipalities	$3,026,187,454	$639,213,052	$1,984,982,754	$454,374,181	$821,131,701	$154,197,671	15.0%	71.1%
School Districts	$1,378,538,676	$347,971,141	-$63,753,736	$387,330,533	$599,708,115	$223,485,593	28.1%	111.3%
Special Districts Safety	$73,204,420	$35,443,747	$19,637,988	$40,807,721	$74,493,296	$13,159,969	55.7%	115.1%
Special Districts Utility	$1,237,391,581	$130,172,212	$706,608,378	$109,116,198	$164,130,388	$63,465,718	8.8%	83.8%
Total	**$5,715,322,131**	**$1,152,800,152**	**$2,647,475,384**	**$991,628,633**	**$1,659,463,500**	**$454,308,951**	**17.4%**	**86.0%**

2015 Totals

Agencies	Assets	Cash	Net Position	NPL	NPL -1%	NPL +1%	NPL % of Assets	NPL % of Cash
Municipalities	$2,987,679,881	$592,042,652	$1,944,170,871	$327,891,733	$653,678,418	$57,587,557	11.0%	55.4%
School Districts	$1,291,571,176	$282,060,471	-$94,533,234	$315,493,771	$506,352,859	$156,075,802	24.4%	111.9%
Special Districts Safety	$89,605,606	$35,617,543	$6,712,366	$49,590,153	$91,020,964	$15,281,939	55.3%	139.2%
Special Districts Safety	$1,226,851,893	$121,379,736	$680,397,105	$96,570,175	$148,869,468	$52,914,092	7.9%	79.6%
Total	**$5,595,708,556**	**$1,031,100,402**	**$2,536,747,108**	**$789,545,832**	**$1,399,921,709**	**$281,859,390**	**14.1%**	**76.6%**

Appendix: F: Public Agency Income Statement Data

FY 2016

Municipalities	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
City of Belvedere	$7,855,000	$7,404,000	$327,816	4.2%
City of Larkspur*	N/A	N/A	N/A	N/A
City of Mill Valley	$39,916,000	$38,133,000	$2,551,885	6.4%
City of Novato	$47,954,000	$42,687,000	$2,604,320	5.4%
City of San Rafael	$100,490,000	$110,893,000	$19,339,577	19.2%
City of Sausalito	$26,588,325	$24,491,036	$1,763,040	6.6%
County of Marin	$611,801,000	$554,877,000	$48,302,323	7.9%
Town of Corte Madera	$23,593,928	$20,264,214	$1,810,099	7.7%
Town of Fairfax*	N/A	N/A	N/A	N/A
Town of Ross	$9,264,385	$7,320,448	$1,339,398	14.5%
Town of San Anselmo	$19,216,454	$19,350,623	$466,182	2.4%
Town of Tiburon	$11,341,758	$11,029,817	$753,153	6.6%
Totals	**$898,020,850**	**$836,450,138**	**$79,257,793**	**8.8%**

School Districts	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Bolinas-Stinson Union School District	$4,070,898	$4,252,221	$254,367	6.2%
Dixie Elementary School District	$25,361,193	$24,220,753	$1,463,819	5.8%
Kentfield School District	$19,712,081	$18,964,836	$1,065,278	5.4%
Larkspur-Corte Madera School District	$21,966,152	$23,618,998	$1,214,607	5.5%
Marin Community College District	$67,403,849	$82,922,415	$3,922,649	5.8%
Marin County Office of Education	$56,776,827	$55,642,573	$1,851,569	3.3%
Mill Valley School District	$50,815,837	$47,724,947	$2,592,161	5.1%
Novato Unified School District	$94,185,666	$91,973,207	$4,150,779	4.4%
Reed Union School District	$25,711,228	$24,983,096	$1,333,084	5.2%
Ross School District	$8,748,369	$8,844,112	$440,091	5.0%
Ross Valley School District	$29,323,920	$29,952,113	$1,621,067	5.5%
San Rafael City Schools - Elementary	$62,306,271	$59,610,089	$2,888,024	4.6%
San Rafael City Schools - High School	$37,919,147	$39,926,631	$2,009,294	5.3%
Sausalito Marin City School District	$7,421,237	$7,798,127	$253,588	3.4%
Shoreline Unified School District	$14,823,677	$14,594,704	$723,686	4.9%
Tamalpais Union High School District	$92,371,238	$88,169,381	$5,256,408	5.7%
Totals	**$618,917,590**	**$623,198,203**	**$31,040,471**	**5.0%**

Appendix: F: Public Agency Income Statement Data (cont'd)

Special Districts Safety	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Central Marin Police Authority*	N/A	N/A	N/A	N/A
Kentfield Fire Protection District	$5,014,333	$4,243,041	$951,986	19.0%
Novato Fire Protection District	$27,838,320	$21,367,857	$4,848,895	17.4%
Ross Valley Fire Department	$9,598,396	$8,237,907	$1,119,907	11.7%
Southern Marin Fire Protection District	$14,911,632	$12,863,646	$2,072,079	13.9%
Tiburon Fire Protection District	$7,184,792	$7,604,639	$1,471,646	20.5%
Total	**$64,547,473**	**$54,317,090**	**$10,464,513**	**16.2%**

Special Districts Utility	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Central Marin Sanitation Agency	$16,952,527	$16,834,929	$936,613	5.5%
Las Gallinas Valley Sanitary District	$12,976,695	$7,881,853	$295,427	2.3%
Marin Municipal Water District	$62,502,430	$68,704,175	$5,725,637	9.2%
Marin/Sonoma Mosquito & Vector Control District	$8,638,747	$8,584,599	$968,417	11.2%
Marinwood Community Services District	$5,837,007	$6,013,031	$321,909	5.5%
North Marin Water District	$17,912,719	$17,534,252	$828,792	4.6%
Novato Sanitary District	$19,299,289	$16,587,829	$280,935	1.5%
Richardson Bay Sanitary District	$2,993,714	$3,239,823	$77,297	2.6%
Ross Valley Sanitary District	$23,623,985	$19,998,903	$543,759	2.3%
Sanitary District # 5 Tiburon-Belvedere	$6,264,746	$4,558,920	$1,781,586	28.4%
Sausalito Marin City Sanitary District	$8,391,876	$5,167,530	$276,804	3.3%
Tamalpais Community Services District	$5,245,439	$5,655,202	$308,274	5.9%
Total	**$190,639,174**	**$180,761,046**	**$12,345,450**	**6.5%**

Appendix: F: Public Agency Income Statement Data (cont'd)

FY 2015

Municipalities	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
City of Belvedere	$7,475,000	$7,191,000	$280,813	3.8%
City of Larkspur*	$21,009,094	$16,693,255	$802,226	3.8%
City of Mill Valley	$37,844,000	$36,158,000	$2,077,981	5.5%
City of Novato	$46,154,000	$41,545,000	$2,421,183	5.2%
City of San Rafael	$94,752,000	$80,572,000	$17,802,358	18.8%
City of Sausalito	$20,603,504	$17,970,673	$2,007,707	9.7%
County of Marin	$602,627,000	$538,354,000	$41,871,696	6.9%
Town of Corte Madera	$21,324,184	$16,988,011	$1,667,545	7.8%
Town of Fairfax*	$9,212,366	$8,630,597	$1,276,895	13.9%
Town of Ross	$10,081,926	$6,667,416	$217,566	2.2%
Town of San Anselmo	$18,707,969	$15,807,161	$359,492	1.9%
Town of Tiburon	$12,271,586	$9,589,263	$463,611	3.8%
Totals	**$902,062,629**	**$796,166,376**	**$71,249,073**	7.9%

School Districts	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Bolinas-Stinson Union School District	$4,133,985	$3,839,557	$212,334	5.1%
Dixie Elementary School District	$21,577,176	$23,137,648	$1,223,806	5.7%
Kentfield School District	$17,024,884	$16,763,254	$879,311	5.2%
Larkspur-Corte Madera School District	$19,285,300	$22,676,756	$1,016,124	5.3%
Marin Community College District	$65,743,077	$76,103,061	$3,955,070	6.0%
Marin County Office of Education	$53,863,696	$53,522,613	$1,571,597	2.9%
Mill Valley School District	$46,142,878	$44,916,603	$2,194,414	4.8%
Novato Unified School District	$84,447,074	$86,629,909	$3,710,767	4.4%
Reed Union School District	$23,536,480	$22,614,955	$1,130,735	4.8%
Ross School District	$7,831,472	$8,062,949	$367,499	4.7%
Ross Valley School District	$26,202,736	$26,800,628	$1,343,461	5.1%
San Rafael City Schools - Elementary	$53,530,867	$52,374,844	$2,370,708	4.4%
San Rafael City Schools - High School	$34,638,111	$35,691,740	$1,672,501	4.8%
Sausalito Marin City School District	$6,650,074	$7,478,427	$243,111	3.7%
Shoreline Unified School District	$13,717,171	$15,547,928	$684,755	5.0%
Tamalpais Union High School District	$84,711,887	$82,324,797	$3,866,993	4.6%
Totals	**$563,036,868**	**$578,485,669**	**$26,443,186**	4.7%

Appendix: F: Public Agency Income Statement Data (cont'd)

Special Districts Safety	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Central Marin Police Authority*	$11,087,891	$12,682,790	$1,486,735	13.4%
Kentfield Fire Protection District	$4,949,898	$4,477,793	$828,090	16.7%
Novato Fire Protection District	$25,295,007	$21,313,411	$4,604,649	18.2%
Ross Valley Fire Department	$8,900,504	$9,225,977	$973,697	10.9%
Southern Marin Fire Protection District	$14,038,197	$14,067,722	$759,752	5.4%
Tiburon Fire Protection District	$6,966,748	$7,294,411	$2,159,000	31.0%
Total	**$71,238,245**	**$69,062,104**	**$10,811,923**	**15.2%**

Special Districts Utility	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Central Marin Sanitation Agency	$17,873,113	$16,220,247	$2,319,236	13.0%
Las Gallinas Valley Sanitary District	$11,621,316	$7,930,633	$266,914	2.3%
Marin Municipal Water District	$61,455,537	$69,478,882	$4,633,745	7.5%
Marin/Sonoma Mosquito & Vector Control District	$8,396,908	$9,652,593	$856,583	10.2%
Marinwood Community Services District	$5,224,022	$4,919,009	$269,828	5.2%
North Marin Water District	$18,506,716	$17,456,194	$669,066	3.6%
Novato Sanitary District	$18,571,214	$15,799,078	$173,410	0.9%
Richardson Bay Sanitary District	$2,874,017	$2,976,836	$69,002	2.4%
Ross Valley Sanitary District	$22,228,230	$20,570,289	$443,292	2.0%
Sanitary District # 5 Tiburon-Belvedere	$6,316,447	$4,500,449	$1,600,837	25.3%
Sausalito Marin City Sanitary District	$7,640,843	$5,596,332	$302,863	4.0%
Tamalpais Community Services District	$5,161,781	$5,086,144	$306,954	5.9%
Total	**$185,870,144**	**$180,186,686**	**$11,911,730**	**6.4%**

Appendix: F: Public Agency Income Statement Data (cont'd)

FY 2014

Municipalities	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
City of Belvedere	$7,151,000	$7,771,000	$280,312	3.9%
City of Larkspur*	$23,430,272	$16,496,021	$1,174,703	5.0%
City of Mill Valley	$35,104,000	$36,651,000	$1,832,914	5.2%
City of Novato	$45,725,000	$42,849,000	$4,167,992	9.1%
City of San Rafael	$93,536,000	$90,637,000	$17,576,796	18.8%
City of Sausalito	$19,374,007	$18,302,083	$1,339,935	6.9%
County of Marin	$578,298,000	$566,596,000	$46,803,624	8.1%
Town of Corte Madera	$18,827,611	$16,188,853	$1,591,599	8.5%
Town of Fairfax	$9,854,550	$8,703,418	$964,694	9.8%
Town of Ross	$7,521,177	$5,161,437	$292,890	3.9%
Town of San Anselmo	$17,157,724	$15,292,443	$426,878	2.5%
Town of Tiburon	$11,283,722	$9,040,229	$460,630	4.1%
Totals	**$867,263,063**	**$833,688,484**	**$76,912,967**	**8.9%**

School Districts	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Bolinas-Stinson Union School District	$3,682,417	$3,611,583	$195,036	5.3%
Dixie Elementary School District	$20,650,150	$21,303,737	$1,075,058	5.2%
Kentfield School District	$15,874,438	$15,651,915	$782,734	4.9%
Larkspur-Corte Madera School District	$18,407,176	$18,693,706	$919,073	5.0%
Marin Community College District	$58,598,119	$69,675,296	$2,747,044	4.7%
Marin County Office of Education	$54,109,107	$53,845,241	$1,488,826	2.8%
Mill Valley School District	$43,586,940	$40,709,942	$1,931,950	4.4%
Novato Unified School District	$76,012,499	$80,693,043	$3,710,767	4.9%
Reed Union School District	$21,716,462	$22,510,117	$1,022,230	4.7%
Ross School District	$7,437,995	$7,755,357	$342,318	4.6%
Ross Valley School District	$25,052,122	$25,063,637	$1,202,960	4.8%
San Rafael City Schools - Elementary	$48,715,280	$48,643,315	$2,003,613	4.1%
San Rafael City Schools - High School	$33,065,771	$32,764,963	$1,458,967	4.4%
Sausalito Marin City School District	$6,831,391	$7,212,560	$223,849	3.3%
Shoreline Unified School District	$13,215,928	$14,468,849	$660,935	5.0%
Tamalpais Union High School District	$80,916,231	$78,209,897	$3,931,527	4.9%
Totals	**$527,872,026**	**$540,813,158**	**$23,696,887**	**4.5%**

Appendix: F: Public Agency Income Statement Data (cont'd)

Special Districts Safety	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Central Marin Police Authority*	$10,971,094	$12,540,840	$2,202,617	20.1%
Kentfield Fire Protection District	$4,346,334	$4,410,646	$640,419	14.7%
Novato Fire Protection District	$24,921,522	$27,094,328	$4,365,000	17.5%
Ross Valley Fire Department	$8,319,924	$8,100,563	$757,240	9.1%
Southern Marin Fire Protection District	$13,177,067	$12,739,358	$1,661,560	12.6%
Tiburon Fire Protection District	$6,338,309	$5,793,305	$901,000	14.2%
Total	**$68,074,250**	**$70,679,040**	**$10,527,836**	**15.5%**

Special Districts Utility	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Central Marin Sanitation Agency	$16,421,864	$18,386,011	$2,724,054	16.6%
Las Gallinas Valley Sanitary District	$11,490,884	$8,624,424	$262,743	2.3%
Marin Municipal Water District	$70,673,150	$70,431,104	$4,576,450	6.5%
Marin/Sonoma Mosquito & Vector Control District	$7,861,221	$8,860,632	$865,130	11.0%
Marinwood Community Services District	$5,096,846	$5,133,110	$408,037	8.0%
North Marin Water District	$20,817,357	$20,329,069	$819,854	3.9%
Novato Sanitary District	$17,963,721	$19,865,633	$258,904	1.4%
Richardson Bay Sanitary District	$2,824,511	$3,009,245	$88,999	3.2%
Ross Valley Sanitary District	$20,868,467	$18,309,740	$796,725	3.8%
Sanitary District # 5 Tiburon-Belvedere	$5,963,722	$4,748,503	$172,890	2.9%
Sausalito Marin City Sanitary District	$7,486,444	$5,131,337	$258,040	3.4%
Tamalpais Community Services District	$5,149,167	$5,396,435	$328,757	6.4%
Total	**$192,617,354**	**$188,225,243**	**$11,560,583**	**6.0%**

Appendix: F: Public Agency Income Statement Data (cont'd)

FY 2013

Municipalities	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
City of Belvedere	$6,898,000	$7,778,000	$360,315	5.2%
City of Larkspur*	$18,603,639	$15,991,539	$1,117,173	6.0%
City of Mill Valley	$32,911,000	$35,373,000	$1,690,435	5.1%
City of Novato	$42,845,000	$40,203,000	$3,600,767	8.4%
City of San Rafael	$97,329,000	$84,881,000	$15,522,832	15.9%
City of Sausalito	$17,435,854	$19,290,681	$1,885,718	10.8%
County of Marin	$539,291,000	$578,123,000	$82,141,000	15.2%
Town of Corte Madera	$16,917,648	$15,662,631	$1,420,037	8.4%
Town of Fairfax*	$8,185,597	$8,393,424	$861,992	10.5%
Town of Ross	$5,954,371	$6,908,283	$426,227	7.2%
Town of San Anselmo	$16,613,802	$15,335,139	$706,204	4.3%
Town of Tiburon	$10,080,056	$8,564,576	$473,302	4.7%
Totals	**$813,064,967**	**$836,504,273**	**$110,206,002**	**13.6%**

School Districts	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Bolinas-Stinson Union School District	$4,166,654	$3,431,372	$181,797	4.4%
Dixie Elementary School District	$19,038,568	$20,037,236	$1,025,538	5.4%
Kentfield School District	$15,347,703	$14,949,309	$751,520	4.9%
Larkspur-Corte Madera School District	$16,692,448	$17,232,998	$760,498	4.6%
Marin Community College District	$73,695,039	$78,071,240	$2,867,705	3.9%
Marin County Office of Education	$53,965,926	$55,824,402	$1,537,897	2.8%
Mill Valley School District	$37,909,411	$36,847,491	$1,708,730	4.5%
Novato Unified School District	$74,691,071	$78,375,760	$3,564,105	4.8%
Reed Union School District	$20,866,279	$20,722,970	$954,501	4.6%
Ross School District	$7,208,553	$7,757,976	$328,289	4.6%
Ross Valley School District	$23,544,533	$23,706,265	$1,126,078	4.8%
San Rafael City Schools - Elementary	$45,813,222	$45,904,573	$1,891,069	4.1%
San Rafael City Schools - High School	$29,829,654	$30,110,447	$1,349,835	4.5%
Sausalito Marin City School District	$7,348,906	$7,412,975	$222,638	3.0%
Shoreline Unified School District	$15,141,029	$13,384,148	$582,511	3.8%
Tamalpais Union High School District	$75,744,653	$73,616,062	$3,790,319	5.0%
Totals	**$521,003,649**	**$527,385,224**	**$22,643,030**	4.3%

Appendix: F: Public Agency Income Statement Data (cont'd)

Special Districts Safety	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Central Marin Police Authority*	$8,760,972	$9,741,410	$1,546,456	17.7%
Kentfield Fire Protection District	$4,266,495	$4,027,584	$719,000	16.9%
Novato Fire Protection District	$23,981,238	$22,959,399	$4,347,000	18.1%
Ross Valley Fire Department	$8,283,616	$8,324,612	$1,352,592	16.3%
Southern Marin Fire Protection District	$13,009,009	$12,479,816	$1,798,760	13.8%
Tiburon Fire Protection District	$5,935,355	$5,505,107	$843,000	14.2%
Total	**$64,236,685**	**$63,037,928**	**$10,606,808**	**16.5%**

Special Districts Utility	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Central Marin Sanitation Agency	$15,760,045	$16,292,627	$1,202,050	7.6%
Las Gallinas Valley Sanitary District	$11,585,053	$8,366,225	$411,624	3.6%
Marin Municipal Water District	$69,738,216	$63,938,837	$3,963,600	5.7%
Marin/Sonoma Mosquito & Vector Control District	$7,957,709	$8,665,503	$891,511	11.2%
Marinwood Community Services District	$4,770,868	$5,053,618	$414,833	8.7%
North Marin Water District	$18,605,081	$16,568,138	$1,608,211	8.6%
Novato Sanitary District	$17,332,035	$15,759,901	$316,059	1.8%
Richardson Bay Sanitary District	$2,646,912	$2,867,406	$61,929	2.3%
Ross Valley Sanitary District	$20,314,968	$16,831,688	$778,004	3.8%
Sanitary District # 5 Tiburon-Belvedere	$5,409,761	$3,786,385	$186,990	3.5%
Sausalito Marin City Sanitary District	$6,804,580	$5,047,168	$165,778	2.4%
Tamalpais Community Services District	$4,782,049	$4,925,928	$278,274	5.8%
Total	**$185,707,277**	**$168,103,424**	**$10,278,863**	**5.5%**

Appendix: F: Public Agency Income Statement Data (cont'd)

FY 2012

Municipalities	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
City of Belvedere	$6,809,417	$7,082,918	$386,682	5.7%
City of Larkspur*	$17,286,549	$18,920,650	$1,216,411	7.0%
City of Mill Valley	$30,695,904	$32,412,000	$1,939,954	6.3%
City of Novato	$47,129,000	$44,317,469	$3,897,198	8.3%
City of San Rafael	$87,243,000	$84,304,491	$14,627,709	16.8%
City of Sausalito	$19,515,672	$20,402,997	$2,407,997	12.3%
County of Marin	$452,987,000	$461,104,000	$47,541,000	10.5%
Town of Corte Madera	$15,809,424	$14,025,216	$1,734,141	11.0%
Town of Fairfax*	$8,032,233	$8,190,115	$783,933	9.8%
Town of Ross	$5,711,293	$6,086,653	$744,696	13.0%
Town of San Anselmo	$15,240,865	$15,053,414	$1,103,350	7.2%
Town of Tiburon	$8,838,698	$8,520,072	$509,588	5.8%
Totals	**$715,299,055**	**$720,419,995**	**$76,892,659**	**10.7%**

School Districts	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Bolinas-Stinson Union School District	$3,366,497	$3,171,763	$168,417	5.0%
Dixie Elementary School District	$19,027,021	$19,498,458	$1,000,029	5.3%
Kentfield School District	$14,441,839	$14,841,354	$731,248	5.1%
Larkspur-Corte Madera School District	$16,554,817	$16,167,730	$833,718	5.0%
Marin Community College District	$73,985,992	$76,108,423	$2,628,704	3.6%
Marin County Office of Education	$56,294,422	$56,662,756	$1,537,812	2.7%
Mill Valley School District	$34,740,584	$35,382,157	$1,657,232	4.8%
Novato Unified School District	$72,505,743	$77,553,300	$3,453,655	4.8%
Reed Union School District	$20,662,117	$19,941,589	$918,955	4.4%
Ross School District	$6,834,205	$7,670,742	$296,989	4.3%
Ross Valley School District	$22,059,245	$21,179,617	$1,023,687	4.6%
San Rafael City Schools - Elementary	$43,858,815	$43,856,979	$1,774,074	4.0%
San Rafael City Schools - High School	$29,847,934	$29,862,827	$1,311,053	4.4%
Sausalito Marin City School District	$7,285,990	$6,899,490	$197,027	2.7%
Shoreline Unified School District	$13,436,120	$12,479,865	$546,884	4.1%
Tamalpais Union High School District	$73,882,043	$71,289,091	$3,630,314	4.9%
Totals	**$508,783,384**	**$512,566,141**	**$21,709,798**	**4.3%**

Appendix: F: Public Agency Income Statement Data (cont'd)

Special Districts Safety	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Central Marin Police Authority*	$6,845,710	$7,930,868	$1,152,082	16.8%
Kentfield Fire Protection District	$4,040,717	$3,935,793	$706,000	17.5%
Novato Fire Protection District	$23,162,755	$23,503,892	$4,420,000	19.1%
Ross Valley Fire Department	$6,188,574	$6,222,678	$3,822,902	61.8%
Southern Marin Fire Protection District	$9,514,727	$8,852,899	$1,321,376	13.9%
Tiburon Fire Protection District	$5,692,247	$5,532,857	$900,000	15.8%
Total	**$55,444,730**	**$55,978,987**	**$12,322,360**	**22.2%**

Special Districts Utility	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Central Marin Sanitation Agency	$15,242,715	$15,762,771	$1,130,652	7.4%
Las Gallinas Valley Sanitary District	$11,493,702	$6,665,852	$403,005	3.5%
Marin Municipal Water District	$61,957,837	$60,474,500	$3,962,731	6.4%
Marin/Sonoma Mosquito & Vector Control District	$7,573,456	$8,219,315	$1,820,548	24.0%
Marinwood Community Services District	$4,115,789	$4,592,674	$438,549	10.7%
North Marin Water District	$15,972,477	$16,405,522	$1,031,112	6.5%
Novato Sanitary District	$16,313,384	$16,052,483	$215,351	1.3%
Richardson Bay Sanitary District	$2,672,170	$2,658,572	$60,129	2.3%
Ross Valley Sanitary District	$22,056,782	$18,228,904	$702,054	3.2%
Sanitary District # 5 Tiburon-Belvedere	$4,927,600	$3,612,300	$240,305	4.9%
Sausalito Marin City Sanitary District	$6,350,068	$4,319,548	$315,887	5.0%
Tamalpais Community Services District	$4,938,176	$4,935,448	$249,495	5.1%
Total	**$173,614,156**	**$161,927,889**	**$10,569,818**	**6.1%**

Appendix: F: Public Agency Income Statement Data (cont'd)

Totals 2016

Special Districts Utility	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Municipalities	$898,020,850	$836,450,138	$79,257,793	8.8%
School Districts	$618,917,590	$623,198,203	$31,040,471	5.0%
Special Districts Safety	$64,547,473	$54,317,090	$10,464,513	16.2%
Special Districts Utility	$190,639,174	$180,761,046	$12,345,450	6.5%
Total	**$1,772,125,087**	**$1,694,726,477**	**$133,108,227**	**7.5%**

Totals 2015

Special Districts Utility	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Municipalities	$902,062,629	$796,166,376	$71,249,073	7.9%
School Districts	$563,036,868	$578,485,669	$26,443,186	4.7%
Special Districts Safety	$71,238,245	$69,062,104	$10,811,923	15.2%
Special Districts Utility	$185,870,144	$180,186,686	$11,911,730	6.4%
Total	**$1,722,207,886**	**$1,623,900,835**	**$120,415,912**	**7.0%**

Totals 2014

Special Districts Utility	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Municipalities	$867,263,063	$833,688,484	$76,912,967	8.9%
School Districts	$527,872,026	$540,813,158	$23,696,887	4.5%
Special Districts Safety	$68,074,250	$70,679,040	$10,527,836	15.5%
Special Districts Utility	$192,617,354	$188,225,243	$11,560,583	6.0%
Total	**$1,655,826,693**	**$1,633,405,925**	**$122,698,273**	**7.4%**

Appendix: F: Public Agency Income Statement Data (cont'd)

Totals 2013

Special Districts Utility	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Municipalities	$813,064,967	$836,504,273	$110,206,002	13.6%
School Districts	$521,003,649	$527,385,224	$22,643,030	4.3%
Special Districts Safety	$64,236,685	$63,037,928	$10,606,808	16.5%
Special Districts Utility	$185,707,277	$168,103,424	$10,278,863	5.5%
Total	**$1,584,012,578**	**$1,595,030,849**	**$153,734,703**	**9.7%**

Totals 2012

Special Districts Utility	Revenue	Expenses	Pension Contribution	Pension Contribution as % of Revenue
Municipalities	$715,299,055	$720,419,995	$76,892,659	10.7%
School Districts	$508,783,384	$512,566,141	$21,709,798	4.3%
Special Districts Safety	$55,444,730	$55,978,987	$12,322,360	22.2%
Special Districts Utility	$173,614,156	$161,927,889	$10,569,818	6.1%
Total	**$1,453,141,325**	**$1,450,893,012**	**$121,494,635**	**8.4%**

Appendix G: CalPERS Termination Fees

The table below lists the estimated termination payments at assumed rates of 2.00% and 3.25% for participating agencies, excepting school districts, per the annual CalPERS Actuarial Report for 6/30/2015.

AGENCY	NPL as Reported in FY 2015 Financials	Assumed Discount Rate 2.00%	Assumed Discount Rate 3.25%
Central Marin Police Authority*	$6,024,473	$71,565,039	$51,696,369
Central Marin Sanitation Agency	$3,324,578	$45,302,181	$33,168,333
City of Belvedere	$2,821,673	$22,330,041	$16,034,899
City of Larkspur	$9,046,789	$64,068,837	$46,794,380
City of Mill Valley	$21,174,403	$164,006,306	$119,143,571
City of Novato	$29,915,448	$210,899,167	$154,434,070
City of Sausalito	$17,741,671	$111,095,700	$80,854,968
College of Marin - CalPERS	$14,503,000	$4,413,804	$3,117,900
Kentfield Fire Protection District	$5,202,429	$25,682,839	$18,599,480
Las Gallinas Valley Sanitary District	$1,693,868	$12,363,061	$9,004,250
Marin Municipal Water District	$62,139,077	$291,279,084	$222,708,365
Marinwood Community Services District	$3,142,286	$19,402,506	$13,677,782
North Marin Water District	$6,701,264	$46,278,897	$34,041,789
Novato Sanitary District	$3,335,896	$23,194,067	$17,250,223
Richardson Bay Sanitary District	$901,425	$6,964,774	$5,134,984
Ross Valley Fire Department	$7,679,794	$56,572,810	$40,834,714
Ross Valley Sanitary District	$3,708,693	$21,982,458	$16,055,544
Sanitary District # 5	$2,757,064	$11,272,815	$8,312,243
Sausalito Marin City Sanitation District	$1,759,386	$12,874,490	$9,642,427
Tiburon Fire Protection District	$6,315,892	$42,833,280	$30,695,410
Town of Corte Madera	$12,146,336	$77,386,425	$56,430,103
Town of Fairfax	$6,078,042	$40,460,118	$29,676,098
Town of Ross	$3,465,264	$24,932,090	$17,959,639
Town of San Anselmo	$4,002,434	$59,135,515	$44,288,748
Town of Tiburon	$5,232,395	$38,702,774	$28,540,001
TOTAL	**$240,813,580**	**$1,504,999,078**	**$1,108,096,290**

Appendix J: Private Pension Discount Rates

The table below lists the discount rates used by the 10 largest US corporate pension funds by total assets under management. Information was obtained from the 2015 Annual Reports and 10K filings of the listed corporations.

Corporation	Pension Fund Assets ($Mils.)	Pension Discount Rate	OPEB Discount Rate
Boeing	$101,931	4.20%	3.80%
IBM	$96,382	4.00%	3.70%
AT&T	$83,414	4.60%	4.50%
General Motors	$82,427	3.73%	3.83%
General Electric	$70,566	4.38%	NA
Lockheed Martin	$63,370	4.38%	4.25%
Ford	$55,344	4.27%	4.22%
Bank of America	$51,000	4.51%	4.32%
UPS	$46,443	4.40%	4.18%
Northrop Grumman	$43,387	4.53%	4.47%
Average		**4.30%**	**4.14%**

BOARD MEMORANDUM

September 7, 2017

To: CMSA Commissioners and Alternates

From: Ad Hoc Grand Jury Response Committee
Jason Dow, General Manager JD

Subject: Agency Responses to the Marin County Civil Grand Jury Report – Marin's Retirement Health Care Benefits: *The Money Still Isn't There*

Recommendation: Approve the draft Agency responses to the Grand Jury's Retirement Health Care Benefits Report as presented or with edits, and authorize staff to submit them to the Grand Jury Foreperson and Presiding Judge.

Summary: 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"*. At the June Board Meeting, the Board formed an ad hoc committee, comprised of Commissioners Gaffney and Boorstein and alternate Commissioner DiGiovanni, to collaborate with staff on preparing draft responses for the Board's review and discussion at its September 12 meeting. GM Dow and the Committee met on August 10 and prepared the attached draft responses for the Board's consideration. CMSA must submit responses to the Grand Jury Foreperson, Jay Hamilton-Roth, and the Marin Superior Court Presiding Judge, Kelly Simmons, by September 30.

Discussion: Previous Marin County Grand Juries have issued reports on Other Post-Employment Benefits (OPEB) in 2005, 2007, and 2013, and CMSA responded to each of those reports. For most local agencies, OPEB is comprised of retiree medical benefit expenses. This report checks in on the status of Marin County local agencies' OPEB funding levels and unfunded liabilities, and identifies numerous cost containment strategies for local agency governing boards to consider.

In 2010, CMSA negotiated and initiated two significant OPEB cost containment measures. First, employees hired after July 1, 2010 receive a defined contribution of 1.5% of their annual compensation to a third-party administered trust fund for eligible retiree medical expenses, instead of a defined lifetime benefit. Second, the Board authorized establishment of a CalPERS retiree medical trust fund, called the California Employers Retirement Benefit Trust (CERBT), to fund OPEB liabilities for current retirees and employees hired prior to July 2010. In the Agency's January 1, 2015 GASB 45 actuarial report, the future projected cost of all retiree medical benefits is $4.512 million. Since 2010, the Agency has been funding the CERBT at the GASB 45 annual required contribution (ARC) level each year, and as of June 30, 2017, that fund has $2,274,471 in assets. With that amount, CMSA's future retiree medical benefit expenses are approximately 50.4% funded. On Page 7, in the special district section of the Report, CMSA is shown as one of a few agencies that have reduced its OPEB liabilities since 2012.

CMSA must respond to the Report's nine recommendations by completing the attached Agency Response to Grand Jury Report form, indicating if the Agency has 1) implemented the recommendations, 2) will implement in the future, 3) will not implement, or 4) requires additional analysis. In addition to completing the form, the Agency must provide a summary explanation for each response. CMSA has either implemented or partially implemented each recommendation. For the partially implemented recommendations, they were noted as "*Will be Implemented in the Future*", and the Committee's proposed implementation activity for each is shown below.

Recommendation 1: "Each agency should adopt a formal, written policy for contributions to its OPEB plan."

Implementation Activity: Board to adopt OPEB contribution policy or modify existing financial policy to include OPEB contribution provision.

Recommendation 2: *"Each agency's standard practice should be to consistently satisfy its formal written OPEB contribution policy."*

Implementation Activity: Staff to include net Annual Required Contribution (ARC) amount in the Agency's annual operating budget.

Recommendation 3: *"Each agency's OPEB contribution policy and practice should support a projection under GASB 75 that it's OPEB plan assets will be sufficient to make all projected OPEB benefit payments."*

Implementation Activity: The 2018 GASB 75 Valuation Report will show the net ARC and this amount will be included in the annual budget and 10-year financial forecast.

Recommendation 5: *"Each term of service, elected or appointed officials of each agency should take a public agency financial class."*

Implementation Activity: After the 2018 GASB 75 Valuation Report is prepared, the Agency's actuary will present the report findings to the Board and will incorporate OPEB and pension financial training elements into the presentation.

Recommendation 8: *"Each agency should have the following downloadable and text-searchable documents readily accessible on the website: the last five years of CAFRs/Audits and the last three actuarial reports."*

Implementation Activity: CMSA will add the current and prior two GASB 45 Valuation Reports to the website's Financial Information page.

Recommendation 9: *"Before the next round of bargaining begins, each agency should prioritize the cost containment strategies to be used, including reducing or eliminating OPEB benefits for future employees."*

Implementation Activity: Prior to the labor relations negotiations scheduled in 2020, the CMSA Board will consider additional OPEB cost containment measures.

Attachments:

1) Draft Agency Responses
2) Grand Jury Response Form
3) Marin County Civil Grand Jury Report – Marin's Retirement Health Care Benefits

2016/2017 MARIN COUNTY CIVIL GRAND JURY
Marin's Retirement Health Care Benefits: ***The Money Still Isn't There***

Report Date – May 10, 2017
Public Release Date – May 17, 2017
CMSA Response Date – September 13, 2017

CMSA'S RESPONSES TO RECOMMENDATIONS

R1. Each agency should adopt a formal, written policy for contributions to its OPEB plan.

Will be Implemented in the Future: Beginning in 2010, CMSA has made contributions into a special trust established by CalPERS, called the California Employers Retiree Benefit Trust (CERBT). CMSA's contributions to the CERBT are equivalent to the net Annual Required Contribution (ARC) as determined in the Agency's GASB 45 Valuation Reports.

CMSA does not have a policy to fund the ARC; however, its funding has been integrated into the Agency's annual budget since 2010, which is approved by the Board of Commissioners. By the end of calendar year 2017, the CMSA Board will either adopt an OPEB funding policy or amend an existing financial policy to state that the annual ARC will be fully funded.

R2. Each agency's standard practice should be to consistently satisfy its formal written OPEB contribution policy.

Will be Implemented in the Future: CMSA's practice has been to fully fund the GASB 45 ARC, and as of June 30, 2017, the CMSA CERBT account balance was $2,274,471. With that amount, CMSA's future retiree medical benefit expenses are approximately 50.4% funded.

After the OPEB funding policy is adopted by the CMSA Board of Commissioners, staff will ensure the GASB 75 Annual Dedicated Contribution (ADC) amount will be incorporated into the Agency's budget each fiscal year.

R3. Each agency's OPEB contribution policy and practice should support a projection under GASB 75 that its OPEB plan assets will be sufficient to make all projected OPEB benefit payments.

Will be Implemented in the Future: In early 2018, CMSA's actuary will prepare the Agency's biannual GASB 75 Valuation Report. That report will estimate the necessary annual CERBT contribution needed to fully fund future OPEB benefit payments, and that annual contribution will be incorporated into future Agency budget documents and its 10-year financial forecast.

R4. Each agency that uses special reserve funds for Post-employment Benefits should transition to a trust meeting the criteria of GASB 75.

<u>Implemented:</u> CMSA doesn't use special reserves to pre-fund its OPEB liabilities, and has funded the CalPERS CERBT since 2010.

R5. Each term of service, elected or appointed officials of each agency should take a public agency financial class.

<u>Will be Implemented in Future:</u> CMSA is a Joint Powers Agency (JPA), and has six Board members who are appointed by its four JPA member agencies. In the near future, CMSA will engage its JPA members to determine if they intend to provide a financial class to their respective Boards in response to this recommendation.

After the 2018 GASB 75 Valuation Report is prepared, the Agency's actuary will present the report findings to the Board and will incorporate OPEB and pension financial training elements into the presentation.

R6. Each agency should make its CAFRs, Audits, and GASB valuations more readily understandable by the general public.

<u>Implemented</u>: CMSA believes its GASB 45 Valuation Reports are prepared and presented in a manner to be very readable and understandable by the general public. CMSA prepares a Comprehensive Annual Financial Report (CAFR) that is designed to meet criteria established by the Government Finance Officers Association (GFOA). The CAFR contains the Agency's audited financial statements, is comprehensive in content, and is readily understandable to stakeholders in public finance and the wastewater utility industry. For other Agency stakeholders and the general public, CMSA produces a Popular Annual Financial Report (PAFR) that includes information extracted from the CAFR, is presented in a summarized, easy to read format, and highlights key Agency and financial information.

The Agency submits its CAFR and PAFR to the GFOA for independent review, to determine if those financial reports go beyond the minimum requirements of generally accepted accounting principles, and evidence the spirit of transparency and full disclosure. GFOA has recognized the Agency for meeting its high standards by awarding CMSA's CAFR the GFOA Certificate of Achievement for Excellence in Financial Reporting for the past fourteen consecutive years, and the Award for Outstanding Achievement in Popular Annual Financial Reporting for the PAFR for the past six consecutive years.

R7. Each agency should ensure that all of its public financial presentations are more readily understandable and scheduled during hours convenient for the public.

<u>Implemented:</u> CMSA believes the presentations of its annual audit, budget, CAFR, and PAFR are understandable. These presentations are given at regularly scheduled Board of Commissioner meetings – 7pm on the second Tuesday of the month. Additionally, the meeting proceedings are available on the Agency's website in audio and video formats.

R8. Each agency should have the following downloadable and text-searchable documents readily accessible on the website: the last five years of CAFRs/Audits and the last three actuarial reports.

<u>Will be Implemented in the Future</u> (Partially Implemented): CMSA's website has the current GASB 45 Valuation Report on its homepage, and the last ten consecutive years CAFRs/Audits on the Financial Information page. In the near future, CMSA will add the current and prior two GASB 45 Valuation Reports to the Financial Information page.

R9. Before the next round of bargaining begins, each agency should prioritize the cost containment strategies to be used, including reducing or eliminating OPEB benefits for future employees.

<u>Will be Implemented in the Future:</u> CMSA implemented two OPEB cost containment measures in 2010. First, during labor relations negotiations with the Agency's represented and unrepresented employee groups, was the establishment of a defined <u>contribution</u> retiree medical benefit for employees hired after July 1, 2010, and the second was participation in the CERBT. Both measures have reduced the Agency's future OPEB liabilities.

Prior to the labor relations negotiations scheduled for 2020, the CMSA Board will consider additional OPEB cost containment measures.

RESPONSE TO GRAND JURY REPORT

Report Title: **Marin's Retirement Health Care Benefits**

Report Date: **May 17, 2017** Response Date**: Aug 17, 2017**

Agency Name: ______________________________ Agenda Date: ________________

Response by: ______________________________ Title:________________________

FINDINGS

- I (we) agree with the findings numbered: _________________________
- I (we) disagree *partially* with the findings numbered: _______________
- I (we) disagree *wholly* with the findings numbered: ________________

  (Attach a statement specifying any portions of the findings that are disputed; include an explanation of the reasons therefor.)

RECOMMENDATIONS

- Recommendations numbered ___________________ have been implemented.

  (Attach a summary describing the implemented actions.)

- Recommendations numbered ___________________ have not yet been implemented, but will be implemented in the future.

  (Attach a timeframe for the implementation.)

- Recommendations numbered ___________________ require further analysis.

  (Attach an explanation and the scope and parameters of an analysis or study, and a timeframe for the matter to be prepared for discussion by the officer or director of the agency or department being investigated or reviewed, including the governing body of the public agency when applicable. This <u>timeframe</u> shall not exceed six months from the date of publication of the grand jury report.)

- Recommendations numbered___________________ will not be implemented because they are not warranted or are not reasonable.

  (Attach an explanation.)

Date:___________ Signed:_____________________________________

Number of pages attached____

2016–2017 MARIN COUNTY CIVIL GRAND JURY

Marin's Retirement Health Care Benefits

The Money Still Isn't There

Report Date: May 10, 2017

Public Release Date: May 17, 2017

COUNTY OF MARIN

Marin's Retirement Health Care Benefits
The Money Still Isn't There

SUMMARY

Four years ago, the Grand Jury released a report titled *Marin's Retirement Health Care Benefits: The Money Isn't There*,[1] that discussed the funding of public agency liabilities for retiree health benefits. They discovered that most agencies were neither saving adequately nor implementing best practice cost containment strategies, and warned of the consequences.

Since then, some agencies have started paying more attention to their unfunded benefit liabilities and are choosing to prepay at least a portion of their liabilities, as financial advisors recommend. However, while 16 of the 39 agencies we studied in this report collectively *decreased* their unfunded liability by $108.1 million (the County of Marin reduced its unfunded liability by $88.3 million), the remaining 23 agencies collectively *increased* their unfunded liability by $41.9 million. This problem has been escalating for years and will not be magically gone tomorrow. Left unchecked, the growing liabilities may eventually challenge agencies' fiscal health.

The Grand Jury recognizes that all agencies face day-to-day operational challenges and that retiree health liabilities are likely not top-of-mind for many agencies. Officials and board members may not be expert at interpreting financial documents nor aware of the long-term implications of retiree health liabilities for their agency's viability – but they need to be. In this report, we offer strategies to help Marin agencies deal with their Other Postemployment Benefits liability (primarily health benefits) and make it easier for the average person to understand the scope and potential effects of such liabilities on our communities.

[1] "Marin's Retirement Health Care Benefits: The Money Isn't There." *Marin County Civil Grand Jury*. 3 June 2013.

BACKGROUND

Public employees are typically granted two retirement benefits: a pension and "Other Postemployment Benefits" (OPEB) – primarily retiree health care. This report is a follow-up to previous OPEB-related Marin County Grand Jury Reports from: 2004-2005,[2] 2006-2007,[3] and 2012-2013.[4] We wanted to see how local public agencies' OPEB liabilities have changed since the 2012-2013 Report, and examine the impact of OPEB on agencies' financial health.

METHODOLOGY

The Grand Jury, in order to understand the financial and historical details of OPEB plans:

- Reviewed Marin County Civil Grand Jury OPEB-related reports and agency responses: 2004-2005, 2006-2007, and 2012-2013.
- Distributed detailed financial questionnaires (and analyzed responses) to the same public agencies surveyed in the 2012-2013 Grand Jury Report (see Appendix A: OPEB Questionnaire to Public Agencies).
- Researched OPEB legal issues.
- Reviewed OPEB-related Governmental Accounting Standards Board Statements 43, 45, 74, and 75 (GASB 43, GASB 45, GASB 74, and GASB 75) and related literature.
- Analyzed all Comprehensive Annual Financial Reports (CAFRs) and audits of public agencies since Fiscal Year 2012.
- Analyzed GASB 45 Actuarial Valuations of OPEB benefits and liabilities, prepared for public agencies.
- Watched city/town council audit and financial presentations.
- Interviewed agency staff and consultants involved with the actuarial process.
- Surveyed literature for examples and best practices of OPEB.

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[2] "The Bloated Retirement Plans of Marin County, Its Cities and Towns." *Marin County Civil Grand Jury*. 9 May 2005.
[3] "Retiree Health Care Costs: I Think I'm Gonna Be Sick." *Marin County Civil Grand Jury*. 19 March 2007.
[4] "Marin's Retirement Health Care Benefits: The Money Isn't There." *Marin County Civil Grand Jury*. 3 June 2013.

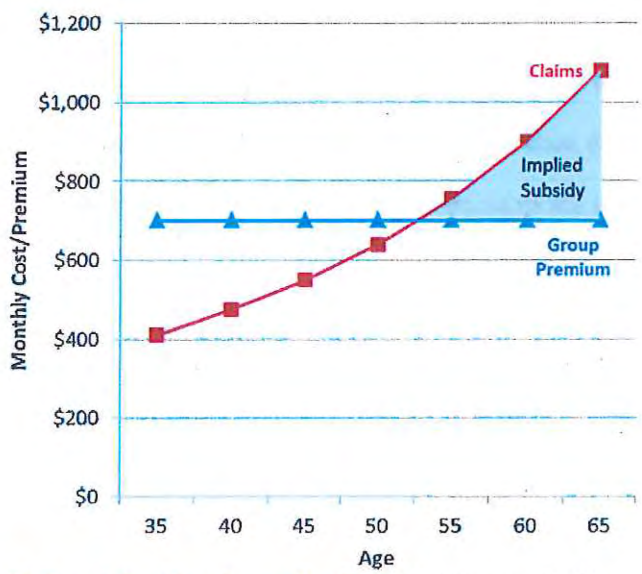
DISCUSSION

If a public agency provides an employee with *Other Postemployment Benefits* (OPEB), and the employee meets specified periods of service and age, the agency will pay these benefits upon retirement to the employee (and to his/her spouse and/or dependents under some OPEB plans). The liability for providing these benefits is determined by an *actuary* and reported in an *actuarial valuation*. In accounting terminology, such a future financial obligation is called an *Actuarial Accrued Liability* (AAL). If an agency does not annually prepay their actuarial-determined *Annual Required Contribution* (ARC), the agency creates an *Unfunded Actuarial Accrued Liability* (UAAL).

Retiree Health Care

OPEB "principally involve health care benefits, but also may include life insurance, disability, legal and other services."[5]

Health care insurance costs continue to rise. These increased costs affect both the active employees and retirees. Public agencies blend employees and retirees into a single health care plan to calculate a premium that applies to both groups. The blending causes active employees, who are statistically healthier, to pay more for their health care to defray some of the additional costs of retiree health care. The additional cost of retiree claims is called an *implied rate subsidy*. If retiree health insurance costs rise, and employees are not charged sufficient premiums, then the public agency will have increased liabilities from the implied rate subsidy shortfall.



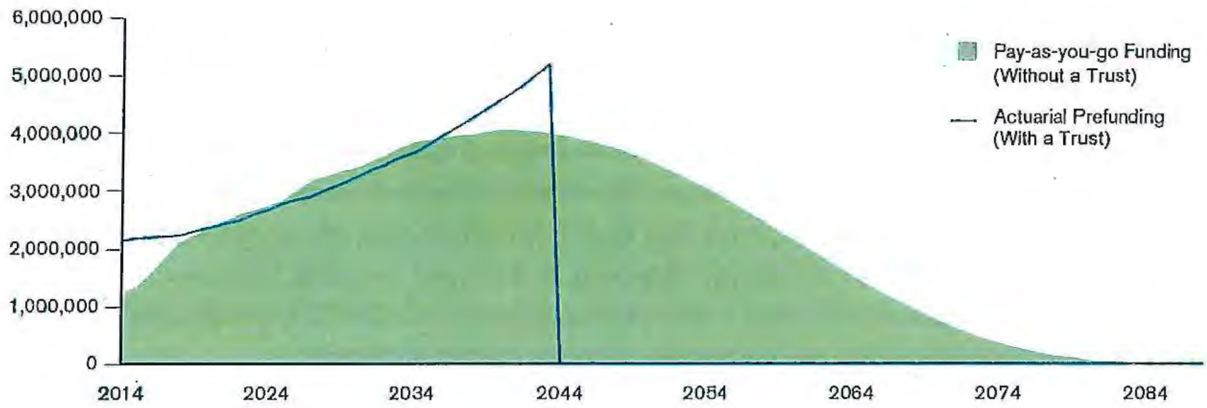
From: "Retiree Health Care: A Cost Containment How-To Guide." *League of California Cities*. Sep. 2016

[5] "Other Postemployment Benefits (OPEB)." *Governmental Accounting Standards Board.*

Prefunding vs. Pay-As-You-Go

Public agencies can choose to either prefund their Actuarial Accrued Liability (AAL) or pay the annual retiree benefits as they come due (*pay-as-you-go* or *pay-go*). Prefunding into an OPEB trust fund allows the contributions to be invested, which can further reduce both the agency's AAL and Unfunded Actuarial Accrued Liability (UAAL). While prefunding is a smart long-term strategy, it may affect au agency's ability to pay its short-term bills. That is why some agencies choose pay-go – they do not have a sufficient budget or adequate cash flow. Basic aid school districts[6] for example, depend upon local property tax distribution to cover both their short-term and long-term obligations.

Nevertheless, prefunding OPEB liabilities is a widely accepted best practice. As the Government Finance Officers Association (GFOA) states, "It is widely acknowledged that the appropriate way to attain reasonable assurance that benefits will remain sustainable is for a government to accumulate resources for future benefit payments in a systematic and disciplined manner during the active service life of the benefitting employees."[7] The following graph shows a hypothetical example of the annual cost for an agency's OPEB payments[8] for a closed group (no new employees) and illustrates how prefunding could be less expensive than pay-go, using 7.25% as the assumed rate of return on investments:



	WITHOUT A TRUST	WITH A TRUST
Employer payments	$160,000,000	$98,000,000
Investment income (7.25%)	0	62,000,000
Total cost of benefits	**160,000,000**	**160,000,000**

[6] Weston, Margaret. "Basic Aid School Districts." *Public Policy Institute of California*. September 2013.
[7] "Sustainable Funding Practices for Defined Benefit Pensions and Other Postemployment Benefits (OPEB)." *Government Finance Officers Association*. January 2016.
[8] "Establishing an OPEB trust fund." *Milliman, Inc.* 2014.

The Actuarial Valuation Process

Actuaries prepare their valuations using Actuarial Standards of Practice and applicable standards of the Governmental Accounting Standards Board (GASB). The accounting standards are issued as implementation guides. During the 2012-2016 time period, actuaries followed the GASB 45[9] implementation. The purposes of a GASB 45 actuarial valuation include:

- Informing an agency of its retiree benefits' financial future obligations,
- Determining how much an agency should consistently prefund to ensure there will be sufficient funding for the retirees' benefits, and
- Determining and measuring the funded status and funding progress of an OPEB plan.

The agency initiates the actuarial valuation process by providing basic data to the actuarial consultant, including:

- **Agency overview**: agency directions and intentions for the valuation.
- **Valuation data**: employee data, updates to health & welfare benefits and/or Memorandums of Understanding (MOUs), new resolutions about agency contributions, plan summaries and rates, and retiree benefits and other contributions paid recently.
- **Assumptions**: rates of retirement, termination, disability, mortality, prefunding, and discount rates.

Within a few months, the actuary arrives at a draft actuarial valuation report. The draft is shared with the finance or budget director, who can correct misunderstandings or misinterpretations. The final (GASB 45) valuation report is then used in the preparation of annual Comprehensive Annual Financial Reports (CAFRs) (See Appendix B: Example Actuarial Valuation Certification.) For agencies that have 200 or more employees, GASB 45 requires actuarial valuations at least biennially, and for smaller agencies at least triennially.

[9] "Statement No. 45 of the Governmental Accounting Standards Board: Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions." *Governmental Accounting Standards Board*. June 2004.

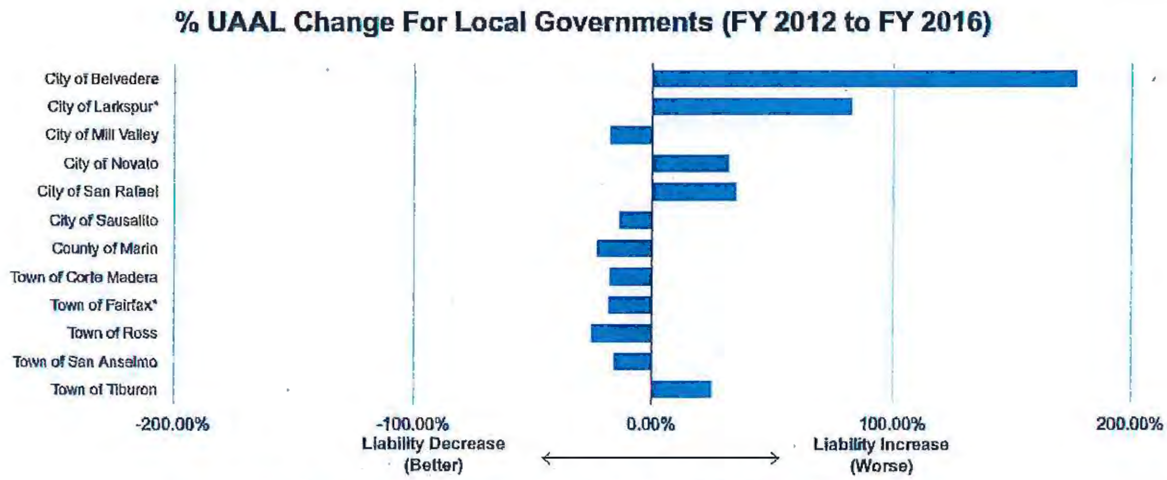
What Has Changed Since the 2012-2013 Report?

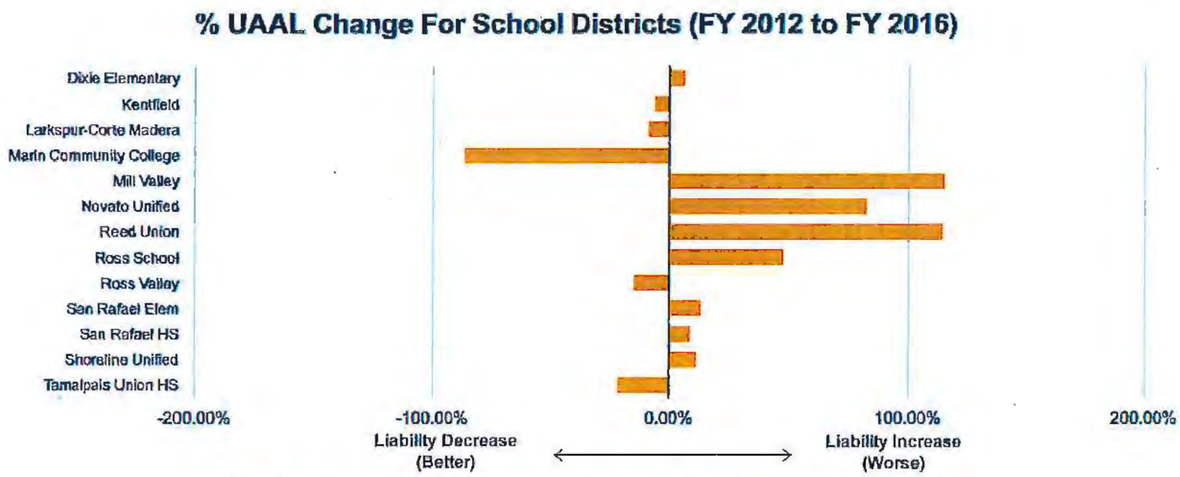
In the 2012-2013 report "Marin's Retirement Health Care Benefits: *The Money Isn't There,*"[10] the 2012-2013 Marin County Grand Jury reviewed the OPEB funding status of 40 local government agencies. Since one agency (Sewerage Agency of Southern Marin) responded that it was staffed by City of Mill Valley employees, only 39 agencies were examined. This year's Grand Jury compared the financial information published in agencies' Audits and Comprehensive Annual Financial Reports (CAFRs) for Fiscal Year 2012 (FY 2012) and FY 2016. (For an example of locating OPEB financial data, please see Appendix C: Finding Key OPEB Information in CAFRs or Audits.) By this comparison, the Grand Jury discovered:

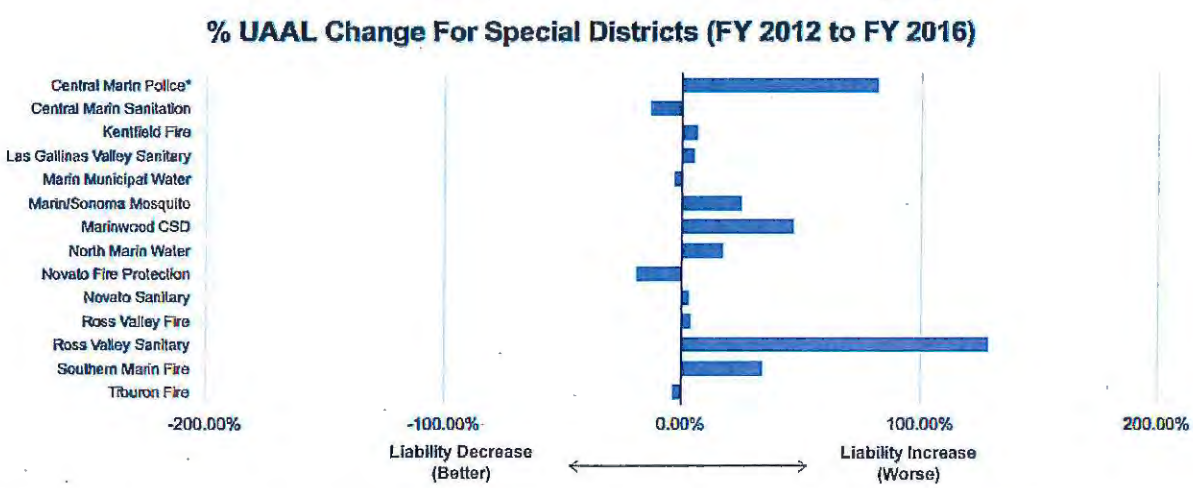
OPEB Highlights	**FY2012**	**FY 2016**
# of agencies that funded over 5% of their liability	11	18
# of agencies that funded between 1-5% of their liability	2	0
# of agencies that had not funded any of their liability	26	21
Collective 39-agency liability (AAL)	$630.7 Million	$650.2 Million
Collectively set aside (OPEB plan assets)	$24.6 Million	$110.2 Million
Collective Unfunded Actuarial Accrued Liability (UAAL)	$606.1 Million	$540.0 Million
Collective Unfunded Actuarial Accrued Liability (UAAL) excluding County of Marin	$223.4 Million	$245.7 Million

Because agencies have very different budgets, we chose to compare liabilities as the percentage Unfunded Actuarial Accrued Liability (UAAL) change from Fiscal Year FY 2012 to FY 2016. As of April 19, 2017, the City of Larkspur, the Town of Fairfax, and the Central Marin Police Authority had not released their FY 2016 CAFRs. For those agencies, we therefore needed to use their "older" FY 2015 financial data and applicable GASB 45 actuarial valuation data instead. Those agencies are indicated with an asterisk [*] following their names throughout this report.

[10] "Marin's Retirement Health Care Benefits: The Money Isn't There." *Marin County Civil Grand Jury.* 22 May 2013.







By reviewing agencies' published financial documents, we were able to prove that the agencies reduced their unfunded liability by a combination of actions:

- **Fully contributing their Annual Required Contribution (ARC) and establishing an investment account.** By keeping up-to-date with actuarial payments, future financial obligations are kept in check.

- **Setting aside "substantial assets" for OPEB liability.** Putting aside more money into a trust account for future OPEB benefits reduces the unfunded liability.

Since FY 2012, the overall unfunded liability of $606.1 million (UAAL) was *reduced* to $540.0 million. However, for agencies that have *increased* their UAAL, we found two basic causes:

- **Underfunding the Annual Required Contribution (ARC).** Agencies that opt to use pay-go and not completely fund their ARC, compound their UAAL each year (i.e., it grows).

- **Not Reporting Implied Rate Subsidies.** As described previously, the implied rate subsidy effectively requires public agencies to calculate an implied liability whenever their retirees participate in group medical plans, but pay the same premiums as active employees. Effective March 31, 2015, all actuarial valuations must include the implicit subsidy liability.[11]

The Liability Fear

Newspapers regularly cover the looming *unfunded* pension crisis across America. Where will the money come from to pay the retirees' pension? Less commonly reported is the looming *unfunded* OPEB crisis. "The logic has been that the OPEB funding problem is 25 years old, so it can wait another year or two — even though procrastinating simply makes the liabilities mushroom … The problem of zero-funded OPEB plans is often ignored."[12] In Marin County, for the 39 agencies we studied, the unfunded pension liability is $956.3 Million and the unfunded OPEB liability (UAAL) is $540.0 Million.

Agencies need to look at their future budgets to decide if they will be able to pay an increasingly larger UAAL obligation. If they can, then the unfunded liability is simply an anticipated expense. If they cannot, then the unfunded liability is a much more urgent issue. To give some insight into the agency's potential challenge paying off its UAAL obligation, we compared each agency's most recent Annual Required Contribution (ARC) with its most recent total revenue. See Appendices D (municipalities), E (school districts), and F (special districts) for details.

If an agency does not plan sufficiently for paying their OPEB liability, citizens may be asked to make hard choices:

- **Agencies may try to find the money**. Agencies may reduce services ("crowd-out"), increase fees, attempt to raise taxes or issue bonds (with voter approval). If an agency proposes new taxes or bonds which may be used to reduce OPEB debt, the Grand Jury

[11] "Actuarial Standard of Practice No. 6." *Actuarial Standards Board.* May 2014.
[12] Miller, Girard and Link, Jim. '"New Normal" Retirement Plan Designs.' *Government Finance Review. Aug. 2009.*

believes it should fully disclose that purpose, and not use language that is "virtually impenetrable, written by lawyers for lawyers who are also accountants."[13]

- **Retiree benefits may be reduced.** "However, unlike pensions, OPEBs are typically not guaranteed or protected by state law. State and local governments have much more latitude to scale back OPEBs and share OPEB-related costs with retirees. Many have implemented several changes to that effect."[14]

Approaching Cost Containment

Over the years, many organizations have investigated reducing OPEB liabilities through cost containment strategies. Because of legal and political issues, these strategies may not be appropriate for every public agency. Rather than limit agencies to specific strategies, the Grand Jury wants to ensure that decision makers in the agencies are aware of the breadth and depth of these options to better inform any future liability-reducing actions.

In 2006, Governor Schwarzenegger established the *Public Employee Post-Employment Benefits Commission*[15] to identify the extent of unfunded OPEB liabilities and evaluate approaches for addressing the liabilities. The 34 recommendations contained in the Commission's final report addressed both pension and OPEB funding. While some of these recommendations are now legally required or obsolete, the Grand Jury believes two recommendations are still warranted today:

- ✓ **Public agencies providing OPEB benefits should adopt prefunding as their policy.** As a policy, prefunding OPEB benefits is just as important as prefunding pensions. The ultimate goal of a prefunding policy should be to achieve full funding.
- ✓ **Any employer considering the use of OPEB bonds should fully understand, and make public, the potential risks they bring.** Such risks include: shifting costs to future generations and converting a future estimated OPEB liability into fixed indebtedness.

In 2015, Smart Business Magazine highlighted cost containment strategies[16] for company employee benefits, including:

- ✓ **Consumer-Directed Health Plans (CDHPs).** Combines a high-deductible plan with a health savings account.
- ✓ **Adding Voluntary Benefits.** Employees can add benefits as-needed with pre-tax dollars.
- ✓ **Self-Funding the Health Plan.** Employers directly pay for health care claims, and reduce their financial risk by purchasing stop loss insurance from an insurance carrier.

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[13] Herhold, Scott. "How ballot questions for bonds mislead voters." *The Mercury News*. 22 Aug. 2016.
[14] "Effective Advocacy & Key City Issues." *League of California Cities*. 20 Jan. 2016.
[15] "Funding Pensions & Retiree Health Care for Public Employees." *Public Employee Post-Employment Benefits Commission*. Jan. 2008.
[16] Pritts, Craig. "Benefit Renewals: Cost containment strategies that can control your health care costs." *Smart Business Pittsburgh*. Sep. 2015.

- ✓ **Expanding Wellness Programs.** Reportedly, 75% of health costs are preventable.

- ✓ **Reduce Spousal Subsidies or Add Spousal Surcharges.**

In 2016, the League of California Cities OPEB Task Force[17] listed a number of strategies that agencies could consider to reduce OPEB costs. The Grand Jury agrees that these strategies should be examined:

- ✓ **Benefit Changes for Future Employees.** Reduce benefits for new hires.
- ✓ **Benefit Changes for Existing Employees**. Reduce benefits for current employees (not retirees).
- ✓ **Change Contributions to Fixed Amounts.** Instead of paying a percentage of premiums, agencies would pay a fixed dollar amount as premiums increase.
- ✓ **Limit Duration of Retiree Medical Benefit.** Medical benefits would only extend until the retiree is eligible for Medicare.
- ✓ **Close the Benefit to New Employees**. Remove the benefit for new hires.
- ✓ **Adopt or Increase Tenure Requirements**. Require longer employment tenure before being eligible for benefits.
- ✓ **Cover Only Retirees.** Currently public agencies may cover the retiree's dependents as well.
- ✓ **Make Agency Insurance Secondary**. If the retiree has access to additional health care (from a spouse, previous employer, or veteran's program), use that primarily.
- ✓ **Eliminate Retiree Health Care for New Employees.** As pensions have become more generous, require retirees to pay for their own health care.
- ✓ **Buy Down/Buy Out Benefits**. Public agencies would pay a lump sum to reduce or eliminate their health care benefit.
- ✓ **Adjust Health Care Plans**. Changing the health care plans offered can reduce both employee and retiree health costs.
- ✓ **League Health Benefits Marketplace (Exchange).** This plan "provides cities the flexibility lacking in other group coverage medical plan designs to decouple and unbundle active employee and retiree costs, which is key to reducing OPEB liabilities."[18]
- ✓ **Audit Retiree Medical Benefits**. Ensure benefits are both compliant and not duplicative.
- ✓ **Enroll Retirees in Medicare Part A**. To the extent that some retirees are ineligible for full Medicare coverage and must pay for Medicare Part A, it may be more cost effective to pay for their enrollment in Part A.

[17] "Retiree Health Care: A Cost Containment How-To Guide." *League of California Cities*. Sep. 2016

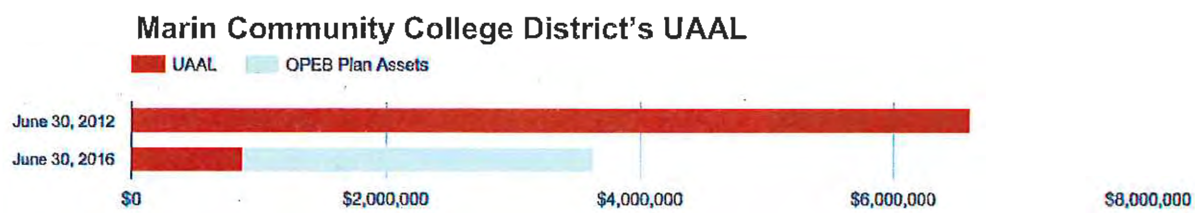
[18] "Health Benefits Marketplace." *League of California Cities*. Accessed Feb 2017.

✓ **Utilize Federally Subsidized Prescription Plan for Medicare Retirees.** As possible, use available subsidies.

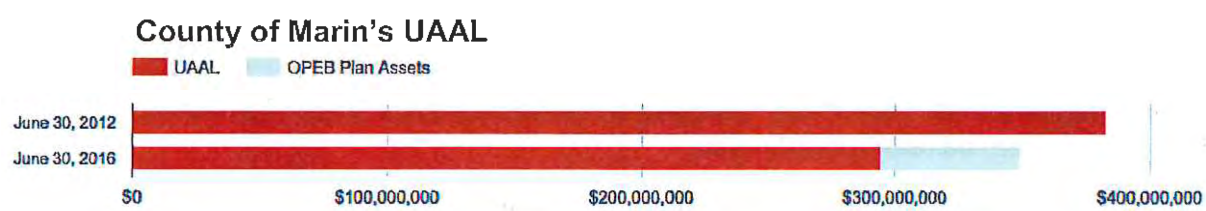
The Grand Jury recognizes that there is no one-size-fits-all acceptable solution to reduce unfunded OPEB liabilities, and that changing benefits requires a dialogue not only with agency staff but also union representatives. Therefore, we encourage agencies to clearly articulate the risk that the promised retiree benefits may not be able to be funded and to work with unions and staff to create a solution that is sustainable and fair for all parties, including the public.

Making a Dent

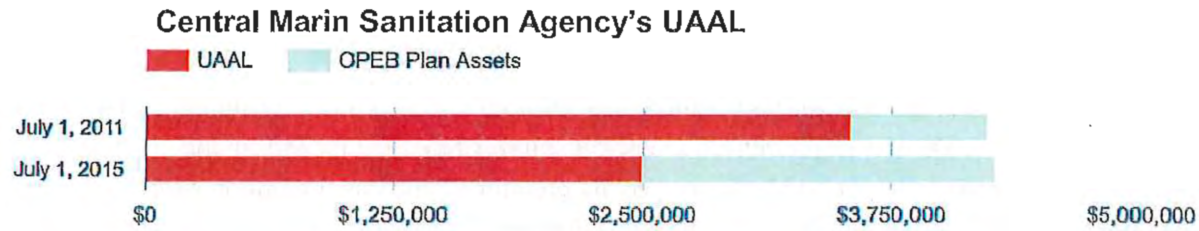
The Grand Jury found that some agencies have made notable reductions in their unfunded liability (UAAL) and are implementing best practice cost containment strategies. Their efforts are highlighted below, as reported in their financial statements and actuarial valuations. The valuation dates shown in the charts are from the agencies' actual valuation reports.



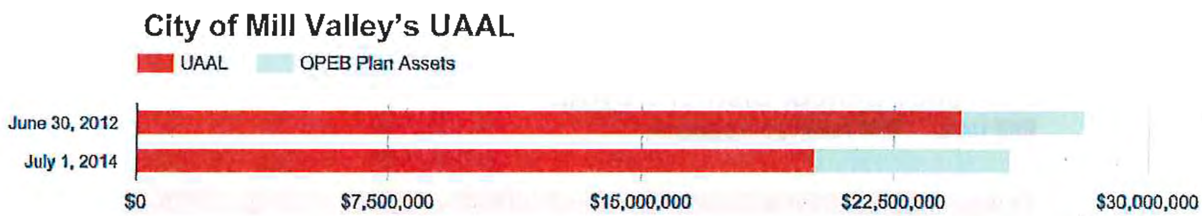
Marin Community College District ("College of Marin") decreased its UAAL by changing its OPEB funding policy. Through FY 2012, the district operated its OPEB plan solely on a pay-as-you-go basis ("pay-go"). However, during FY 2013, it established an irrevocable trust with the California Employers' Retiree Benefit Trust (CERBT) to prefund its OPEB costs through CalPERS, in addition to its regular pay-go costs.



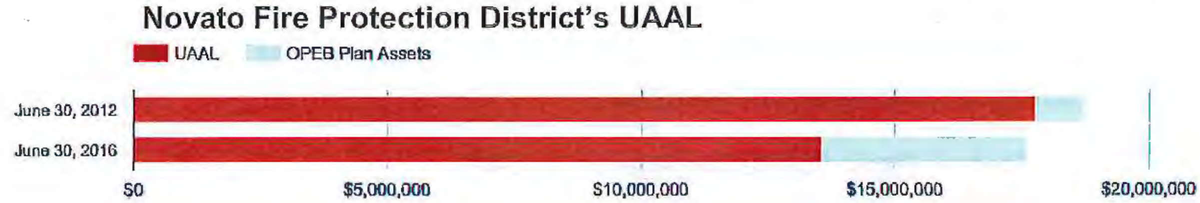
According to the CAFRs and actuarial valuations, the **County of Marin** accomplished its improvements primarily by changing its OPEB funding policy. Through FY 2012, the County was a pay-go funder but had also contributed to a reserve intended to be used to fund its OPEB plan. In February 2013, the County entered into an irrevocable trust agreement with the CERBT to prefund the County's OPEB costs through CalPERS, in addition to the regular pay-go contributions. The County transferred the reserve balance to the CERBT and began prefunding its full ARC during FY 2013. From FY 2013 through FY 2016, the County contributed 103.57% of its total ARC for that period. The most recent actuarial valuation reflects that the County also decreased its AAL by another factor within its control. It did not increase the maximum benefit for retirees eligible for its OPEB "Plan 3": retirees hired between October 1, 1993 and December 31, 2007 and those hired earlier who elect Plan 3.



Before FY 2012, the **Central Marin Sanitation Agency** (CMSA) contracted with CalPERS to administer its OPEB plan and entered into an irrevocable trust agreement with the CERBT to prefund future OPEB costs.



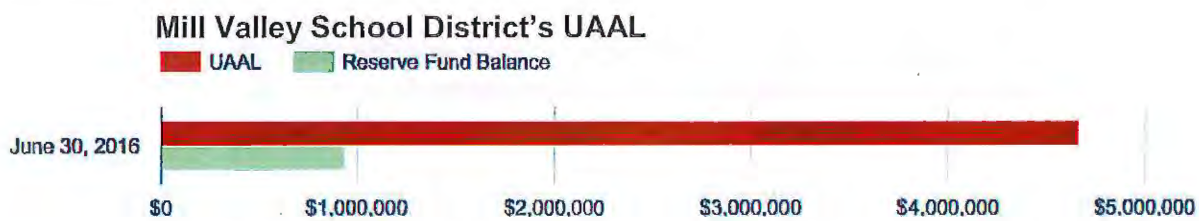
Through FY 2014, the **City of Mill Valley**'s CAFRs reflect that the City was funding its OPEB on a pay-go basis, plus some amounts to its trust account to prefund future OPEB costs. The most recent actuarial valuation noted the City's increased trust account contributions and the City's intent to consistently make total OPEB contributions greater than or equal to ARC each year. During 2013, Mill Valley implemented two OPEB cost-containment methods for new employees: (1) it increased their length of service required to be eligible for OPEB from 15 years to 20 years; and (2) it restricted any OPEB benefit to the employee only. In March 2017, the City started public discussions to eliminate OPEB benefits for American Federation of State, County and Municipal Employees (AFSCME) union members hired after January 1, 2017 and establishing a Retiree Health Savings Account, which is estimated to save $3,000/year for each employee.

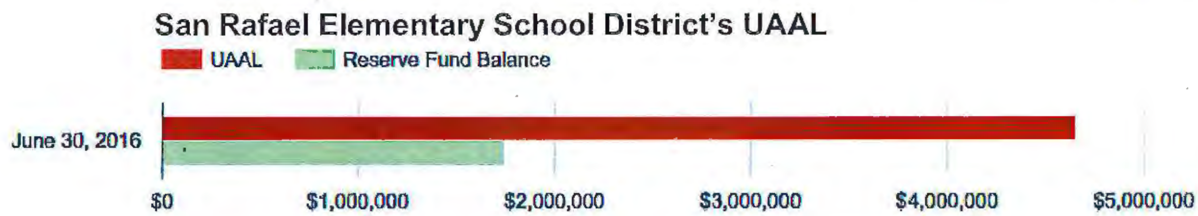


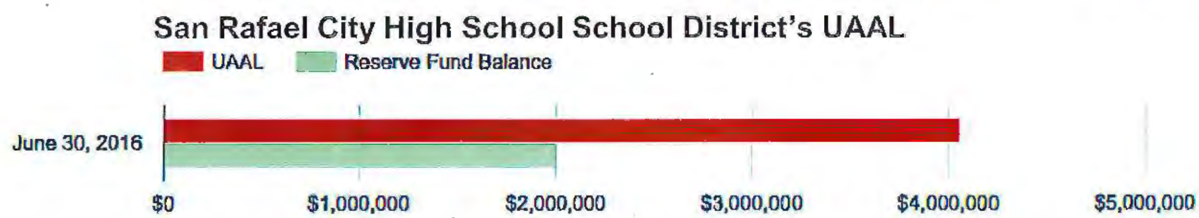
Starting in FY 2012, the **Novato Fire Protection District** (NFPD) has contributed 110.49% of its total ARC. The District implemented a cost-containment method providing that a retiree reaching age 65 must change to Medicare, pay its premiums, and has the option to select a Medicare supplement plan through the district. However, NFPD will only pay a maximum of 80% of the applicable Kaiser Medicare supplemental rate.

A Fund Which Would Make a Dent

The Grand Jury also found that at least three school districts in Marin County have established *substantial* Special Reserve Funds for OPEB:







California law authorizes these funds and many school districts throughout the state have them. They are commonly referred to as a *Fund 20, Special Reserve Fund for Postemployment Benefits*. Such Funds may be an important step in financing future benefits, and these school districts should be commended for establishing a Fund 20. However, funds set aside for future benefits (as opposed to pay-go costs) should be considered contributions to an OPEB plan only "if the vehicle established is one that is capable of building assets that are separate from and independent of the control of the employer and legally protected from its creditors. Furthermore, the sole purpose of the assets should be to provide benefits under the plan. These conditions generally require the establishment of a legal trust."[19] The Mill Valley School District should also be commended for establishing a trust with CERBT. Yet, if a school district deposits its Fund 20 balance into a trust, the district will reduce (or further reduce) its UAAL.

GASB 75

Most Marin agencies began implementing Governmental Accounting Standards (GASB) Statement 45 for their OPEB financial reporting on July 1, 2009. Beginning July 1, 2017, agencies will switch to using GASB 75. The changes to OPEB reporting are similar to changes in the GASB reporting of net pension liability (GASB 67 and 68). It states, "Employers that participate in a defined benefit pension plan administered as a trust or equivalent arrangement are required to record the net pension liability, pension expense, and deferred outflows/deferred inflows of resources related to pensions in their financial statements as part of their financial position."[20] These changes have increased financial scrutiny, and triggered public agencies across the United States to make changes to their pension funding strategies.[21] The primary objective of GASB 75 is to improve governmental accounting and financial reporting for OPEB, by improving the consistency, comparability and transparency of the information reported.[22] The new reporting standards will cause actuaries to change how they prepare their OPEB valuations and cause agencies to change their financial reporting. (See Appendix G: GASB 45 vs. 75 Overview for more details.) Three important changes are GASB 75's requirements for *biennial actuarial valuations, balance sheet liability reporting,* and *single blended discount rate.*

Biennial Actuarial Valuations. GASB 75 requires all agencies to obtain OPEB actuarial valuations biennially. In contrast, GASB 45 allowed agencies having fewer than 200 OPEB plan members to obtain such valuations triennially. This change affects several Marin agencies.

Balance Sheet Liability Reporting. GASB 75 requires agencies to report their Net OPEB Liability (NOL) for agencies with an OPEB trust, or Total OPEB Liability (TOL) for agencies that do not have an OPEB trust, *upfront* on the face of their balance sheets. NOL and TOL are the equivalent of UAAL and AAL under GASB 45 with some technical differences. GASB 75 also requires disclosure of how and why OPEB liability changed from year to year.

Single Blended Discount Rate. The *discount rate* is the rate used to discount future benefit payments (i.e. actuarial accrued liability) to a present value. A lower rate *increases* that liability, and a higher rate *decreases* that liability. Both GASB 45 and GASB 75 permit having higher long-term discount rates with full prefunding over the amortization period and plan assets exist.

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19 "City of Mill Valley, Actuarial Valuation of Other Post-Employment Benefit Programs As of July 1, 2014" *Bickmore*. Aug. 2015

20 "Notes to the Agent Multiple-Employer Defined Benefit Pension Plan GASB 68 Accounting Valuation Reports." *California Public Employees Retirement System*. 30 Jun. 2016.

21 Farmer, Liz and Maciag, Mike. "Why Some Public Pensions Could Soon Look Much Worse." *Governing*. 17 Mar. 2015.

22 "Summary of Statement No. 75: Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions." *Governmental Accounting Standards Board*. June 2015.

However, GASB 75 requires a single blended discount rate if the plan has some assets, but is projected to be insufficient to make benefit payments at some future point. The single rate combines the long-term rate when assets are projected to cover the payments and a municipal bond (lower) rate when assets are projected to be insufficient.

The Grand Jury also notes that actuaries determined an Annual Required Contribution (ARC) under GASB 45, while GASB 75 uses the term Actuarially Determined Contribution (ADC). However, both terms have a similar meaning. The ARC represents a target contribution required to ensure there are sufficient savings to finance and cover the promised OPEB.[23] GASB 75 similarly defines the ADC as also representing a target contribution to an OPEB plan, determined in conformity with Actuarial Standards of Practice (ASOP). ASOP No. 6, adopted in 2014, defines the ADC as a potential payment to prefund an OPEB plan, using a contribution allocation procedure that may include an amortization method.[24] The ARC method may be used for the ADC.[25]

The Grand Jury believes that GASB 75 will cause a local public agency's financial situation to look much worse. The agency "should expect a larger total OPEB liability because the single blended rate calculated under [GASB] 75 is likely to be lower than the discount rate under existing standards."[26] "The recognition of the Net OPEB Liability in the employer's financial statements will likely be a significant increase in the amount of liability that was reported under prior GASB standards."[27] This change will likely increase scrutiny of the agencies' balance sheet OPEB obligations, and force agencies to focus on addressing these liabilities. For example, the previous section ("Making a Dent") shows that agencies following full prefunding policies with plan assets achieve the goal of reducing their unfunded OPEB liabilities. Under GASB 75, an agency can reach that goal with a prefunding policy and practice supporting a projection that plan assets will be sufficient to make *all* projected benefit payments.

"It's Hard to Wrap Your Head Around This!"

– Marin County Elected Official

"One of the most important responsibilities a local elected official has is oversight of the agency's spending."[28] However, understanding the ins-and-outs of financial and actuarial standards imposed on public agencies is not easy, as evidenced by the (above) official's exclamation. Even if an elected official has business financial expertise, the standards that guide public agencies differ significantly. If an elected official has trouble understanding these

[23] "Guide to Implementation of GASB Statements 43 and 45 on Other Postemployment Benefits." *Governmental Accounting Standards Board.* 2005.
[24] "Actuarial Standard of Practice No. 6." *Actuarial Standards Board.* May 2014.
[25] "GASB Approves New OPEB Employer Accounting Standard (No. 75)." *Bartel Associates.* July 2015.
[26] McAllister, Brian and Spinellli, Connie and Belger, Diane. "Getting familiar with OPEB." *Journal of Accountancy.* 1 Aug. 2016.
[27] "GASB Issues Two Other Postemployment Benefit (OPEB) Related Exposure Drafts." *Milliman.* Aug. 2014.
[28] "Budgeting and Finance." *Institute for Local Government.* Accessed Feb. 2017.

concepts, how can the average citizen hope to understand the annual Comprehensive Annual Financial Reports (CAFRs), budgets, or Audits?

"Relatively few educational opportunities are provided to help trustees and policy makers understand how liabilities are calculated, in the role and sensitivity of actuarial assumptions, the impact that amortization periods and actuarial smoothing have on the retirement plan's short-term and long-term contribution rates, and of the full meaning of a plan's funded status."[29]

Therefore, the Grand Jury recommends that public agencies improve both their financial literacy and transparency:

- Elected officials should take (and invite the public to attend) a financial literacy class such as one offered by: League of California Cities,[30,31] UC Davis,[32] ICMA University,[33] Government Finance Officers Association,[34] or the California State Association of Counties.[35]
- Financial documents issued by public agencies should be made easier to understand by the average resident.
- Public financial presentations both by and to public agencies should be easier to understand.

For example, the Government Finance Officers Association has established best practices for budget documents,[36] and annually recognizes agencies with "Distinguished Presentation Awards." Governing Magazine's "Guide to Financial Literacy: Connecting Money, Policy and Priorities,"[37] explains not only the terminology and purpose of various financial documents, it also offers essential questions that leaders should know to ask. Additional examples of classes and presentations can also be found in Appendix H (Example Financial Literacy Classes and Presentations).

[29] Kehler, David. "Public Pension Plan Financing: The Devil's in the Actuarial Details." *Society of Actuaries.* 2010.
[30] "New Mayors & Council Members Academy." *League of California Cities.* Accessed Mar. 2017.
[31] "Municipal Finance Institute." *League of California Cities.* Accessed Mar. 2017.
[32] Brinkley, Dr. Catherine. "Community Governance." *UC Davis.* Spring 2016.
[33] "Local Government 101 Online Certificate Program." *ICMA University.*
[34] "Government Finance Officers Association Training." *Government Finance Officers Association.*
[35] "California State Association of Counties Upcoming Courses." *California State Association of Counties.*
[36] "Making the Budget Document Easier to Understand." *Government Finance Officers Association.* Feb 2014.
[37] Marlowe, Justin. "Guide to Financial Literacy: Connecting Money, Policy and Priorities." *Governing.* 2014.

We Are Not Alone

Marin County's public agencies are not unique in facing the challenges of OPEB liabilities.

"Total unfunded state other postemployment (OPEB) liabilities have increased, according to S&P Global Ratings' latest survey of U.S. states. For states that have completed new OPEB actuarial studies since our last survey (which used 2013 or prior studies), total liabilities increased $59.4 billion, or 12% over a span of two years."[38]

In January 2016, California Controller Betty Yee "pegged the state's unfunded liability for other post-employment benefits (OPEB) at $74.1 billion. That's how much it will cost to allow workers to stay on their health plans after they retire until they're eligible for Medicare, subsidize their premiums, and then provide them with supplemental benefits after Medicare kicks in. The benefit's value can exceed $16,000 in the case of married couples and $20,000 in the case of retirees with children."[39]

The City of San Luis Obispo (California) reduced their 2009 estimated $5.9 million OPEB liability to $4.2 million by changing their amortization period and changing from pay-go to prefunding their Annual Required Contribution (ARC). In January 2010, the City of Beverly Hills (California) eliminated OPEB liabilities for new non-safety hires by shifting from a defined *benefit* health plan to a defined *contribution* retiree health plan.[40] South Lake Tahoe (California) collaborated with its stakeholders to reduce OPEB liability by 73 percent by creating a new insurance plan.[41]

Sharing Our Data

Despite the fact that agencies' OPEB financial documents are publicly available, the Grand Jury spent an enormous effort to gather the documents (not all of the documents were available online, nor text-searchable), extract the data, and analyze it. With the rise of the Open Data Movement (examples include: Data.gov, the Data Foundation, OpenGov, Marin County's Open Data Portal, and the City of Sausalito's Budget Transparency Tool), we wanted other organizations – including future Grand Juries – to be able to leverage our public data. Therefore, we have created a data portal consisting of all the Comprehensive Annual Financial Reports (CAFRs) and Audits for the 39 agencies we researched for FY 2011– FY 2016 along with a spreadsheet containing validated data extracted from those and other financial reports (including Annual Required Contributions (ARCs), discount rates, amortization periods, and the change of assets, liabilities, and unfunded liability). This information is available online, for free access here: https://goo.gl/fSqOfX.

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[38] Spain, Carol. "Rising U.S. State Post-Employment Benefit Liabilities Signal An Unsustainable Trend." *Standard and Poors*. 7 Sep. 2016.
[39] Eide, Stephen and Disalvo, Daniel. "Phase out costly perks for retired state workers." *San Diego Union Tribune*. 1 Apr 2016.
[40] "Retiree Health Care: A Cost Containment How-To Guide." *League of California Cities*. Sep. 2016
[41] Kerry, Nancy. "Reducing Unfunded Liabilities for Other Post-Employment Benefits." *Western City*. May 2015.

CONCLUSION

Other Postemployment Benefits (OPEB) are just one of many financial obligations that public agencies face. Since the amount of the Annual Required Contribution (ARC) is a relatively small percentage for many agencies' annual total revenue, it is easy for them to not be too concerned (especially when faced by a much larger underfunded pension benefit). However, unlike pensions, agencies have more opportunities to reduce their OPEB obligations. The Grand Jury sees the delicate balance that agencies are facing: attracting new employees, negotiating with existing employees and retirees, and responsibly managing expenses in the public's interest. While some Marin agencies continue to reduce their unfunded OPEB liability, we are concerned that many agencies still have not yet done so. We hope that this report will give the agencies the additional reminders and tools to address this looming financial burden before more drastic measures need to be taken.

FINDINGS

F1. Many of the municipalities have *decreased* their UAAL obligation since FY 2012.

F2. Some of the schools that have *increased* their UAAL obligation (since FY 2012) are setting aside OPEB contributions into reserve funds (rather than irrevocable trust funds).

F3. Many of the special districts have *increased* their UAAL obligation since FY 2012.

F4. Some of the agencies that stated they comply with their actuarial funding guidelines, are not in compliance as shown in their CAFRs.

F5. GASB 45 has increased the agency's reporting transparency, but the information in these financial reports is difficult for the average person to understand.

F6. GASB 45 permits an agency with a full ARC funding policy in its GASB 45 valuation to increase its discount rate, thereby decreasing its OPEB liability and ARC payments.

F7. Upcoming GASB 75 reporting will further improve an agency's OPEB reporting transparency.

RECOMMENDATIONS

R1. Each agency should adopt a *formal, written policy* for contributions to its OPEB plan.

R2. Each agency's standard practice should be to consistently satisfy its formal, written OPEB contribution policy.

R3. Each agency's OPEB contribution policy and practice should support a projection under GASB 75 that its OPEB plan assets will be sufficient to make all projected OPEB benefit payments.

R4. Each agency that uses special reserve funds for Postemployment Benefits should transition to a trust meeting the criteria of GASB 75.

R5. Each term of service, elected or appointed officials of each agency should take a public agency financial class.

R6. Each agency should make its CAFRs, Audits, and GASB valuations more readily understandable by the general public.

R7. Each agency should ensure that all of its public financial *presentations* are more readily understandable and scheduled during hours convenient for the public.

R8. Each agency should have the following downloadable and text-searchable documents readily accessible on their website: the last five years of CAFRs/Audits and the last three actuarial reports.

R9. Before the next round of bargaining begins, each agency should prioritize the cost containment strategies to be used, including reducing or eliminating OPEB benefits for future employees.

REQUEST FOR RESPONSES

Pursuant to Penal code section 933.05, the grand jury requests responses as follows:

From the following governing bodies:

<u>Municipalities</u>

- City of Belvedere (R1-R9)
- City of Larkspur (R1-R9)
- City of Mill Valley (R1-R9)
- City of Novato (R1-R9)
- City of San Rafael (R1-R9)
- City of Sausalito (R1-R9)
- County of Marin (R1-R9)
- Town of Corte Madera (R1-R9)
- Town of Fairfax (R1-R9)
- Town of Ross (R1-R9)
- Town of San Anselmo (R1-R9)
- Town of Tiburon (R1-R9)

School Districts

- Dixie Elementary School District (R1-R9)
- Kentfield School District (R1-R9)
- Larkspur-Corte Madera School District (R1-R9)
- Marin Community College District (R1-R9)
- Mill Valley School District (R1-R9)
- Novato Unified School District (R1-R9)
- Reed Union School District (R1-R9)
- Ross School District (R1-R9)
- Ross Valley School District (R1-R9)
- San Rafael City Schools (R1-R9)
- Shoreline Unified School District (R1-R9)
- Tamalpais Union High School District (R1-R9)

Special Districts

- Central Marin Police Authority (R1-R9)
- Central Marin Sanitation Agency (R1-R9)
- Kentfield Fire Protection District (R1-R9)
- Las Gallinas Valley Sanitary District (R1-R9)
- Marin Municipal Water District (R1-R9)
- Marin/Sonoma Mosquito & Vector Control District (R1-R9)
- Marinwood Community Services District (R1-R9)
- North Marin Water District (R1-R9)
- Novato Fire Protection District (R1-R9)
- Novato Sanitary District (R1-R9)
- Ross Valley Fire Department (R1-R9)
- Ross Valley Sanitary District (R1-R9)
- Southern Marin Fire Protection District (R1-R9)
- Tiburon Fire Protection District (R1-R9)

The governing bodies indicated above should be aware that the comment or response of the governing body must be conducted in accordance with Penal Code section 933 (c) and subject to the notice, agenda and open meeting requirements of the Brown Act.

Note: At the time this report was prepared information was available at the websites listed.

Reports issued by the Civil Grand Jury do not identify individuals interviewed. Penal Code Section 929 requires that reports of the Grand Jury not contain the name of any person or facts leading to the identity of any person who provides information to the Civil Grand Jury. The California State Legislature has stated that it intends the provisions of Penal Code Section 929 prohibiting disclosure of witness identities to encourage full candor in testimony in Grand Jury investigations by protecting the privacy and confidentiality of those who participate in any Civil Grand Jury investigation.

GLOSSARY

Actuary: A professional dealing with the assessment and management of risk for financial investments, insurance policies, and any other ventures involving a measure of uncertainty.[42]

Actuarial Accrued Liability (AAL): The portion of the actuarial present value benefits allocated to prior years of employment—and thus not provided for by future normal costs.[43]

Actuarially Determined Contribution (ADC): "A target or recommended contribution to a defined benefit OPEB plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted."[44]

Annual Required Contribution (ARC): The ARC is the employer's periodic required contribution to a defined benefit OPEB plan. The ARC is the sum of two parts: (1) the normal cost, which is the cost for OPEB benefits attributable to the current year of service, and (2) an amortization payment, which is a catch-up payment for past service costs to fund the Unfunded Actuarial Accrued Liability (UAAL) over the next 30 years.[45] Despite the name "Annual **Required** Contribution," the contribution is not legally required.

California Employers' Retiree Benefit Trust (CERBT): This trust fund is dedicated to prefunding Other Post Employment Benefits (OPEB) for all eligible California public agencies. Even those not contracted with CalPERS health benefits can prefund future retiree benefits such as health, vision, dental, and life insurance.[46]

California Public Employees' Retirement System (CalPERS): An agency in the California executive branch that serves more than 1.7 million members in its retirement system and administers benefits for nearly 1.4 million members and their families in its health program.[47]

Discount Rate: A percentage rate required to calculate the present value of a future cash flow.[48]

Governmental Accounting Standards Board (GASB): "The independent organization that establishes and improves standards of accounting and financial reporting for U.S. state and local governments. Established in 1984 by agreement of the Financial Accounting Foundation (FAF) and 10 national associations of state and local government officials, the GASB is recognized by governments, the accounting industry, and the capital markets as the official source of generally accepted accounting principles (GAAP) for state and local governments."[49]

[42] "Definition of 'Actuary'." *Investopedia.*
[43] "Other Postemployment Benefits: A Plain-Language Summary of GASB Statements No. 43 and No. 45." *Governmental Accounting Standards Board.*
[44] "Statement No. 75 of the Governmental Accounting Standards Board." *Governmental Accounting Standards Board*. No. 350. June 2015.
[45] "GASBhelp." *Governmental Accounting Standards Board.*
[46] "California Employers' Retiree Benefit Trust (CERBT) Fund." *CalPERS.* Accessed March 2017.
[47] "CalPERS Story." *CalPERS.* Accessed March 2017.
[48] "Fixed Income Bond Terms." *Corporate Finance Institute.*
[49] "FACTS about GASB." *Governmental Accounting Standards Board.* 2012–2014.

Implied Rate Subsidy: The implicit rate is an inherent subsidy of retiree health care costs by active employee health care costs when health care premiums paid by retirees and actives are the same.[50]

Net OPEB liability: Introduced in GASB 75, the liability of employers and nonemployer contributing entities to employees for benefits provided through a defined benefit OPEB plan that is administered through a trust.[51] GASB 45 uses Unfunded Actuarial Accrued Liability (UAAL) to connote a similar liability.

Other Postemployment Benefits (OPEB): Benefits (other than pensions) that U.S. state and local governments provide to their retired employees. These benefits principally involve health care benefits, but also may include life insurance, disability, legal and other services.[52]

Pay-As-You-Go Funding (Pay-go): With pay-as-you-go funding, plan contributions are made as benefit payments become due and funds necessary for future liability are not accumulated. That is, contributions made are for current retirees only, causing the majority of retiree health benefits liability to be considered unfunded.[53]

Public Employees' Retirement System (PERS): The retirement and disability fund for public employees in California.

Unfunded Actuarial Accrued Liability (UAAL): The excess of the Actuarial Accrued Liability (AAL) over the actuarial value of assets.[54]

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[50] "Glossary: Implied Rate Subsidy." *Milliman.*
[51] "Summary of Statement No. 75: Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions." *Governmental Accounting Standards Board.* June 2015.
[52] "Other Postemployment Benefits (OPEB)." *Governmental Accounting Standards Board.*
[53] "Glossary: Pay-as-you-go funding." *Milliman.*
[54] "Other Postemployment Benefits: A Plain-Language Summary of GASB Statements No. 43 and No. 45." *Governmental Accounting Standards Board.*

APPENDIX A: OPEB Questionnaire to Public Agencies

OPEB Questionnaire

Definitions

A. Other Post Employment Benefits (OPEB): Benefits (other than pensions) that U.S. state and local governments provide to their retired employees. These benefits principally involve health care benefits, but also may include life insurance, disability, legal and other services.

B. Actuarial Accrued Liability (AAL): Excess of the present value of a OPEB fund's total of future benefits (payable to the OPEB beneficiaries) and fund administration expenses over the present value of the future normal cost of those benefits.

C. Actuarial Value of Assets (AVA): The value of OPEB investments and other property used by the actuary for the purpose of an actuarial valuation (sometimes referred to as valuation assets). Actuaries often select an asset valuation method that smoothes the effects of short-term volatility in the market value of assets.

D. Unfunded Actuarial Accrued Liability (UAAL): The UAAL is the Actuarial Accrued Liability (AAL) minus the value of any assets (AVA) that have been irrevocably set aside to fund future benefits.

E. Annual Required Contribution (ARC): The annual required contribution, or ARC, refers to the amount needed to be contributed by employers to adequately fund an OPEB plan. The ARC is the sum of two factors: a) the cost of OPEB benefits being accrued in the current year (known as the normal cost), plus b) the cost to amortize, or pay off, the OPEB plan's unfunded liability. The ARC is the required employer contribution after accounting for other revenue, chiefly expected investment earnings and contributions from employee participants.

F. Discount Rate: The interest rate used to bring future cash flows to the present to account for the time value of money

APPENDIX A: OPEB Questionnaire to Public Agencies (cont'd)

Agency Identification

1. Name of Responding Agency. ______________________________

Separate Investment Accounts

Please respond to this set of questions with regard to the existence of a separate investment account into which you may deposit each year's funds for amortizing your retiree health care benefits' UAAL?

2. Do you have such a separate investment account?

   ____

3. If you have a separate investment account, when did you set up that account?

   ____

4. If you do have such a separate investment account, what, is its current value?

   ____

5. If you do have a separate investment account, what is the value of your deposits into that account for each of the fiscal years 2011-2012 to the present?

   (1) Fiscal Year 2011-2012 ____________________

   (2) Fiscal Year 2012-2013 ____________________

   (3) Fiscal Year 2013-2014 ____________________

   (4) Fiscal Year 2014-2015 ____________________

   (5) Fiscal Year 2015-2016 ____________________

6. If you have any other accounts to fund retiree health care benefits, please identify the nature, purpose and current value of those account(s).

   ____

   ____

7. If you do not have an investment account to fund retiree healthcare benefits why not?

   ____

APPENDIX A: OPEB Questionnaire to Public Agencies (cont'd)

Annual Required Contribution ("ARC")

8. What is your ARC for each of the fiscal years 2011-2012 to the present?

   (1) Fiscal Year 2011-2012 ________________

   (2) Fiscal Year 2012-2013 ________________

   (3) Fiscal Year 2013-2014 ________________

   (4) Fiscal Year 2014-2015 ________________

   (5) Fiscal Year 2015-2016 ________________

9. Have you committed to fully fund each year's ARC?

   ____

10. If you have you committed to fully fund each year's ARC, when did you make that commitment? ______________________________

11. If you have you committed to fully fund each year's ARC in what amount did you fund each year's ARC for fiscal years 2011-2012 to the present?

   (1) Fiscal Year 2011-2012 ________________

   (2) Fiscal Year 2012-2013 ________________

   (3) Fiscal Year 2013-2014 ________________

   (4) Fiscal Year 2014-2015 ________________

   (5) Fiscal Year 2015-2016 ________________

12. If you have you not committed to fully fund each year's ARC, in what amount did you fund each year's ARC for fiscal years 2011-2012 to the present?

   (1) Fiscal Year 2011-2012 ________________

   (2) Fiscal Year 2012-2013 ________________

   (3) Fiscal Year 2013-2014 ________________

   (4) Fiscal Year 2014-2015 ________________

   (5) Fiscal Year 2015-2016 ________________

APPENDIX A: OPEB Questionnaire to Public Agencies (cont'd)

13. What discount rate(s) have you used to calculate your ARC for each year for fiscal years 2011-2012 to the present?

    (1) Fiscal Year 2011-2012 ____________________

    (2) Fiscal Year 2012-2013 ____________________

    (3) Fiscal Year 2013-2014 ____________________

    (4) Fiscal Year 2014-2015 ____________________

    (5) Fiscal Year 2015-2016 ____________________

14. Please explain how you arrived at such discount rate(s) for fiscal years 2011-2012 to the present.

    ____

    ____

15. Please specify the amortization period which you have used for each year fiscal year from 2011-2012 to the present to calculate your ARC and to fund your retiree health care benefits UAAL.

    (1) Fiscal Year 2011-2012 ____________________

    (2) Fiscal Year 2012-2013 ____________________

    (3) Fiscal Year 2013-2014 ____________________

    (4) Fiscal Year 2014-2015 ____________________

    (5) Fiscal Year 2015-2016 ____________________

<u>Negotiations to Reduce OPEB Obligations</u>

16. If from fiscal years 2011-2012 to the present you have negotiated any caps with any employee group(s) or negotiating group(s) on the amounts you commit to pay existing or new employees for retiree health care benefits, please specify the following for each negotiating group:

    (1) The employee group(s) or negotiating group(s):

    ____

APPENDIX A: OPEB Questionnaire to Public Agencies (cont'd)

(2) The nature of the cap: ______________________

(3) The date such cap was negotiated: ______________

(4) Whether applicable to both new and existing employees:

____

(5) If there is no negotiated cap, what is your cap?

____

17. If from fiscal years 2011-2012 to the present you have negotiated with any employee group or negotiating group a higher retirement age on the amounts you commit to pay existing or new employees for retiree health care benefits, please specify the following for each employee group(s) and negotiating group(s):

(1) The employee group(s) or negotiating group(s):

____

(2) The change in retirement age: ______________________

(3) The date such higher retirement age was negotiated: ______________

(4) Whether the higher retirement age is applicable to both new and existing employees: ______________________

18. If from fiscal years 2011-2012 to the present you have negotiated with any employee group(s) or negotiating group(s) to require active employees to contribute towards the cost of their retiree health care benefits, please specify the following for each employee group(s) and negotiating group(s):

(1) The employee group(s) or negotiating group(s):

____

(2) The nature of employee contribution:

____

(3) Whether you increased the employee's compensation to satisfy part of this contribution:

____

(4) The date such increased contribution went into effect: ______________

APPENDIX A: OPEB Questionnaire to Public Agencies (cont'd)

(5) Whether applicable to both new and existing employees:

____

(6) The amount of the employee contribution:

____

19. Please explain the nature of reduction in OPEB benefits, if any, when a recipient becomes eligible for Medicare.

____

____

20. What OPEB benefits (by type and agency funding amount) do you offer to your employees. If the benefits differ between employee group or negotiating groups or based on date of hire, please explain.

____

____

Your Website

21. Is there a link on your website to provide the latest following information?

____

(1) actuarial valuation of your AAL,
(2) your UAAL,
(3) its consequent percent funded,
(4) the Discount Rate (annual percentage) used to determine these values, and
(5) a projection of outlays ("Pay-Go") for retiree health care benefits for each of the current and subsequent 10 years?

(Collectively "Website Link")

22. If you maintain a Website Link, when was this information first put on your website?

____

23. With regard to the Website Link information, to the extent such information is not on your website, why not?

____

APPENDIX A: OPEB Questionnaire to Public Agencies (cont'd)

24. Please provide us the URL for the website page(s) that display this Website Link information.

____

Financial Reporting

25. Please provide the audited Comprehensive Annual Financial Report (CAFR) for fiscal year 2012 (2011-2012) in one of the following formats:

    (1) a hyperlink to a publicly available web site containing the appropriate PDF document (preferred): ______________________
    (2) a digital copy of the appropriate PDF file, or
    (3) a printed document.

APPENDIX B: Example Actuarial Valuation Certification

ACTUARIAL VALUATION CERTIFICATION

This report presents the City of Novato's Retiree Healthcare Plan ("Plan") January 1, 2014 actuarial valuation. The purpose of this valuation is to:

- Determine the Governmental Accounting Standards Board Statement Nos. 43 and 45 January 1, 2014 Benefit Obligations,
- Determine the Plan's January 1, 2014 Funded Status, and
- Calculate the 2014/15 and 2015/16 Annual Required Contributions.

The report provides information intended for reporting under GASB 43 and 45, but may not be appropriate for other purposes. Information provided in this report may be useful to the City for the Plan's financial management. Future valuations may differ significantly if the Plan's experience differs from our assumptions or if there are changes in Plan design, actuarial methods, or actuarial assumptions. The project scope did not include an analysis of this potential variation.

The valuation is based on Plan provisions, participant data, and asset information provided by the City as summarized in this report, which we relied on and did not audit. We reviewed the participant data for reasonableness.

To the best of our knowledge, this report is complete and accurate and has been conducted using generally accepted actuarial principles and practices. Additionally, in our opinion, actuarial methods and assumptions comply with GASB 43 and 45. As members of the American Academy of Actuaries meeting the Academy Qualification Standards, we certify the actuarial results and opinions herein.

Respectfully submitted,

John E. Bartel, ASA, MAAA, FCA President Bartel Associates, LLC October 28, 2014	Bianca Lin, FSA, MAAA, EA Assistant Vice President Bartel Associates, LLC October 28, 2014

Source: "City of Novato Retiree Healthcare Plan." City of Novato, California. January 1, 2014.

APPENDIX C: Finding Key OPEB Information in CAFRs or Audits

Where can people find important OPEB-related information in an agency's financial reports?

Example from a Municipality's Comprehensive Annual Financial Report (CAFR) (note: no prefunding contributions made):

NOTE 10 - Postemployment Benefits Other Than Pensions

Development of 2015 / 2016 Fiscal Year

Annual OPEB Cost - Based on a 4.00% discount rate

AAL	Actuarial Accrued Liability	$	3,629,754
	Actuarial Value of Assets		-
UAAL	Unfunded Actuarial Accrued Liability	$	3,629,754
	Amortization Period		23 years
	Annual % of Payroll Amortization of Unfunded AAL	$	119,323
	Normal Cost (based on the Entry Age Normal Method)		177,525
ARC	Annual Required Contribution		296,848
	Interest on Net OPEB Obligation		73,576
	Adjustment to ARC		(89,962)
	Annual OPEB Cost		280,462
	Pay-as-you-go Cost		(105,580)
	Increase in net OPEB Obligation		174,882
	Net OPEB Obligation - beginning of year		1,839,397
	Net OPEB Obligation - end of year	$	2,014,279

Example from a Municipality's Comprehensive Annual Financial Report (CAFR):

Required Supplementary Information
Schedule of Funding Progress (unaudited)
Other Postemployment Benefits Plan
As of June 30, 2016

The Schedule of Funding Progress presents trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liability for benefits. Trend information from the actuarial studies is presented below:

Actuarial Valuatiou Date	Actuarial Accrued Liability (AAL) (a)	Actuarial Value of Assets (b)	Uufunded AAL (UAAL) (a-b)	Funded Ratio (b/a)	Covered Payroll (c)	UAAL as a % of Covered Payroll [(a-b)/c]
July 1, 2008	$ 1,747,300	$ -	$ 1,747,300	0%	$ 3,725,600	46.9%
July 1, 2011	$ 1,941,900	$ -	$ 1,941,900	0%	$ 4,068,100	47.7%
July 1, 2014	$ 1,628,827	$ -	$ 1,628,827	0%	$ 1,999,530	81.5%

APPENDIX C: Finding Key OPEB Information in CAFRs or Audits (cont'd)

Example from School District's Audit:

ARC	Annual required contribution (ARC)	$	24,585
	Interest on net OPEB obligation		(499)
	Adjustment to ARC		1,537
	Annual OPEB cost		25,623
Contribution	Contributions made:		
	Contributions from governmental funds		(19,944)
	Decrease in net OPEB (asset)		5,679
	Net OPEB Obligation (asset) - July 1, 2015		(12,465)
	Net OPEB Obligation (asset) - June 30, 2016	$	(6,786)

Funded Status and Funding Progress - OPEB Plans

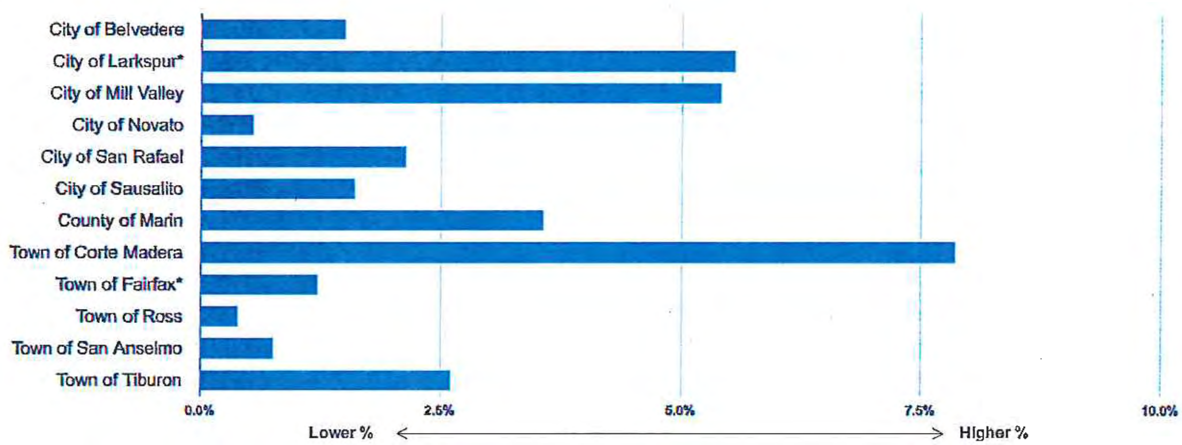
As of July 1, 2014, the most recent actuarial valuation date, the District did not have a funded plan. The actuarial liability (AAL) for benefits was $189,127 and the unfunded actuarial accrued liability (UAAL) was $189,127.

APPENDIX D: Marin Municipalities' ARC as a Percentage of Total Revenue

The amount of an agency's annual required contribution (ARC) can be compared to its total revenue. A higher percentage may signal future budgetary challenges if not properly managed.

Municipality	UAAL FY 2012	UAAL FY 2016	UAAL Change	ARC FY 2016	Total Revenue FY 2016
City of Belvedere	$374,116	$1,036,193	662,077	$118,105	$7,855,000
City of Larkspur*	$7,493,551	$13,698,307	6,204,756	$1,165,424	$21,009,094
City of Mill Valley	$24,481,979	$20,156,488	(4,325,491)	$2,157,955	$39,916,000
City of Novato	$2,786,000	$3,673,318	887,318	$262,000	$47,954,000
City of San Rafael	$24,295,000	$32,727,000	8,432,000	$2,148,000	$100,490,000
City of Sausalito	$6,646,550	$5,730,670	(915,880)	$428,391	$26,588,325
County of Marin	$382,720,000	$294,375,000	(88,345,000)	$21,937,000	$611,801,000
Town of Corte Madera	$11,790,000	$9,704,000	(2,086,000)	$1,855,000	$23,593,928
Town of Fairfax*	$1,024,300	$835,400	(188,900)	$116,600	$9,212,366
Town of Ross	$417,000	$383,000	(34,000)	$36,000	$9,264,385
Town of San Anselmo	$1,941,900	$1,628,827	(313,073)	$147,364	$19,216,454
Town of Tiburon	$2,900,736	$3,629,754	729,018	$296,848	$11,341,758

Municipalities: FY 2016 ARC as Percentage of Total Revenue

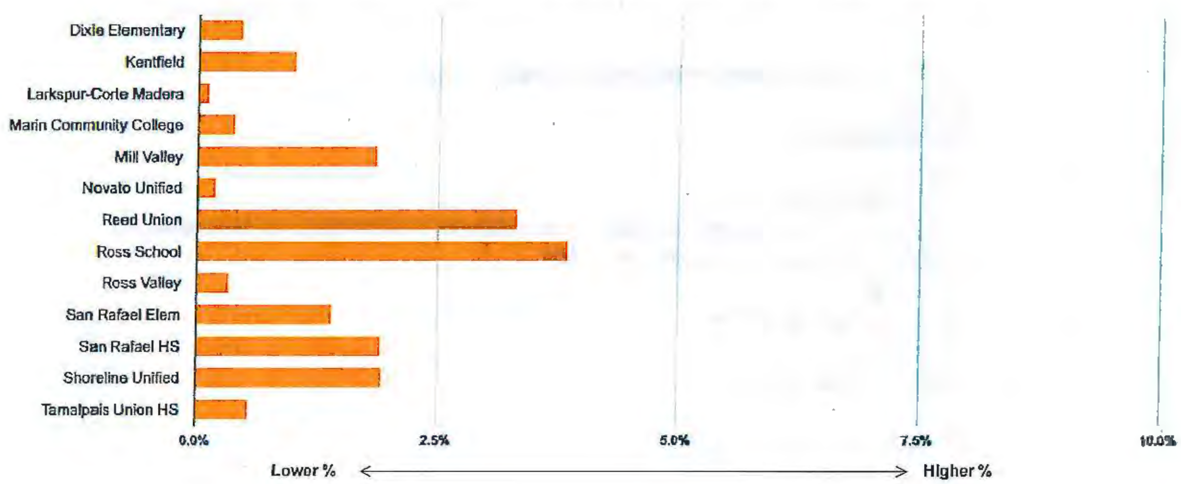


APPENDIX E: Marin School Districts' ARC as a Percentage of Total Revenue

The amount of an agency's annual required contribution (ARC) can be compared to its total revenue. A higher percentage may signal future budgetary challenges if not properly managed.

School District	UAAL FY 2012	UAAL FY 2016	UAAL Change	ARC FY 2016	Total Revenue FY 2016
Dixie Elementary	$1,057,000	$1,128,416	71,416	$114,463	$25,361,193
Kentfield	$1,432,000	$1,340,399	(91,601)	$199,312	$19,712,081
Larkspur-Corte Madera	$207,671	$189,127	(18,544)	$24,585	$21,966,152
Marin Community College	$6,604,85	$877,366	(5,727,491)	$261,064	$67,403,849
Mill Valley	$2,159,158	$4,662,117	2,502,959	$945,212	$50,815,837
Novato Unified	$823,300	$1,503,161	679,861	$175,235	$94,185,666
Reed Union	$2,730,727	$5,867,732	3,137,005	$855,510	$25,711,228
Ross School	$2,085,000	$3,086,992	1,001,992	$338,061	$8,748,369
Ross Valley	$1,838,000	$1,561,792	(276,208)	$98,513	$29,323,920
San Rafael Elem	$5,462,058	$6,200,000	737,942	$880,377	$62,306,271
San Rafael HS	$4,943,154	$5,400,000	456,846	$726,362	$37,919,147
Shoreline Unified	$1,798,111	$2,013,470	215,359	$286,133	$14,823,677
Tamalpais Union HS	$3,892,000	$3,053,537	(838,463)	$505,711	$92,371,238

School Districts: FY 2016 ARC as Percentage of Total Revenue

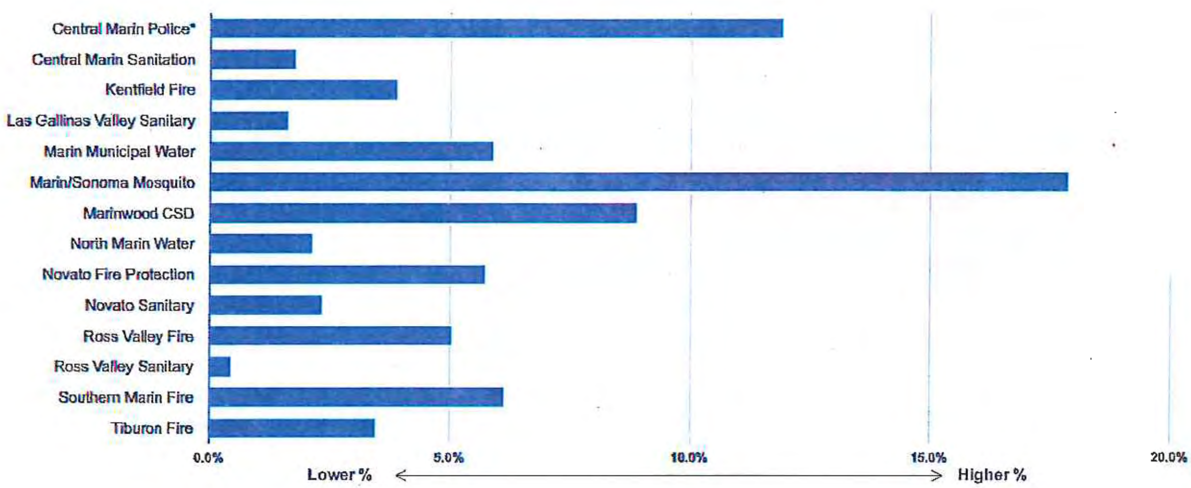


APPENDIX F: Special Districts' ARC as a Percentage of Total Revenue

The amount of an agency's annual required contribution (ARC) can be compared to its total revenue. A higher percentage may signal future budgetary challenges if not properly managed.

Special District	UAAL FY 2012	UAAL FY 2016	UAAL Change	ARC FY 2016	Total Revenue FY 2016
Central Marin Police*	$7,493,551	$15,155,425	7,661,874	$1,321,032	$11,087,891
Central Marin Sanitation	$2,872,049	$2,496,424	(375,625)	$301,327	$16,952,527
Kentfield Fire	$2,004,784	$2,146,412	141,628	$195,606	$5,014,333
Las Gallinas Valley Sanitary	$1,985,486	$2,094,980	109,494	$211,861	$12,976,695
Marin Municipal Water	$34,264,000	$33,104,000	(1,160,000)	$3,683,000	$62,502,430
Marin/Sonoma Mosquito	$12,030,407	$15,038,000	3,007,593	$1,542,000	$8,638,747
Marinwood CSD	$4,422,797	$6,477,757	2,054,960	$518,769	$5,837,007
North Marin Water	$3,470,834	$4,085,375	614,541	$384,385	$17,912,719
Novato Fire Protection	$16,751,185	$13,567,350	(3,183,835)	$1,596,595	$27,838,320
Novato Sanitary	$6,112,283	$6,313,211	200,928	$452,506	$19,299,289
Ross Valley Fire	$4,917,120	$5,121,615	204,495	$485,075	$9,598,396
Ross Valley Sanitary	$302,766	$693,717	390,951	$109,118	$23,623,985
Southern Marin Fire	$5,285,282	$7,089,540	1,804,258	$916,153	$14,911,632
Tiburon Fire	$2,269,028	$2,182,181	(86,847)	$249,592	$7,184,792

Special Districts: FY 2016 ARC as Percentage of Total Revenue



APPENDIX G: GASB 45 vs. GASB 75 Overview

GASB 45[55,56]	GASB 75[57,58,59,60]	Effect
Actuarial valuations required every 2 or 3 years (based on number of OPEB plan members), with optional alternative measurement method if fewer than 100 plan members.	Actuarial valuation required every 2 years for all OPEB plans, with optional alternative measurement method if fewer than 100 plan members.	More current picture of actuarial liability.
No single discount rate is required when an employer contributes less than ARC but has *some* plan assets.	Requires single discount rate that reflects (1) a long-term rate on plan assets to the extent they are projected to always be sufficient to cover projected payments, and (2) a municipal bond (*lower*) rate for the years when plan assets are not projected to cover projected payments. The projection must be based in part on whether the employer has a policy and practice to make its benefit payments.	Improves consistency, comparability and transparency of OPEB liability reporting. Long-term liability is more accurately stated.
Only "net OPEB obligation" required on face of balance sheet. Unfunded liability (UAAL) reported in plan notes in CAFR (Comprehensive Annual Financial Report) or Audit.	Net OPEB Liability (NOL) reported on the face of the balance sheet. NOL equals actuarial accrued liability (TOL) minus market value of plan assets (FNP). NOL same as UAAL with some technical differences.	Financial reporting of OPEB liabilities parallels GASB 68 for pension reporting.
Provides for limited disclosures in financial statement notes and required supplementary information schedules.	Provides for more extensive disclosures in financial statement notes and schedules. The note disclosures include (1) an explanation of how and why the NOL changed from year to year, (2) a description of contribution requirements and how they are determined, (3) a statement of assumptions and other inputs used to measure, (4) detailed information about the discount rate used, and (5) NOL calculations with 1% increases and decreases in medical trend rate and discount rate.	Improves transparency of OPEB liability reporting.
Six acceptable actuarial cost methods	Must use a single actuarial cost method (*entry age actuarial cost method*).	Improves consistency, comparability, and transparency of OPEB liability reporting
Permits a choice between open or closed amortization periods.	Must use a defined closed period amortization for expenses.	Improves consistency, comparability, and transparency of OPEB liability reporting

[55] "Summary of Statement No. 45: Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions." *Governmental Accounting Standards Board*. June 2004
[56] "Guide to Implementation of GASB Statements 43 and 45 on Other Postemployment Benefits." *Governmental Accounting Standards Board*. 2005.
[57] "Summary of Statement No. 75: Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions." *Governmental Accounting Standards Board*. June 2015.
[58] "Overview of GASB Statements 73, 74, and 75." *Milliman*. March 2016
[59] "Brief Summary of New OPEB Accounting Standards: GASB 74 and 75." *Bartel Associates*. July 2015.
[60] "GASB Approves New OPEB Employer Accounting Standard (No. 75)." *Bartel Associates*. July 2015.

APPENDIX H: Example Financial Literacy Classes and Presentations

County Financial Reporting and Budgeting for Nonfinancial Professionals

Understand and interpret county financial reports

This course provides the tools for decision-makers, elected officials, senior managers – other than accountants and auditors – who want to have an overview understanding of government financial reporting. Participants discuss budgets, financial statements and the audit, and at the 30,000' level what each of those is saying (or not saying!). Participants should bring questions about terms or concepts they have encountered as part of their interaction with county and government financial reporting. The discussion reviews terms and definitions used with government financial reporting and strategies on how to read financial statements and auditor reports to identify critical information and understand what it means … in plain English!

Financial Management: Debt and Investment of Public Funds

Make informed decisions about the use of public resources

Elected and appointed officials make critical decisions on the issuance and administration of debt, and the investment of public funds, but may have little experience or depth of knowledge on this complicated subject. This class provides a foundation on understanding debt, debt capacity, optious, and county policy on debt. It examines the fiduciary responsibilities of elected and appointed officials and then explores investment of public funds. An overview of prudent investment policy, portfolio strategy and the role of the investment advisors are also explored.

From: *California State Association of Counties*

Retiree Health Benefits The Funding Issue

- Unlike pensions, health benefits have not been pre-funded for a long period of time
  - Most plan sponsors nationwide have not pre-funded health benefits either
  - Currently very little investment income to help pay benefits
- Costs rise as more members retire, and health inflation outpaces general inflation
- Pre-funding contribution rates have been calculated since 1999 – but pre-funding started only recently

2 GRS

Circumstances That Would Increase Projected Costs

- Medicare funding reductions or cost shifting
- Unexpected new benefit recipients (from health benefit cutbacks of other employers)
- Medical inflation worse than assumed; the actual future contributions will depend on future per capita health cost increases (health inflation) *
- Lower than expected investment returns; bigger impact as plan assets grow
- This is not a complete list

* Per capita costs are projected to increase 9% the first year, graded down to 3.5% in the tenth and later years.

7 GRS

From: "Michigan State Employees: Retiree Health Actuarial Valuation." *Gabriel Roeder Smith & Company*. 30 Sep. 2015

Central Marin Sanitation Agency

BOARD MEMORANDUM

September 7, 2017

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager JD

Subject: Ross Valley Sanitary District Field Operations Base Evaluation

Recommendation: Consider authorizing the General Manager to work with RVSD on evaluating the feasibility of utilizing a portion Agency' corporation yard as the RVSD Field Operations Base.

Summary: Ross Valley Sanitary District (RVSD) is evaluating options for the location of its field operations base, where its collection system offices, maintenance staff, equipment, and supplies are located. RVSD General Manager Greg Norby and Board members Tom Gaffney and Michael Boorstein have expressed interest in evaluating CMSA's corporation yard as a potential site for the district's field operations. Staff is seeking CMSA Board authorization to participate in the evaluation process to determine if the Agency's corporation yard is a feasible option. If approved, staff will report back on the evaluation findings at a future Board meeting.

Discussion: RVSD owns approximately 10.5 acres of land on Sir Francis Drake Blvd. adjacent to the Marin Country Mart. Historically, RVSD owned and operated a wastewater treatment plant on the property that provided wastewater treatment and disposal services to customers in the RVSD and Sanitary District #2 service areas. After CMSA's treatment plant began operation in May 1985, RVSD shut down then later demolished its treatment plant, but continued to utilize the property for its administrative offices and field operations base.

In September 2006, at the RVSD Board's request, a CMSA/RVSD committee was formed to evaluate the possibility of RVSD relocating its offices and operations to CMSA. The result of this assessment was development of a Property Lease Agreement under which RVSD would lease a portion of CMSA's corporation yard for three modular office buildings and equipment parking, a section of the parking lot for district staff personal vehicles, and an area near the CMSA maintenance annex to place storage containers to house materials and supplies. The agreement was executed in January 2007, had a twelve month term, and its monthly lease fee was $4,965.

To prepare the corporation yard area for the RVSD facilities, Nute Engineering prepared the utility design work and Maggiora & Ghilotti was hired to install potable water, fire protection water, sewer, power, and telecommunication utilities to the office building site. The construction contract was publicly bid and administered by CMSA, while the utility installation design and construction contracts were funded by RVSD. The final construction contract cost was approximately $545,000.

RVSD relocated to CMSA in early 2007 at an interim location near the chlorine contact tanks while the site improvement work was being performed, and then moved to the corporation yard in July 2007. The Lease Agreement was extended for two separate one-year terms, and in 2009 RVSD purchased an administrative office building on Kerner Blvd. in San Rafael, performed some minor site improvement work on its property, and moved off CMSA's site in December 2009. Currently, RVSD's administrative, human resources, finance, and technical staff are located in the San Rafael offices and the field staff are located at the Sir Francis Drake property.

For its field operation base, RVSD is currently evaluating making long term improvements at its Sir Francis Drake property or relocating to CMSA's corporation yard.

Attachment:
- 2007 RVSD Property Use Agreement

PROPERTY USE AGREEMENT

This Agreement is by and between Sanitary District No. 1 of Marin County ("District") and the Central Marin Sanitation Agency ("CMSA") with regard to temporary relocation of District facilities and operations onto CMSA property. The Effective Date of this Agreement is January 15, 2007.

Recitals

A. Whereas, District and CMSA each operate regional wastewater facilities.

B. Whereas, District desires to move its administrative and crew offices, equipment and supplies, and related facilities to portions of the CMSA property, which will provide opportunities to share equipment and assets, and may lead to further exploration of joint operations that would increase efficiencies.

C. Whereas, the District and CMSA have formed a working group to prepare a site improvement construction contract, and a joint Board committee to establish a property use agreement for relocating District's office and corporation yard facilities to CMSA's corporation yard and related areas.

Agreement

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the parties agree as follows:

1. Recitals. The foregoing recitals are incorporated herein by reference.

2. District Relocation.

2.1 Scope. CMSA hereby grants District the right to use and occupy the portions of the CMSA property as shown on Exhibit A hereto ("CMSA Site" or "Premises") on a temporary basis, for purposes of temporary relocation, installation, and operation of District Facilities (Temporary Use). Such "District Facilities" shall include, but not be limited to, storage of District containers and stock, installation of temporary structures and/or facilities reasonably necessary to accommodate District operations, including but not limited to an office, meeting room, crew building, corporation yard utilities, a fuel dispensing area, and parking for District vehicles, employees, and visitors, together with ancillary utilities. In addition, District may extend the existing CMSA maintenance annex building, in the future, to accommodate district materials and supplies with the extension scope mutually agreed in writing by both parties.

Exhibit A is attached as two site maps that show the general layout and position of the District's meeting room, office, and crew room, the location of the employee parking area, and storage areas in the vicinity of the CMSA maintenance annex.

2.2 Term. The parties shall cooperate to accomplish such relocation and establish the Temporary Use on or before April 15, 2007. The Term of this Agreement shall commence as of the Effective Date, and expire twelve (12) months after the Effective Date. The Term may be renewed annually if requested in writing by District and approved by CMSA.

2.3 Termination. Either party may terminate this Agreement by providing one hundred twenty (120) days written notice to the other party. Upon termination of this Agreement or expiration of the Term, the District shall remove the District facilities and other District property, equipment, and fixtures from the CMSA Site.

2.4 Access Rights. CMSA hereby grants District rights of ingress and egress onto the CMSA Property in order to accomplish the District Facilities relocation, establish the Temporary Use, operate and maintain District Facilities on the CMSA Site, and allow District staff access to the Premises and public access the District offices during the temporary occupancy. District access shall be pursuant to CMSA's security policy and mutually agreed upon access procedures (Exhibit B).

2.5 Interim Use. CMSA hereby grants District interim use of the area north of the existing Chlorine Contact Tanks until the Temporary Use commences. The interim area will accommodate an administrative and crew trailer and District employee parking. District vehicles shall not be located on the CMSA property. During the interim use period, District may use the CMSA Board room for public meetings. Board room use must be coordinated with CMSA in advance.

District will improve the interim site prior to occupancy by removing existing landscaping and irrigation, grading, placement of at least 12" of compacted base material, and installation of utilities. Planning, design, and construction of the improvements will be coordinated by District and approved by CMSA. The cost of the construction will be split equally between District and CMSA.

District shall pay, in advance, the monthly base rent as shown in Exhibit D until the Temporary Use commences.

3. Site Improvements. District and CMSA shall work cooperatively to develop and implement site improvement plans and secure permits from the City of San Rafael ("Improvement Plans") for the installation of District Facilities and the construction of necessary District funded site improvements to accommodate the Temporary Use (collectively "Site Improvements"). The parties intend that the Improvement Plans be completed by March 30, 2007. CMSA shall act as Lead Agency in connection with the Site Improvements.

District shall (a) prepare the draft and final Improvement Plans for CMSA approval; and (b) prepare the permit applications and supporting documentation for submittal to the City of San Rafael for the Temporary Use (including improvements); (c) Reimburse CMSA for its expenses to accommodate the site improvements and Temporary Use.

4. Shared Administrative Resource: District and CMSA will jointly fund the one part-time administrative assistant during the Term. The administrative assistant will be a CMSA employee, be located in the CMSA administrative office, and work approximately 28 hours per work. Each party will pay one-half of administrative assistant's salary and benefit expenses.

5. Property Lease Fee: CMSA will invoice District at the beginning of each quarter the Property Lease Fee. The Fee amount will include the rent related items detailed in Exhibit D (base rent and utilities) the District's share of the Administrative Resource, and any material and supply reimbursements pursuant to Exhibit C. Costs associated with CMSA using District resources will be credited on the quarterly invoice.

6. Maintenance Facility Use: CMSA hereby provides District access to its maintenance building and shop for the purpose of sharing selected equipment and facilities. District agrees to adhere to the shop use procedures and protocols set forth Exhibit C. CMSA and District agree to develop protocols, in the future, for additional asset and resource sharing that may mutually benefit each agency.

7. Permanent Facilities: Within one year of the Effective Date, District shall notify CMSA of its intentions for locating permanent District Facilities at the CMSA Site ("Permanent Facilities"). If District desires such Permanent Facilities, then CMSA and District shall commence good faith negotiations in that regard, and District will begin to prepare the necessary plans, specifications, and permit applications as appropriate. Permanent Facilities shall architecturally match existing CMSA facilities. The Permanent Facility design and the scope of the improvements shall be approved by CMSA.

If within one year of the Effective Date, the District, CMSA, and the JPA member agencies are considering and formally discussing a sanitary district regionalization, the Term may be extended 12 months without District preparing the Permanent Facility plans.

8. Indemnification: Each party agrees to hold the other free and harmless from all claims arising from this Agreement for damage to persons or property except to the extent arising out of the sole or active negligence or willful misconduct of the indemnifying party.

9: Insurance: Both Parties shall maintain their current insurance coverage types and limits through CSRMA during the term of this Agreement.

10. Jurisdiction: this Agreement is made and entered into in Marin County in the State of California and shall be interpreted, construed, and enforced in accordance with the laws of the State of California without reference to its choice of laws rules.

11. Miscellaneous: This Agreement has been jointly prepared by both parties. If any provision of this Agreement is declared invalid or is unenforceable for any reason, that provision shall be deleted from this document and shall not invalidate any other provision contained in the Agreement.

Each individual executing this Agreement on behalf of each party represents and warrants that he or she is duly authorized to execute and deliver this Agreement on behalf of such party and that such execution is binding upon such party.

All Exhibits attached to this Agreement are incorporated by reference. Any modifications or amendments to the Agreement must be approved in writing by each party.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the Effective Date notwithstanding the date of signature set forth opposite their signature:

CENTRAL MARIN SANITATION AGENCY

DATED: January 9, 2007 By: [signature]

Bob Sinnott, Commission Chair

DATED: January 9, 2007 By: [signature]

John Dupar, Commission Secretary

SANITARY District NO. 1 OF MARIN COUNTY

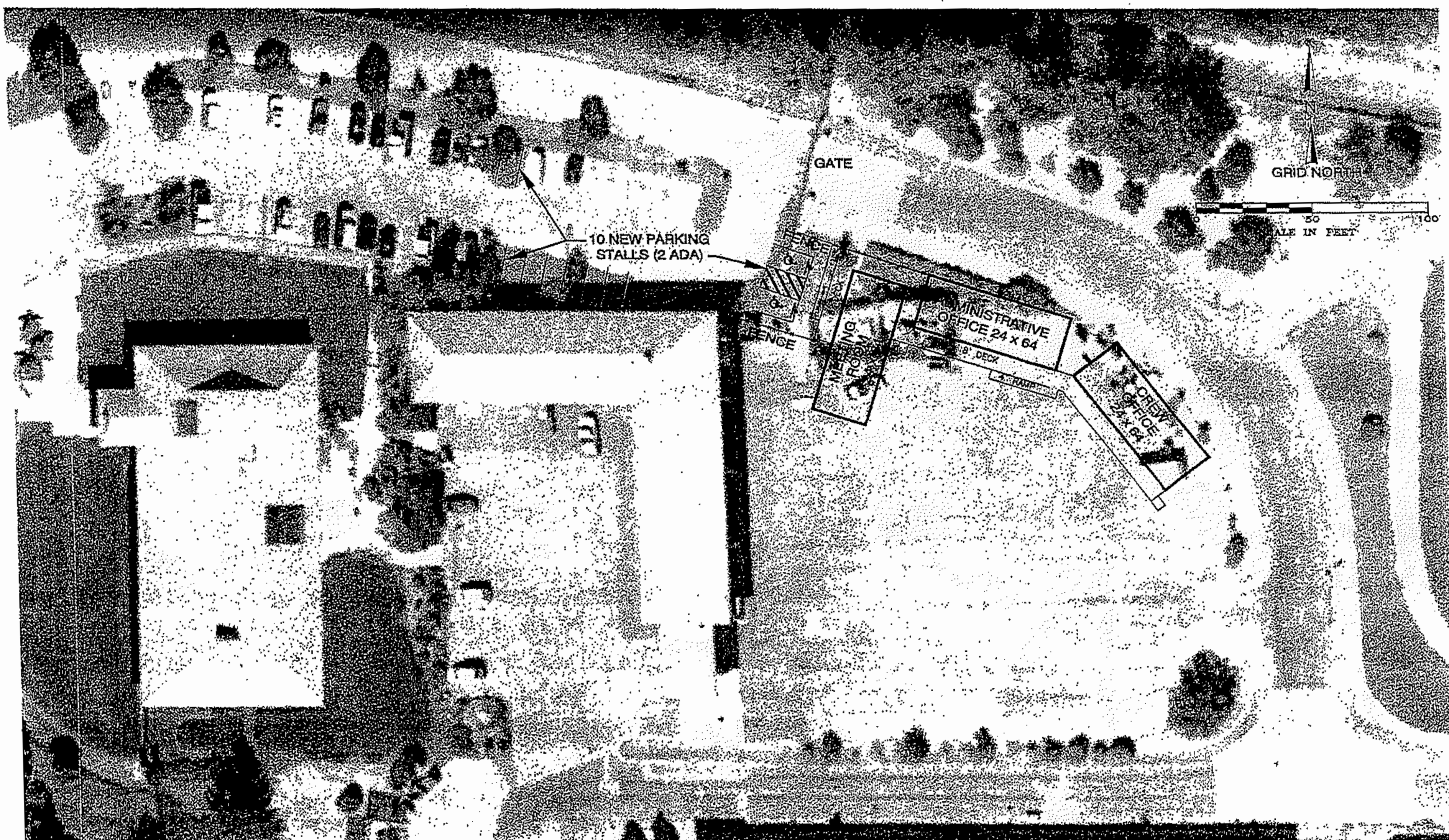
DATED: January ___, 2007 By:____________________

Sue Brown, Board President

DATED: January ___, 2007 By:____________________

Patricia Burke, Board Secretary

EXHIBIT A-1

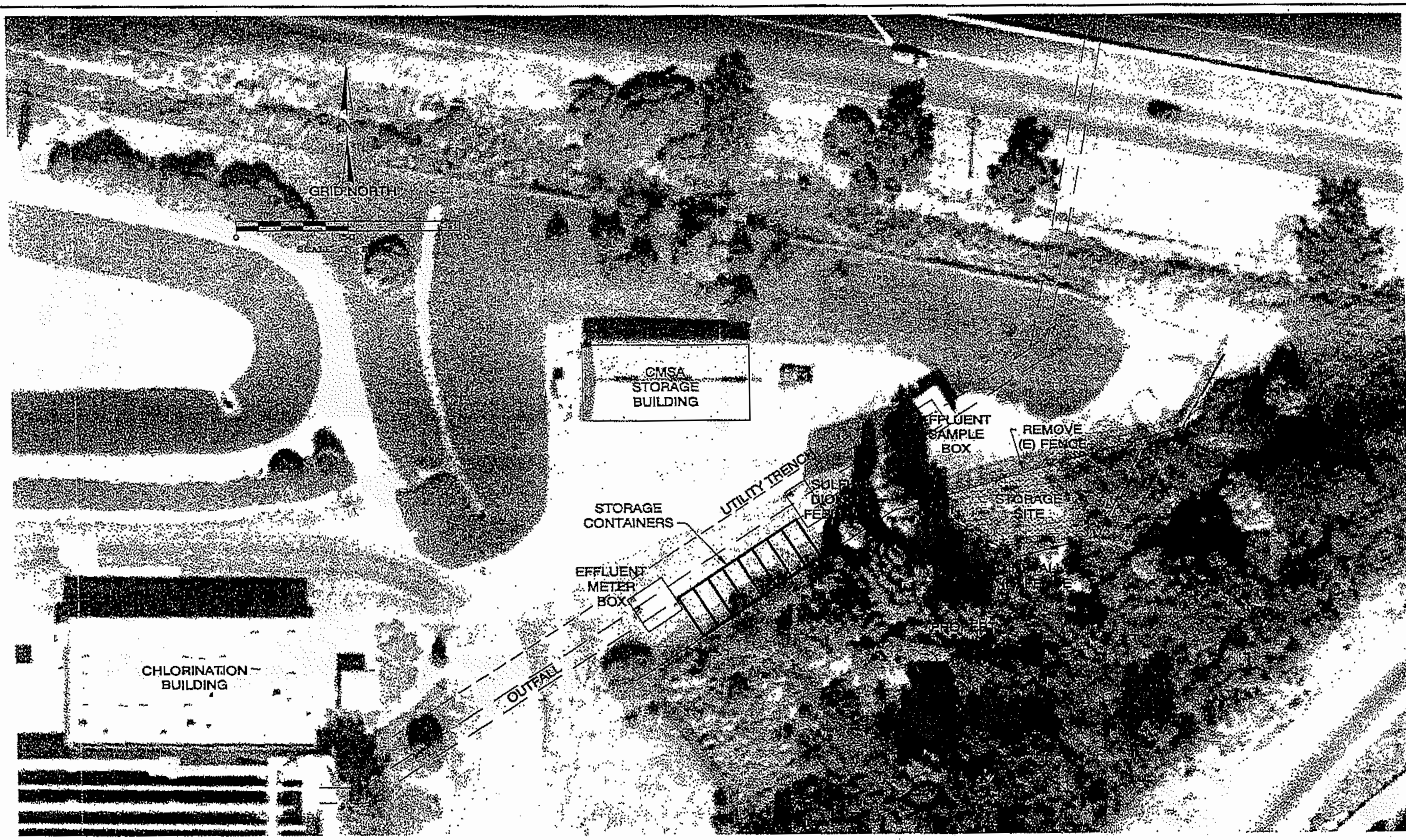


Sanitary District No. 1 at CMSA

OFFICE BUILDINGS

12/15/06

EXHIBIT A-2



Sanitary District No. 1 at CMSA

STORAGE

12/15/06

EXHIBIT B

CMSA Facility Access Protocols

The District and CMSA agree to the below facility access protocols and District agrees to comply with the relevant sections in the CMSA Security Policy.

I. <u>District Staff and Vehicle Access</u>
CMSA will provide each District employee with an electronic access card that will be programmed to open the facility and treatment plant access gates, the existing person gate between the administrative and maintenance buildings, and the new person gate in the vicinity of the District's meeting room. The cards will not access the CMSA administrative building.

CMSA will provide vehicle access transponders for each District vehicle to allow access to the treatment plant and facility security gates. District will immediately notify CMSA if an access card or transponder is lost, defective, or stolen.

II. <u>Public Access to the District</u>
The public may park in either the visitor or employee parking lots, but will not be allowed vehicular access beyond the normally closed treatment plant security gate. Members of the public, vendors, or service providers can either sign-in at the CMSA administrative building or enter the District facilities near their meeting room. During CMSA's normal business hours, CMSA will promptly notify District when the public signs-in, and District will escort the public to District facilities.

III. <u>Prohibited Access Areas</u>
District staff shall not access the CMSA treatment plant or associated buildings or structures without a CMSA staff escort.

District staff shall not access the CMSA administrative office building after normal CMSA business hours, unless there is an emergency necessitating access for proper response

CMSA staff shall not access District facilities or storage containers after normal business hours, unless there is an emergency necessitating access for proper response

EXHIBIT C

Maintenance Facility Sharing Procedures

CMSA and District staff developed the following procedures to allow District staff access to the CMSA maintenance facility and use of selected equipment.

1) CMSA will provide maintenance facility and equipment orientation to District staff prior to the Temporary Use, and training to select District staff that will use CMSA's specialized stationary equipment (such as the lathe, drill press, arc welder, etc).

2) CMSA will designate adequate space in the maintenance facility to accommodate the District's rolling tool box, and authorizes the use of available bench space and of stationary tools.

3) CMSA grants the District with general access to the maintenance facility during regular business hours.

a. District staff shall not enter unoccupied offices, or use any of CMSA maintenance staff's assigned tools or equipment, without prior approval.

b. Use of stationary equipment, as designated by CMSA, shall be coordinated with the appropriate CMSA supervisory staff prior to its use.

c. District agrees to make District equipment accessible to CMSA as requested and if available.

4) CMSA and District supervisory staff will meet as necessary to schedule District project work. For any other work or maintenance facility use, District will contact the CMSA Maintenance Supervisor, Lead, or Treatment Plant Manager before starting.

5) District shall arrange after-hours emergency work with the CMSA Operator-In-Charge (OIC), Maintenance Supervisor or Treatment Plant Manager; If unavailable, District shall notify them via voicemail prior to the emergency work.

6) CMSA and District will establish a Log Book in the maintenance facility for District employees to record their work activities. Entries shall include date,

project (scheduled or unscheduled), District staff performing work, and Time IN and Time OUT for each District employee. Any use of CMSA materials (nuts, bolts, pipe, etc.) will be recorded in the book.

7) District shall be responsible for safe work practices and good housekeeping while using the CMSA maintenance facility and equipment.

8) District shall reimburse CMSA for any materials or supplies used by District, and costs incurred by CMSA to repair equipment damaged by District staff or clean-up work after District use.

9) CMSA staff will not use any District tools or equipment stored in the maintenance facility (e.g. rolling tool box), without prior approval.

EXHIBIT D

Rent and Utility Payment Provisions

CMSA will invoice District quarterly for the Property Lease Fee, and District shall pay the quarterly fee in a timely manner. The following monthly payment elements will be included in the Property Lease Fee in addition to those listed in Item 5 in the Agreement.

Payment Element	Monthly Amount
1) Base Rent[1]	$ 3,900
2) Electricity[2]	$ 510
3) Water[3]	$ 55
4) Common Area Maintenance/Incidentals[4]	$ 500

Notes

(1) The base rent amount is for the approximate ½ acre site with parking, and is based on a negotiated 6% rate of return on the $780,000 property valuation from the David Tattersall & Co. Appraisal Report (November 2006).

If the Agreement is extended for an additional year, the base rent will increase per the San Francisco-Oakland-San Jose Consumer Price Index (CPI) on the anniversary of the Effective Date. The CPI increase formula will be agreed to by both parties prior to its application.

(2) The electricity charge was determined using the average amount calculated from 3-years of the District's PG&E invoices. CMSA will monitor electricity usage for one year after the rent commencement date, and compare the average monthly monitored value to the 3-year average. CMSA may, at its discretion, modify the electricity charge to be based on actual usage after the first year of the Agreement.

(3) The water charge was determined using the average amount from 3-years of the District's MMWD invoices. CMSA will monitor water usage for one year after the rent commencement date, and compare the average monthly monitored value to the 3-year average. CMSA may, at its discretion, modify the water charge to be based on actual usage after the first year of the Agreement.

(4) CMSA and District agree that the Common Area Maintenance charge covers on-going CMSA expenses for landscaping, painting, corrective and preventative maintenance for the equipment, facilities, and appurtenances in and around the CMSA maintenance building, and other incidentals. Garbage service for the District facilities will be coordinated and paid by District.