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TECHNICAL MEMORANDUM

To: Bob Simmons, General Manager, Sausalito-Marin City Sanitary District

From: John Farnkopf, Senior Vice President, HF&H

Date: May 11, 2010

Subject: Sewer Rate Update

This technical memorandum briefly summarizes the results of our update of the Sausalito-Marin City Sanitary District's (District) sewer rates. This update was a collaborative effort in which you and I revised the previous District financial plan and rate analysis model using the District's current operating and capital budgets. The results of the update lead to our recommendation that the District increase its sewer service charges for the next four years.

1. Background

The District provides wastewater conveyance and treatment services to the City of Sausalito, Marin City, and the Tamalpais Community Services District (TCSD). The District bills Sausalito and Marin City residential customers per equivalent dwelling unit (EDU) on the tax rolls. (Non-residential customers in Sausalito and Marin City are individually billed by the District on the basis of the estimated volume and strength of wastewater discharge.) TCSD is directly billed by the District based on a contractually determined formula. The District's recent and current residential charges for Sausalito and Marin City are shown in **Figure 1.** Customers in the Sausalito and TCSD are charged additional amounts by each of these municipalities for their local collection system O&M and capital improvements.

Since FY 2000-01, the District has undertaken a comprehensive evaluation of its facilities to determine a cost-effective strategy for infrastructure renewal, replacement, and related upgrades. A facilities evaluation had not been previously conducted nor had rates been increased for many years. The facilities evaluation identified an initial capital improvement program that was funded through a series of rate increases beginning in

FY 2001-02. Further evaluation led to an additional rate increase in FY 2008-09. Since FY 2000-01, rates increased an average of 16% per year, which indicates the impact of funding the much-needed capital improvement program.

Since FY 2008-09, the District continued to evaluate its infrastructure needs. A preliminary Strategic and Financial Plan[1] was developed to address two interrelated issues:

1. **Reduced wet weather overflows.** A combination of (1) public and private sewer line rehabilitation to reduce inflow and infiltration (I&I), (2) flow equalization storage to moderate peak flows in the conveyance system, and (3) treatment plant improvements to reduce blending were considered.
2. **Continued service to TCSD after 2013.** TCSD was studying the feasibility of reducing or eliminating its wastewater discharges to the District, and, instead, conveying some or all of its flow to the Sewerage Agency of Southern Marin (SASM).

Subsequent workshops with the District Board of Directors and TCSD resolved various open issues, allowing the preliminary Plan to be completed.

2. Key Assumptions

The Plan contains a financial model used for deriving rate projections. The following key assumptions were incorporated in the Plan:

- **Service to TCSD.** The District currently plans to continue to serve TCSD but at a reduced level after FY 2012-13. TCSD currently discharges 90% of its flow to the District. It is assumed that 50% of this flow would be treated by the District commencing in FY 2013-14. These assumptions have not been formally agreed to by the District and TCSD.
- **Capital improvements.** Resolving TCSD's status allowed the District to determine the appropriate combination of capital improvements needed for upgrades and regulatory compliance. The $39 million project total for the period FY 2009-10 through FY 2019-20 is itemized in **Figure 2.** The majority of the improvements are associated with the treatment plant improvements that are planned in the next three years to five years.

[1] *Ten-Year Strategic Plan and Preliminary Financial Study Report.* SMCSD. February 2010.

- **Debt Financing.** The District plans to issue a $29 million bond in FY 2010-11. $3.95 million is allocated to TCSD so that it can refinance its current short-term loan and finance a portion of the future improvements, rather than pay for them from cash. The result smoothes out TCSD's share of the capital costs. TCSD will also pay its share of other cash-funded projects and renewal and replacement costs.
- **O&M expense and revenue projections.** The budget for FY 2009-10 and an updated District staffing plan were used as the basis for projecting operating and maintenance expenses. Inflation rates for O&M and construction costs was estimated at 2% per year. Based on recent rates of growth, it was assumed that there will be no growth during this time frame.
- **Fund balance.** The fund balance is trending downward in FY 2009-10. The combination of the projected rate increases and bond proceeds increases the fund balance in FY 2010-11, after which it declines as construction is funded. By FY 2012-13, construction for the major improvements is finished and the fund balance stabilizes thereafter.

3. Financial Projections and Rate Increases

Various key financial projections are shown in **Figure 3**.

- **Revenue requirements.** The revenue requirements are the sum of O&M, capital expenses, and transfers to reserves; in effect the cost of operations. From this, non-operating revenues and other sources of non-rate revenue are netted, with the remainder being the amount of revenue that must be generated from rates. Over the planning period, revenue requirements are projected to gradually increase 108.5%.
- **Revenue from current rates.** The revenue from current rates is flat because it is assumed that there will be negligible growth.
- **Annual Surplus/(Deficit) without rate increases.** Because the revenue from current rates is consistently less than the increasing revenue requirements, ever-increasing, annual deficits are projected.
- **Rate increases.** Rate increases have been programmed in to close the gap between the revenue requirements and the revenue.
- **Revenue from increased rates.** With the rate increases, revenue is projected to increase 123.0%.
- **Annual Surplus/(Deficit) with rate increases.** Although the cumulative increase in rate revenue (123.0%) exceeds the cumulative increase in revenue

requirements (108.5%), the revenue increases build on a smaller increase in FY 2009-10. As a result, deficits still occur in a number of years.

- **Fund balance.** During the planning period, the fund balance remains above the minimum recommended balance with the proposed rate increases.
- **Debt coverage ratio.** The revenue from rates (net of operating expenses) must exceed the debt service by 1.20 times. Rates need to be set to meet this minimum requirement regardless of other conditions. As a result, the rate increases for FY 2010-11 and FY 2011-12 are needed to provide adequate coverage.
- **Annual charge per EDU.** The annual charges reflect the District's rate increases. (Sausalito and TCSD add their local costs for their respective local O&M and capital improvements.) The charge for Marin City includes an additional amount to cover the District's O&M and capital costs to maintain the Marin City collection system. This charge is projected to increase by the cost of inflation.

Figure 4 shows the projected fund balance. The steep increase is caused by the receipt of the $26.3 million in bond proceeds, which are then expended on the debt-funded portion of the capital improvements, drawing the fund balance down.

4. Annual Charges and Customer Bill Comparison

Figure 3 also shows the projected annual residential charges resulting from the projected rate increases. These charges are levied annually on the tax roll per equivalent residential unit (EDU). Unlike water service, residential sewer service is not metered. Other indirect means can be used to determine residential wastewater flows.

Charging per EDU is the most common basis for charging residential sewer customers and has been the District's practice. Metered water use, particularly average winter water use (when residential irrigation is lowest) can be used as an indirect measure of wastewater use. For agencies that also provide water service, ready access to metered water use data enables them to base wastewater bills on water use.

The use of flow for estimating non-residential wastewater discharges is commonly practiced to account for the wide variation in non-residential customer wastewater flows. The District's non-residential sewer customers' bills are based on metered water use data from MMWD. In order to determine each non-residential bill, District staff matches MMWD's customer accounts with the County of Marin's assessor parcel numbers from the tax rolls, which is a time consuming process.

The District's current practice of billing residential customers per EDU rather than by flow is consistent with industry practice, as is its practice of billing the much smaller number of non-residential customers on the basis of metered water use. Certain representatives of residential customers have asked the District to consider using flow as the basis for deriving residential bills. They feel that this would more equitably charge customers for their share of costs.

The District evaluated whether it should change its practice of billing residential customers to a flow-based calculation similar to its non-residential customers, and decided to continue charging per EDU for the following reasons.

- **Equity.** At least 90% of the District's costs are fixed. In other words, if all of the District's customers stopped discharging wastewater, the District's costs would only decrease 10%. Flow-based sewer rates would reflect differences in flow among customers, but the costs associated with flow variations are only a small portion of the total costs. Hence, the variation in flow-based bills might not be great, depending on how the rate structure was designed. If the District converted its residential customers' bills from flat to flow-based charges, the District would still want to retain a fixed component in the charge to ensure that each account pays its proportionate share of fixed costs. As a result, a customer with half as much flow as another customer would receive much less than a 50% reduction in its bill.
- **Administrative difficulty.** Agencies that provide both water and sewer service have ready access to metered water billing data that could be used for billing both water and sewer service. The District only provides sewer service and therefore does not have ready access to metered billing data. Billing customers based on flow would require the District to match each customer's assessor parcel number with MMWD's water accounts. The administrative effort to bill all residential customers based on flow would be much greater than it currently takes to bill the much smaller number of non-residential customers. At present, the additional effort would exceed the District's staffing capabilities.
- **Additional cost.** Billing residential customers based on flow is more expensive. In addition to increased staff time, the District would incur costs by consultants to manipulate the County and MMWD's databases to determine each customer's bill.
- **Industry practice.** Charging residential customers per EDU is the most common industry practice. Very large agencies as well as small agencies follow this practice. The largest wastewater agency in California, the Los Angeles County

Sanitation Districts bills residential customers per EDU rather than by flow because it would be impractical for an agency its size to compile meter readings from the over 120 water suppliers in its service area.

Figure 5 compares the resulting average bills for the District's customers with other neighboring sewerage agencies in Southern Marin. The table indicates the costs associated with the collection systems and treatment. For those agencies for which we are aware that customers also pay property taxes that are distributed to the sewer agency, we added the average property tax payment to the sewer service charge to provide the full cost. The District's current and proposed charges are within the mid-range of its neighbors.

Figure 6 expands on the data in **Figure 5** by including additional agencies in San Mateo County that also discharge to the Bay. **Figure 6** graphs monthly bills versus population within each agency's service area. The trendline indicates that sewer bills are higher for smaller agencies, which have smaller customer bases to spread their fixed costs. Larger agencies' lower bills reflect economies of scale. The charges by Sausalito and TCSD, which are a combination of the District's charge and their local charges, follow the trendline.

5. Findings and Recommendations

Over the last decade, the District has taken affirmative steps to upgrade its facilities, which have malfunctioned, resulting in regulatory sanctions. At this time, the District has identified substantial capital improvements that cannot be funded on a pay-as-you-go cash basis. The District will have to issue bonds and incur the costs of financing. These additional costs commence as TCSD reduces its flows (and revenues) to the District, which diminishes the District's customer base for distributing costs. The combination of these factors is financially challenging. We recommend the following actions in response.

1. **Rate increases.** The District should adopt the rate increases indicated in **Figure 3** for the next four years, namely:

FY 2010-11	21%
FY 2011-12	20%
FY 2012-13	15%
FY 2013-14	12%

These rate increases will enable the District to issue bonds for the capital improvements that are required for the District to comply with its discharge permit. The rate increases in the first two years are needed in order to provide minimal debt service coverage. Based on current assumptions, we do not believe it is possible for the rate increases to be reduced and conditions could vary from the assumptions in this report that could lead to the need for higher rate increases. These increases do not reflect the local increases in Marin City for O&M and capital improvements, which are estimated to increase 2% per year.

2. **Implementation.** Each year, prior to implementing the rate increase, District staff should confirm the need for the rate increase. The District can implement a lower rate increase, if possible, without going through the Proposition 218 notification process.
3. **Rate structure.** The District's current policy of charging residential customers per EDU should be maintained because it is not within the District's current capabilities to bill its residential customers using metered water use data. The District's practice is consistent with industry practices and is defensible.

Figure 1. SMCSD Historical Residential Charges

	Annual Charge Per Dwelliing Unit		Equivalent Monthly Charge		Change From Prior Year
	Sausalito Residents	Marin City Residents	Sausalito Residents	Marin City Residents	
FY 2000-01	$160	$181	$13.34	$15.11	0%
FY 2001-02	$197	$223	$16.41	$18.59	23%
FY 2002-03	$242	$274	$20.19	$22.86	23%
FY 2003-04	$298	$337	$24.83	$28.12	23%
FY 2004-05	$298	$337	$24.83	$28.12	0%
FY 2005-06	$298	$337	$24.83	$28.12	0%
FY 2006-07	$298	$337	$24.83	$28.12	0%
FY 2007-08	$298	$337	$24.83	$28.12	0%
FY 2008-09	$388	$439	$32.33	$36.56	30%
FY 2009-10	$388	$439	$32.33	$36.56	0%

Note: Marin City's rates currently include $50.66 for the District's local O&M
Sausalito currently adds $360 for its own local collection system O&M.

Figure 2. Capital Improvement Program – FY 2009-10 Through FY 2019-20

Capital Improvement Projects at Inflated Cost	TCSD Funding	Project Budget
- Treatment Plant Improvements		
Sludge Dewatering Facility Improvements	25.4%	$120,000
Sodium Bisulfite Storage Improvements	25.4%	$1,011,000
Plant Odor Control Improvements	25.4%	$312,120
Plant SCADA System Improvements	18.0%	$443,973
Treatment Plant Headworks	13.5%	$13,433,436
Primary Effl. Box, Infl. Box & Supernatant Box Rehab.	25.4%	$826,200
Long-Term Facilities Plan & GGNRA Easement Agreement Extension	25.4%	$465,120
Digester Cleaning and Influent Piping Strengthening	13.5%	$687,704
Primary & Digester Structure Seismic Improvements	13.5%	$1,375,771
High Rate Clarifier (Replacement of Sand filters)	13.5%	$6,814,824
Fixed Film Reactor Pump Station and Reactor Inspection and Renewal	25.4%	$1,164,767
Biosolids to Energy Project	13.5%	$129,440
Administration Bldg & Site Improvements	25.4%	$0
		$26,784,356
- Conveyance System & Marin City Sewer System Impr.		
Locust St. Pump Station Improvements	40.0%	$1,373,000
Portable Emergency Engine Driven Pumps	25.0%	$223,200
Pump Station Reliability Improvements	10.0%	$306,000
Scotties Pump Station Improvement	40.0%	$1,142,400
Locust Street Pump Station Force Main & 24" Gravity Sewer Study and Im	18.0%	$2,920,060
Marin City Collection System Rehabilitation	0.0%	$1,320,000
Marin City Pump Station & Force Main Study & Improvements	0.0%	$492,632
Highway Booster PS, Force Main and Infl. Sewer Study and Improvements	0.0%	$1,142,400
Princess St. Pump Station Study and Improvements	0.0%	$157,121
Private Lateral Inspection and Rehabilitation	0.0%	$41,216
		$9,118,029
- Other Capital Expenses		
Capital Outlay and Future Capital Projects	18.0%	$957,751
Maintenance Management Sys & Computerized O&M	25.4%	$60,500
Financial Analysis Study	25.4%	$40,000
Engineering and Construction Management Staff Costs	18.0%	$2,044,344
		$3,102,595
Total Capital Improvement Projects		$39,004,980

Figure 3. Financial Projections

	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19
Revenue Requirements	$3,490,368	$3,918,719	$4,967,098	$5,206,484	$6,006,224	$6,222,899	$6,458,025	$6,854,675	$7,073,020	$7,276,222
Annual increase		12.3%	26.8%	4.8%	15.4%	3.6%	3.8%	6.1%	3.2%	2.9%
Cumulative increase		12.3%	42.3%	49.2%	72.1%	78.3%	85.0%	96.4%	102.6%	108.5%
Revenue from Current Rates	$3,157,292	$3,157,292	$3,157,292	$3,157,292	$3,157,292	$3,157,292	$3,157,292	$3,157,292	$3,157,292	$3,157,292
Annual increase		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cumulative increase		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Annual Surplus/(Deficit)	($333,077)	($761,428)	($1,809,807)	($2,049,192)	($2,848,932)	($3,065,607)	($3,300,733)	($3,697,383)	($3,915,728)	($4,118,930)
Revenue Requirements	$3,490,368	$3,918,719	$4,967,098	$5,206,484	$6,006,224	$6,222,899	$6,458,025	$6,854,675	$7,073,020	$7,276,222
Rate increases	0.0%	21.0%	20.0%	15.0%	12.0%	6.0%	6.0%	2.0%	2.0%	2.0%
Revenue from Increased Rates	$3,157,292	$3,820,323	$4,584,388	$5,272,046	$5,904,691	$6,258,973	$6,634,511	$6,767,201	$6,902,545	$7,040,596
Annual increase		21.0%	20.0%	15.0%	12.0%	6.0%	6.0%	2.0%	2.0%	2.0%
Cumulative increase		21.0%	45.2%	67.0%	87.0%	98.2%	110.1%	114.3%	118.6%	123.0%
Annual Surplus/(Deficit)	($333,077)	($98,396)	($382,711)	$65,562	($101,533)	$36,074	$176,486	($87,474)	($170,474)	($235,625)
Fund Balance	$5,494,000	$4,135,561	$25,009,871	$13,940,770	$6,541,126	$7,297,967	$6,883,096	$7,287,854	$7,552,050	$8,783,986
Percent of Minimum Balance	250%	151%	985%	528%	247%	276%	260%	268%	273%	310%
Percent of Target Balance	70%	49%	306%	168%	76%	82%	75%	76%	76%	85%
Debt Coverage Ratio	3.85	8.34	1.21	1.45	1.55	1.72	1.86	1.90	1.94	1.98
Annual charge, $/EDU										
Sausalito	$388	$469	$563	$648	$726	$769	$815	$832	$848	$865
Marin City	$439	$521	$616	$702	$780	$825	$872	$890	$908	$926

EDU = equivalent dwelling unit

Figure 4. Fund Balance With and Without Increased Rate Revenue

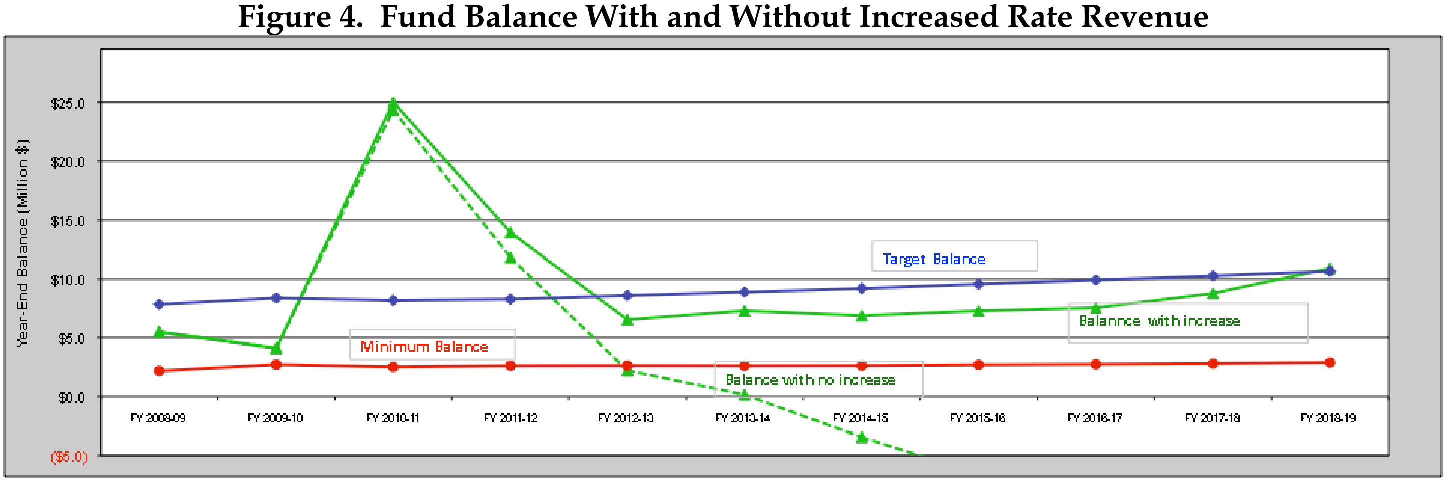

Figure 5. Annual Residential Bills In Southern Marin

	FY 09-10	FY 10-11
City of Sausalito		
Collection System (City of Sausalito)	$360	$422
Treatment (SMCSD)	$388	$469
Sewer service charge	$748	$891
Property Tax (approx)	$45	$37
Total Payment	**$793**	**$928**
Marin City		
Collection System (SMCSD)	$51	$52
Treatment (SMCSD)	$388	$469
Sewer service charge	$439	$521
Property Tax (approx)	$45	$37
Total Payment	**$484**	**$558**
Tamalpais Community Services District		
Collection System (TCSD)	--	--
Treatment (SMCSD/SASM)	--	--
Sewer service charge	**$710**	**$1,014**
City of Mill Valley		
Collection System (City of Mill Valley)	--	--
Treatment (SASM)	--	--
Sewer service charge	**$297**	**$297**
Town Of Tiburon		
Collection System (SD 5)	--	--
Treatment (SD5)	--	--
Sewer service charge	$478	$598
Property Tax (approx)	$304	$304
Total Payment	**$782**	**$902**
City of Belvedere		
Collection System (SD 5)	--	--
Treatment (SD5)	--	--
Sewer service charge	**$1,185**	**$1,457**
Ross Valley Sanitary District		
Collection System (RVSD)	$500	$500
Treatment (CMSD)	$254	$254
Sewer service charge	**$754**	**$754**

Based on current rates or proposed increased rates.

Figure 6. Residential Customer Bills Versus Population