

Wastewater Utility Financial Plan and Rates Study

Prepared for
City of San Leandro, California
June 2019

MUNICIPAL FINANCIAL SERVICES

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List of Abbreviations

BOD	Biochemical Oxygen Demand
CAFR	Comprehensive Annual Financial Report
CIP	Capital Improvement Program
City	City of San Leandro
DSC	debt service coverage
EBMUD	East Bay Municipal Utility District
FY	Fiscal year (July 1 to June 30)
FY20	July 1, 2019 to June 30, 2020
GASB	Governmental Accounting Standards Board
gpd	gallons per day
hcf	Hundred Cubic Feet (equal to ~ 748.1 gallons)
mg	million gallons
mgd	million gallons per day
mg/L	milligrams per Liter
O&M	Operation and maintenance
SRF	State Revolving Fund
SS	Suspended Solids
WPCP	Water Pollution Control Plant

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Executive Summary

The City of San Leandro, in conjunction with Municipal Financial Services, has analyzed the adequacy of revenues to meet projected expenditures of the wastewater enterprise fund to determine whether revenues will be adequate to cover operating and maintenance costs as well as needed capital costs while supporting debt service obligations. Rates and charges were developed for the five-year period Fiscal Year 2019 – 20 (FY20) through FY24.

Prior Rate Study and Current Rates and Charges

The previous rate study was in 2010 and resulted in adoption of wastewater rates for FY11 through FY15 (five fiscal years). Rate increase for FY16 – FY19 were based on changes in the cost-of-living index. Current rates are listed in the table below.

Table ES-1. Current Rates	
Description	2018-2019 Fees
A. For Classification A Users (Residential):	
• Single-Family Unit	\$35.75 each per month
• Multiple-Family Unit	\$25.37 each per month
• Accessory Dwelling Unit	\$25.37 each per month
B. For Classification B Users (Commercial & Institutional):	
<i>Commercial</i>	
• Auto Services	\$8.26 per 100 cubic feet
• Bakery, Wholesale	\$6.79 per 100 cubic feet
• Laundries	\$4.81 per 100 cubic feet
• Markets/Foods	\$8.10 per 100 cubic feet
• Mixed Use	\$7.02 per 100 cubic feet
• Restaurants	\$7.59 per 100 cubic feet
• All Other	\$3.92 per 100 cubic feet
<i>Institutional:</i>	
• Schools	\$3.23 per 100 cubic feet
C. For Classification C Users (Industrial & Other Large Users):	
Loading Charge – based on the total discharge volumes for the billing period.	
Connection	\$5.99 each per month
Volume	\$3,271.82 per Million Gallons
BOD (Biochemical oxygen demand)	\$438.96 per Thousand Pounds
SS (Suspended solids)	\$732.35 per Thousand Pounds

Legend: BOD-Biochemical Oxygen Demand; SS-Suspended Solids

Projected Capital Improvement Program Expenditures and Funding

Between FY20 and FY24 (six fiscal years), total projected CIP expenditures are approximately \$23,400,000 million. FY19 CIP expenditures are shown for information. CIP expenditures are projected to be funded with cash from wastewater rates and charges and no new debt will be issued. CIP expenditures are summarized in the table below.

Table ES-2. Projected CIP Expenditures, FY19 - FY24							
	Budget FY19	Projected					Total FY20-FY24
		FY20	FY21	FY22	FY23	FY24	
Collection System & Plant	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	10,000,000
FY19							
Solar	1,900,000						
As-built	500,000						
Dirt Relocation	6,600,000						
FY20							
Treatment Wetland		3,500,000					3,500,000
FY21							
FFR Demo and disposal			2,000,000				2,000,000
Collection crew dump			400,000				400,000
FY22							
Lift station replacement				3,500,000			3,500,000
FY23							
Eden Road land purchase and frontage fees					2,500,000		2,500,000
FY24							
Planning and Design for Nutrient caps						1,500,000	1,500,000
Total	11,000,000	5,500,000	4,400,000	5,500,000	4,500,000	3,500,000	23,400,000

Wastewater Fund 593 Revenues, Expenditures and Fund Balance

Revenues, Expenditures and Fund Balance for Wastewater Fund 593 are summarized in the table below. The approximate amount of revenues required from rates (treatment charges) for the five-year period, FY20 through FY24, is \$81.5 million. Another \$7.4 million in revenues is projected from other sources. Expenditures during the same period are projected to be approximately \$91.6 million. The operating fund balance is projected to decline from approximately \$18.0 to \$14.6 million during the five-year period. The budgeted minimum operating reserve balance in FY24 is \$5.7 million. Fund balance above the budgeted minimum is required to pay for regulatory compliance capital projects planned for FY25-FY29.

Table ES-3. Projected Wastewater Fund 593 Revenues, Expenditures and Fund Balance

All Cash Flow in \$millions	Actual	Budget	Projected Five-Year Plan					FY20-
	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY24
REVENUES								
Treatment Charges	\$12.6	\$12.9	13.5	14.8	16.2	17.7	19.4	\$81.5
Other Revenues	0.6	0.8	0.8	0.8	0.8	0.8	0.8	3.9
General Fund Loan Repayment	0.5	0.5	0.5	0.5	0.6	0.6	0.6	2.8
Interest Income	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.7
Total Revenues	13.8	14.5	15.0	16.2	17.6	19.2	20.9	88.9
EXPENDITURES								
Operating & Maintenance	10.0	9.9	10.2	10.5	10.9	11.2	11.5	54.4
Debt Service	2.8	2.8	2.8	2.8	2.8	2.8	2.8	13.8
Capital (cash)	3.6	11.0	5.5	4.4	5.5	4.5	3.5	23.4
Total Expenditures	16.3	23.7	18.5	17.7	19.1	18.5	17.8	91.6
NET TRANSFERS	(0.2)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.2)	(0.7)
Wastewater Fund Ending Balance	27.4	18.0	14.4	12.7	11.1	11.6	14.6	(3.4)
Min. Op. Balance 180 (days cash O&M)	4.9	4.9	5.0	5.2	5.4	5.5	5.7	
Single Family Monthly Bill, \$	\$34.71	\$35.75	\$37.00	\$40.50	\$44.30	\$48.60	\$53.20	
Single Family Monthly Bill, \$ Diff	\$0.68	\$1.04	\$1.25	\$3.50	\$3.80	\$4.30	\$4.60	
Single Family Monthly Bill, % Diff	2.0%	3.0%	3.5%	9.5%	9.4%	9.7%	9.5%	
Debt Service Coverage Ratio	1.34x	1.59x	1.65x	2.00x	2.39x	2.83x	3.32x	

Recommended Wastewater Rates

The current (FY19) and recommended rates for FY20 – FY24 are shown in the table below. The effective dates for the recommended rates are July 1 of each fiscal year. Note that Industrial rate descriptions include the terms “BOD” and “SS”. BOD is an acronym for Biochemical Oxygen Demand. SS is an acronym for Suspended Solids. BOD and SS are the two primary pollutants removed during the wastewater treatment process. Rate categories shown in bold type have their FY20 rates adjusted so that the FY20 change in rates is spread over the next three years (FY21-FY23).

Table ES-4. Current and Recommended FY20 – FY24 Wastewater Rates											
	Current	Recommended					FY20	FY21	FY22	FY23	FY24
	FY19	FY20	FY21	FY22	FY23	FY24					
Residential, \$ per month											
Single family	\$35.75	\$37.00	\$40.50	\$44.30	\$48.60	\$53.20	3.5%	9.5%	9.4%	9.7%	9.5%
Multiple family	\$25.37	\$26.10	\$28.50	\$31.20	\$34.20	\$37.40	2.9%	9.2%	9.5%	9.6%	9.4%
Commercial, \$ per 100 cubic feet											
Auto, Steam cleaning	\$8.26	\$8.68	\$9.50	\$10.40	\$11.39	\$12.47	5.1%	9.4%	9.5%	9.5%	9.5%
Bakeries	\$6.79	\$6.98	\$7.64	\$8.37	\$9.16	\$10.03	2.8%	9.5%	9.6%	9.4%	9.5%
Laundries	\$4.81	\$4.97	\$5.44	\$5.96	\$6.53	\$7.15	3.3%	9.5%	9.6%	9.6%	9.5%
Markets & foods	\$8.10	\$8.52	\$9.33	\$10.22	\$11.19	\$12.25	5.2%	9.5%	9.5%	9.5%	9.5%
Mixed Use	\$7.02	\$7.24	\$7.93	\$8.68	\$9.50	\$10.41	3.1%	9.5%	9.5%	9.4%	9.6%
Restaurants	\$7.59	\$7.97	\$8.82	\$9.78	\$10.83	\$12.00	5.0%	10.7%	10.8%	10.7%	10.9%
All other	\$3.92	\$3.92	\$4.28	\$4.66	\$5.07	\$5.51	0.0%	9.1%	8.9%	8.8%	8.7%
Institutional											
Schools	\$3.23	\$3.39	\$3.77	\$4.19	\$4.66	\$4.91	5.0%	11.1%	11.3%	11.2%	11.0%
Industrial											
Volume, \$ per Million Gallons	\$3,271.82	\$3,315.00	\$3,630.00	\$3,974.00	\$4,352.00	\$4,766.00	1.3%	9.5%	9.5%	9.5%	9.5%
BOD, \$ per Thousand Pounds	\$438.96	\$459.00	\$502.00	\$550.00	\$602.00	\$659.00	4.6%	9.4%	9.6%	9.5%	9.5%
SS, \$ per Thousand Pounds	\$732.35	\$769.00	\$851.00	\$943.00	\$1,044.00	\$1,142.00	5.0%	10.7%	10.8%	10.7%	10.7%
Commercial/Institutional/Industrial (applies only to Industrial in FY19)											
Each Account, \$ per month	\$5.99	\$6.30	\$7.00	\$7.75	\$8.55	\$9.65	5.0%	10.9%	10.8%	10.6%	10.9%

Legend: BOD-Biochemical Oxygen Demand; SS-Total Suspended Solids

Section 1

Introduction

This section describes the organization of the report, rate-making objectives, the rate-setting process, and a general description of the wastewater system.

1.1 Organization of the Report

This report is divided into seven sections. This introduction provides an overview of the study objectives and description of the City's wastewater system.

Section 2 discusses the wastewater discharge characteristics of customers. The number and type of connections and wastewater flow and strength projected for FY19 – FY24 is developed in this section.

Section 3 summarizes the five-year Financial Plan for the wastewater enterprise and describes the development of revenue required from wastewater rates.

Section 4 describes the allocation of revenue requirements to defined billable parameters.

Section 5 describes the development of the wastewater rate structure and wastewater rates.

Section 6 describes the impact of recommended wastewater rates upon customer bills.

Section 7 describes the limitations of the study document.

1.2 Rate-Making Objectives

There are numerous rate-making objectives that must be considered when developing rates and rate structures.

Revenue sufficiency. Generate enough revenue to fund operating costs, capital costs, bonded debt, and adequate reserves.

Revenue stability. Recover revenue from rates that will cover fixed and variable costs.

Meet Fiscal Management Goals. Meet financial goals and metrics that will support the best credit rating and reduced risk of default.

Administrative ease and cost of implementation. Enable easy and cost-efficient implementation and ongoing administration, including monitoring and updating.

Affordability. Be as affordable as possible while maintaining the utilities sound financial position and credit rating.

Customer acceptance. Be as simple as possible to facilitate customer understanding and acceptance.

Fairness. Provide for each customer class to pay its proportionate share of the required revenue in compliance with legal rate-making requirements.

1.3 Overview of Utility Rate Setting Process

Rate studies classically have three categories of technical analysis – the development of revenue required from rates, the allocation of costs among billable parameters (cost-of-service analysis) and the design of a rate structure. An overview of the rate-setting analytical steps is shown in Figure 1-1.

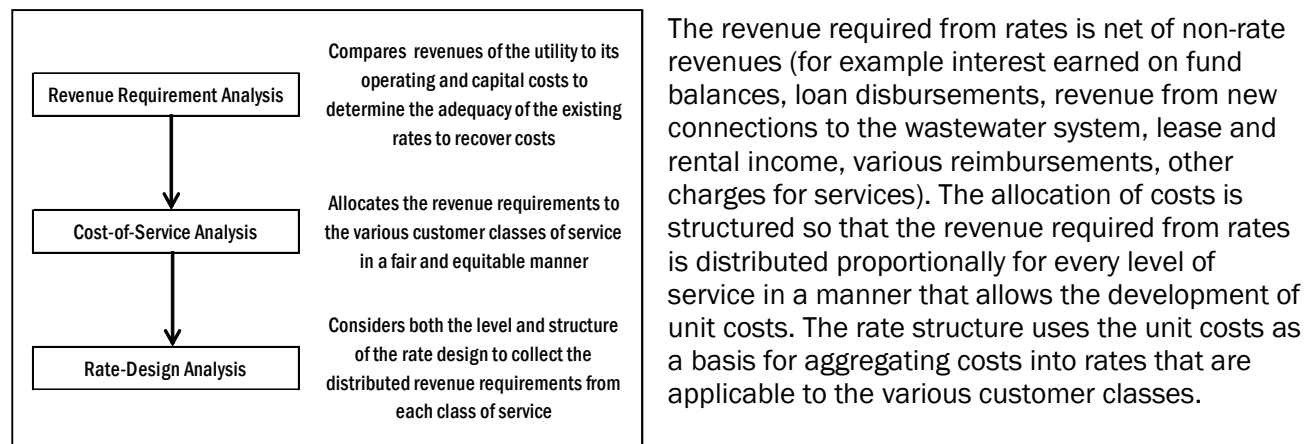


Figure 1-1. Overview of Rate Setting Analytical Steps

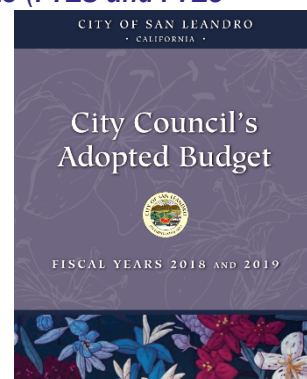
Rates for residential customer classes (single family and multiple family) are flat rates. The rates are in units of dollars per month. Rates for nonresidential customer classes (commercial and institutional) are variable rates plus a monthly charge per account. The variable rates are in units of dollars per hundred cubic feet of metered water use. Monthly bills for industrial users may be calculated based on the measured flow and loading (of BOD and SS) of each users' wastewater times the unit cost for flow (in \$ per million gallons, BOD loading (in \$ per thousand pounds, and SS loading (in \$ per thousand pounds).

1.4 Customer and Financial Data

Information and data for the development of rates and preparation of this report comes from many documents provided by the City. The list of documents, and the key information and data from each used in this study, are summarized below.

City of San Leandro City Council's Adopted Budget Fiscal Years 2018 and 2019 (FY18 and FY19 Budgets).

The City of San Leandro Annual Budget is the most important document the City produces. It outlines the City's spending plan and priorities for two fiscal years, which run from July 1st to June 30th. The city's budget is developed in conjunction with the Mayor, City Manager and all city departments. The budget is then reviewed and approved by the City Council. The result is a budget that closely matches the community's highest priorities each fiscal year.



All revenue, expenditure and fund balance data used in the development of wastewater rates and charges in this study were provided by the City.

City of San Leandro Fiscal Year 2016-2017 Comprehensive Annual Financial Report (FY17 CAFR).

The City of San Leandro *Comprehensive Annual Financial Report* shows the financial position and results of the City's operations as represented by the financial activity of its various funds.

Utility Billing System data. The City provided billing data from its Utility Billing system for connections.

Section 2

User Characteristics

The purpose of this section is to summarize use of the wastewater system by all customers connected to the system. The data used in this section comes from the City's Utility Billing system, invoices for services provided by the Wastewater Management Division, data bases with customer discharge data and operating data for the City's Water Pollution Control Plant. Customer data is used for the allocation of costs, development of rates, and analysis of the impact on customer bills.

2.1 Residential Wastewater Charges Tax Roll Assessment Data

Wastewater charges for residential dwelling units (houses, apartments, condominiums and the like) for the period of July 1 to and including June 30 of each fiscal year are filed with the County Auditor of the County of Alameda who then enters such charges as an assessment of the tax roll against the respective premises. The City provided a list of assessments of residential wastewater charges for Fiscal Year July 1, 2017 – June 30, 2018. The data is summarized in Appendix A, Table A-1. This data is used to project the number of residential accounts.

2.2 EBMUD Metered Water Use Data

At the City's request, EBMUD (East Bay Municipal Utility District) provided monthly water meter reading data for accounts within San Leandro. The data is used to estimate the projected number of commercial and institutional accounts and the amount of wastewater discharge to the sanitary sewer by the City's residential, commercial and institutional customer classes. The data provided by EBMUD is summarized in tables in Appendix A: Table A-2 (number of meters), Table A-3 (monthly metered water use) and Table A-4 (monthly average metered water use per meter). Table A-5 shows the estimated amount of wastewater discharge to the sanitary sewer by the City's residential, commercial and institutional customer classes.

The City's residential customer class has two categories: single family and multiple family.¹ Because EBMUD and the City define the multiple family customer class differently it was not possible to calculate precisely the average wastewater discharge per multiple family billing unit. Estimates of the average number of multiple family billing units in the tax roll assessment data and multiple family accounts in the EBMUD data were developed and support the current rate structure estimate of the percent difference between average single family wastewater discharge and average multiple family billing unit wastewater discharge. The current rate structure uses an average multiple family billing unit wastewater discharge difference that is 16 percent less than that for single family customers.

2.3 Industrial Wastewater Discharge Data

The City monitors and analyzes the wastewater discharge for 20 Industrial User customers. The wastewater discharge monitoring and analysis data is summarized in Appendix A, Table A-6. This data is used to project the wastewater discharge of Industrial User accounts.

¹ Note that the EBMUD multiple family category is defined differently than the City's multiple family category. The EBMUD multiple family category is split into accounts with 5+ units (Apartments) and accounts with 2, 3 or four units. Section 12.5.100(m) of the San Leandro Administrative Code defines multiple family as "Any residential unit designed to house one family in a building containing more than two such units, including triplexes, quadplexes, and apartments. For the purpose of this Code, mobile homes located in a mobile home park shall be considered multiple-family dwellings."

2.4 Customer Class Wastewater Flow and BOD/SS Concentrations

Listed in the table below are flows and BOD/SS concentrations for each customer class that are used to develop wastewater rates. Residential customer class wastewater flow is based on metered winter water use. Commercial customer classes wastewater flow is based on metered potable water use. Industrial User wastewater flow is based on effluent meter measurements. Flow from Inflow/Infiltration (I/I) is based on a comparison of summer and winter flows to the City's Water Pollution Control Plant (WPCP).² All flow data is for FY18.

Residential wastewater BOD/SS concentration estimates for the Residential customer class are based on a mass loading analysis.³ Wastewater BOD/SS concentration estimates for Commercial customer classes are based on data gathered by other wastewater agencies. Industrial User wastewater BOD/SS concentration are based on sampling and analysis of wastewater discharge from each user. Wastewater BOD/SS concentration estimates for I/I are based on data gathered by other wastewater agencies. All BOD/SS concentration data is for FY18.

Table 2-1. Customer Class Wastewater Discharge Characteristics						
	Number of Billing Units	Flow		BOD mg/L	Strength SS mg/L	Data Source
		Average gpd/Unit	Data Source			
Residential						
Single family	14,142	145	<i>water meter</i>	300	320	<i>mass loading analysis</i>
Multiple family	4,243	121	<i>water meter</i>	300	320	
Nonres						
Auto, Steam cleaning	63	680	<i>water meter</i>	1,000	1,100	<i>data generated by other wastewater agencies</i>
Bakeries	3	74	<i>water meter</i>	1,000	600	
Laundries	23	3,024	<i>water meter</i>	450	240	
Markets & foods	34	1,026	<i>water meter</i>	800	900	
Mixed Use	265	333	<i>water meter</i>	800	800	
Restaurants	97	968	<i>water meter</i>	1,000	600	
Other Commercial	1,182	611	<i>water meter</i>	300	320	
Institutional						
Schools	31	1,180	<i>water meter</i>	300	320	<i>lab analysis</i>
Industrial	20	26,649	<i>effluent meter</i>	1,574	605	
Inflow/Infiltration	1	210,046	<i>estimated</i>	20	60	<i>estimated</i>

² Inflow is stormwater that enters into sanitary sewer systems at points of direct connection to the systems. Various sources contribute to the inflow, including footing/foundation drains, roof drains or leaders, downspouts, drains from window wells, outdoor basement stairwells, drains from driveways, groundwater/basement sump pumps, and even streams. Infiltration is groundwater that enters sanitary sewer systems through cracks and/or leaks in the sanitary sewer pipes. Cracks or leaks in sanitary sewer pipes or manholes may be caused by age related deterioration, loose joints, poor design, installation or maintenance errors, damage or root infiltration.

³ A mass loading analysis compares the amount of BOD and SS treated at the City's Water Pollution Control Plant with the amount of BOD and SS discharged by Residential customers, Commercial customers, Industrial User customers and added by Inflow/Infiltration.

2.5 Customer Class Wastewater Volume and BOD/TSS Loads

Flows and BOD/TSS concentrations shown in the previous section for the various customer classes are the basis for development of projected wastewater discharge volumes (in million gallons – mg) and BOD/TSS loads (in thousand pounds – klbs).

Calculation of projected customer and WPCP wastewater discharge volumes and BOD/TSS loads and number of Accounts – Dwelling Units for FY19 – FY24 are shown in Appendix B, Table B-1 (Accounts and Billing Units), Table B-2 (Average and Annual Wastewater Discharge), Table B-3 (Average and Annual Wastewater BOD), Table B-4 (Average and Annual Wastewater SS), and Table B-5 (Water Pollution Control Plant Influent Characteristics).

The sum of projected FY20 wastewater discharge volumes and BOD/TSS loads for the various customer class and I/I are compared to FY20 WPCP values in Figure 2-1.

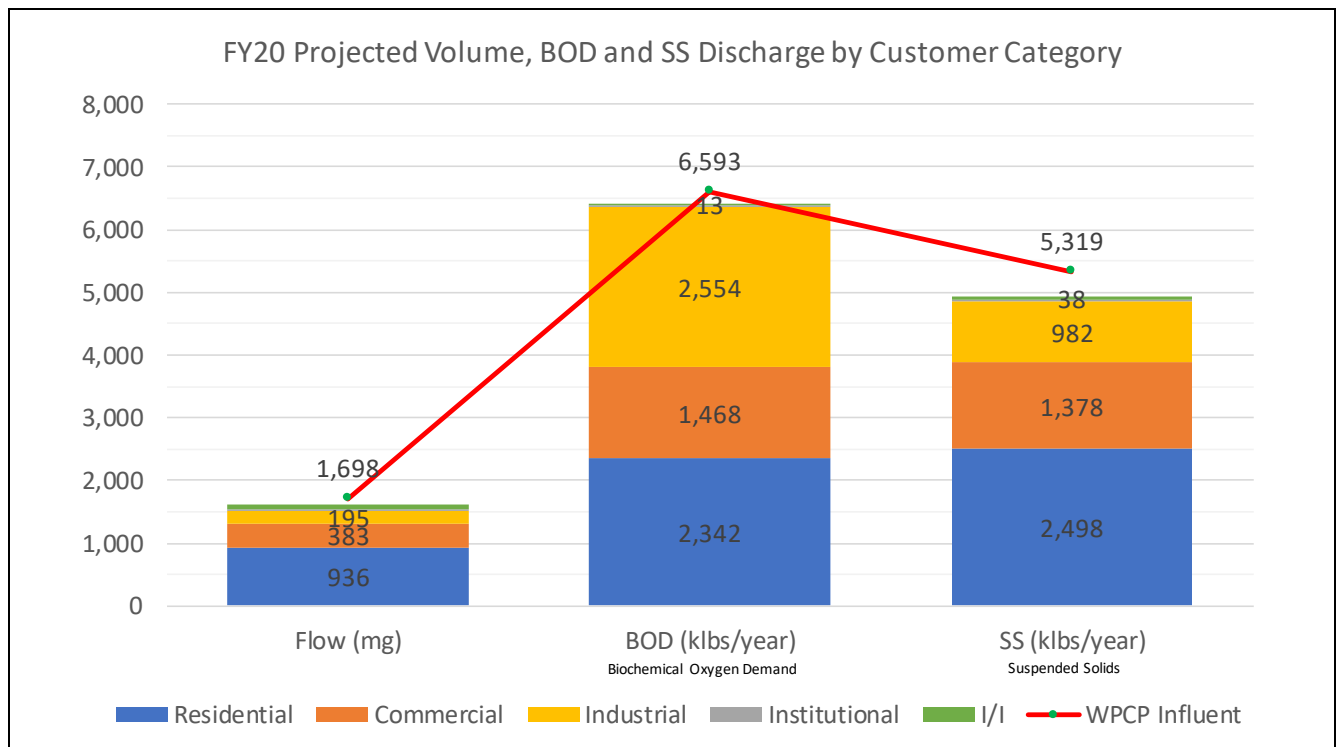


Figure 2-1. FY20 Volume, BOD and SS Discharge by Customer Category

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Section 3

Financial Plan and Revenue Requirements

Revenue from rates must be enough to meet the following financial planning criteria:

1. Provide funds for operating, capital and debt service expenditures;
2. Maintain annual fund balances that meet annual target fund balances;
3. Meet debt service coverage requirements;
4. Satisfy Financial Management Plan goals; and
5. Meet legal requirements.

3.1 Operation and Maintenance Expenditures

O&M expenditures include the cost of employee services, professional and other services, supplies, interdepartmental charges.⁴ O&M expenditures also include the costs of providing technical services such as water quality testing services and other administrative costs of the wastewater system. These costs are a normal obligation of the system and are met from operating revenues as they are incurred. They enable the City to provide wastewater collection, treatment and disposal services that meets all current State and Federal quality mandates and satisfy wastewater discharge needs of residential, commercial, institutional, and industrial customers.

Detailed O&M expenditures for FY19 are listed in detail in Table C-1 in Appendix C. Projected O&M, debt service, capital project and transfer expenditures for FY19 – FY24 are summarized in Table C-2 in Appendix C.

⁴ FY19 values are from the City of San Leandro *City Council's Adopted Budget Fiscal Years 2018 and 2019*. Values for FY20 – FY24 are based on projections from FY19.

3.2 Capital Improvement Program Expenditures

Between FY20 and FY24 (six fiscal years), total projected CIP expenditures are approximately \$23,400,000 million. FY19 CIP expenditures are shown for information. CIP expenditures are projected to be funded with cash from wastewater rates and charges and no new debt will be issued. CIP expenditures are summarized in the table below.

Table 3-1. Projected CIP Expenditures, FY19– FY24							
	Budget FY19	Projected					Total FY20-FY24
		FY20	FY21	FY22	FY23	FY24	
Collection System & Plant	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	10,000,000
FY19							
Solar	1,900,000						
As-built	500,000						
Dirt Relocation	6,600,000						
FY20							
Treatment Wetland		3,500,000					3,500,000
FY21							
FFR Demo and disposal			2,000,000				2,000,000
Collection crew dump station			400,000				400,000
FY22							
Lift station replacement				3,500,000			3,500,000
FY23							
Eden Road land purchase and frontage fees					2,500,000		2,500,000
FY24							
Planning and Design for Nutrient caps						1,500,000	1,500,000
Total	11,000,000	5,500,000	4,400,000	5,500,000	4,500,000	3,500,000	23,400,000

3.3 Revenue Required from Rates and Cash Flow

Revenues, Expenditures and Fund Balance for Wastewater Fund 593 are summarized in the table below. The approximate amount of revenues required from rates (treatment charges) for the five-year period, FY20 through FY24, is \$81.5 million. Another \$7.4 million in revenues is projected from other sources. Expenditures during the same period are projected to be approximately \$91.6 million. The operating fund balance is projected to decline from approximately \$18.0 to \$14.6 million during the five-year period. The budgeted minimum operating reserve balance in FY24 is \$5.7 million. Fund balance above the budgeted minimum is required to pay for regulatory compliance capital projects planned for FY25-FY29.

Table 3-3. Projected FY18 – FY24 Cash Flow

All Cash Flow in \$millions	Actual	Budget	Projected Five-Year Plan					FY20-FY24
	FY18	FY19	FY20	FY21	FY22	FY23	FY24	
REVENUES								
Treatment Charges	\$12.6	\$12.9	13.5	14.8	16.2	17.7	19.4	\$81.5
Other Revenues	0.6	0.8	0.8	0.8	0.8	0.8	0.8	3.9
General Fund Loan Repayment	0.5	0.5	0.5	0.5	0.6	0.6	0.6	2.8
Interest Income	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.7
Total Revenues	13.8	14.5	15.0	16.2	17.6	19.2	20.9	88.9
EXPENDITURES								
Operating & Maintenance	10.0	9.9	10.2	10.5	10.9	11.2	11.5	54.4
Debt Service	2.8	2.8	2.8	2.8	2.8	2.8	2.8	13.8
Capital (cash)	3.6	11.0	5.5	4.4	5.5	4.5	3.5	23.4
Total Expenditures	16.3	23.7	18.5	17.7	19.1	18.5	17.8	91.6
NET TRANSFERS								
Wastewater Fund Ending Balance	27.4	18.0	14.4	12.7	11.1	11.6	14.6	(3.4)
Min. Op. Balance 180 (days cash O&M)	4.9	4.9	5.0	5.2	5.4	5.5	5.7	
Single Family Monthly Bill, \$	\$34.71	\$35.75	\$37.00	\$40.50	\$44.30	\$48.60	\$53.20	
Single Family Monthly Bill, \$ Diff	\$0.68	\$1.04	\$1.25	\$3.50	\$3.80	\$4.30	\$4.60	
Single Family Monthly Bill, % Diff	2.0%	3.0%	3.5%	9.5%	9.4%	9.7%	9.5%	
Debt Service Coverage Ratio	1.34x	1.59x	1.65x	2.00x	2.39x	2.83x	3.32x	

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Section 4

Cost of Service Analysis

The total amount of revenue required from rates is allocated between amounts to be recovered from the billable parameters of flow, BOD, SS and accounts/units. Allocation is accomplished by the development of percentage allocations among the four parameters. The four parameters and the allocations are based on principles and methodology found in the State of California *Revenue Program Guidelines*. The use of these industry standard principles and methods ensures that revenue requirements are equitably recovered from classes of customers in proportion to the cost of serving those customers.

The general cost of service process includes the following steps:

1. Identification of annual revenue requirements;
2. Allocation of annual revenue requirements to billable parameters;
3. Development of unit costs of service for each billable parameter; and
4. Distribution of costs to customer classes.

Annual revenues required from rates were identified in Section 3. Development of unit costs of service and distribution of costs to customer classes is presented in this section.

4.1 Billable Parameters

The billable parameters are flow, BOD, SS and accounts/units. Each of the billable parameters is described below.

Flow. Flow is the rate at which wastewater is discharged to the sanitary sewer. Units of measure include gallons per day (gpd), million gallons per day (mgd). Flow is often expressed in terms of volume. Volume units of measure include hundred cubic feet (hcf) and million gallons. The two terms are used interchangeably with their corresponding unit of measure. For example, average monthly wastewater discharge for a customer could be expressed as a volume of 6 hcf or a flow of 148 gpd.

BOD. BOD is an acronym for Biochemical Oxygen Demand. BOD is one of the two primary contaminants removed during the treatment process.

SS. SS is an acronym for Suspended Solids. SS is one of the two primary contaminants removed during the treatment process.

Account/Billing Unit. The source of the wastewater discharge with a connection (direct or indirect) to the sanitary sewer. Dwelling units in multiple family dwellings are connected to the sanitary sewer through an account with a direct connection to the sanitary sewer. Account/Dwelling Unit charges are based on costs of serving every account regardless of the flow or strength (BOD and SS levels) of wastewater discharge.

4.2 Allocation of Revenue Requirements to Billable Parameters

The allocation of FY20 – FY24 O&M expenses, debt service, capital improvements (cash funded) and transfers to billable parameters is summarized in the table below. Allocations to billable parameters are used to allocate annual revenue requirements to billable parameters for rate development. The allocation of revenue requirements to billable parameters is based on industry standard principles and methods.

Table 4-1. Allocation of Expenditures to Billable Parameters

	Notes	FY20-FY24				Account/ Dwelling Unit	Allocation			
		Total	Flow	BOD	SS		Flow	BOD	SS	Account/ Dwelling Unit
Expenditures										
Collection System	1	\$8.9	\$8.4	\$0.0	\$0.0	\$0.5	94.0%	0.0%	0.0%	6.0%
WPCP Operations	1, 2	\$37.1	\$8.9	\$11.1	\$14.9	\$2.2	24.0%	30.0%	40.0%	6.0%
Administrative Support	1	\$4.0	\$0.0	\$0.0	\$0.0	\$4.0	0.0%	0.0%	0.0%	100.0%
EBDA		\$3.9	\$2.9	\$0.0	\$0.0	\$1.0	73.3%	0.0%	0.0%	26.7%
EBMUD	1	\$0.4	\$0.0	\$0.0	\$0.0	\$0.4	0.0%	0.0%	0.0%	100.0%
Transfers	1	\$0.7	\$0.0	\$0.0	\$0.0	\$0.7	0.0%	0.0%	0.0%	100.0%
Debt Service	3	\$13.8	\$6.0	\$3.3	\$4.5	\$0.0	43.7%	24.1%	32.2%	0.0%
Capital Projects	3	\$23.4	\$10.2	\$5.6	\$7.5	\$0.0	43.7%	24.1%	32.2%	0.0%
Total		\$92.3	\$36.4	\$20.1	\$26.8	\$8.9	39.4%	21.8%	29.1%	9.7%

Notes:

- 1 The portion of expenditures allocated to Account/Dwelling Unit is independent of flow or strength of wastewater discharge.
- 2 The portion of expenditures allocated to Flow, BOD and SS is based on industry standards and State guidelines.
- 3 Debt Service and Capital Project expenditures allocations are a composite of the other expenditure categories excluding allocations to the Account/Dwelling Unit function.

The allocation of annual revenue required from rates to billable parameters is summarized in the table below.

Table 4-2. Allocation of Annual Revenue Required from Rates to Billable Parameters

			FY20	FY21	FY22	FY23	FY24
Revenue Required from Rates	<i>from Table C-3</i>		\$13,477,000	\$14,757,000	\$16,159,000	\$17,694,000	\$19,375,000
Allocation to Functional Cost Categories							
Flow	<i>from Table 4-1</i>	39%	\$5,314,513	\$5,819,268	\$6,372,132	\$6,977,443	\$7,640,328
BOD	<i>from Table 4-1</i>	22%	\$2,938,955	\$3,218,087	\$3,523,824	\$3,858,564	\$4,225,143
SS	<i>from Table 4-1</i>	29%	\$3,918,606	\$4,290,782	\$4,698,431	\$5,144,752	\$5,633,524
Account/Billing Units	<i>from Table 4-1</i>	10%	\$1,304,925	\$1,428,863	\$1,564,613	\$1,713,241	\$1,876,006

4.3 Billable Parameter Unit Costs

Unit costs for each billable parameter are calculated by dividing the annual revenue requirement for each parameter (listed in Table 4-2) by the annual amount of discharge for each parameter or the number of accounts/dwelling units (listed in Tables B-1 through B-4). The calculation of billable parameters unit costs for FY20 – FY24 is summarized in the table below.

Table 4-3. Billable Parameters Unit Costs						
		FY20	FY21	FY22	FY23	FY24
Calculation of Flow Unit Cost						
Revenue Requirement, \$		\$5,314,513	\$5,819,268	\$6,372,132	\$6,977,443	\$7,640,328
Units of Use, Million Gallons (MG)	<i>from Table B-2</i>	1,603	1,603	1,603	1,603	1,603
Unit Cost, \$ per MG		\$3,315	\$3,630	\$3,974	\$4,352	\$4,766
Calculation of BOD Unit Cost						
Revenue Requirement, \$		\$2,938,955	\$3,218,087	\$3,523,824	\$3,858,564	\$4,225,143
Units of Use, Thousand Pounds (Klbs)	<i>from Table B-3</i>	6,410	6,410	6,410	6,410	6,410
Unit Cost, \$ per Klbs		\$459	\$502	\$550	\$602	\$659
Calculation of SS Unit Cost						
Revenue Requirement, \$		\$3,918,606	\$4,290,782	\$4,698,431	\$5,144,752	\$5,633,524
Units of Use, Thousand Pounds (Klbs)	<i>from Table B-4</i>	4,931	4,931	4,931	4,931	4,931
Unit Cost, \$ per Klbs		\$795	\$870	\$953	\$1,043	\$1,142
Calculation of Account/Billing Units Unit Cost						
Revenue Requirement, \$		\$1,304,925	\$1,428,863	\$1,564,613	\$1,713,241	\$1,876,006
Units of Use, Accounts/Billing Units	<i>from Table B-1</i>	16,221	16,221	16,221	16,221	16,221
Unit Cost, \$ per Account/Billing Unit		\$80	\$88	\$96	\$106	\$116
Unit Cost per Month, \$ per Account/Billing Unit		\$6.70	\$7.35	\$8.05	\$8.80	\$9.65

The unit costs for each billable parameter listed in the table above are used to develop revenue required from rates for every customer class. Use of these unit costs to develop revenue requirements, rates and monthly bills ensures that revenue requirements are equitably recovered from customer classes in proportion to the cost of serving those customer classes.

4.4 Allocation of Revenue to Customer Classes

The unit costs for each billable parameter are used to allocate revenue required from rates to each customer class. Calculation of customer class revenue requirements are shown in tables in Appendix D: Table D-1 (Accounts and Billing Units Revenue by Customer Class), Table D-2 (Flow Revenue by Customer Class), Table D-3 (BOD Revenue by Customer Class), and Table D-4 (SS Revenue by Customer Class). The sum of Flow, BOD, and SS revenue requirements by customer class is shown in Table D-5.

Revenue requirements by customer class include “Inflow/Infiltration (I/I)” as a customer class. Revenue requirements for I/I are then allocated among the remaining customer classes as shown in Table D-6.

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Section 5

Rates and Charges

Distribution of costs to billable parameters and customer classes shown in the preceding section is followed by the calculation of rates and monthly charges in this section.

5.1 Recommended Changes to Rate Structure

The current wastewater rate structure has been in place since 2010. The term “rate structure” refers to the selection of customer classes and corresponding Flow, BOD and SS assignments and the type of rate applied to recover costs – volumetric (in units of \$/hcf, for example) or fixed (in units of \$/month, for example). Recommended changes to the rate structure are described below.

Apply the “Account/Billing Unit Charge” Separately from the Flow/BOD/SS Rate for Commercial and Institutional Customer Classes. Currently, there is an account charge applied to the monthly bill for account in the Industrial User customer class. Account charges for the Residential customer class are added to the monthly charge. Account charges for the Commercial and Institutional customer classes are added to the volumetric charge. By adding the account charges to the volumetric charge (instead of collecting it separately or added to the monthly charge), each subclass in the Commercial and Institutional customer classes pays a different portion of the account charge revenue requirements.

It is recommended that the same Account/Billing Unit charge be applied to every monthly bill in addition to the portion of the monthly bill with the Flow/BOD/SS charges.

5.2 Residential Monthly Charges

For the Residential customer class, the monthly charge has three components: 1) account/billing unit costs; 2) Flow, BOD and SS costs; and 3) I/I costs. Development of the monthly charge for both Single Family accounts and for Multiple Family accounts is shown in Appendix E, Table E-1.

5.3 Commercial and Institutional Rates and Monthly Charges

For the Commercial and Institutional customer classes, the monthly charge has two components: 1) account/billing unit costs; and 2) Flow, BOD, SS and I/I costs. The Flow, BOD, SS and I/I costs are recovered through a volumetric charge which varies based on the BOD and SS characteristics of each account. Development of the rates and monthly charges for Commercial and Institutional customer classes is shown in Appendix E, Table E-2.

5.4 Industrial Rates and Monthly Charges

Monthly charges for each billable parameter are calculated by multiplying the unit cost for each parameter (listed in Table 4-2) by the amount of discharge for each parameter and the number of accounts.

5.5 Current and Calculated Rates and Charges

The table below lists current and calculated rates for each of the existing customer classes. Calculations are based on the unit costs developed in Section 4.

Table 5-1. Current and Calculated Wastewater Rates and Charges, FY19 – FY24											
	Current	Calculated									
	FY19	FY20	FY21	FY22	FY23	FY24	FY20	FY21	FY22	FY23	FY24
Residential, \$ per month											
Single family	\$35.75	\$37.00	\$40.50	\$44.30	\$48.60	\$53.20	3.5%	9.5%	9.4%	9.7%	9.5%
Multiple family	\$25.37	\$26.10	\$28.50	\$31.20	\$34.20	\$37.40	2.9%	9.2%	9.5%	9.6%	9.4%
Commercial, \$ per 100 cubic feet											
Auto, Steam cleaning	\$8.26	\$8.68	\$9.50	\$10.40	\$11.39	\$12.47	5.1%	9.4%	9.5%	9.5%	9.5%
Bakeries	\$6.79	\$6.98	\$7.64	\$8.37	\$9.16	\$10.03	2.8%	9.5%	9.6%	9.4%	9.5%
Laundries	\$4.81	\$4.97	\$5.44	\$5.96	\$6.53	\$7.15	3.3%	9.5%	9.6%	9.6%	9.5%
Markets & foods	\$8.10	\$8.52	\$9.33	\$10.22	\$11.19	\$12.25	5.2%	9.5%	9.5%	9.5%	9.5%
Mixed Use	\$7.02	\$7.24	\$7.93	\$8.68	\$9.50	\$10.41	3.1%	9.5%	9.5%	9.4%	9.6%
Restaurants	\$7.59	\$8.35	\$9.14	\$10.01	\$10.96	\$12.00	10.0%	9.5%	9.5%	9.5%	9.5%
All other	\$3.92	\$3.83	\$4.20	\$4.60	\$5.03	\$5.51	-2.3%	9.7%	9.5%	9.3%	9.5%
Institutional											
Schools	\$3.23	\$3.42	\$3.74	\$4.10	\$4.49	\$4.91	5.9%	9.4%	9.6%	9.5%	9.4%
Industrial											
Volume, \$ per Million Gallons	\$3,271.82	\$3,315.00	\$3,630.00	\$3,974.00	\$4,352.00	\$4,766.00	1.3%	9.5%	9.5%	9.5%	9.5%
BOD, \$ per Thousand Pounds	\$438.96	\$459.00	\$502.00	\$550.00	\$602.00	\$659.00	4.6%	9.4%	9.6%	9.5%	9.5%
SS, \$ per Thousand Pounds	\$732.35	\$795.00	\$870.00	\$953.00	\$1,043.00	\$1,142.00	8.6%	9.4%	9.5%	9.4%	9.5%
Commercial/Institutional/Industrial (applies only to Industrial in FY19)											
Each Account, \$ per month	\$5.99	\$6.70	\$7.35	\$8.05	\$8.80	\$9.65	11.9%	9.7%	9.5%	9.3%	9.7%

5.6 Current and Recommended Rates and Charges

The calculated rates are adjusted for four rate categories so that rates for FY20 do not decrease or do not increase more than 5.2 percent. Rates for Restaurants, Commercial All Other, Industrial SS and the Commercial/Industrial Monthly Charge are changed in FY20, FY21, FY22 and FY23 until they ultimately match the “unchanged” FY24 rates. The table below lists current and recommended rates for each of the existing customer classes. Rates for Restaurants, Commercial All Other, Industrial SS and the Commercial/Industrial Monthly Charge are shown in bold font.

Table 5-2. Current and Recommended Wastewater Rates and Charges, FY19 – FY24

	Current	Recommended									
	FY19	FY20	FY21	FY22	FY23	FY24	FY20	FY21	FY22	FY23	FY24
Residential, \$ per month											
Single family	\$35.75	\$37.00	\$40.50	\$44.30	\$48.60	\$53.20	3.5%	9.5%	9.4%	9.7%	9.5%
Multiple family	\$25.37	\$26.10	\$28.50	\$31.20	\$34.20	\$37.40	2.9%	9.2%	9.5%	9.6%	9.4%
Commercial, \$ per 100 cubic feet											
Auto, Steam cleaning	\$8.26	\$8.68	\$9.50	\$10.40	\$11.39	\$12.47	5.1%	9.4%	9.5%	9.5%	9.5%
Bakeries	\$6.79	\$6.98	\$7.64	\$8.37	\$9.16	\$10.03	2.8%	9.5%	9.6%	9.4%	9.5%
Laundries	\$4.81	\$4.97	\$5.44	\$5.96	\$6.53	\$7.15	3.3%	9.5%	9.6%	9.6%	9.5%
Markets & foods	\$8.10	\$8.52	\$9.33	\$10.22	\$11.19	\$12.25	5.2%	9.5%	9.5%	9.5%	9.5%
Mixed Use	\$7.02	\$7.24	\$7.93	\$8.68	\$9.50	\$10.41	3.1%	9.5%	9.5%	9.4%	9.6%
Restaurants	\$7.59	\$7.97	\$8.82	\$9.78	\$10.83	\$12.00	5.0%	10.7%	10.8%	10.7%	10.9%
All other	\$3.92	\$3.92	\$4.28	\$4.66	\$5.07	\$5.51	0.0%	9.1%	8.9%	8.8%	8.7%
Institutional											
Schools	\$3.23	\$3.39	\$3.77	\$4.19	\$4.66	\$4.91	5.0%	11.1%	11.3%	11.2%	11.0%
Industrial											
Volume, \$ per Million Gallons	\$3,271.82	\$3,315.00	\$3,630.00	\$3,974.00	\$4,352.00	\$4,766.00	1.3%	9.5%	9.5%	9.5%	9.5%
BOD, \$ per Thousand Pounds	\$438.96	\$459.00	\$502.00	\$550.00	\$602.00	\$659.00	4.6%	9.4%	9.6%	9.5%	9.5%
SS, \$ per Thousand Pounds	\$732.35	\$769.00	\$851.00	\$943.00	\$1,044.00	\$1,142.00	5.0%	10.7%	10.8%	10.7%	10.7%
Commercial/Institutional/Industrial (applies only to Industrial in FY19)											
Each Account, \$ per month	\$5.99	\$6.30	\$7.00	\$7.75	\$8.55	\$9.65	5.0%	10.9%	10.8%	10.6%	10.9%

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Section 6

Impact of Rate Changes on Customer Bills

The impact on customers is summarized in terms of annual changes in revenue required from each customer class, annual changes in wastewater rates and charges, and annual changes in monthly bills.

6.1 Impact on Residential Monthly Bills

The impact on residential bills varies depending on the customer class. The impact on Single Family and Multiple Family customer classes is shown in the table below.

Table 6-1. Residential Monthly Bills, Current vs Recommended FY20 – FY24

	Current		Recommended			
	FY19	FY20	FY21	FY22	FY23	FY24
Residential, \$ per month						
Single family	\$35.75	\$37.00	\$40.50	\$44.30	\$48.60	\$53.20
Multiple family	\$25.37	\$26.10	\$28.50	\$31.20	\$34.20	\$37.40
Change in Bill, \$ per month						
Single family	\$1.04	\$1.25	\$3.50	\$3.80	\$4.30	\$4.60
Multiple family	\$0.74	\$0.73	\$2.40	\$2.70	\$3.00	\$3.20
Percent Change in Bill						
Single family	3%	3%	9%	9%	10%	9%
Multiple family	3%	3%	9%	9%	10%	9%

6.2 Impact on Nonresidential Annual Charges

The impact on nonresidential annual charges varies depending on the customer class. The impact on Commercial, Institutional and Industrial customer classes is shown in the table below.

Table 6-2. Nonresidential Annual Revenue from Rates, Current vs Recommended FY20 – FY24

	Current FY19	FY20	FY21	Recommended FY22	FY23	FY24
Revenue from Rates, \$ per year						
Commercial						
Auto, Steam cleaning	\$215,214	\$226,157	\$247,523	\$270,972	\$296,766	\$324,906
Bakeries	\$917	\$942	\$1,031	\$1,130	\$1,237	\$1,354
Laundries	\$159,711	\$165,024	\$180,630	\$197,896	\$216,822	\$237,409
Markets & foods	\$149,920	\$157,694	\$172,686	\$189,159	\$207,112	\$226,732
Mixed Use	\$368,345	\$379,888	\$416,093	\$455,446	\$498,472	\$546,220
Restaurants	\$346,969	\$364,363	\$403,403	\$446,857	\$494,866	\$548,568
All other	\$1,792,774	\$1,792,774	\$1,955,676	\$2,130,706	\$2,317,650	\$2,519,945
Account Charges	\$0	\$125,937	\$139,930	\$154,923	\$170,915	\$192,904
Institutional						
Schools	\$82,182	\$86,277	\$95,813	\$106,660	\$118,614	\$124,927
Account Charges	\$0	\$2,306	\$2,562	\$2,837	\$3,129	\$3,532
Industrial						
Total	\$5,594,576	\$5,875,569	\$6,441,381	\$7,062,696	\$7,737,456	\$8,461,030
Change in Revenues, \$ per year						
Commercial						
	<i># of accounts</i>					
Auto, Steam cleaning	63	\$10,943	\$21,365	\$23,450	\$25,794	\$28,139
Bakeries	3	\$26	\$89	\$99	\$107	\$117
Laundries	23	\$5,313	\$15,606	\$17,266	\$18,926	\$20,586
Markets & foods	34	\$7,774	\$14,992	\$16,473	\$17,953	\$19,619
Mixed Use	265	\$11,544	\$36,205	\$39,353	\$43,026	\$47,748
Restaurants	97	\$17,394	\$39,039	\$43,454	\$48,009	\$53,702
All other	1,182	\$0	\$162,902	\$175,030	\$186,945	\$202,294
Account Charges		\$125,937	\$13,993	\$14,993	\$15,992	\$21,989
Institutional						
Schools	31	\$4,095	\$9,536	\$10,847	\$11,954	\$6,313
Account Charges		\$2,306	\$256	\$275	\$293	\$403
Industrial						
Total	1,716	\$280,993	\$565,812	\$621,315	\$674,761	\$723,574
Percent Change in Annual Revenue						
Commercial						
Auto, Steam cleaning		5%	9%	9%	10%	9%
Bakeries		3%	9%	10%	9%	9%
Laundries		3%	9%	10%	10%	9%
Markets & foods		5%	10%	10%	9%	9%
Mixed Use		3%	10%	9%	9%	10%
Restaurants		5%	11%	11%	11%	11%
All other		0%	9%	9%	9%	9%
Account Charges		na	11%	11%	10%	13%
Institutional						
Schools		5%	11%	11%	11%	5%
Account Charges		na	11%	11%	10%	13%
Industrial						
Total		5%	10%	10%	10%	9%

6.3 Single Family Monthly Bills Survey

The City’s current (FY19) and recommended (F20) single family monthly bills were compared to the monthly bills for seven other agencies. Results of the survey are shown in Figure 6-1.

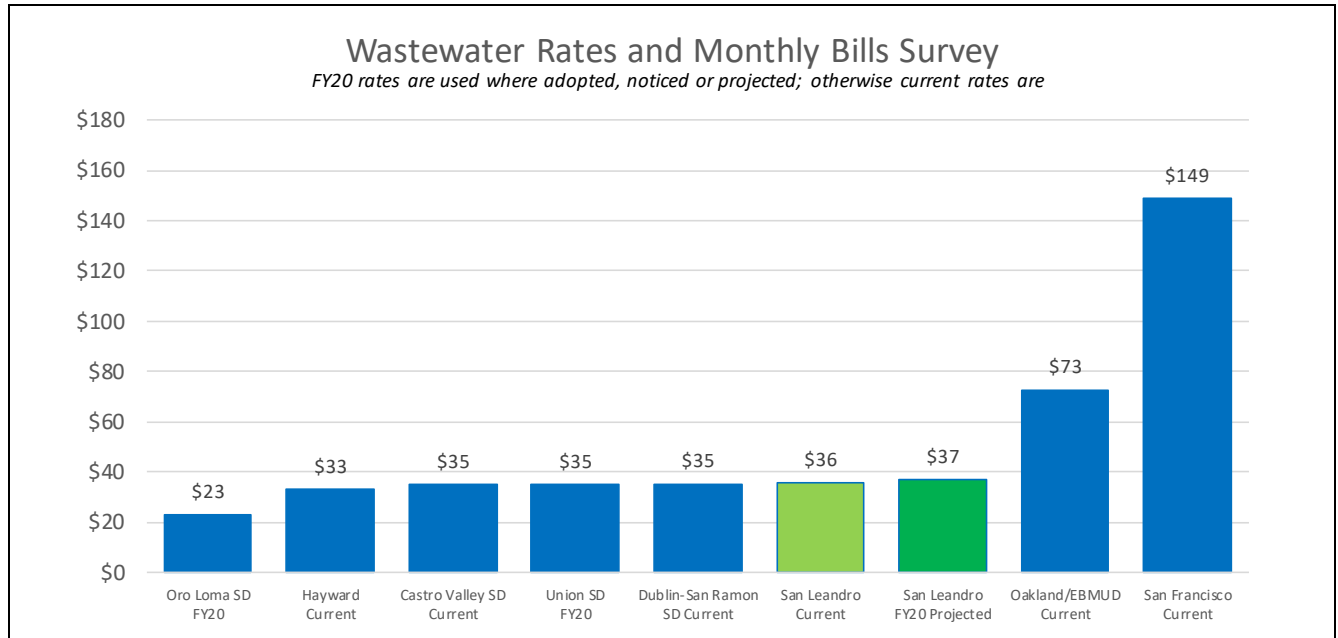


Figure 6-1. Residential Monthly Bills Survey

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Section 7

Limitations

This document was prepared solely for City of San Leandro in accordance with professional standards at the time the services were performed and in accordance with the contract between City of San Leandro and Municipal Financial Services dated April 30, 2018. This document is governed by the specific scope of work authorized by City of San Leandro; it is not intended to be relied upon by any other party. We have relied on information or instructions provided by City of San Leandro and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

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Appendix A: Customer Current Wastewater Discharge Characteristics

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Table A-1
 FY18 Residential Number of Accounts and Billing Units

	Number of Accounts				Sum of Billing Units			
	R	M	MIXED	Total	R	M	MIXED	Total
2 UNITS, LESSER QUALITY THAN 2200 OR UNKNOWN LEGAL	43	2		45	83	6		89
3 UNITS, LESSER QUALITY THAN 2300 OR UNKNOWN LEGAL	7	9	1	17	19	27	3	49
4 UNITS, LESSER QUALITY THAN 2400 OR UNKNOWN LEGAL		4		4		17		17
CHURCH	3			3	4			4
COMMERCIAL REPAIR GARAGE	1			1	1			1
CONDOMINIUM-OFFICE	1			1	1			1
CONDOMINIUMS - SINGLE RESIDENTIAL LIVING UNIT	729			729	729			729
DOUBLE OR DUPLEX TYPE - TWO UNITS	345	1	1	347	686	3	3	692
FIVE OR MORE SINGLE FAMILY RES HOMES	1	2	1	4	8	10	4	22
FOUR LIVING UNITS; E.G. FOURPLEX OR TRIPLEX W/SFR	6	83	1	90	24	331	3	358
HISTORICAL RESIDENTIAL	2			2	2			2
INDUSTRIAL LIGHT/MANUFACTURING	1			1	2			2
MEDICAL - DENTAL BUILDING	4	1		5	6	25		31
MEDICAL-RESIDENTIAL CARE FACILITY (SFR) <7 PATIENT	2			2	3			3
MISC. INDUSTRIAL (IMPROVED); NO OTHER IND CODE	3			3	7			7
MISCELLANEOUS IMPROVED COMMERCIAL	15	2		17	22	7		29
MOBILE HOME PARK PARCEL WITH IMPROVEMENTS		1		1		48		48
MORE THAN 1 MOBILE HOME, OR M/H W/OTHER RES UNITS	1			1	2			2
MULTIPLE RESIDENTIAL BUILDING OF 5 OR MORE UNITS.	7	179	13	199	68	3,217	94	3,379
NURSING/CUSTODIAL CARE FACILITY	4	2		6	4	77		81
ONE STORY STORE	10			10	19			19
ONE TO FIVE STORY OFFICE BUILDING	6			6	7			7
RESIDENTIAL IMPS ON COMMERCIAL LAND	2	1		3	2	3		5
RESIDENTIAL PROPERTY CONVERTED TO 5 OR MORE UNITS		6	4	10		45	15	60
RESTAURANT	1			1	1			1
RESTRICTED RESIDENTIAL INCOME PROPERTY		2		2		111		111
SFR - PLANNED DEVELOPMENT TRACT WITH COMMON AREA	114			114	114			114
SINGLE FAMILY RES - MANUFACTURED	1			1	1			1
SINGLE FAMILY RES HOME WITH NON-ECONOMIC 2ND UNIT	56	3		59	72	15		87
SINGLE FAMILY RES HOME WITH SLIGHT COMMERCIAL/IND	4			4	4			4
SINGLE FAMILY RESIDENTIAL HOME, R&T 402.1	6			6	6			6
SINGLE FAMILY RESIDENTIAL HOMES USED AS SUCH	10,801		1	10,802	10,868		3	10,871
STORE ON 1ST FLOOR, WITH OFFICES, APTS/LOFTS 2ND/3	11	8	1	20	16	65	4	85
TOWNHOUSE - PLANNED DEVELOPMENT	387			387	387			387
TOWNHOUSE - PLANNED DEVELOPMENT, R&T 402.1	30			30	30			30
TOWNHOUSE STYLE - CONDOMINIUM	333			333	333			333
TRIPLEX; DOUBLE OR DUPLEX WITH SINGLE FAMILY HOME	77	28	1	106	229	87	3	319
TWO, THREE OR FOUR SINGLE FAMILY HOMES	183	3	1	187	374	11	3	388
VACANT RESIDENTIAL LAND, ZONED 4 UNITS OR LESS	2			2	2			2
WAREHOUSE	2	1		3	3	3		6
WAREHOUSE-SELF STORAGE	1			1	2			2
(blank)	1			1	1			1
Grand Total	13,203	338	25	13,566	14,142	4,108	135	18,385

Table A-2
Monthly Number of Meters

BCC	Category	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Total
700	Other Commercial	2		2		2		2		2		2		12
1500	Other Commercial	4	2	4	3	4	2	4	3	4	2	4	2	38
2010	Markets & Foods	5		5	1	4		4		4		4		27
2020	Markets & Foods	1		1		1		1		1		1		6
2030	Markets & Foods	1		1		1		1		1		1		6
2040	Markets & Foods	1		1	1	1		1		1		1		7
2050	Bakeries	1	2	1	2	1	2	1	2	1	2	1	2	18
2051	Bakeries													0
2070	Other Commercial	1		1		1		1		1		1		6
2080	Markets & Foods													0
2090	Markets & Foods	1		1		1		1		1		1		6
2091	Markets & Foods													0
2300	Other Commercial	1	2	1	2	1	2	1	2	1	2	1	2	18
2400	Other Commercial	2	2	1	1	1	1	2		1	1	1	1	11
2500	Other Commercial	6	8	7	6	5	5	10	3	8	5	8	5	76
2600	Other Commercial	2	3		3		3		3		3		3	20
2700	Other Commercial	6	4	6	2	5	1	6	1	7	1	6	1	46
2810	Other Commercial	2		2		2		2		2		2		12
2820	Other Commercial	5		5		5		5		5		5		30
2830	Other Commercial													0
2840	Other Commercial	1		1	1			1		1		1		6
2850	Other Commercial	3	1	3	1	3	1	3	1	3	1	3	1	24
2893	Other Commercial	2	2	2	2	2	2	2	2	2	2	2	2	24
3200	Other Commercial	2	3	3	2	2	2	4	1	3	2	3	2	29
3300	Other Commercial	10	2	11	1	11	1	12		11	4	10	2	75
3400	Other Commercial	19	8	21	6	19	6	23	4	21	8	19	6	160
3470	Other Commercial	2	1	1	1	2		2		2		2		13
3500	Other Commercial	7	1	7	2	6	1	7	1	7	1	7	1	48
3590	Other Commercial	13	10	13	11	11	9	13	9	13	9	13	9	133
3600	Other Commercial	3	9	7	5	3	5	11	1	7	7	6	6	70
3700	Other Commercial	10		8		8		8		8		8		50
3800	Other Commercial	1	1	1	1	1	1	2	1	1	1	1	1	13
3900	Other Commercial	18	5	22	8	11	5	19	5	17	5	17	5	137
4100	Other Commercial	1	2	1	2	1	2	1	2	1	2	1	2	18
4200	Other Commercial	139	57	146	70	125	54	149	52	142	63	145	56	1,198
4400	Other Commercial	1	13	1	13	1		14		14		14		71
4500	Other Commercial		1		1		1		1		1		1	6
4700	Other Commercial	7	3	7	3	7	3	7	3	7	3	7	3	60
4800	Other Commercial	2	1	2	1	2	1	2		3		3	1	18
4900	Other Commercial	1		1		1		1		1		1		6
4950	Other Commercial	5	4	5	3	5	3	5	3	5	5	4	4	51
5000	Other Commercial	24	27	28	27	24	25	33	23	28	30	28	24	321
5300	Other Commercial	160	59	155	59	153	53	162	34	176	33	176	60	1,280
5400	Markets & Foods	17	9	16	10	16	7	18	6	19	7	19	8	152
5540	Other Commercial	17	5	15	5	15	2	18	4	17	4	17	4	123
5811	Restaurants	19	7	19	7	17	6	20	7	18	6	18	9	153
5812	Restaurants	46	25	46	25	44	16	56	8	62	15	61	24	428
5813	Other Commercial	6	3	6	3	6	3	6		9		9	3	54
6513	Multiple Family 5+	209	83	203	83	209	69	232	76	216	94	204	108	1,786
6514	Multiple Family <5	347	116	344	120	344	109	349	74	387	71	387	112	2,760
6800	Mixed Use	147	120	155	110	146	103	166	93	171	98	167	112	1,588
7000	Other Commercial		2		2		2		2		2	2	2	14
7001	Other Commercial		4	2	2		2	4		2	4	2	2	24
7020	Other Commercial	3	1	3	1	3	1	3	1	3	1	4	1	25
7200	Other Commercial	44	30	44	34	40	24	49	15	60	15	58	29	442
7210	Laundries	3	3	3	3	3	3	3	3	3	3	3	3	36
7215	Laundries	6		6		6		6		6		6		36
7216	Laundries	6	3	6	5	5	1	8	1	8	1	8	3	55
7218	Laundries	1		1		1		1		1		2	1	8
7260	Other Commercial		2		2		2		2		2		2	12
7300	Other Commercial		1		1		1		1		1		1	6
7342	Other Commercial	1		1		1		1		1		1		6
7500	Auto, Steam cleaning	51	8	51	8	49	7	49	6	53	4	53	7	346
7539	Other Commercial	1	2	1	2	1	2	1	2	1	2	1	2	18
7542	Auto, Steam cleaning	4	1	4	1	4	1	4	2	4	1	4	1	31
7600	Other Commercial	4	3	4	3	4	3	4	2	6	3	5	2	43
7900	Other Commercial	7	7	9	5	7	4	13	2	10	4	10	4	82
7950	Other Commercial	143	71	136	76	133	40	173	43	169	42	168	56	1,250
7990	Other Commercial	6	20	13	13	6	8	25	1	18	14	18	9	151
8000	Other Commercial	15	34	14	35	15	35	15	30	18	34	17	36	298
8060	Other Commercial	4	9	4	9	4	9	4	8	5	8	7	9	80
8200	Schools	15	15	17	13	15	13	20	9	20	14	18	14	183
8600	Other Commercial	48	16	48	18	46	16	48	12	52	13	51	16	384
8800	Single Family	7,397	6,177	6,847	7,096	5,929	4,374	8,606	3,629	9,360	3,638	9,316	4,674	77,043
Total		9,037	7,010	8,503	7,933	7,501	5,054	10,425	4,196	11,212	4,296	11,144	5,456	91,767

Table A-3
Monthly Metered Water Use, Hundred Cubic Feet

BCC	Category	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Total
700	Other Commercial	28		28		28		27		26		26		163
1500	Other Commercial	124	7	144	14	157	3	75	5	83	5	104	3	724
2010	Markets & Foods	122		130	4	177		170		181		200		984
2020	Markets & Foods	56		53		44		44		53		57		307
2030	Markets & Foods	10		13		12		15		21		24		95
2040	Markets & Foods	5		6	3	3		7		8		7		39
2050	Bakeries	1	27	2	24	3	23	1	19	2	16	1	16	135
2051	Bakeries													0
2070	Other Commercial	313		367		476		214		224		301		1,895
2080	Markets & Foods													0
2090	Markets & Foods	1,436		1,501		1,883		1,374		1,180		1,244		8,618
2091	Markets & Foods													0
2300	Other Commercial	3	9	2	6	3	9	2	13	2	12	3	12	76
2400	Other Commercial		40	21	32		22	30		18	19	16	13	211
2500	Other Commercial	65	656	270	394	47	332	269	153	204	239	153	272	3,054
2600	Other Commercial	20	66		72		58		54		63		94	427
2700	Other Commercial	148	43	69	40	74	3	140	11	114	1	107	0	750
2810	Other Commercial	162		155		179		208		209		178		1,091
2820	Other Commercial	368		307		343		367		343		367		2,095
2830	Other Commercial													0
2840	Other Commercial	317		367	340			334		429		386		2,173
2850	Other Commercial	50	7	46	8	32	4	25	3	42	5	45	8	275
2893	Other Commercial	48	114	51	126	47	100	22	66	31	86	23	91	805
3200	Other Commercial	127	84	126	67	127	72	146	64	159	64	140	66	1,242
3300	Other Commercial	720	789	1,166	416	740	423	1,364		1,215	777	688	859	9,157
3400	Other Commercial	481	309	714	168	616	174	648	79	732	308	627	262	5,118
3470	Other Commercial	16	3	13	2	12		17		16		16		95
3500	Other Commercial	83	3	91	22	85	2	60	0	76	2	76	1	501
3590	Other Commercial	573	159	595	136	597	109	458	74	536	79	627	78	4,021
3600	Other Commercial	345	418	636	737	441	175	456	3	452	466	163	560	4,852
3700	Other Commercial	102		190		143		454		153		101		1,143
3800	Other Commercial	159	85	157	76	113	112	123	15	46	68	117	39	1,110
3900	Other Commercial	1,737	1,076	2,737	1,248	403	1,224	1,472	1,083	1,564	1,141	1,476	948	16,109
4100	Other Commercial	11	347	15	392	14	352	11	348	13	353	14	317	2,187
4200	Other Commercial	9,155	2,522	10,179	2,268	9,253	2,205	9,082	1,315	8,118	3,164	7,850	3,136	68,247
4400	Other Commercial	97	1,271	74	682	89		477		296		304		3,290
4500	Other Commercial		6		7		6		6		7		8	40
4700	Other Commercial	329	243	361	237	347	133	360	102	386	137	362	198	3,195
4800	Other Commercial	83	14	93	14	110	11	104		64		61	12	566
4900	Other Commercial	4		0		1		0		1		1		7
4950	Other Commercial	391	89	260	149	307	86	45	76	83	138	39	551	2,214
5000	Other Commercial	388	1,338	831	1,045	488	1,189	2,029	652	975	1,550	1,002	1,155	12,642
5300	Other Commercial	6,918	2,125	6,442	2,202	6,074	1,465	6,063	1,039	6,068	1,039	6,150	1,585	47,170
5400	Markets & Foods	1,330	233	1,306	250	1,176	161	1,272	114	1,291	104	1,103	159	8,499
5540	Other Commercial	981	155	905	229	706	154	614	275	970	282	450	483	6,204
5811	Restaurants	824	515	864	530	782	294	858	314	816	305	806	308	7,216
5812	Restaurants	3,515	2,230	3,665	2,160	3,608	1,300	4,470	942	4,667	1,831	3,486	2,325	34,199
5813	Other Commercial	324	25	290	28	284	27	206		246		234	32	1,696
6513	Multiple Family 5+	34,206	13,949	34,154	14,469	33,596	10,553	36,802	11,105	32,653	16,148	27,418	18,947	284,000
6514	Multiple Family <5	11,283	3,143	11,385	3,139	10,551	2,529	10,622	1,857	11,039	1,722	11,133	2,906	81,309
6800	Mixed Use	6,902	3,539	7,454	3,127	6,251	3,132	4,782	2,322	4,706	2,465	4,520	3,411	52,611
7000	Other Commercial		1,208		1,280		896		946		898	352	726	6,306
7001	Other Commercial		1,567	696	622		552	1,127		592	661	440	544	6,801
7020	Other Commercial	832	675	735	789	561	762	584	544	585	527	788	217	7,599
7200	Other Commercial	412	319	399	234	392	197	438	164	421	166	423	251	3,816
7210	Laundries	174	41	159	43	165	48	139	46	151	39	155	37	1,197
7215	Laundries	1,934		1,940		1,783		2,117		2,043		1,991		11,808
7216	Laundries	222	49	232	147	159	38	260	39	233	37	254	44	1,714
7218	Laundries	1,621		1,741		1,870		1,799		1,790	1,241		1,718	11,780
7260	Other Commercial		171		229		181		168		159		289	1,197
7300	Other Commercial		4		5		6		7		7		8	37
7342	Other Commercial	11		4		6		9		6		23		59
7500	Auto, Steam cleaning	3,882	115	4,075	113	4,111	139	3,767	94	2,896	66	2,777	38	22,073
7539	Other Commercial	1,126	1	1,151	1	865	2	993	1	481	2	0	1	4,624
7542	Auto, Steam cleaning	558	379	573	149	441	84	317	142	379	133	418	342	3,915
7600	Other Commercial	123	44	86	121	64	88	87	18	102	6	72	61	872
7900	Other Commercial	128	143	96	119	108	7	145	6	158	8	172	10	1,100
7950	Other Commercial	21,618	11,627	20,789	8,906	15,231	2,284	6,193	2,750	4,675	1,437	6,032	7,897	109,439
7990	Other Commercial	1,169	8,402	3,298	3,658	1,148	333	1,770	32	1,008	503	2,214	2,320	25,855
8000	Other Commercial	1,290	2,600	1,362	2,563	1,269	2,361	1,249	2,124	1,329	2,508	697	2,855	22,207
8060	Other Commercial	1,584	7,149	977	7,153	735	4,829	355	4,060	829	4,538	938	5,610	38,757
8200	Schools	3,174	3,042	3,730	2,828	2,940	1,001	2,234	690	2,300	626	1,162	1,665	25,392
8600	Other Commercial	3,004	1,671	3,287	1,432	2,816	1,072	2,114	990	2,047	1,140	2,194	1,233	23,000
8800	Single Family	108,234	99,893	100,088	105,999	77,808	55,679	107,389	42,824	111,835	39,659	113,275	67,905	1,030,588
Total		235,456	174,739	233,653	171,254	192,894	97,001	219,405	77,754	214,371	86,957	206,583	132,626	2,042,693

Table A-4
Monthly Average Water Use

BCC	Category	Number of Meters (from Table A-2)							Bimonthly Metered Water Use (from Table A-3)						
		Jul-17 Aug-17	Sep-17 Oct-17	Nov-17 Dec-17	Jan-18 Feb-18	Mar-18 Apr-18	May-18 Jun-18	2-Month Average	Jul-17 Aug-17	Sep-17 Oct-17	Nov-17 Dec-17	Jan-18 Feb-18	Mar-18 Apr-18	May-18 Jun-18	2-Month Average
700	Other Commercial	2	2	2	2	2	2	2	28	28	28	27	26	26	27
1500	Other Commercial	6	7	6	7	6	6	6	131	158	160	80	88	107	121
2010	Markets & Foods	5	6	4	4	4	4	5	122	134	177	170	181	200	164
2020	Markets & Foods	1	1	1	1	1	1	1	56	53	44	44	53	57	51
2030	Markets & Foods	1	1	1	1	1	1	1	10	13	12	15	21	24	16
2040	Markets & Foods	1	2	1	1	1	1	1	5	9	3	7	8	7	7
2050	Bakeries	3	3	3	3	3	3	3	28	26	26	20	18	17	23
2051	Bakeries	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2070	Other Commercial	1	1	1	1	1	1	1	313	367	476	214	224	301	316
2080	Markets & Foods	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2090	Markets & Foods	1	1	1	1	1	1	1	1,436	1,501	1,883	1,374	1,180	1,244	1,436
2091	Markets & Foods	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300	Other Commercial	3	3	3	3	3	3	3	12	8	12	15	14	15	13
2400	Other Commercial	2	2	1	2	2	2	2	40	53	22	30	37	29	35
2500	Other Commercial	14	13	10	13	13	13	13	721	664	379	422	443	425	509
2600	Other Commercial	5	3	3	3	3	3	3	86	72	58	54	63	94	71
2700	Other Commercial	10	8	6	7	8	7	8	191	109	77	151	115	107	125
2810	Other Commercial	2	2	2	2	2	2	2	162	155	179	208	209	178	182
2820	Other Commercial	5	5	5	5	5	5	5	368	307	343	367	343	367	349
2830	Other Commercial	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2840	Other Commercial	1	2	0	1	1	1	1	317	707	0	334	429	386	362
2850	Other Commercial	4	4	4	4	4	4	4	57	54	36	28	47	53	46
2893	Other Commercial	4	4	4	4	4	4	4	162	177	147	88	117	114	134
3200	Other Commercial	5	5	4	5	5	5	5	211	193	199	210	223	206	207
3300	Other Commercial	12	12	12	12	15	12	13	1,509	1,582	1,163	1,364	1,992	1,547	1,526
3400	Other Commercial	27	27	25	27	29	25	27	790	882	790	727	1,040	889	853
3470	Other Commercial	3	2	2	2	2	2	2	19	15	12	17	16	16	16
3500	Other Commercial	8	9	7	8	8	8	8	86	113	87	60	78	77	84
3590	Other Commercial	23	24	20	22	22	22	22	732	731	706	532	615	705	670
3600	Other Commercial	12	12	8	12	14	12	12	763	1,373	616	459	918	723	809
3700	Other Commercial	10	8	8	8	8	8	8	102	190	143	454	153	101	191
3800	Other Commercial	2	2	2	3	2	2	2	244	233	225	138	114	156	185
3900	Other Commercial	23	30	16	24	22	22	23	2,813	3,985	1,627	2,555	2,705	2,424	2,685
4100	Other Commercial	3	3	3	3	3	3	3	358	407	366	359	366	331	365
4200	Other Commercial	196	216	179	201	205	201	200	11,677	12,447	11,458	10,397	11,282	10,986	11,375
4400	Other Commercial	14	14	1	14	14	14	12	1,368	756	89	477	296	304	548
4500	Other Commercial	1	1	1	1	1	1	1	6	7	6	6	7	8	7
4700	Other Commercial	10	10	10	10	10	10	10	572	598	480	462	523	560	533
4800	Other Commercial	3	3	3	2	3	4	3	97	107	121	104	64	73	94
4900	Other Commercial	1	1	1	1	1	1	1	4	0	1	0	1	1	1
4950	Other Commercial	9	8	8	8	10	8	9	480	409	393	121	221	590	369
5000	Other Commercial	51	55	49	56	58	52	54	1,726	1,876	1,677	2,681	2,525	2,157	2,107
5300	Other Commercial	219	214	206	196	209	236	213	9,043	8,644	7,539	7,102	7,107	7,735	7,862
5400	Markets & Foods	26	26	23	24	26	27	25	1,563	1,556	1,337	1,386	1,395	1,262	1,417
5540	Other Commercial	22	20	17	22	21	21	21	1,136	1,134	860	889	1,252	933	1,034
5811	Restaurants	26	26	23	27	24	27	26	1,339	1,394	1,076	1,172	1,121	1,114	1,203
5812	Restaurants	71	71	60	64	77	85	71	5,745	5,825	4,908	5,412	6,498	5,811	5,700
5813	Other Commercial	9	9	9	6	9	12	9	349	318	311	206	246	266	283
6513	Multiple Family 5+	292	286	278	308	310	312	298	48,155	48,623	44,149	47,907	48,801	46,365	47,333
6514	Multiple Family <5	463	464	453	423	458	499	460	14,426	14,524	13,080	12,479	12,761	14,039	13,552
6800	Mixed Use	267	265	249	259	269	279	265	10,441	10,581	9,383	7,104	7,171	7,931	8,769
7000	Other Commercial	2	2	2	2	2	4	2	1,208	1,280	896	946	898	1,078	1,051
7001	Other Commercial	4	4	2	4	6	4	4	1,567	1,318	552	1,127	1,253	984	1,134
7020	Other Commercial	4	4	4	4	4	5	4	1,507	1,524	1,323	1,128	1,112	1,005	1,267
7200	Other Commercial	74	78	64	64	75	87	74	731	633	589	602	587	674	636
7210	Laundries	6	6	6	6	6	6	6	215	202	213	185	190	192	200
7215	Laundries	6	6	6	6	6	6	6	1,934	1,940	1,783	2,117	2,043	1,991	1,968
7216	Laundries	9	11	6	9	9	11	9	271	379	197	299	270	298	286
7218	Laundries	1	1	1	1	3	1	1	1,621	1,741	1,870	1,799	3,031	1,718	1,963
7260	Other Commercial	2	2	2	2	2	2	2	171	229	181	168	159	289	200
7300	Other Commercial	1	1	1	1	1	1	1	4	5	6	7	7	8	6
7342	Other Commercial	1	1	1	1	1	1	1	11	4	6	9	6	23	10
7500	Auto, Steam cleanii	59	59	56	55	57	60	58	3,997	4,188	4,250	3,861	2,962	2,815	3,679
7539	Other Commercial	3	3	3	3	3	3	3	1,127	1,152	867	994	483	1	771
7542	Auto, Steam cleanii	5	5	5	6	5	5	5	937	722	525	459	512	760	653
7600	Other Commercial	7	7	7	6	9	7	7	167	207	152	105	108	133	145
7900	Other Commercial	14	14	11	15	14	14	14	271	215	115	151	166	182	183
7950	Other Commercial	214	212	173	216	211	224	208	33,245	29,695	17,515	8,943	6,112	13,929	18,240
7990	Other Commercial	26	26	14	26	32	27	25	9,571	6,956	1,481	1,802	1,511	4,534	4,309
8000	Other Commercial	49	49	50	45	52	53	50	3,890	3,925	3,630	3,373	3,837	3,552	3,701
8060	Other Commercial	13	13	13	12	13	16	13	8,733	8,130	5,564	4,415	5,367	6,548	6,460
8200	Schools	30	30	28	29	34	32	31	6,216	6,558	3,941	2,924	2,926	2,827	4,232
8600	Other Commercial	64	66	62	60	65	67	64	4,675	4,719	3,888	3,104	3,187	3,427	3,833
8800	Single Family	13,574	13,943	10,303	12,235	12,998	13,990	12,841	208,127	206,087	133,487	150,213	151,494	181,180	171,765
Total		16,047	16,436	12,555	14,621	15,508	16,600	15,295	410,195	404,907	289,895	297,159	301,328	339,209	340,449

Table A-4
Monthly Average Water Use

		Monthly Average Water Use per Meter, HCF						
BCC	Category	Jul-17	Sep-17	Nov-17	Jan-18	Mar-18	May-18	Average
		Aug-17	Oct-17	Dec-17	Feb-18	Apr-18	Jun-18	
700	Other Commercial	14	14	14	14	13	13	14
1500	Other Commercial	22	23	27	11	15	18	19
2010	Markets & Foods	24	22	44	43	45	50	38
2020	Markets & Foods	56	53	44	44	53	57	51
2030	Markets & Foods	10	13	12	15	21	24	16
2040	Markets & Foods	5	5	3	7	8	7	6
2050	Bakeries	9	9	9	7	6	6	8
2051	Bakeries	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2070	Other Commercial	313	367	476	214	224	301	316
2080	Markets & Foods	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2090	Markets & Foods	1,436	1,501	1,883	1,374	1,180	1,244	1,436
2091	Markets & Foods	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2300	Other Commercial	4	3	4	5	5	5	4
2400	Other Commercial	20	27	22	15	19	15	19
2500	Other Commercial	52	51	38	32	34	33	40
2600	Other Commercial	17	24	19	18	21	31	22
2700	Other Commercial	19	14	13	22	14	15	16
2810	Other Commercial	81	78	90	104	105	89	91
2820	Other Commercial	74	61	69	73	69	73	70
2830	Other Commercial	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2840	Other Commercial	317	354	#DIV/0!	334	429	386	#DIV/0!
2850	Other Commercial	14	14	9	7	12	13	11
2893	Other Commercial	41	44	37	22	29	29	34
3200	Other Commercial	42	39	50	42	45	41	43
3300	Other Commercial	126	132	97	114	133	129	122
3400	Other Commercial	29	33	32	27	36	36	32
3470	Other Commercial	6	8	6	9	8	8	7
3500	Other Commercial	11	13	12	8	10	10	10
3590	Other Commercial	32	30	35	24	28	32	30
3600	Other Commercial	64	114	77	38	66	60	70
3700	Other Commercial	10	24	18	57	19	13	23
3800	Other Commercial	122	117	113	46	57	78	89
3900	Other Commercial	122	133	102	106	123	110	116
4100	Other Commercial	119	136	122	120	122	110	122
4200	Other Commercial	60	58	64	52	55	55	57
4400	Other Commercial	98	54	89	34	21	22	53
4500	Other Commercial	6	7	6	6	7	8	7
4700	Other Commercial	57	60	48	46	52	56	53
4800	Other Commercial	32	36	40	52	21	18	33
4900	Other Commercial	4	0	1	0	1	1	1
4950	Other Commercial	53	51	49	15	22	74	44
5000	Other Commercial	34	34	34	48	44	41	39
5300	Other Commercial	41	40	37	36	34	33	37
5400	Markets & Foods	60	60	58	58	54	47	56
5540	Other Commercial	52	57	51	40	60	44	51
5811	Restaurants	52	54	47	43	47	41	47
5812	Restaurants	81	82	82	85	84	68	80
5813	Other Commercial	39	35	35	34	27	22	32
6513	Multiple Family 5+	165	170	159	156	157	149	159
6514	Multiple Family <5	31	31	29	30	28	28	29
6800	Mixed Use	39	40	38	27	27	28	33
7000	Other Commercial	604	640	448	473	449	270	481
7001	Other Commercial	392	330	276	282	209	246	289
7020	Other Commercial	377	381	331	282	278	201	308
7200	Other Commercial	10	8	9	9	8	8	9
7210	Laundries	36	34	36	31	32	32	33
7215	Laundries	322	323	297	353	341	332	328
7216	Laundries	30	34	33	33	30	27	31
7218	Laundries	1,621	1,741	1,870	1,799	1,010	1,718	1,627
7260	Other Commercial	86	115	91	84	80	145	100
7300	Other Commercial	4	5	6	7	7	8	6
7342	Other Commercial	11	4	6	9	6	23	10
7500	Auto, Steam cleanin	68	71	76	70	52	47	64
7539	Other Commercial	376	384	289	331	161	0	257
7542	Auto, Steam cleanin	187	144	105	77	102	152	128
7600	Other Commercial	24	30	22	18	12	19	21
7900	Other Commercial	19	15	10	10	12	13	13
7950	Other Commercial	155	140	101	41	29	62	88
7990	Other Commercial	368	268	106	69	47	168	171
8000	Other Commercial	79	80	73	75	74	67	75
8060	Other Commercial	672	625	428	368	413	409	486
8200	Schools	207	219	141	101	86	88	140
8600	Other Commercial	73	72	63	52	49	51	60
8800	Single Family	15.3	14.8	13.0	12.3	11.7	13.0	13.3
Total		26	25	23	20	19	20	22

Table A-5
 Summary of EBMUD Water Use Data and Estimated Wastewater Discharge

	Water Use		FY18 Wastewater Annual (Winter x 6) HCF	Wastewater Use Divided by Water Use Factor	Average Number of Meters or Accounts	FY18 Average Monthly Wastewater Discharge	
	Jul-17 to Jun-18 Annual HCF <i>from Table A-3</i>	Mar-18 to Apr-18 Winter HCF <i>from Table A-4</i>				HCF	HCF
Residential							
Single family	1,030,588	151,494	908,964	0.882	12,841	5.9	145
Multiple Family 5+	284,000	46,365	278,190	0.980	298	77.9	1,915
Multiple Family <5	81,309	14,039	84,234	1.036	460	15.3	375
Multiple Family All	365,309	60,404	362,424	0.992	758	39.9	89
Commercial							
Auto, Steam cleaning	25,988	3,474	20,844	0.802	63	28	680
Bakeries	135	18	108	0.800	3	3	74
Laundries	26,499	5,534	33,204	1.253	23	123	3,024
Markets & Foods	18,542	2,838	17,028	0.918	34	42	1,026
Mixed Use	52,611	7,171	43,026	0.818	265	14	333
Restaurants	41,415	7,619	45,714	1.104	97	39	968
Other Commercial	456,214	58,692	352,152	0.772	1,182	25	611
Institutional							
Schools	25,392	2,926	17,556	0.691	31	48	1,180

Table A-6
 FY18 SIU Flow, BOD, and SS

User	Account Name	Flow MG	Flow HCF	BOD Klbs	SS Klbs	Average BOD mg/L	Average SS mg/L
1	21st Amendment Brewery	4.7	6,267	323	104		
2	Alexandre Family Creamery	0.8	1,030	4	1		
3	Aryzta Cookie	2.0	2,669	45	30		
4	Bakery St.	0.4	497	6	2		
5	Coca Cola	55.7	74,416	500	152		
6	Costco	3.9	5,184	31	16		
7	Drake's Brewing	5.0	6,667	149	27		
8	Davis Street Transfer Station	7.1	9,461	14	30		
9	Georgia Pac Corrug	7.5	10,075	66	63		
10	Berber Food/Mi Rancho	1.0	1,376	39	48		
11	National Construction	1.6	2,201	13	11		
12	Saags Sausage	10.4	13,845	53	10		
13	Safeway Milk Processing Plant	66.6	88,971	1,195	444		
14	San Francisco Foods	5.0	6,674	23	18		
15	Spar Sausage Company	0.5	696	2	1		
16	True World Foods, Inc	1.0	1,390	6	3		
17	Weber's Quality Meats	0.7	941	13	6		
18	Wills Family Favorites	1.6	2,098	10	9		
19	WMT Oyster Bay	18.6	24,812	56	0		
20	Wycen	0.6	792	7	7		
Total		194.5	260,062	2,554	982	1,574	605

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Appendix B: Customer Projected Wastewater Discharge Characteristics

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Table B-2
Average and Annual Wastewater Discharge

	FY19	FY20	FY21	FY22	FY23	FY24
Wastewater Flow, gallons per day/billing unit						
	<u>Current Values</u>					
Residential						
Single family	189	145	145	145	145	145
Multiple family	158	121	121	121	121	121
Commercial						
Auto, Steam cleaning	632	680	680	680	680	680
Bakeries	3,041	74	74	74	74	74
Laundries	1,353	3,024	3,024	3,024	3,024	3,024
Markets & foods	627	1,026	1,026	1,026	1,026	1,026
Mixed Use	700	333	333	333	333	333
Restaurants	896	968	968	968	968	968
All other	485	611	611	611	611	611
Institutional						
Schools	2,546	1,180	1,180	1,180	1,180	1,180
Industrial	26,649	26,649	26,649	26,649	26,649	26,649
Inflow/Infiltration	210,046	210,046	210,046	210,046	210,046	210,046
Wastewater Volume, million gallons						
Residential	<u>FY08</u>					
Single family	1,061	976	748	748	748	748
Multiple family	278	245	187	187	187	187
Commercial						
Auto, Steam cleaning	1.7	14.5	15.6	15.6	15.6	15.6
Bakeries	5.5	3.3	0.1	0.1	0.1	0.1
Laundries	0.7	11.1	24.8	24.8	24.8	24.8
Markets & foods	10.5	7.8	12.7	12.7	12.7	12.7
Mixed Use	0.2	67.6	32.2	32.2	32.2	32.2
Restaurants	27.7	31.7	34.2	34.2	34.2	34.2
All other	253.7	209.2	263.4	263.4	263.4	263.4
Institutional						
Schools	12.9	28.3	13.1	13.1	13.1	13.1
Industrial	195.0	195	195	195	195	195
Inflow/Infiltration	53.6	77	77	77	77	77
Total Wastewater Volume	1,906	1,865	1,603	1,603	1,603	1,603
Water Volume, million gallons						
	<u>Adjustment Factor</u>					
Commercial						
Auto, Steam cleaning	0.800	18.11	19.49	19.49	19.49	19.49
Bakeries	0.800	4.16	0.10	0.10	0.10	0.10
Laundries	1.000	11.11	24.84	24.84	24.84	24.84
Markets & foods	0.920	8.46	13.85	13.85	13.85	13.85
Mixed Use	0.820	82.47	39.25	39.25	39.25	39.25
Restaurants	1.000	31.66	34.20	34.20	34.20	34.20
All other	0.770	271.63	342.11	342.11	342.11	342.11
Institutional						
Schools	0.690	41.08	19.03	19.03	19.03	19.03

Notes:

- 1 Baseline values for single family customers are decreased by 23% from 189 gpd to 145 gpd. Values for multiple family customers are based on 84% of single family values.

Table B-3
Average and Annual Wastewater BOD

	FY19	FY20	FY21	FY22	FY23	FY24
Average Concentration, milligrams / liter	<u>Current Values</u>					
Residential						
Single family	195	300	300	300	300	300
Multiple family	193	300	300	300	300	300
Commercial						
Auto, Steam cleaning	1,000	1,000	1,000	1,000	1,000	1,000
Bakeries	1,000	1,000	1,000	1,000	1,000	1,000
Laundries	450	450	450	450	450	450
Markets & foods	800	800	800	800	800	800
Mixed Use	800	800	800	800	800	800
Restaurants	1,000	1,000	1,000	1,000	1,000	1,000
All other	275	300	300	300	300	300
Institutional						
Schools	200	300	300	300	300	300
Industrial	1,574	1,574	1,574	1,574	1,574	1,574
Inflow/Infiltration	20	20	20	20	20	20
Wastewater BOD Load, thousand pounds						
Residential	<u>FY08</u>					
Single family	1,549	1,587	1,873	1,873	1,873	1,873
Multiple family	405	394	469	469	469	469
Commercial						
Auto, Steam cleaning	16.6	120.8	130.0	130.0	130.0	130.0
Bakeries	46.3	27.8	0.7	0.7	0.7	0.7
Laundries	2.7	41.7	93.2	93.2	93.2	93.2
Markets & foods	70.2	51.9	85.0	85.0	85.0	85.0
Mixed Use	1.1	451.2	214.7	214.7	214.7	214.7
Restaurants	231.2	264.1	285.2	285.2	285.2	285.2
All other	370.2	479.7	659.1	659.1	659.1	659.1
Institutional						
Schools	18.9	47.28	32.86	32.86	32.86	32.86
Industrial	3,708	2,554	2,554	2,554	2,554	2,554
Inflow/Infiltration	1,175	13	13	13	13	13
Total Wastewater BOD	7,602	6,032	6,410	6,410	6,410	6,410

Table B-4
Average and Annual Wastewater SS

	FY19	FY20	FY21	FY22	FY23	FY24
Average Concentration, milligrams / liter	<u>Current Values</u>					
Residential						
Single family	195	320	320	320	320	320
Multiple family	193	320	320	320	320	320
Commercial						
Auto, Steam cleaning	1,000	1,100	1,100	1,100	1,100	1,100
Bakeries	600	600	600	600	600	600
Laundries	240	240	240	240	240	240
Markets & foods	800	900	900	900	900	900
Mixed Use	800	800	800	800	800	800
Restaurants	600	600	600	600	600	600
All other	275	320	320	320	320	320
Institutional						
Schools	200	320	320	320	320	320
Industrial	605	605	605	605	605	605
Inflow/Infiltration	60	60	60	60	60	60
Wastewater SS Load, thousand pounds						
Residential	<u>FY08</u>					
Single family	1,549	1,587	1,998	1,998	1,998	1,998
Multiple family	405	394	500	500	500	500
Commercial						
Auto, Steam cleaning	18.0	120.8	143.0	143.0	143.0	143.0
Bakeries	27.8	16.7	0.4	0.4	0.4	0.4
Laundries	1.4	22.2	49.7	49.7	49.7	49.7
Markets & foods	70.2	51.9	95.6	95.6	95.6	95.6
Mixed Use	1.1	451.2	214.7	214.7	214.7	214.7
Restaurants	138.7	158.4	171.1	171.1	171.1	171.1
All other	370.2	479.7	703.0	703.0	703.0	703.0
Institutional						
Schools	18.9	47.28	35.05	35.05	35.05	35.05
Industrial	1,137	982	982	982	982	982
Inflow/Infiltration	1,140	38	38	38	38	38
Total Wastewater SS	4,885	4,349	4,931	4,931	4,931	4,931

Table B-5
Water Pollution Control Plant Influent Characteristics

Fiscal Year 2017-2018	Measured ⁽¹⁾	Calculated ⁽²⁾	Calculated ⁽²⁾	Measured ⁽¹⁾	Measured ⁽¹⁾	Days in Month
	Flow mg	BOD K lb	SS K lb	BOD mg/l	SS mg/l	
Jul-17	142	519	424	438	358	31
Aug-17	139	521	434	449	374	31
Sep-17	133	570	420	514	379	30
Oct-17	132	563	423	511	384	31
Nov-17	138	584	502	507	436	30
<u>Dec-17</u>	<u>131</u>	524	380	<u>480</u>	<u>348</u>	<u>31</u>
Jan-18	160	627	422	470	316	31
Feb-18	125	490	453	470	435	28
Mar-18	162	551	481	408	356	31
Apr-18	160	528	459	396	344	30
May-18	145	624	481	516	398	31
<u>Jun-18</u>	<u>131</u>	<u>493</u>	<u>440</u>	451	403	<u>30</u>
Total	1,698	6,593	5,319			365
Average Day	4.65	18.06	14.57	466	376	

<u>Inflow/Infiltration Calculation</u>	<u>Flow, mg</u>	<u>Months</u>	<u>mg/Month</u>		
Jan/Mar/Apr average with I/I >	482	3	161		
Monthly average without I/I >	1,216	9	135	Months	Total I/I, mg per year
monthly average I/I >			26	3	76.7

<u>Annual Summary</u>	<u>Flow, mg</u>	<u>BOD, K lb</u>	<u>SS, K lb</u>
Water Pollution Control Plant >	1,698	6,593	5,319
FY18 Customer ⁽³⁾ >	1,527	6,397	4,893
<u>I/I ></u>	<u>77</u>	<u>13</u>	<u>38</u>
Difference from WPCP >	95	184	389
<i>Difference as a % of WPCP ></i>	6%	3%	7%

Notes:

- 1 Measurements of flow, in million gallons; and BOD and SS, in milligrams per liter, were provided by the City.
- 2 Thousand pounds (K lb) was calculated using the formula: million gallons x mg/l x 8.34 [a conversion factor] / 1000.
- 3 Customer data was based on FY18 use.

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Appendix C: Cash Flow Table

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Table C-1
Wastewater Fund 593 FY19 Expenditure Detail

Expense Code	Description	Collection System	WPCP Operations	East Bay Dischargers Authority	East Bay Municipal Utility District
4101	Regular Salaries-General	721,363.03	2,306,724.50	409,626.50	53,059.43
4103	Salaries-Temp/Part	0.00	66,483.61	0.00	0.00
4110	Overtime-General	45,429.94	47,110.58	5,739.60	0.00
4201	FICA/Regular	47,541.16	147,545.96	25,752.70	3,289.68
4210	PERS/General	260,052.00	837,503.41	148,203.35	19,525.87
4220	Health Insurance-General	137,588.42	348,175.26	50,796.44	0.00
4240	Medicare	11,118.50	35,094.62	6,022.81	769.36
4301	Vacancy Savings	-30,577.33	-94,715.95	-16,153.53	-1,916.11
5120	Consulting	0.00	30,000.00	0.00	0.00
5190	Miscellaneous	0.00	65,000.00	0.00	0.00
5240	Construction	0.00	55,000.00	0.00	0.00
5310	Equipment Room-Outside	2,600.00	56,800.00	200.00	0.00
5311	Software Maintenance	0.00	54,190.00	0.00	0.00
5330	Structural R&M	5,000.00	441,650.00	0.00	0.00
5340	Grounds R&M	0.00	28,200.00	0.00	0.00
5360	Laundry Service	2,200.00	9,000.00	0.00	0.00
5420	Electricity	30,000.00	550,000.00	0.00	0.00
5421	Gas	0.00	2,500.00	0.00	0.00
5430	Water	12,000.00	6,000.00	0.00	0.00
5440	Sewer	0.00	292,000.00	0.00	0.00
5450	Refuse	0.00	35,000.00	0.00	0.00
5510	Transportation/Training	2,850.00	22,000.00	0.00	0.00
5520	Memberships	1,000.00	7,300.00	0.00	0.00
5530	Notices/Publications	500.00	5,000.00	0.00	0.00
5540	Subscriptions	0.00	200.00	0.00	0.00
5610	Equipment-Outside	0.00	6,000.00	400.00	0.00
5830	Other Gov't Agency Fees	0.00	201,200.00	0.00	0.00
5890	Miscellaneous	0.00	46,892.00	2,700.00	0.00
6105	Hardware	0.00	7,000.00	100.00	0.00
6120	Electrical	0.00	30,000.00	750.00	0.00
6130	Plumbing & Irrigation	0.00	4,000.00	0.00	0.00
6140	Horticultural	0.00	500.00	0.00	0.00
6180	Fuel & Oil	0.00	25,500.00	0.00	0.00
6190	Miscellaneous	2,000.00	91,425.00	4,898.00	0.00
6210	Books	250.00	500.00	0.00	0.00
6220	Laboratory Supplies	0.00	25,000.00	8,000.00	500.00
6250	First Aid & Safety	0.00	9,000.00	0.00	0.00
6270	Uniforms	3,000.00	14,475.00	0.00	0.00
6290	Miscellaneous	24,150.00	217,000.00	2,000.00	0.00
6310	Postage & Delivery	100.00	500.00	0.00	0.00
6320	Stationary/Envelopes	0.00	6,000.00	0.00	0.00
6330	Forms Printing	0.00	350.00	0.00	0.00
7401	Fixed Assets <\$500	0.00	10,000.00	0.00	0.00
7410	Furniture & Equipment	7,000.00	31,700.00	0.00	0.00
7510	Automotive Equipment	0.00	6,500.00	0.00	0.00
8311	Vehicle R&M	274,246.45	174,849.04	28,904.76	0.00
8315	Information Technology	0.00	149,292.00	0.00	0.00
8320	Buildings R&M	0.00	165,436.31	0.00	0.00
8330	Insurance Services	69,395.03	215,458.59	36,534.66	4,305.05
8350	Administrative Support	0.00	726,109.00	0.00	0.00
	Total	1,628,807.20	7,518,448.93	714,475.29	79,533.28

Source: City of San Leandro Expenditure Budget Detail Fiscal Year 2019 pages 324-350.

Table C-2
 Projected Capital Expenditures

	Budget FY19	Projected					Total FY20-FY24
		FY20	FY21	FY22	FY23	FY24	
Collection System & Plant	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	10,000,000
FY19							
Solar	1,900,000						
As-built	500,000						
Dirt Relocation	6,600,000						
FY20							
Treatment Wetland		3,500,000					3,500,000
FY21							
FFR Demo and disposal			2,000,000				2,000,000
Collection crew dump station			400,000				400,000
FY22							
Lift station replacement				3,500,000			3,500,000
FY23							
Eden Road land purchase and frontage fees					2,500,000		2,500,000
FY24							
Planning and Design for Nutrient caps						1,500,000	1,500,000
Total	#####	5,500,000	4,400,000	5,500,000	4,500,000	3,500,000	23,400,000

Table C-3
Projected Cash Flow

	Budget FY18	Budget FY19	Projected				
			FY20	FY21	FY22	FY23	FY24
Beginning Fund Balance	30,070,299	27,397,504	18,041,376	14,344,216	12,702,073	11,048,699	11,607,926
Revenues							
Sewer Service Charges	12,559,635	12,933,970	13,477,000	14,757,000	16,159,000	17,694,000	19,375,000
Other Revenues	560,000	760,000	767,600	775,276	783,029	790,859	798,768
General Fund Loan Repayment	490,109	504,812	519,957	535,556	551,622	568,171	583,539
Interest Income	189,163	285,000	180,414	143,442	127,021	110,487	116,079
Total	13,798,907	14,483,782	14,944,971	16,211,274	17,620,672	19,163,517	20,873,386
Expenditures							
Collection System	1,513,274	1,628,807	1,677,671	1,728,001	1,779,841	1,833,236	1,888,233
WPCP Operations	6,702,207	6,792,340	6,996,110	7,205,993	7,422,173	7,644,838	7,874,183
Administrative Support	726,109	726,109	747,892	770,329	793,439	817,242	841,759
EBDA	912,619	714,475	735,909	757,986	780,726	804,148	828,272
EBMUD	97,916	79,533	81,919	84,377	86,908	89,515	92,200
Transfers	153,714	132,782	136,765	140,868	145,094	149,447	153,930
Debt Service	2,765,864	2,765,864	2,765,864	2,765,864	2,765,864	2,765,864	2,765,864
Capital Projects	3,600,000	11,000,000	5,500,000	4,400,000	5,500,000	4,500,000	3,500,000
Total	16,471,703	23,839,910	18,642,130	17,853,418	19,274,045	18,604,290	17,944,441
Annual Surplus / (Shortfall)	(2,672,795)	(9,356,128)	(3,697,159)	(1,642,144)	(1,653,373)	559,227	2,928,945
Ending Fund Balance	27,397,504	18,041,376	14,344,216	12,702,073	11,048,699	11,607,926	14,536,871
Debt Service Coverage Ratio							
Net Revenues							
Operating Revenues	13,798,907	14,483,782	14,944,971	16,211,274	17,620,672	19,163,517	20,873,386
Operating O&M	10,105,839	10,074,046	10,376,266	10,687,554	11,008,181	11,338,426	11,678,577
Net Revenues	3,693,069	4,409,736	4,568,705	5,523,720	6,612,491	7,825,091	9,194,809
Debt Service	2,765,864	2,765,864	2,765,864	2,765,864	2,765,864	2,765,864	2,765,864
Coverage Ratio							
Net Revenues	3,693,069	4,409,736	4,568,705	5,523,720	6,612,491	7,825,091	9,194,809
Debt Service	2,765,864	2,765,864	2,765,864	2,765,864	2,765,864	2,765,864	2,765,864
Coverage Ratio	1.34x	1.59x	1.65x	2.00x	2.39x	2.83x	3.32x

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Appendix D: Cost Allocation Tables

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Table D-1
Accounts and Billing Units Revenue by Customer Class

		FY20	FY21	FY22	FY23	FY24
Unit Cost, \$ per Account/Year	<i>from Table 4-2</i>	\$80.45	\$88.09	\$96.45	\$105.62	\$115.65
Accounts/Billing Units						
Residential						
Single family	<i>from Table B-1</i>	14,142	14,142	14,142	14,142	14,142
Multiple family	<i>from Table B-1</i>	363	363	363	363	363
Commercial						
Auto, Steam cleaning	<i>from Table B-1</i>	63	63	63	63	63
Bakeries	<i>from Table B-1</i>	3	3	3	3	3
Laundries	<i>from Table B-1</i>	23	23	23	23	23
Markets & foods	<i>from Table B-1</i>	34	34	34	34	34
Mixed Use	<i>from Table B-1</i>	265	265	265	265	265
Restaurants	<i>from Table B-1</i>	97	97	97	97	97
All other	<i>from Table B-1</i>	1,182	1,182	1,182	1,182	1,182
Institutional						
Schools	<i>from Table B-1</i>	31	31	31	31	31
Industrial	<i>from Table B-1</i>	20	20	20	20	20
Inflow/Infiltration	<i>from Table B-1</i>	not applicable				
Total Accounts		16,221	16,221	16,221	16,221	16,221
Revenue						
Residential						
Single family		\$1,137,653	\$1,245,704	\$1,364,053	\$1,493,629	\$1,635,530
Multiple family		\$29,202	\$31,975	\$35,013	\$38,339	\$41,981
Commercial						
Auto, Steam cleaning		\$5,055	\$5,535	\$6,061	\$6,636	\$7,267
Bakeries		\$241	\$264	\$289	\$317	\$347
Laundries		\$1,810	\$1,982	\$2,170	\$2,376	\$2,602
Markets & foods		\$2,735	\$2,995	\$3,279	\$3,591	\$3,932
Mixed Use		\$21,291	\$23,313	\$25,528	\$27,953	\$30,609
Restaurants		\$7,790	\$8,530	\$9,340	\$10,227	\$11,199
All other		\$95,086	\$104,117	\$114,009	\$124,839	\$136,699
Institutional						
Schools		\$2,454	\$2,687	\$2,942	\$3,221	\$3,527
Industrial		\$1,609	\$1,762	\$1,929	\$2,112	\$2,313
Inflow/Infiltration		not applicable				
Total Account/Billing Units Revenue		\$1,304,925	\$1,428,863	\$1,564,613	\$1,713,241	\$1,876,006

Table D-2
Flow Revenue by Customer Class

		FY20	FY21	FY22	FY23	FY24
Unit Cost, \$ per Million Gallons	<i>from Table 4-2</i>	\$3,315	\$3,630	\$3,974	\$4,352	\$4,766
Flow, Million Gallons						
Residential						
Single family	<i>from Table B-2</i>	748	748	748	748	748
Multiple family	<i>from Table B-2</i>	187	187	187	187	187
Commercial						
Auto, Steam cleaning	<i>from Table B-2</i>	16	16	16	16	16
Bakeries	<i>from Table B-2</i>	0	0	0	0	0
Laundries	<i>from Table B-2</i>	25	25	25	25	25
Markets & foods	<i>from Table B-2</i>	13	13	13	13	13
Mixed Use	<i>from Table B-2</i>	32	32	32	32	32
Restaurants	<i>from Table B-2</i>	34	34	34	34	34
All other	<i>from Table B-2</i>	263	263	263	263	263
Institutional						
Schools	<i>from Table B-2</i>	13	13	13	13	13
Industrial	<i>from Table B-2</i>	195	195	195	195	195
Inflow/Infiltration	<i>from Table B-2</i>	77	77	77	77	77
Total Accounts		1,603	1,603	1,603	1,603	1,603
Revenue						
Residential						
Single family		\$2,481,033	\$2,716,673	\$2,974,773	\$3,257,357	\$3,566,819
Multiple family		\$621,172	\$680,169	\$744,789	\$815,539	\$893,019
Commercial						
Auto, Steam cleaning		\$51,686	\$56,595	\$61,972	\$67,859	\$74,306
Bakeries		\$268	\$293	\$321	\$352	\$385
Laundries		\$82,335	\$90,154	\$98,720	\$108,097	\$118,367
Markets & foods		\$42,224	\$46,234	\$50,626	\$55,435	\$60,702
Mixed Use		\$106,690	\$116,823	\$127,922	\$140,073	\$153,381
Restaurants		\$113,355	\$124,121	\$135,913	\$148,824	\$162,963
All other		\$873,216	\$956,151	\$1,046,991	\$1,146,448	\$1,255,365
Institutional						
Schools		\$43,533	\$47,667	\$52,196	\$57,154	\$62,584
Industrial		\$644,866	\$706,113	\$773,197	\$846,646	\$927,081
Inflow/Infiltration		\$254,137	\$278,274	\$304,711	\$333,657	\$365,356
Total Flow Revenue		\$5,314,513	\$5,819,268	\$6,372,132	\$6,977,443	\$7,640,328

Table D-3
BOD Revenue by Customer Class

		FY20	FY21	FY22	FY23	FY24
Unit Cost, \$ per Thousand Pounds	<i>from Table 4-2</i>	\$459	\$502	\$550	\$602	\$659
BOD, Thousand Pounds						
Residential						
Single family	<i>from Table B-3</i>	1,873	1,873	1,873	1,873	1,873
Multiple family	<i>from Table B-3</i>	469	469	469	469	469
Commercial						
Auto, Steam cleaning	<i>from Table B-3</i>	130	130	130	130	130
Bakeries	<i>from Table B-3</i>	1	1	1	1	1
Laundries	<i>from Table B-3</i>	93	93	93	93	93
Markets & foods	<i>from Table B-3</i>	85	85	85	85	85
Mixed Use	<i>from Table B-3</i>	215	215	215	215	215
Restaurants	<i>from Table B-3</i>	285	285	285	285	285
All other	<i>from Table B-3</i>	659	659	659	659	659
Institutional						
Schools	<i>from Table B-3</i>	33	33	33	33	33
Industrial	<i>from Table B-3</i>	2,554	2,554	2,554	2,554	2,554
Inflow/Infiltration	<i>from Table B-3</i>	13	13	13	13	13
Total Accounts		6,410	6,410	6,410	6,410	6,410
Revenue						
Residential						
Single family		\$858,667	\$940,220	\$1,029,547	\$1,127,347	\$1,234,449
Multiple family		\$214,983	\$235,401	\$257,766	\$282,252	\$309,067
Commercial						
Auto, Steam cleaning		\$59,627	\$65,290	\$71,493	\$78,285	\$85,722
Bakeries		\$309	\$338	\$370	\$406	\$444
Laundries		\$42,743	\$46,803	\$51,249	\$56,117	\$61,449
Markets & foods		\$38,969	\$42,670	\$46,724	\$51,162	\$56,023
Mixed Use		\$98,465	\$107,817	\$118,061	\$129,276	\$141,557
Restaurants		\$130,771	\$143,191	\$156,795	\$171,690	\$188,001
All other		\$302,214	\$330,917	\$362,356	\$396,777	\$434,473
Institutional						
Schools		\$15,066	\$16,497	\$18,065	\$19,781	\$21,660
Industrial		\$1,171,277	\$1,282,521	\$1,404,368	\$1,537,773	\$1,683,868
Inflow/Infiltration		\$5,864	\$6,421	\$7,031	\$7,698	\$8,430
Total BOD Revenue		\$2,938,955	\$3,218,087	\$3,523,824	\$3,858,564	\$4,225,143

Table D-4
SS Revenue by Customer Class

		FY20	FY21	FY22	FY23	FY24
Unit Cost, \$ per Thousand Pounds	<i>from Table 4-2</i>	\$795	\$870	\$953	\$1,043	\$1,142
SS, Thousand Pounds						
Residential						
Single family	<i>from Table B-4</i>	1,998	1,998	1,998	1,998	1,998
Multiple family	<i>from Table B-4</i>	500	500	500	500	500
Commercial						
Auto, Steam cleaning	<i>from Table B-4</i>	143	143	143	143	143
Bakeries	<i>from Table B-4</i>	0	0	0	0	0
Laundries	<i>from Table B-4</i>	50	50	50	50	50
Markets & foods	<i>from Table B-4</i>	96	96	96	96	96
Mixed Use	<i>from Table B-4</i>	215	215	215	215	215
Restaurants	<i>from Table B-4</i>	171	171	171	171	171
All other	<i>from Table B-4</i>	703	703	703	703	703
Institutional						
Schools	<i>from Table B-4</i>	35	35	35	35	35
Industrial	<i>from Table B-4</i>	982	982	982	982	982
Inflow/Infiltration	<i>from Table B-4</i>	38	38	38	38	38
Total Accounts		4,931	4,931	4,931	4,931	4,931
Revenue						
Residential						
Single family		\$1,587,425	\$1,738,193	\$1,903,331	\$2,084,135	\$2,282,137
Multiple family		\$397,441	\$435,189	\$476,534	\$521,802	\$571,375
Commercial						
Auto, Steam cleaning		\$113,678	\$124,475	\$136,300	\$149,248	\$163,427
Bakeries		\$321	\$352	\$385	\$422	\$462
Laundries		\$39,510	\$43,262	\$47,372	\$51,872	\$56,801
Markets & foods		\$75,982	\$83,198	\$91,102	\$99,756	\$109,234
Mixed Use		\$170,657	\$186,865	\$204,618	\$224,056	\$245,342
Restaurants		\$135,989	\$148,904	\$163,051	\$178,540	\$195,502
All other		\$558,705	\$611,768	\$669,890	\$733,525	\$803,213
Institutional						
Schools		\$27,853	\$30,499	\$33,396	\$36,569	\$40,043
Industrial		\$780,559	\$854,694	\$935,895	\$1,024,799	\$1,122,159
Inflow/Infiltration		\$30,488	\$33,384	\$36,555	\$40,028	\$43,831
Total SS Revenue		\$3,918,606	\$4,290,782	\$4,698,431	\$5,144,752	\$5,633,524

Table D-5
Flow, BOD, and SS Revenue by Customer Class

	FY20	FY21	FY22	FY23	FY24
Revenue					
Residential					
Single family	\$4,927,125	\$5,395,087	\$5,907,651	\$6,468,840	\$7,083,405
Multiple family	\$1,233,597	\$1,350,759	\$1,479,089	\$1,619,593	\$1,773,461
Commercial					
Auto, Steam cleaning	\$224,991	\$246,360	\$269,765	\$295,391	\$323,455
Bakeries	\$898	\$983	\$1,077	\$1,179	\$1,291
Laundries	\$164,587	\$180,219	\$197,341	\$216,087	\$236,616
Markets & foods	\$157,174	\$172,102	\$188,452	\$206,354	\$225,959
Mixed Use	\$375,812	\$411,505	\$450,600	\$493,404	\$540,280
Restaurants	\$380,115	\$416,217	\$455,760	\$499,054	\$546,466
All other	\$1,734,134	\$1,898,836	\$2,079,237	\$2,276,751	\$2,493,051
Institutional					
Schools	\$86,453	\$94,664	\$103,657	\$113,504	\$124,287
Industrial	\$2,596,701	\$2,843,327	\$3,113,460	\$3,409,218	\$3,733,107
Inflow/Infiltration	\$290,488	\$318,078	\$348,297	\$381,383	\$417,616
Total Revenue	\$12,172,075	\$13,328,137	\$14,594,387	\$15,980,759	\$17,498,994
Percent of Total Revenue					
Residential					
Single family	40%	40%	40%	40%	40%
Multiple family	10%	10%	10%	10%	10%
Commercial					
Auto, Steam cleaning	2%	2%	2%	2%	2%
Bakeries	0%	0%	0%	0%	0%
Laundries	1%	1%	1%	1%	1%
Markets & foods	1%	1%	1%	1%	1%
Mixed Use	3%	3%	3%	3%	3%
Restaurants	3%	3%	3%	3%	3%
All other	14%	14%	14%	14%	14%
Institutional					
Schools	1%	1%	1%	1%	1%
Industrial	21%	21%	21%	21%	21%
Inflow/Infiltration	2%	2%	2%	2%	2%
Total Percent of Revenue	100%	100%	100%	100%	100%

Table D-6
Wastewater Inflow/Infiltration Allocation by Customer Class

		FY20	FY21	FY22	FY23	FY24
Revenue						
Revenue required from charges	<i>from Table D-5</i>	\$290,488	\$318,078	\$348,297	\$381,383	\$417,616
Number of Units, Accounts/Billing Units	<i>from Table B-1</i>	20,101	20,101	20,101	20,101	20,101
Annual Charge		\$14.45	\$15.82	\$17.33	\$18.97	\$20.78
Accounts/Billing Units						
Residential						
Single family	<i>from Table B-1</i>	14,142	14,142	14,142	14,142	14,142
Multiple family	<i>from Table B-1</i>	4,243	4,243	4,243	4,243	4,243
Commercial						
Auto, Steam cleaning	<i>from Table B-1</i>	63	63	63	63	63
Bakeries	<i>from Table B-1</i>	3	3	3	3	3
Laundries	<i>from Table B-1</i>	23	23	23	23	23
Markets & foods	<i>from Table B-1</i>	34	34	34	34	34
Mixed Use	<i>from Table B-1</i>	265	265	265	265	265
Restaurants	<i>from Table B-1</i>	97	97	97	97	97
All other	<i>from Table B-1</i>	1,182	1,182	1,182	1,182	1,182
Institutional		0	0	0	0	0
Schools	<i>from Table B-1</i>	31	31	31	31	31
Industrial	<i>from Table B-1</i>	20	20	20	20	20
Inflow/Infiltration	<i>from Table B-1</i>	not applicable				
Total Accounts		20,101	20,101	20,101	20,101	20,101
Revenue Allocation to Customer Classes						
Residential						
Single family		\$204,369	\$223,779	\$245,039	\$268,317	\$293,808
Multiple family		\$61,316	\$67,140	\$73,519	\$80,503	\$88,151
Commercial						
Auto, Steam cleaning		\$908	\$994	\$1,089	\$1,192	\$1,305
Bakeries		\$43	\$47	\$52	\$57	\$62
Laundries		\$325	\$356	\$390	\$427	\$467
Markets & foods		\$491	\$538	\$589	\$645	\$706
Mixed Use		\$3,825	\$4,188	\$4,586	\$5,022	\$5,499
Restaurants		\$1,399	\$1,532	\$1,678	\$1,837	\$2,012
All other		\$17,081	\$18,704	\$20,481	\$22,426	\$24,557
Institutional						
Schools		\$441	\$483	\$528	\$579	\$634
Industrial		\$289	\$316	\$347	\$379	\$416
Total		\$290,488	\$318,078	\$348,297	\$381,383	\$417,616

Appendix E: Rates and Charges Tables

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Table E-1
Calculation of Residential Charges

		FY20	FY21	FY22	FY23	FY24
Single family						
Revenue required from charges						
Account and Billing Unit Costs	<i>from Table D-1</i>	\$1,137,653	\$1,245,704	\$1,364,053	\$1,493,629	\$1,635,530
Flow, BOD, SS Costs	<i>from Table D-5</i>	\$4,927,125	\$5,395,087	\$5,907,651	\$6,468,840	\$7,083,405
Inflow/Infiltration Costs	<i>from Table D-6</i>	\$204,369	\$223,779	\$245,039	\$268,317	\$293,808
Total Revenue Requirement		\$6,269,147	\$6,864,570	\$7,516,744	\$8,230,785	\$9,012,743
Number of Units, Accounts/Billing Units	<i>from Table B-1</i>	14,142	14,142	14,142	14,142	14,142
Monthly Charge		\$37.00	\$40.50	\$44.30	\$48.60	\$53.20
Multiple family						
Revenue required from charges						
Account and Billing Unit Costs	<i>from Table D-1</i>	\$29,202	\$31,975	\$35,013	\$38,339	\$41,981
Flow, BOD, SS Costs	<i>from Table D-5</i>	\$1,233,597	\$1,350,759	\$1,479,089	\$1,619,593	\$1,773,461
Inflow/Infiltration Costs	<i>from Table D-6</i>	\$61,316	\$67,140	\$73,519	\$80,503	\$88,151
Total Revenue Requirement		\$1,324,115	\$1,449,875	\$1,587,621	\$1,738,435	\$1,903,593
Number of Units, Billing Units	<i>from Table B-1</i>	4,243	4,243	4,243	4,243	4,243
Monthly Charge		\$26.10	\$28.50	\$31.20	\$34.20	\$37.40

Table E-2
Calculation of Commercial and Institutional Rates and Monthly Charges

		FY20	FY21	FY22	FY23	FY24
Account and Billing Unit Portion						
Account and Billing Unit Costs	<i>from Table D-1</i>	\$136,462	\$149,422	\$163,618	\$179,161	\$196,182
Number of Units, Accounts/Billing Units	<i>from Table B-1</i>	1,696	1,696	1,696	1,696	1,696
Total Monthly Charge		\$6.70	\$7.35	\$8.05	\$8.80	\$9.65
Flow, BOD, SS and I/I Portion						
Revenue required from charges, Flow/BOD/SS						
Commercial						
Auto, Steam cleaning	<i>from Table D-5</i>	\$224,991	\$246,360	\$269,765	\$295,391	\$323,455
Bakeries	<i>from Table D-5</i>	\$898	\$983	\$1,077	\$1,179	\$1,291
Laundries	<i>from Table D-5</i>	\$164,587	\$180,219	\$197,341	\$216,087	\$236,616
Markets & foods	<i>from Table D-5</i>	\$157,174	\$172,102	\$188,452	\$206,354	\$225,959
Mixed Use	<i>from Table D-5</i>	\$375,812	\$411,505	\$450,600	\$493,404	\$540,280
Restaurants	<i>from Table D-5</i>	\$380,115	\$416,217	\$455,760	\$499,054	\$546,466
All other	<i>from Table D-5</i>	\$1,734,134	\$1,898,836	\$2,079,237	\$2,276,751	\$2,493,051
Institutional						
Schools	<i>from Table D-5</i>	\$86,453	\$94,664	\$103,657	\$113,504	\$124,287
Revenue required from charges, Inflow/Infiltration						
Commercial						
Auto, Steam cleaning	<i>from Table D-6</i>	\$908	\$994	\$1,089	\$1,192	\$1,305
Bakeries	<i>from Table D-6</i>	\$43	\$47	\$52	\$57	\$62
Laundries	<i>from Table D-6</i>	\$325	\$356	\$390	\$427	\$467
Markets & foods	<i>from Table D-6</i>	\$491	\$538	\$589	\$645	\$706
Mixed Use	<i>from Table D-6</i>	\$3,825	\$4,188	\$4,586	\$5,022	\$5,499
Restaurants	<i>from Table D-6</i>	\$1,399	\$1,532	\$1,678	\$1,837	\$2,012
All other	<i>from Table D-6</i>	\$17,081	\$18,704	\$20,481	\$22,426	\$24,557
Institutional						
Schools	<i>from Table D-6</i>	\$441	\$483	\$528	\$579	\$634
Metered Water Use, Million Gallons						
Commercial						
Auto, Steam cleaning	<i>from Table B-2</i>	19.49	19.49	19.49	19.49	19.49
Bakeries	<i>from Table B-2</i>	0.10	0.10	0.10	0.10	0.10
Laundries	<i>from Table B-2</i>	24.84	24.84	24.84	24.84	24.84
Markets & foods	<i>from Table B-2</i>	13.85	13.85	13.85	13.85	13.85
Mixed Use	<i>from Table B-2</i>	39.25	39.25	39.25	39.25	39.25
Restaurants	<i>from Table B-2</i>	34.20	34.20	34.20	34.20	34.20
All other	<i>from Table B-2</i>	342.11	342.11	342.11	342.11	342.11
Institutional						
Schools	<i>from Table B-2</i>	19.03	19.03	19.03	19.03	19.03
Rate, \$/100 cubic feet						
Commercial						
Auto, Steam cleaning		\$8.68	\$9.50	\$10.40	\$11.39	\$12.47
Bakeries		\$6.98	\$7.64	\$8.37	\$9.16	\$10.03
Laundries		\$4.97	\$5.44	\$5.96	\$6.53	\$7.15
Markets & foods		\$8.52	\$9.33	\$10.22	\$11.19	\$12.25
Mixed Use		\$7.24	\$7.93	\$8.68	\$9.50	\$10.41
Restaurants		\$8.35	\$9.14	\$10.01	\$10.96	\$12.00
All other		\$3.83	\$4.20	\$4.60	\$5.03	\$5.51
Institutional						
Schools		\$3.42	\$3.74	\$4.10	\$4.49	\$4.91