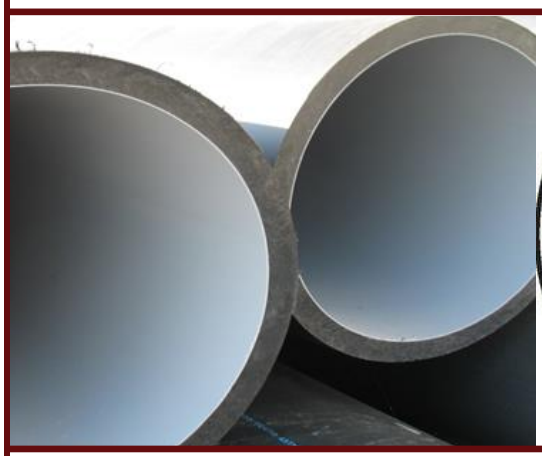

City of Alameda

SEWER RATE STUDY

October 2014, updated February 2015

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October 9, 2014

Bob Haun, Public Works Director
City of Alameda,
2263 Santa Clara Avenue
Alameda, CA 94501

Re: Sewer Rate Study

Bartle Wells Associates is pleased to submit to the City of Alameda the attached Sewer Rate Study. The report presents BWA's analysis of the capital and operating costs of the sewer utility. It lists the assumptions and rate design objectives used in BWA's analysis.

The report recommends updating rates and charges to more accurately recover the costs of providing service to the City's sewer customers. Recommendations were developed with substantial input from City staff.

BWA finds that the sewer rates and charges proposed in our report to be based on the cost of service, follow generally accepted rate design criteria, and adhere to the substantive requirements of Proposition 218. BWA believes that the proposed rates are fair and reasonable to the City's customers.

We enjoyed working with you on the rate study and appreciate the assistance and cooperation of City staff throughout the project. Please contact us if you ever have any future questions about this study and the rate recommendations.

Yours truly,

Doug Dove, CIPFA
Principal

Alison Lechowicz
Senior Financial Analyst

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EXECUTIVE SUMMARY

The City of Alameda (City) has contracted with Bartle Wells Associates (BWA) to conduct a comprehensive review of the City's sewer fund and to recommend new sewer service charges. The City last conducted a sewer rate review in 2010 that recommended rate increases through FY2013. For FY2014 and FY2015, sewer rates were increased by the annual change in the Consumer Price Index (CPI). BWA evaluated sewer funding needs and revenue sources and recommends an annual increase of 3.0% to the sewer service charges. Rates must be adequate to:

- Cash fund sewer pipeline replacements and other capital improvements
- Maintain reasonable and adequate operating and capital reserves
- Meet or exceed debt coverage requirements
- Mitigate impacts on the ratepayers

The most significant source of on-going capital costs is the Sewer Pipeline Replacement Program. The program was initiated in response to direction from the Environmental Protection Agency to reduce inflow and infiltration. The replacement program will be conducted in conjunction with the City's other planned capital projects such as pump station upgrades and manhole repairs.

The City's primary source of sewer fund revenue is the service charges which are collected annually with the Alameda County property taxes. Other revenue sources include "hand-billed" sewer service charges, connection fees, interest earnings, and permit fees. Total FY2015 budgeted annual revenue is $9.6 million. This operating revenue combined with proceeds from the 2012 Sewer Revenue Bonds and existing operating fund reserves is adequate to fund the sewer capital and operating expenses through FY2020 with inflationary rate increases of 3.0%. The City's current sewer service charge for residential customers is $278.76 annually ($23.23 monthly), $250.92 annually ($20.91 monthly) for multi-family customers, and $250.92 annually plus volume charges for commercial customers. BWA projects a rate increase of 3.0% per year through FY2020. See table below:

Table ES-1
Proposed Sewer Service Charges
City of Alameda
Sewer Financial Plan and Rate Study

Customer Class	FY2015 Current	FY2016 Proposed	FY2017 Proposed	FY2018 Proposed	FY2019 Proposed	FY2020 Proposed
% Increase		3.0%	3.0%	3.0%	3.0%	3.0%
Single Family ($/month)	$23.23	$23.93	$24.65	$25.39	$26.15	$26.93
Multi-Family ($/month)	$20.91	$21.54	$22.19	$22.86	$23.55	$24.26
Commercial						
Fixed Charge ($/month) (includes first 730 cubic feet)	$20.91	$21.54	$22.19	$22.86	$23.55	$24.26
Flow-Based Rate ($ per HCF)	$2.88	$2.96	$3.05	$3.14	$3.23	$3.33

HCF = Hundred cubic feet

INTRODUCTION

The City of Alameda (City) contracted with Bartle Wells Associates (BWA) to conduct a comprehensive sewer financial plan and rate study. This report provides recommended rate adjustments and capital financing for the next five year period (FY2016 through FY2020).

Background

The City owns and operates a wastewater collection system that collects and conveys wastewater generated within the City to the East Bay Municipal Utility District (EBMUD) interceptor system, which conveys the flow to EBMUD's Main Wastewater Treatment Plant (MWWTP) located near the eastern terminus of the San Francisco-Oakland Bay Bridge. EBMUD also receives flows from six other "Satellite" collection system agencies: the cities of Albany, Berkeley, Emeryville, Oakland, and Piedmont, and the Stege Sanitary District.

City facilities on the main Alameda island and Harbor Bay Isle include 34 pump stations and about 128 miles of collection lines ranging from 4 inches to 30 inches in diameter. In addition, approximately 14 miles of pipeline and 9 pump stations are located in the City-owned portion of Alameda Point, the former Alameda Naval Air Station. An additional 3 miles of sewers will be transferred from the Navy to the City at a later date after cleanup operations are completed. Currently, revenue for sewer maintenance on the Alameda Point, both the City and Navy owned assets, come from leaseholders and a maintenance contract the City holds with the Navy. As Alameda Point is developed, sewer assets will be renewed, parcel ownership will become private and the sewer system will then be considered part of the main City system. When this occurs, revenue for Alameda Point sewers will transfer to the rate payer system.

The original sewers in Alameda were primarily terra cotta pipe and were installed between 1890 and 1920. The sewers constructed after 1920 can be divided into three major groups based on the date of construction: those built prior to 1950; between 1950 and 1970; and 1970 to the present. In Alameda, the property owner is responsible for maintenance and repair of the entire service lateral from the building drain to the connection to the City's sewer main. However, the City takes responsibility for replacement of the lower portion of the lateral (within the public right-of-way) when the public sewer main to which it is connected is rehabilitated or replaced, or if the lower lateral fails, whichever occurs first.

During large storms, wastewater flows from the Satellite agencies can exceed regional conveyance and sewage treatment capacity. When this occurs, EBMUD diverts and directs the excess flow to three wet weather facilities, designed to store and provide partial treatment prior to discharging to the SF Bay. EBMUD and the Satellite agencies have recently reached a settlement with the Environmental Protection Agency (EPA) regarding the excess wet weather flows and wet weather facility discharges. Each agency has developed plans and programs to reduce I&I flows, reduce sanitary sewer overflows

(SSOs), and repair and replace aging sewer pipelines.[1] Under Final Consent Decree requirements, Alameda will replace three miles of sewer pipeline annually for the next twenty-two years. This work will be conducted in addition to other planned capital improvements. A history of the regulatory events that have impacted the City over the last twenty-six years is shown in Figure 1.

Figure 1 History of Regulatory Action

1987	State Regional Water Quality Control Board (State Board) issued a Cease and Desist Order (CDO) to the Cities of Alameda, Berkeley, Emeryville, Oakland, Piedmont, Albany, EBMUD and Stege Sanitary District - Permission to continue to discharge treated wastewater to the SF Bay was conditioned upon each City adopting a Sewer Compliance Plan, administered under the National Pollution Elimination System (NPDES) Permit - The City's NPDES permit requires participation in regionally administered Infiltration and Inflow Correction Program (I/ICP)
1988	Provision to test private laterals, and repair as necessary, upon property sale was added to the City Municipal Code.
Oct 2003	San Francisco Bay Regional Water Board (Regional Board) passed a resolution that stated its intent to implement new regulations that would uniformly address sanitary sewer overflows (SSOs). The resolution also included a reference to a requirement that all agencies prepare a sewer system management plan (SSMP).
Jul 2005	The Regional Board transmitted a Water Code Section 13267 request to City of Alameda, and all other collection systems in the region, that formally required the preparation of SSMPs.
May 2006	State Board adopted Statewide General Waste Discharge Requirements (WDR) for Sanitary Sewer Systems, Order No. 2006-003-DWQ. WDR required development and implementation of Sewer System Management Plan (SSMP).
Jan 2009	East Bay Municipal District's (EBMUD) NPDES permit no longer allowed the discharge of partially treated sewage from three Wet Weather Facilities that are used when sanitary flows surcharge the capacity of the main treatment plant.
May 2009	EPA issued the City an Administrative Order (AO) for maintenance, operations, and data collection.
Sept 2011	City entered into a Stipulated Order for Preliminary Relief with EPA and the Water Boards to develop measures to address excess wet weather flow and to address unauthorized sanitary sewer overflows.
Sept 2014	City entered into a Final Consent Decree with seven other defendants (Berkeley, Emeryville, Oakland, Piedmont, Albany, EBMUD and Stege Sanitary District), three plaintiffs (EPA and Water Boards) and two intervenors (San Francisco Bay Keeper and Our Childrens Earth Foundation). The multi-decade decree defines the programs and work needed to reach the goals of eliminating discharges from the Wet Weather Facilities and of eliminating SSOs.

[1] Sanitary Sewer Overflows (SSOs) from sewer collection systems throughout California cities and communities have often caused beach closures, pollution of creeks and a threat to public health. A consensus has developed among the public regulatory agencies and municipal sewer agencies that there is a need to develop and implement comprehensive Sewer System Management Plans (SSMP) to prevent or significantly reduce SSOs from public sewer systems.

Sewer Customers

The City serves approximately 19,400 parcels throughout its service area. The majority of customers are single family and multi-family residential units. The City's estimated customer base for FY2015 is shown in Table 1. The customer base is expressed in terms of single-family equivalent dwelling units (EDUs). The City expects significant growth over the next 25 years due to redevelopment of the Naval Air Station.

Table 1
Sewer Customers
City of Alameda
Sewer Financial Plan and Rate Study

Customer Class	Number of Parcels	Number of EDUs	Revenue	% of Revenue
Single Family	14,284	14,065	$3,921,000	41.5%
Multi-Family	4,399	13,865	$3,479,000	36.8%
Commercial	685	5,919	$1,650,000	17.5%
Combination	64	484	$135,000	1.4%
Handbills	22	958	$267,000	2.8%
Total	19,454	35,291	$9,452,000	100.0%

SEWER SERVICE

Sewer Service Fund

The City accounts for the revenues and expenses of sewer service through Fund 602, the Sewer Service Fund. The fund includes subaccounts for operations, other reserves, and the 2012 Sewer Revenue Bond. As shown in Table 2, total sewer reserves for July 1, 2014 is $27.4 million including $6.75 million in remaining bond proceeds. For financial planning purposes, this report combines the three subaccounts into one cash flow.

Table 2
Pipeline Replacement Cost Analysis
City of Alameda
Sewer Financial Plan and Rate Study

Reserve Fund	July 1, 2014
Operating Fund	$18,500,000
Reserve Fund	2,150,000
2012 Sewer Bond Fund	6,750,000
Total	$27,400,000

BWA recommends a minimum operating reserve fund target of 60% of operating and plus one year of pipeline replacement expenditure and one year of debt service. Maintaining a prudent minimal level of fund reserves provides a financial cushion for dealing with unanticipated expenses, revenue shortfalls, and non-catastrophic emergency capital repairs. The fund reserve targets will escalate over time as the utility's expenses gradually increase in future years.

Sewer Rates

Table 3 shows a history of the City's sewer rates for the past 6 years. Since 2010, sewer rates increased by approximately 56%. The City completed its last rate study in 2010 which included annual rate increases of 14% per year for FY2011 to FY2013. For FY2014 and FY2015, the sewer service charges were increased by the annual adjustment in the CPI.

The sewer fixed charges are based on customer type: Single Family, Multi-Family, and Commercial. Residential customers are charged a flat monthly rate at the current monthly charge of $23.23 per dwelling unit. Multi-family residential units are charged 90% of the single family rate at $20.91 per month. The sewer rate for commercial customers is comprised of a flat rate equivalent to the multi-family rate plus a flow-based charge that is billed per each hundred cubic feet (hcf) of metered water use over 7.3 hcf. (One hcf of water is equal to 748 gallons of water.)

Table 3
History of Sewer Service Charges
City of Alameda
Sewer Financial Plan and Rate Study

Customer Class	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015
Single Family ($/month)	$14.91	$17.00	$19.38	$22.09	$22.62	$23.23
Multi-Family ($/month)	$13.42	$15.30	$17.44	$19.88	$20.36	$20.91
Commercial						
Fixed Charge ($/month) (includes first 730 HCF)	$13.42	$15.30	$17.44	$19.88	$20.36	$20.91
Flow-Based Rate ($ per HCF)	$1.84	$2.10	$2.39	$2.73	$2.80	$2.88
Increase		14.0%	14.0%	14.0%	2.4% CPI	2.7% CPI

HCF = Hundred cubic feet
CPI = Consumer Price Index

Revenues

The majority of revenues for the Sewer Service Fund are collected as sewer service charges on the property tax roll. A small portion of customers are directly billed by the City based on estimated sewer flow. Other revenues include connection fees, miscellaneous revenues, and interest earnings from reserves and investments. Total revenues for FY2015 are estimated at $9.6 million.

Expenses

Sewer fund expenses include operating, debt service, and capital improvement costs. Operating costs include personnel services, utilities, materials, supplies, and cost allocation to the City's General Fund for administration. In recent years, operating costs have increased because City staff are assuming a greater role in the Closed Circuit Television (CCTV) inspection, cleaning, and repair of the sewer system. In the past, these services were provided by contractors and budgeted as a capital expense. Operating costs are budgeted as $3.3 million in FY2015 and are projected to increase by 3% per year.

Debt Service

The City's total annual debt service payment is about $1.2 million per year which includes debt service for four outstanding Clean Water State Revolving Fund (SRF) loans and the 2012 Sewer Revenue Bond (2012 bonds). Two of the SRF loans will be paid off in FY2018 which will reduce annual debt service payments to approximately $900,000 beginning in FY2019. Covenants of the 2012 bonds require that the Sewer Fund net revenues (revenues less operating expenses) be equal to or greater than 1.20 times the total annual debt service payment. This covenant is referred to as the debt service coverage ratio in BWA's cash flow projection presented later in this report. The City's debt service payments are shown in Table 4.

Table 4
Sewer Service Fund Debt Service
City of Alameda
Sewer Financial Plan and Rate Study

Outstanding Obligation Original Par Amount	1996 State Water Resources $2,324,502	1998 State Water Resources $2,292,025	1999 State Water Resources $1,051,007	2004 State Water Resources $1,530,442	2012 Sewer Revenue Bonds $14,175,000	Total Annual Payment
FY2015	154,144	148,431	66,889	102,271	722,069	1,193,805
FY2016	154,144	148,431	66,889	102,271	723,719	1,195,455
FY2017	154,124	148,431	66,889	102,271	720,069	1,191,785
FY2018	154,144	148,431	66,889	102,271	718,269	1,190,005
FY2019	0	0	66,889	102,271	720,969	890,129
FY2020	0	0	66,889	102,271	767,169	936,329
FY2021	0	0	0	102,271	766,869	869,140
FY2022	0	0	0	102,271	763,069	865,340
FY2023	0	0	0	102,271	763,769	866,040
FY2024	0	0	0	0	766,169	766,169
FY2025	0	0	0	0	766,919	766,919
FY2026	0	0	0	0	765,219	765,219
FY2027	0	0	0	0	766,494	766,494
FY2028	0	0	0	0	767,319	767,319
FY2029	0	0	0	0	763,381	763,381
FY2030	0	0	0	0	764,700	764,700
FY2031	0	0	0	0	764,956	764,956
FY2032	0	0	0	0	764,131	764,131
FY2033	0	0	0	0	762,856	762,856
FY2034	0	0	0	0	766,056	766,056
FY2035	0	0	0	0	763,731	763,731
Total	$616,557	$593,723	$401,336	$920,443	$15,847,900	$18,379,959

Capital Improvement Program

The City's sewer utility is capital intensive. In FY2015, the sewer utility's total budget is about $13.7 million. About $9.2 million or about two-thirds of the budget is comprised of capital projects that are needed to keep the sewer system in good working order and to meet the clean water requirements set forth by the EPA. The City's capital programs include pipeline replacements, pump station rehabilitation, other capital and maintenance projects, and vehicle and equipment replacement.

Pipeline Replacements

The City is required, per Consent Decree, to replace 2.6 linear miles of sewer pipeline every year for the next twenty-two years or face a fine of $1,000 per day of noncompliance. All the EBMUD satellite agencies are required to complete major overhauls of their collection systems. The City has a targeted replacement rate of 3 miles per year in order to provide for leeway in case of unexpected obstacles or delays.

The City conducted a competitive bid process during FY2014 and selected Ranger Pipelines to conduct the sewer pipeline replacements. Table 5 shows the unit cost per linear foot of pipeline replacement. Other costs associated with the program are the soft costs of City employees providing oversight, administration, and engineering review. The pipeline replacements for FY2015 are estimated at $5.3 million and are escalated by 3% each year beginning in FY2016. The City expects cost increases due to the high demand for pipeline contractors among EBMUD satellite agencies.

Table 5
Pipeline Replacement Cost Analysis
City of Alameda
Sewer Financial Plan and Rate Study

Ranger Pipelines Cost Estimate	FY2015
Total Project Cost	$3,667,150
LF	13,500
$/LF	$271.64
Cost for 2.4 miles	$3,442,200
Cost for 3 miles	$4,302,800
Design, Administration, and Construction Management (15%)	$645,400
Contingency (8%)	$344,200
Total Cost	$5,292,400

Pump Station Rehab

Across the service area, the City owns and maintains 34 pump stations that have an estimated total replacement value of about $15 million. Major pump station rehabilitation projects are planned for FY2015 and FY2016 at an estimated cost of $2.7 million each year. In FY2017 and beyond, BWA budgets an annual sinking fund contribution of $400,000 based on a pump station useful life of 40 years (i.e. $15 million/40 years rounded up). By contributing annually to a sinking fund, the City will have funds available for the eventual repair and replacement of the pump stations.

Other Capital Projects and Capital Maintenance Projects

Other capital projects and capital maintenance projects are detailed in Table 6. Other Capital Projects are estimated at $500,000 for FY2015 and include pavement and manhole repairs and projects related to Phases 8 and 9 of the Sanitary Sewer Master Plan. Capital Maintenance Projects total $609,000 for FY2015 and include pipe and pump station maintenance and sewer point repairs. Both categories of projects are escalated by 3% annually beginning in FY2016.

Table 6
FY2015 Other Capital Improvement Projects and Capital Maintenance Projects
City of Alameda
Sewer Financial Plan and Rate Study

Cost Category	Project Type	Project Name	Expense to Sewer Fund (602)
Other Capital Projects	Streets/ Transportation	Pavement Management FY2014-15	250,000
Other Capital Projects	Sewer	Sanitary Sewer Master Plan, Phases 8 & 9	150,000
Other Capital Projects	Sewer	Manhole Repairs	100,000
Total Other Capital Projects			**$500,000**
Capital Maintenance Projects	Sewer	Sanitary Sewer Pipe Maintenance	97,000
Capital Maintenance Projects	Sewer	Sewer Point Repairs	367,000
Capital Maintenance Projects	Sewer	Sewer Pump Station Maintenance	145,000
Total Capital Maintenance Projects			**$609,000**

Vehicle/Equipment Replacement

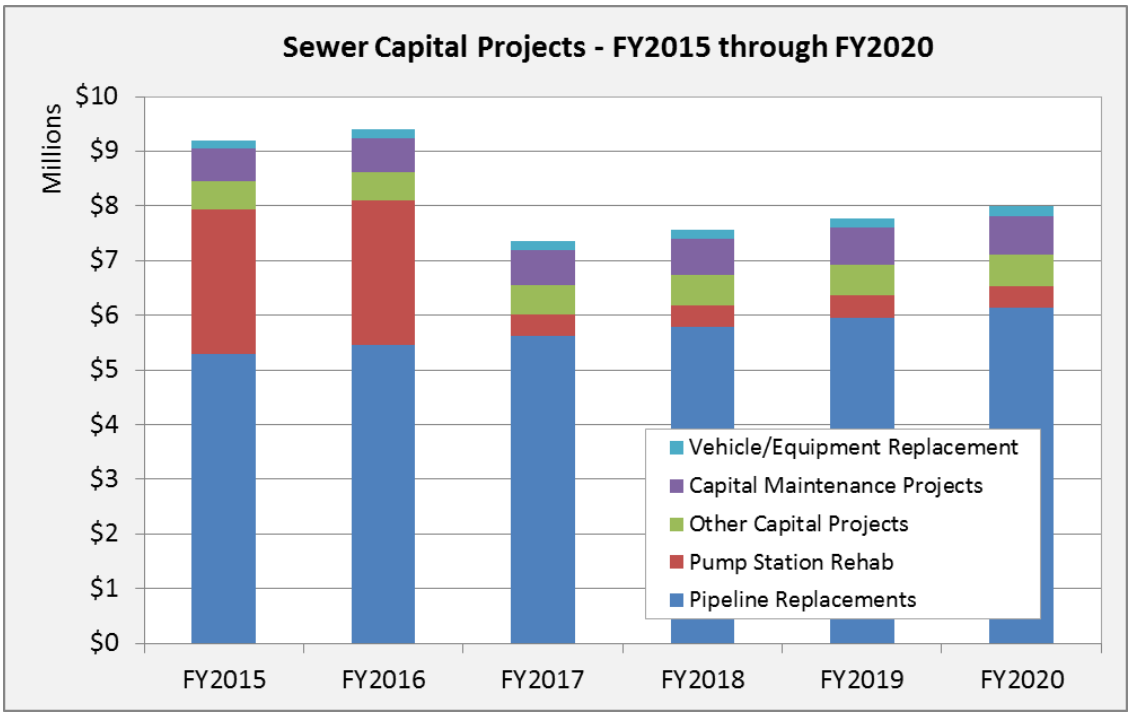
BWA worked closely with the City to inventory and assess the City's sewer vehicles and equipment. The list of assets, the use, quantity, and replacement cost are provided in Table 7. The replacement cost is divided by the useful life to estimate an annual replacement sinking fund contribution. For FY2015, capital replacement costs are projected at $147,000. Replacement costs are escalated by 3% beginning in FY2016.

Table 7
Vehicles and Equipment
City of Alameda
Sewer Financial Plan and Rate Study

Asset	Use	Quantity	Replacement Cost	Useful Life	Annual Replacement Cost
Tractor / Backhoe	Sewer Repairs	1	$105,000	15	$7,000
Tractor / Backhoe (Standby)	Sewer Repairs	1	105,000	15	7,000
Vac-Con Jetter / Vacuum	Sewer Cleaning / Repairs	1	270,000	10	27,000
Vactor Jetter / Vacuum	Sewer and Storm Drain Cleaning	1	225,000	10	22,500
Dump Truck	Sewer Cleaning / Repairs	1	43,000	10	4,300
Dump Truck (Standby)	Sewer Cleaning / Repairs	1	43,000	10	4,300
Flat-Bed Truck F-350	Sewer Cleaning / Repairs	1	43,000	10	4,300
Utility Truck F-450	Sewer Cleaning / Repairs	1	43,000	10	4,300
Utility Truck C-30	Sewer Cleaning / Repairs	1	37,000	10	3,700
Compressor / Jack Hammer	Sewer Repairs	1	22,000	5	4,400
Walk Behind Concrete Saw	Sewer Repairs	1	15,000	5	3,000
Emergency Bypass Pump (with level control unit)	Sewer Cleaning / Repairs	1	77,000	5	15,400
Emergency Bypass Pump (with level control unit and transducer)	Sewer Cleaning / Repairs	1	78,000	5	15,600
CCTV Mainline Camera/ Mobile Van	Sewer/Storm Inspections	1	65,000	10	6,500
Asphalt Roller	Sewer Repairs	1	25,000	15	1,700
Skid Loader w/trailer	Sewer Repairs	1	45,000	15	3,000
Asphalt Truck	Sewer Repairs	1	46,000	10	4,600
Mini-Excavator	Sewer Repairs	1	53,000	10	5,300
Sewer Cameras and Skids	Sewer Maintenance	1	15,000	5	3,000
Total			**$1,355,000**		**$146,900**

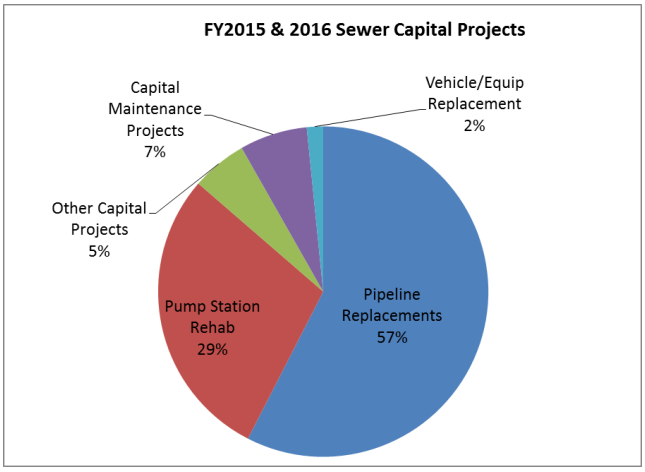
Figure 3 summarizes the sewer utility's total capital expenditures for FY2015 though FY2020. After the major pump station rehabilitation projects are completed in FY2016, capital projects are estimated at over $7 million each year.

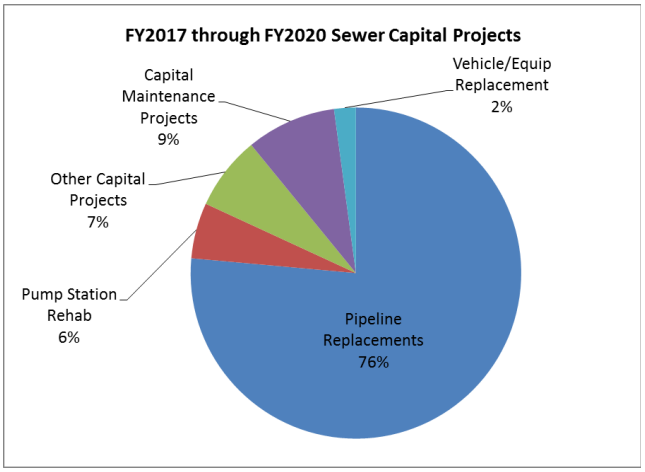
Figure 2



As shown on Figure 3, for FY2015 & FY2016 pipeline replacements account for roughly 57% of all infrastructure needs, followed by pump station rehabilitation which comprises 29% of all capital projects. Beginning in FY2017 once the pump station project is completed, the majority of capital projects will be for pipeline replacements, accounting for 76% of all capital spending.

Figure 3





Cash Flow

BWA developed a twenty-year cash flow projection to determine annual revenue requirements and project sewer rate increases. The financial projections incorporate the latest information available as well as a number of reasonable and slightly conservative assumptions:

Reserves

- The City has about $6.75 million in remaining proceeds from the 2012 Sewer Revenue Bond. The cash flow assumes that the bond proceeds will be spent down over the next two years to fund pipeline replacements.
- BWA recommends the City fund cost increases through a combination of spending down a portion of the operating reserves while phasing in rate increases.
- BWA recommends that the City maintain reserves equal to 60% of operating and plus one year of pipeline replacement expenditure and one year of debt service. The recommended reserve is equal to about $8.5 million in FY2015.

Revenues

- Rate adjustments will take effect on July 1 of each year. The first rate increase will be on July 1, 2015.
- The City anticipates new growth in the upcoming years; however many of the new development projects are still in the planning stages.
- The connection fee charge is projected to increase by 3% each year.
- The interest earning rate on reserve funds is estimated at 1% each year through FY2018 and thereafter increases to 1.5%.

Expenses

- All operating expenses, including Personnel Services, Utilities, Materials & Supplies, and Cost Allocation, are escalated by 3%.
- The base year for capital expenditures is FY2015. Capital projects are escalated by 3% annually thereafter.
- The City will utilize rate revenue and reserves to meet costs. No new debt is projected over the next twenty years.

Table 8 shows the cash flow projection for the next five years, which is the Proposition 218 legal maximum rate horizon. The City's Proposition 218 notice will describe proposed rate increases for the next five years. Rate increases proposed for year six and beyond would be subject to additional Proposition 218 review, noticing, and public hearing requirements. A twenty-year cash flow for the City of Alameda's Sewer Fund is provided in Appendix A.

As shown in Table 8, the Sewer Fund's current reserves exceed BWA's recommended target. Over the next five years, BWA recommends a moderate draw down of reserves (from a $27.4 million beginning balance in FY2015 to an ending balance of $14.9 million in FY2020) coupled with inflationary rate increases.

Table 8
Sewer Fund Projected Cash Flow
City of Alameda
Sewer Financial Plan and Rate Study

	Budget FY2015	Projection FY2016	Projection FY2017	Projection FY2018	Projection FY2019	Projection FY2020
		Year 1	Year 2	Year 3	Year 4	Year 5
Revenue Increase		3.00%	3.00%	3.00%	3.00%	3.00%
Operating Fund	18,500,000	19,723,000	17,481,000	16,063,000	14,687,000	13,726,000
Reserve Fund	2,150,000	2,150,000	2,150,000	2,150,000	2,150,000	2,150,000
2012 Sewer Bond Fund	6,750,000	1,458,000	0	0	0	0
Total Beginning Cash Fund Balance	**$27,400,000**	**$23,331,000**	**$19,631,000**	**$18,213,000**	**$16,837,000**	**$15,876,000**
		1-Jul	1-Jul	1-Jul	1-Jul	1-Jul
Single Family Monthly Rate	$23.23	$23.93	$24.65	$25.39	$26.15	$26.93
Connection Fee	$989.00	$1,019.00	$1,050.00	$1,082.00	$1,114.00	$1,147.00
Customer Growth		175	175	175	175	175
Estimated EDUs	34,333	34,508	34,683	34,858	35,033	35,208
Revenues						
Charges for services	9,452,000	9,909,000	10,259,000	10,621,000	10,993,000	11,378,000
Connection Fees	0	178,000	184,000	189,000	195,000	201,000
Interest	167,000	197,000	175,000	161,000	220,000	206,000
Misc.	5,000	5,000	5,000	5,000	5,000	10,000
Total Revenues	9,624,000	10,289,000	10,623,000	10,976,000	11,413,000	11,795,000
Expenses						
Operating Expenses						
Personnel Services	1,336,000	1,376,000	1,417,000	1,460,000	1,504,000	1,549,000
Utilities, Materials & Supplies	704,000	725,000	747,000	769,000	792,000	816,000
Cost Allocation (G&A)	1,261,000	1,299,000	1,338,000	1,378,000	1,419,000	1,462,000
Total Operating Expenses	3,301,000	3,400,000	3,502,000	3,607,000	3,715,000	3,827,000
Debt Service	1,194,000	1,195,000	1,192,000	1,190,000	890,000	936,000
Debt Service Coverage Ratio	5.30	5.76	5.97	6.19	8.65	8.51
Net Operating Revenues	5,129,000	5,694,000	5,929,000	6,179,000	6,808,000	7,032,000
Capital Expenses						
Pipeline Replacements	5,292,000	5,451,000	5,615,000	5,783,000	5,956,000	6,135,000
Pump Station Rehab	2,650,000	2,650,000	400,000	400,000	400,000	400,000
Other Capital Projects	500,000	515,000	530,000	546,000	562,000	579,000
Capital Maintenance Projects	609,000	627,000	646,000	665,000	685,000	706,000
Vehicle/Equipment Replacement	147,000	151,000	156,000	161,000	166,000	171,000
Total Capital Expenses	9,198,000	9,394,000	7,347,000	7,555,000	7,769,000	7,991,000
Total Expenses[1]	13,693,000	13,989,000	12,041,000	12,352,000	12,374,000	12,754,000
Net Revenues	(4,069,000)	(3,700,000)	(1,418,000)	(1,376,000)	(961,000)	(959,000)
Total Ending Fund Balance	**$23,331,000**	**$19,631,000**	**$18,213,000**	**$16,837,000**	**$15,876,000**	**$14,917,000**
Operating Fund[2]	19,723,000	17,481,000	16,063,000	14,687,000	13,726,000	12,767,000
Reserve Fund	2,150,000	2,150,000	2,150,000	2,150,000	2,150,000	2,150,000
2012 Sewer Bond Fund	1,458,000	0	0	0	0	0
Minimum Operating Fund	8,467,000	8,686,000	8,908,000	9,137,000	9,075,000	9,367,000

1 - Operating, debt service, and capital expenses
2 - Operating fund minimum is 60% of operating, plus one year of pipeline replacement expenditure, and one year of debt service

Proposed Sewer Rates

In order to meet operating costs, maintain financial health, and make the Consent Decree required sewer pipeline replacements, sewer rates must increase. BWA proposes 3.0% annual rate increases beginning in FY2016 through FY2020 to fund the sewer utility's cost of providing service. Sewer rate revenue is only used for the intended purpose of operating and maintaining the sewer system. The proposed sewer rates are shown in Table 9.

Table 9
Proposed Sewer Service Charges
City of Alameda
Sewer Financial Plan and Rate Study

Customer Class	FY2015 Current	FY2016 Proposed	FY2017 Proposed	FY2018 Proposed	FY2019 Proposed	FY2020 Proposed
% Increase		3.0%	3.0%	3.0%	3.0%	3.0%
Single Family ($/month)	$23.23	$23.93	$24.65	$25.39	$26.15	$26.93
Multi-Family ($/month)	$20.91	$21.54	$22.19	$22.86	$23.55	$24.26
Commercial						
Fixed Charge ($/month) (includes first 730 cubic feet)	$20.91	$21.54	$22.19	$22.86	$23.55	$24.26
Flow-Based Rate ($ per HCF)	$2.88	$2.96	$3.05	$3.14	$3.23	$3.33

HCF = Hundred cubic feet

The proposed rates for the City are competitive with other nearby communities, including the City of Berkeley, the City of Oakland, and the City of Albany as shown on Figure 4. Please note that many of these agencies will also be implementing sewer rate increases in the next few years.

Figure 4

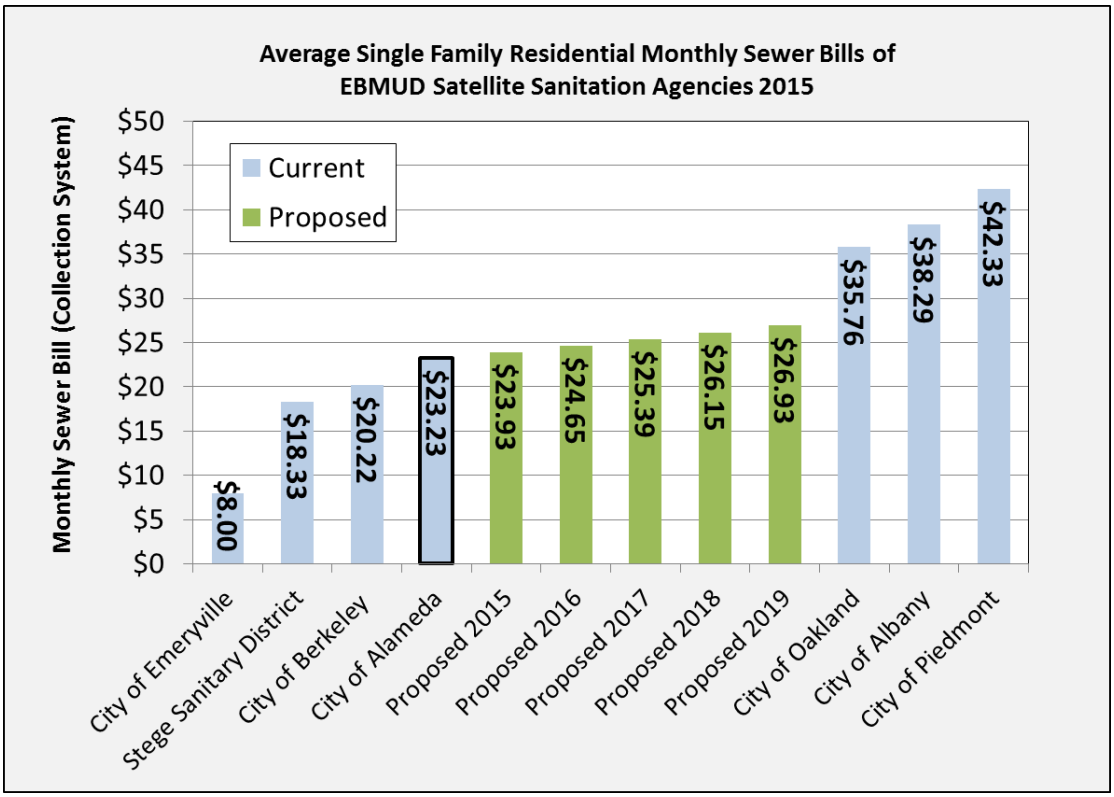


Table 10
Sewer Bill Survey
City of Alameda
Sewer Financial Plan and Rate Study

Agency	Monthly Service Charge (Single-Family Residential)
City of Emeryville[1]	$8.00
Stege Sanitary District	18.33
City of Berkeley[2]	20.22
City of Alameda (current)	23.23
City of Alameda (proposed FY2016)	23.93
City of Alameda (proposed FY2017)	24.65
City of Alameda (proposed FY2018)	25.39
City of Alameda (proposed FY2019)	26.15
City of Alameda (proposed FY2020)	26.93
City of Oakland	35.76
City of Albany	38.29
City of Piedmont[3]	42.33

[1] The City of Emeryville has not raised its sewer service charge since 1997
[2] The service charge is based upon an estimated monthly residential wastewater flow of 6.5 hundred cubic feet per month
[3] Based on a residential parcel size of 0 to 4,999 sq ft

APPENDIX A: 20-Year Cash Flow Projection

Sewer Fund Projected Cash Flow: Years 1-5 (FY2016 to FY2020)
City of Alameda
Sewer Financial Plan and Rate Study

	Budget FY2015	Projection FY2016	Projection FY2017	Projection FY2018	Projection FY2019	Projection FY2020
		Year 1	Year 2	Year 3	Year 4	Year 5
Revenue Increase		3.00%	3.00%	3.00%	3.00%	3.00%
Operating Fund	18,500,000	19,723,000	17,481,000	16,063,000	14,687,000	13,726,000
Reserve Fund	2,150,000	2,150,000	2,150,000	2,150,000	2,150,000	2,150,000
2012 Sewer Bond Fund	6,750,000	1,458,000	0	0	0	0
Total Beginning Cash Fund Balance	**$27,400,000**	**$23,331,000**	**$19,631,000**	**$18,213,000**	**$16,837,000**	**$15,876,000**
		1-Jul	1-Jul	1-Jul	1-Jul	1-Jul
Single Family Monthly Rate	$23.23	$23.93	$24.65	$25.39	$26.15	$26.93
Connection Fee	$989.00	$1,019.00	$1,050.00	$1,082.00	$1,114.00	$1,147.00
Customer Growth		175	175	175	175	175
Estimated EDUs	34,333	34,508	34,683	34,858	35,033	35,208
Revenues						
Charges for services	9,452,000	9,909,000	10,259,000	10,621,000	10,993,000	11,378,000
Connection Fees	0	178,000	184,000	189,000	195,000	201,000
Interest	167,000	197,000	175,000	161,000	220,000	206,000
Misc.	5,000	5,000	5,000	5,000	5,000	10,000
Total Revenues	9,624,000	10,289,000	10,623,000	10,976,000	11,413,000	11,795,000
Expenses						
Operating Expenses						
Personnel Services	1,336,000	1,376,000	1,417,000	1,460,000	1,504,000	1,549,000
Utilities, Materials & Supplies	704,000	725,000	747,000	769,000	792,000	816,000
Cost Allocation (G&A)	1,261,000	1,299,000	1,338,000	1,378,000	1,419,000	1,462,000
Total Operating Expenses	3,301,000	3,400,000	3,502,000	3,607,000	3,715,000	3,827,000
Debt Service	1,194,000	1,195,000	1,192,000	1,190,000	890,000	936,000
Debt Service Coverage Ratio	5.30	5.76	5.97	6.19	8.65	8.51
Net Operating Revenues	5,129,000	5,694,000	5,929,000	6,179,000	6,808,000	7,032,000
Capital Expenses						
Pipeline Replacements	5,292,000	5,451,000	5,615,000	5,783,000	5,956,000	6,135,000
Pump Station Rehab	2,650,000	2,650,000	400,000	400,000	400,000	400,000
Other Capital Projects	500,000	515,000	530,000	546,000	562,000	579,000
Capital Maintenance Projects	609,000	627,000	646,000	665,000	685,000	706,000
Vehicle/Equipment Replacement	147,000	151,000	156,000	161,000	166,000	171,000
Total Capital Expenses	9,198,000	9,394,000	7,347,000	7,555,000	7,769,000	7,991,000
Total Expenses[1]	13,693,000	13,989,000	12,041,000	12,352,000	12,374,000	12,754,000
Net Revenues	(4,069,000)	(3,700,000)	(1,418,000)	(1,376,000)	(961,000)	(959,000)
Total Ending Fund Balance	**$23,331,000**	**$19,631,000**	**$18,213,000**	**$16,837,000**	**$15,876,000**	**$14,917,000**
Operating Fund[2]	19,723,000	17,481,000	16,063,000	14,687,000	13,726,000	12,767,000
Reserve Fund	2,150,000	2,150,000	2,150,000	2,150,000	2,150,000	2,150,000
2012 Sewer Bond Fund	1,458,000	0	0	0	0	0
Minimum Operating Fund	8,467,000	8,686,000	8,908,000	9,137,000	9,075,000	9,367,000

1 - Operating, debt service, and capital expenses
2 - Operating fund minimum is 60% of operating, plus one year of pipeline replacement expenditure, and one year of debt service

Sewer Fund Projected Cash Flow: Years 6-10 (FY2021 to FY2025)
City of Alameda
Sewer Financial Plan and Rate Study

	Projection FY2021	Projection FY2022	Projection FY2023	Projection FY2024	Projection FY2025
	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue Increase	3.25%	3.25%	3.25%	3.25%	3.25%
Operating Fund	12,767,000	11,993,000	11,317,000	10,743,000	10,433,000
Reserve Fund	2,150,000	2,150,000	2,150,000	2,150,000	2,150,000
2012 Sewer Bond Fund	0	0	0	0	0
Total Beginning Cash Fund Balance	**$14,917,000**	**$14,143,000**	**$13,467,000**	**$12,893,000**	**$12,583,000**
	1-Jul	1-Jul	1-Jul	1-Jul	1-Jul
Single Family Monthly Rate	$27.81	$28.71	$29.64	$30.60	$31.59
Connection Fee	$1,181.00	$1,216.00	$1,252.00	$1,290.00	$1,329.00
Customer Growth	200	200	200	200	200
Estimated EDUs	35,408	35,608	35,808	36,008	36,208
Revenues					
Charges for services	11,816,000	12,268,000	12,736,000	13,222,000	13,726,000
Connection Fees	236,000	243,000	250,000	258,000	266,000
Interest	192,000	180,000	170,000	215,000	209,000
Misc.	10,000	10,000	10,000	10,000	10,000
Total Revenues	12,254,000	12,701,000	13,166,000	13,705,000	14,211,000
Expenses					
Operating Expenses					
Personnel Services	1,595,000	1,643,000	1,692,000	1,743,000	1,795,000
Utilities, Materials & Supplies	840,000	865,000	891,000	918,000	946,000
Cost Allocation (G&A)	1,506,000	1,551,000	1,598,000	1,646,000	1,695,000
Total Operating Expenses	3,941,000	4,059,000	4,181,000	4,307,000	4,436,000
Debt Service	869,000	865,000	866,000	766,000	767,000
Debt Service Coverage Ratio	9.57	9.99	10.38	12.27	12.74
Net Operating Revenues	7,444,000	7,777,000	8,119,000	8,632,000	9,008,000
Capital Expenses					
Pipeline Replacements	6,319,000	6,509,000	6,704,000	6,905,000	7,112,000
Pump Station Rehab	400,000	400,000	400,000	400,000	400,000
Other Capital Projects	596,000	614,000	632,000	651,000	671,000
Capital Maintenance Projects	727,000	749,000	771,000	794,000	818,000
Vehicle/Equipment Replacement	176,000	181,000	186,000	192,000	198,000
Total Capital Expenses	8,218,000	8,453,000	8,693,000	8,942,000	9,199,000
Total Expenses[1]	13,028,000	13,377,000	13,740,000	14,015,000	14,402,000
Net Revenues	(774,000)	(676,000)	(574,000)	(310,000)	(191,000)
Total Ending Fund Balance	**$14,143,000**	**$13,467,000**	**$12,893,000**	**$12,583,000**	**$12,392,000**
Operating Fund[2]	11,993,000	11,317,000	10,743,000	10,433,000	10,242,000
Reserve Fund	2,150,000	2,150,000	2,150,000	2,150,000	2,150,000
2012 Sewer Bond Fund	0	0	0	0	0
Minimum Operating Fund	9,553,000	9,809,000	10,079,000	10,255,000	10,541,000

1 - Operating, debt service, and capital expenses
2 - Operating fund minimum is 60% of operating, plus one year of pipeline replacement expenditure, and one year of debt service

Sewer Fund Projected Cash Flow: Years 11-15 (FY2026 to FY2030)
City of Alameda
Sewer Financial Plan and Rate Study

	Projection FY2026	Projection FY2027	Projection FY2028	Projection FY2029	Projection FY2030
	Year 11	Year 12	Year 13	Year 14	Year 15
Revenue Increase	3.00%	3.00%	3.00%	3.00%	3.00%
Operating Fund	10,242,000	10,151,000	10,122,000	10,160,000	10,274,000
Reserve Fund	2,150,000	2,150,000	2,150,000	2,150,000	2,150,000
2012 Sewer Bond Fund	0	0	0	0	0
Total Beginning Cash Fund Balance	**$12,392,000**	**$12,301,000**	**$12,272,000**	**$12,310,000**	**$12,424,000**
	1-Jul	1-Jul	1-Jul	1-Jul	1-Jul
Single Family Monthly Rate	$32.54	$33.52	$34.53	$35.57	$36.64
Connection Fee	$1,369.00	$1,417.00	$1,467.00	$1,518.00	$1,571.00
Customer Growth	200	200	200	200	200
Estimated EDUs	36,408	36,608	36,808	37,008	37,208
Revenues					
Charges for services	14,217,000	14,725,000	15,252,000	15,797,000	16,360,000
Connection Fees	274,000	283,000	293,000	304,000	314,000
Interest	205,000	203,000	202,000	203,000	205,000
Misc.	10,000	10,000	10,000	10,000	10,000
Total Revenues	14,706,000	15,221,000	15,757,000	16,314,000	16,889,000
Expenses					
Operating Expenses					
Personnel Services	1,849,000	1,904,000	1,961,000	2,020,000	2,081,000
Utilities, Materials & Supplies	974,000	1,003,000	1,033,000	1,064,000	1,096,000
Cost Allocation (G&A)	1,746,000	1,798,000	1,852,000	1,908,000	1,965,000
Total Operating Expenses	4,569,000	4,705,000	4,846,000	4,992,000	5,142,000
Debt Service	765,000	766,000	767,000	763,000	765,000
Debt Service Coverage Ratio	13.25	13.73	14.23	14.84	15.36
Net Operating Revenues	9,372,000	9,750,000	10,144,000	10,559,000	10,982,000
Capital Expenses					
Pipeline Replacements	7,325,000	7,581,000	7,846,000	8,121,000	8,405,000
Pump Station Rehab	400,000	400,000	400,000	400,000	400,000
Other Capital Projects	691,000	715,000	740,000	766,000	793,000
Capital Maintenance Projects	843,000	873,000	904,000	936,000	969,000
Vehicle/Equipment Replacement	204,000	210,000	216,000	222,000	229,000
Total Capital Expenses	9,463,000	9,779,000	10,106,000	10,445,000	10,796,000
Total Expenses[1]	14,797,000	15,250,000	15,719,000	16,200,000	16,703,000
Net Revenues	(91,000)	(29,000)	38,000	114,000	186,000
Total Ending Fund Balance	**$12,301,000**	**$12,272,000**	**$12,310,000**	**$12,424,000**	**$12,610,000**
Operating Fund[2]	10,151,000	10,122,000	10,160,000	10,274,000	10,460,000
Reserve Fund	2,150,000	2,150,000	2,150,000	2,150,000	2,150,000
2012 Sewer Bond Fund	0	0	0	0	0
Minimum Operating Fund	10,831,000	11,170,000	11,521,000	11,879,000	12,255,000

1 - Operating, debt service, and capital expenses
2 - Operating fund minimum is 60% of operating, plus one year of pipeline replacement expenditure, and one year of debt service

Sewer Fund Projected Cash Flow: Years 16-20 (FY2031 to FY2035)
City of Alameda
Sewer Financial Plan and Rate Study

	Projection FY2031	Projection FY2032	Projection FY2033	Projection FY2034	Projection FY2035
	Year 16	Year 17	Year 18	Year 19	Year 20
Revenue Increase	3.00%	3.00%	3.00%	3.00%	3.00%
Operating Fund	10,460,000	10,725,000	11,076,000	11,518,000	12,051,000
Reserve Fund	2,150,000	2,150,000	2,150,000	2,150,000	2,150,000
2012 Sewer Bond Fund	0	0	0	0	0
Total Beginning Cash Fund Balance	**$12,610,000**	**$12,875,000**	**$13,226,000**	**$13,668,000**	**$14,201,000**
	1-Jul	1-Jul	1-Jul	1-Jul	1-Jul
Single Family Monthly Rate	$37.74	$38.87	$40.04	$41.24	$42.48
Connection Fee	$1,626.00	$1,683.00	$1,742.00	$1,803.00	$1,866.00
Customer Growth	200	200	200	200	200
Estimated EDUs	37,408	37,608	37,808	38,008	38,208
Revenues					
Charges for services	16,941,000	17,542,000	18,166,000	18,810,000	19,477,000
Connection Fees	325,000	337,000	348,000	361,000	373,000
Interest	209,000	215,000	222,000	230,000	241,000
Misc.	10,000	10,000	10,000	10,000	10,000
Total Revenues	17,485,000	18,104,000	18,746,000	19,411,000	20,101,000
Expenses					
Operating Expenses					
Personnel Services	2,143,000	2,207,000	2,273,000	2,341,000	2,411,000
Utilities, Materials & Supplies	1,129,000	1,163,000	1,198,000	1,234,000	1,271,000
Cost Allocation (G&A)	2,024,000	2,085,000	2,148,000	2,212,000	2,278,000
Total Operating Expenses	5,296,000	5,455,000	5,619,000	5,787,000	5,960,000
Debt Service	765,000	764,000	763,000	766,000	764,000
Debt Service Coverage Ratio	15.93	16.56	17.20	17.79	18.51
Net Operating Revenues	11,424,000	11,885,000	12,364,000	12,858,000	13,377,000
Capital Expenses					
Pipeline Replacements	8,699,000	9,003,000	9,318,000	9,644,000	9,982,000
Pump Station Rehab	400,000	400,000	400,000	400,000	400,000
Other Capital Projects	821,000	850,000	880,000	911,000	943,000
Capital Maintenance Projects	1,003,000	1,038,000	1,074,000	1,112,000	1,151,000
Vehicle/Equipment Replacement	236,000	243,000	250,000	258,000	266,000
Total Capital Expenses	11,159,000	11,534,000	11,922,000	12,325,000	12,742,000
Total Expenses[1]	17,220,000	17,753,000	18,304,000	18,878,000	19,466,000
Net Revenues	265,000	351,000	442,000	533,000	635,000
Total Ending Fund Balance	**$12,875,000**	**$13,226,000**	**$13,668,000**	**$14,201,000**	**$14,836,000**
Operating Fund[2]	10,725,000	11,076,000	11,518,000	12,051,000	12,686,000
Reserve Fund	2,150,000	2,150,000	2,150,000	2,150,000	2,150,000
2012 Sewer Bond Fund	0	0	0	0	0
Minimum Operating Fund	12,642,000	13,040,000	13,452,000	13,882,000	14,322,000

1 - Operating, debt service, and capital expenses
2 - Operating fund minimum is 60% of operating, plus one year of pipeline replacement expenditure, and one year of debt service