

Draft Report



City of Belmont Comprehensive Sewer Rate Study

April 2022





April 6, 2020

Mr. Peter Brown
Director of Public Works
City of Belmont
One Twin Pines Lane
Belmont, California 94002

Subject: City of Belmont 2022 Comprehensive Sewer Rate Study Draft Report

Dear Mr. Brown:

HDR Engineering, Inc. (HDR) is pleased to present the draft report on the comprehensive sewer rate study recently conducted for the City of Belmont (City). The overall objective in conducting the rate study was to establish cost-based rates that provide adequate and sustainable funding for the operational and capital needs of the sewer utility. This report outlines the approach, methodology, findings, and conclusions of the rate study process undertaken for the City's sewer utility.

This report was developed utilizing the City's specific accounting, operating, and historical customer billing records. HDR utilized this information to develop our analyses which shaped our findings, conclusions, and recommendations. At the same time, this study was developed utilizing generally accepted rate setting principles as outlined in the Water Environment Federation Manual of Practice No. 27 rate setting manuals to meet the requirements of Proposition 218. The conclusions and recommendations contained within this report are intended to provide the City with cost-based and equitable rates for its customers.

We appreciate the assistance provided by the City staff, management, and the City Council in the development of this study.

Sincerely yours,
HDR Engineering, Inc.

A handwritten signature in black ink, appearing to read 'Shawn Koorn'.

Shawn Koorn
Associate Vice President



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Proposition 218 Notice



Executive Summary

Introduction

HDR Engineering, Inc. (HDR) was retained by the City of Belmont (City) to perform a comprehensive sewer rate study as an update to the prior rate study which was performed in 2020. The 2020 study set rates for the two year period of Fiscal Years (FY) 2020/2021 and 2021/2022. The City's sewer treatment services are provided for the City through its participation in Silicon Valley Clean Water (SVCW), which owns and operates a sub-regional wastewater treatment plant and related conveyance facilities that serve the City of Belmont, the cities of Redwood City and San Carlos and the West Bay Sanitary District. SVCW costs are allocated proportionally among the JPA members based on their capacity rights, average annual flow rates and strength of the sewer generated by each member agency. The collection system component is based on the costs to operate and maintain the City's sewer system, except for treatment costs. The treatment costs are based on the current treatment costs projections as notified of cost changes by the SVCW.

The City's sewer rate is comprised of two components, a collection system component and a treatment system component. The collection system component is based on the costs to operate the City's sewer system, with the exception of treatment costs. The treatment costs are based on the current treatment costs projections and can be adjusted as the City is notified of cost changes by SVCW. Each parcels' sewer charge is the sum of the base charge and flow charges for both collection and treatment.

The vast majority of the City's rate revenues are derived from residential customers. Currently, the City has two major classes of service: residential and non-residential customers. Non-residential customers are further categorized between low-strength and high-strength customers. The City's sewer rate structure includes a fixed component, as well as a component based on the customers' winter water average consumption. Annually, the City requests the water consumption data from the Mid-Peninsula Water District to develop the proposed sewer rates, and resulting revenue forecast, for the next fiscal year. In the 2016 rate study, it was recommended that the City make adjustments to the winter water calculation that takes into account the mandated conservation on the City's sewer customers. This resulted in the City adopting a drought regulation adjustment on each customer's winter period consumption, or a multiplier, to develop the consumption for rate setting purposes. The consumption data from Mid-Peninsula Water District is reviewed and a determination made as to the level of the drought regulation adjustment. In the 2020 study, adjustment factor was reduced to reflect current consumption patterns. For this study, the adjustment factor was increased from 9% to 10% to reflect the changes in consumption and the planned reduction in consumption due to conservation efforts and the anticipated drought.

This study is based on the previous sewer rate study methodologies and analyses completed by HDR in 2014, 2016, 2018, and 2020. The prior studies, provided recommendations, and rates, to fund an adequate level of renewal and replacement and include funding of capital projects from prior years. This funding/financial plan was updated during the recent issuance of the 2019 JPFA

Sewer Revenue Bond debt to fund a portion of the City’s major capital improvement projects. This study reviews the adequacy of the existing sewer rates to meet system improvement needs, and provide the basis for appropriate rate structures for each customer classification. The projected rate adjustments allow the City to meet three key prudent financial criteria, these are:

- Meeting Debt Service Coverage Ratios (DSC) – DSC ratios are the measurement of a utility’s ability to repay outstanding debt. During this study this was a key driver in the results of the proposed rate adjustments to meet a 2.0 debt service coverage ratio target. The 2.0 debt service coverage target was based on the analysis for the recent 2019 JPFA Sewer Revenue Bond. The proposed rate adjustments in this study allow the City to maintain a strong debt service coverage ratio.
- Adequate Renewal and Replacement Funding – The need to maintain the system is key to minimizing future capital needs. This study has continued with the City’s the annual renewal and replacement funding needs to prudent levels which exceed depreciation over the rate planning period. This reflects the funding needs of past deferred capital improvements and necessary inflow and infiltration (I&I) capital improvement needs.
- Maintaining Prudent Reserve Fund Levels – The study has continued to provide ending reserve fund balances to be in line with typical industry levels (i.e. industry best practices). Given that the City receives semi-annual payments for services, it is important to have sufficient cash reserves on hand to fund operations between payments.

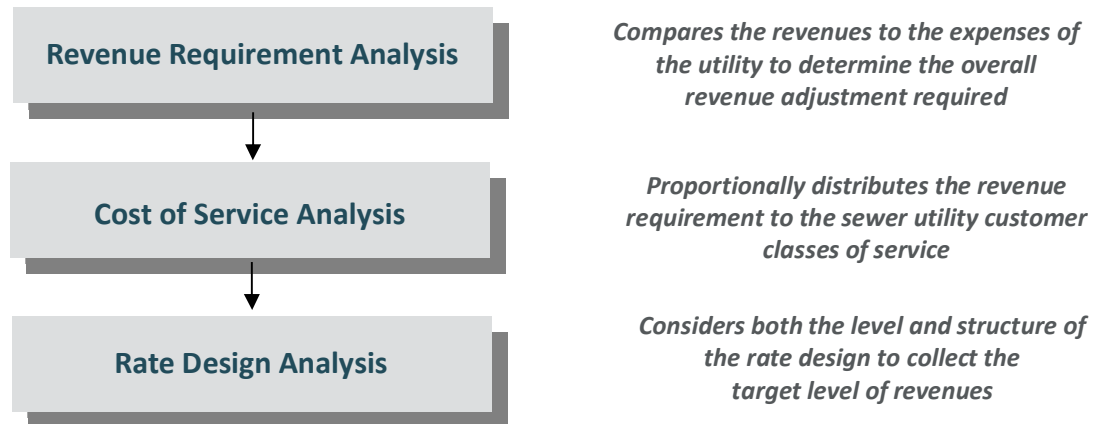
Meeting these three key criteria are critical to the City being able to fund/finance future capital through the issuance of long-term debt. By adjusting rates the City is demonstrating to the outside financial community its willingness and commitment to maintain a strong financial position. This willingness to address this financial issue and adjust rates accordingly will be beneficial when issuing future long-term debt for the sewer systems capital needs.

The development of this study examines the adequacy and proportionality of the current sewer rates for the sewer utility and provides the cost-basis for any recommended sewer rate revenue adjustments. This report describes the overall methodology used to analyze the City’s sewer rates along with the findings, conclusions, and recommendations.

Overview of the Rate Study Process

A comprehensive sewer rate study uses three interrelated analyses to address the adequacy and proportionality of a utility’s rates. These three analyses are a revenue requirement analysis, a cost of service analysis, and a rate design analysis. These three analyses are illustrated below in Figure ES-1.

Figure ES – 1 Overview of the Comprehensive Rate Analyses



For the City’s sewer rate study, HDR completed each of the three analyses, a revenue requirement, cost of service analysis, and rate design analysis. The results from each task of the rate study were used as the basis for establishing cost-based and proportional rates for the City’s customers.

Key Study Results

The sewer utility was financially evaluated on a stand-alone basis. By reviewing the sewer utility individually, the costs (expenses) required to adequately fund both O&M and capital infrastructure must be balanced against the rate impacts to customers. Likewise, future rate impacts should be considered. For example, the delayed action to fund capital improvements in the current time period could result in future higher costs and in turn increased rate adjustments as well as risk associated with catastrophic failure. It is challenging to balance the desire for least cost rates with the operating and capital needs required to provide a high-level service to customers.

Based on the technical analysis undertaken as part of this study, the following findings, conclusions, and recommendations were noted.

- The revenue requirement analysis for the sewer utility was developed for FY 2021/2022 – 2026/2027.
- The starting point for the revenue requirement analysis was the City’s FY 2021/2022 sewer budget and the current capital improvement plan.
- Wastewater treatment is provided by the Silicon Valley Clean Water (SVCW) and included within the City’s operation and maintenance expenses. SVCW FY 2021/2022 budget was escalated annually at approximately 4% annual inflationary factor for future years based on SVCW cost planning projections.
- The current flow adjustment factor has been increased to 10% from the current 9% to reflect anticipated changes in winter water averages for the two year rate setting period.

- Escalation factors were developed to project future years operating expenses. These factors ranged from 2% to 7% per year depending on the specific expense and reflect the inflationary increases experienced by the City in the past.
- The level of repair and replacements were funded at an adequate level as projected in the prior studies, as well as a focus on inflow and infiltration (I&I) capital needs.
- A cost of service analysis was developed to review the proportionality of the existing rates. The results of the cost of service analysis indicated minor some cost differences between the various customer classes of service. However, the differences are minimal and reflect a reasonable range of difference. Given this, it is recommended that no adjustments in the cost relationships between the classes of service be made at this time.
- Proposed rates were developed for consideration by the City Council for FY 2022/2023 and FY 2023/2024.
- Rate projections were developed for a 5-year period through FY 2026/2027, to provide the City Council with a projection of rates necessary to meet future operating and capital needs.
- The proposed rate adjustments are necessary for the City to adequately fund its financial needs and maintain prudent financial measures and operating metrics
 - ✓ Maintain a healthy financial outlook for future long-term borrowing by targeting a 2.0 debt service coverage ratio
 - ✓ Adequate funding of capital improvements from rates to prudently maintain the City's existing infrastructure (i.e., renewal and replacement programs) as well as I&I improvements.
 - ✓ Maintain adequate minimum reserve levels for routine operating and capital needs and emergency situations

Provided below is the executive summary of the technical analyses undertaken for the City and the findings, conclusions, and recommendations of this study.

Overview of the Sewer Rate Study

The sewer rate study determined the overall adequacy of the existing sewer rates, on a financial stand-alone basis, at current rate levels. That is, no funding sources other than those generated by the sewer utility were used to fund sewer utility expenses. For the sewer rate study, a concerted effort was made to minimize rate impacts over the five year review period while also maintaining the City's financial metric's targets for debt service coverage ratio, capital improvement funding, and operating and capital cash reserve levels.

Summary of the Revenue Requirement Analysis

The development of the revenue requirement analysis is used to determine the overall adequacy of the sewer utility rates. The starting point of the sewer revenue requirement analysis was the FY 2021/2022 budget. HDR and City staff developed a projection of revenues and expenses for future years based on assumed escalation (inflationary) factors. The sewer study developed future rate needs based on operating and capital needs, however, the focus for purposes of rate setting was the next two-year period (FY 2022/2023 – 2023/2024). A rate transition plan was developed for the five-year time period in a way that creates a smooth transition to fully funding

the utility in the future. The summary of the sewer revenue requirement is shown below in Table ES-1. It indicates the need for rate adjustments in order to properly fund the sewer utility.

Table ES – 1						
Summary of Sewer Revenue Requirement (\$000s)						
	Budget	Projected				
	2021/22^[1]	2022/23	2023/24	2024/25	2025/26	2026/27
Revenues						
Retail Rate Revenues	\$13,840	\$13,160	\$13,291	\$13,424	\$13,559	\$13,694
Other Revenues	<u>138</u>	<u>244</u>	<u>225</u>	<u>206</u>	<u>247</u>	<u>228</u>
Total Revenues	\$13,979	\$13,404	\$13,516	\$13,631	\$13,806	\$13,922
Expenses						
Collection O&M Expenses	\$4,155	\$4,351	\$4,488	\$4,630	\$4,778	\$4,931
Treatment O&M Expenses	3,387	3,530	3,670	3,990	4,700	4,690
Repair & Replace. Funding	1,900	2,250	2,600	2,950	3,300	3,650
I/I Capital Funding	627	644	661	679	697	716
Total Debt Service	2,502	2,500	2,500	3,479	3,474	3,477
Change in Working Capital +/-	<u>1,407</u>	<u>853</u>	<u>1,099</u>	<u>242</u>	<u>95</u>	<u>661</u>
Total Expenses	\$13,979	\$14,128	\$15,018	\$15,970	\$17,044	\$18,125
Balance/(Deficiency) of Funds	\$0	(\$724)	(\$1,502)	(\$2,339)	(\$3,238)	(\$4,204)
Cumulative as a % of Rates	0.0%	5.5%	11.3%	17.4%	23.9%	30.7%
Proposed Rate Adjustments	0.0%	5.5%	5.5%	5.5%	5.5%	5.5%
Debt Service Coverage Ratio						
Before Rate Adjustment	2.52	2.15	2.09	1.40	1.21	1.20
After Rate Adjustment	2.52	2.44	2.69	2.07	2.14	2.41

[1] Note: FY 2021/22 includes the revenues at the adopted rate levels from the prior rate study. Therefore, no rate adjustment is included in FY 2021/22.

Table ES–1 shows the total deficiency of revenues before any sewer rate adjustments ranges from \$724,000 in FY 2022/23 increasing to \$4.2 million by FY 2026/27. A 5.5% annual sewer revenue adjustment is proposed for the projected time period of FY 2022/2023 through FY 2026/2027. The projected rate adjustments allow the City to meet three key prudent financial metric criteria, these are:

- Meet Prudent Debt Service Coverage Ratios – DSC target of 2.0.
- Adequate Renewal and Replacement Funding – Annual renewal and replacement funding needs exceed depreciation over the 5-year plan as well as I&I capital funding needs.
- Maintain Prudent Reserve Fund Levels – Operating reserve target equal to annual minimum of 180 days of O&M; Capital project reserve target equal to two years of annual depreciation.

The revenue requirement developed in this sewer rate study will allow the City to develop cost-based rates that meet the City’s goals and objectives for maintaining the existing system and funding future capital needs. The rate transition plan developed provides a gradual increase in rates over the 5-year period. While the revenue requirement analysis projected operating and capital needs over a five year period, the focus of the proposed rates, for Proposition 218 purposes is the next two fiscal year period of FY 2022/2023 and FY 2023/2024.

Summary of Cost of Service Analysis

A cost of service analysis determines the proportional distribution of the previously developed revenue requirement to each of the customer classes of service. The objectives of the cost of service analysis are different from determining revenue requirement. A revenue requirement analysis determines the utility's overall financial needs, while the cost of service study determines the proportional manner to collect the revenue requirement. The City has two rate schedules, low strength and high strength. Low strength includes all residential customers, and the non-residential customers that have domestic strength wastewater. High strength is for those non-residential customers that have wastewater strengths greater than domestic strength levels. Table ES-2 provides the summary of the cost of service analysis for the FY 2020/2021 test year.

Table ES – 2 Summary of the FY 2022/23 Sewer Cost of Service Analysis (\$000’s)				
Classes of Service	Present Rate Revenues	Distributed Costs	\$ Difference	% Difference
Low Strength				
Residential and Non-Residential	\$12,858	\$13,565	(\$707)	5.5%
High Strength				
Non-Residential	<u>302</u>	<u>318</u>	<u>(\$17)</u>	<u>5.5%</u>
Total	\$13,160	\$13,883	(\$724)	5.5%

The results of the cost of service analysis indicated no cost differences between the customer classes of service. It should be noted that the cost of service analysis developed by HDR is not a simple fixed/variable analysis. Rather, the cost of service analysis distributes costs between the various customer classes of service based on each customer classes proportional share of volume, strength, and customer-related costs. Given that, no adjustments in the cost relationships between the customer classes of service are recommended at this time.

Summary of the Rate Design Analysis

The final step of the comprehensive sewer rate study process is the design of sewer rates to collect the desired level of revenue, based on the results of the revenue requirement and cost of service analysis. The individual allocated totals were then distributed to the different customer classes. The distributed expenses were then aggregated to determine the overall responsibility of each customer class of service.

Developing proportional rates is of paramount importance in developing the proposed sewer rates. Given this, the City's proposed sewer rates have been developed with the intent of meeting the legal requirements of California constitution article XIII D, section 6 (Article XIII D), commonly referred to as Proposition 218. A key component of Article XIII D is the development of rates which reflect the cost of providing service and are proportionally allocated among the customer classes of service. HDR would point out that there is no single methodology for equitably assigning costs to the various customer groups. The Water Environment Federation (WEF) Manual of Practice No. 27 clearly delineates various methodologies which may be used to establish cost-based rates. Article XIII D does not prescribe a particular methodology for establishing rates; consequently, HDR developed the City's proposed sewer rates based on the WEF MOP #27 methodology and the City's sewer collection system operating and customer characteristics, to meet the requirements of Article XIII D to provide an administrative record of the steps taken to establish the City's proposed sewer rates.

HDR is of the opinion that the proposed rates comply with legal requirements of Article XIII D. HDR reaches this conclusion based upon the following:

- **The revenue derived from sewer rates does not exceed the funds required to provide the property related service (i.e., sewer service).** The proposed rates are designed to collect the overall revenue requirements of the City's sewer utility.
- **The revenues derived from sewer rates shall not be used for any purpose other than that for which the fee or charge is imposed.** The revenues derived from the City's sewer rates are used exclusively to operate and maintain the City's sewer system.
- **The amount of a fee or charge imposed upon a parcel or person as an incident of property ownership shall not exceed the proportional costs of the service attributable to the parcel.** The cost of service analysis was specifically developed to focus on the issue of proportional assignment of costs.

The City's sewer rate is comprised of two components, a collection system component and a treatment system component. The collection system component is based on the costs to operate the City's sewer system, except for treatment costs. The treatment costs are based on the current treatment costs projections and can be adjusted as the City is notified of cost changes by the wholesale provider. Each parcels' sewer charge is the sum of the base charge and flow charges for both collection and treatment. The proposed sewer rate designs maintain their current rate structure.

For the five year rate period, the rates include a 10% flow adjustment factor that replaces the current 9% flow adjustment factor which was updated during the 2020 rate study. Mid-Peninsula Water District consumption billing data for the three year periods of FY 2019/2020 2020/2021, and 2021/2022 billing information was reviewed. Based on this data, along with the projected upcoming drought, the recommendation is to increase the flow adjustment factor from 9% to 10% for the two year rate setting period. The flow adjustment factor will allow the City to maintain sufficient revenues during the proposed rate period of FY 2022/2023 and FY 2023/2024. The flow adjustment factor will be reviewed again during the next rate study and a determination made as to adjust the flow adjustment factor or to eliminate, and restart, the flow adjustment factor.

The same formula for this adjustment will remain as follows: (HCF = 100 cubic feet)

Formula: Actual Volume Usage x (1 + (flow adjustment factor)) = adjusted volume usage

Example: 8 HCF x (1+ .10) = 8.8 HCF adjusted volume usage

Table ES-3 provides the present and proposed rates for the residential and non-residential customers for the next five fiscal years.

Table ES – 3
Present and Proposed Sewer Rates (Annual)

	Present Rates	Proposed Rates FY 2022/23	Proposed Rates FY 2023/24	Forecasted Rates FY 2024/25	Forecasted Rates FY 2025/26	Forecasted Rates FY 2026/27
COLLECTION						
<u>Residential</u>						
Base Charge	\$386.93	\$408.21	\$430.66	\$454.35	\$479.34	\$505.70
Flow Charge (\$/HCF) ^[1]	\$5.51	\$5.81	\$6.13	\$6.47	\$6.83	\$7.20
<u>Non-Residential</u>						
Base Charge	\$386.93	\$408.21	\$430.66	\$454.35	\$479.34	\$505.70
Flow Charge Low Strength (\$/HCF) ^[1]	\$5.51	\$5.81	\$6.13	\$6.47	\$6.83	\$7.20
Flow Charge High Strength (\$/HCF) ^[1]	\$10.70	\$11.29	\$11.91	\$12.56	\$13.26	\$13.98
TREATMENT						
<u>Residential</u>						
Base Charge	\$203.36	\$214.54	\$226.34	\$238.79	\$251.93	\$265.78
Flow Charge (\$/HCF) ^[1]	\$2.72	\$2.87	\$3.03	\$3.19	\$3.37	\$3.55
<u>Non-Residential</u>						
Base Charge	\$203.36	\$214.54	\$226.34	\$238.79	\$251.93	\$265.78
Flow Charge Low Strength (\$/HCF) ^[1]	\$2.72	\$2.87	\$3.03	\$3.19	\$3.37	\$3.55
Flow Charge High Strength (\$/HCF) ^[1]	\$5.30	\$5.59	\$5.90	\$6.22	\$6.57	\$6.93
COMBINED						
<u>Residential</u>						
Base Charge	\$590.29	\$622.76	\$657.01	\$693.14	\$731.27	\$771.49
Flow Charge (\$/HCF)	\$8.23	\$8.68	\$9.16	\$9.66	\$10.20	\$10.76
<u>Non-Residential</u>						
Base Charge	\$590.29	\$622.76	\$657.01	\$693.14	\$731.27	\$771.49
Flow Charge Low Strength (\$/HCF) []]	\$8.23	\$8.68	\$9.16	\$9.66	\$10.20	\$10.76
Flow Charge High Strength (\$/HCF)	\$16.00	\$16.88	\$17.81	\$18.79	\$19.82	\$20.91

At present rates, a typical residential customer with 8 hundred cubic feet of winter water average would have a monthly bill of \$120.96 (8 HCF X 1.09 = 8.72 HCF). Under the proposed rates, with the proposed flow adjustment factor increased to 10%, the same customer would have a monthly bill of \$128.31 in FY 2022/23. The proposed rate adjustment for FY 2021 was 5.5%, however with the flow factor adjustment from 1.09 to 1.10, it results in an overall change to the bill of 6.1%. Table ES-4 shows the average residential bill for FY 2021 through FY 2025.

Table ES – 4
Present and Proposed Sewer Rates (Monthly)

	Proposed FY 2022/23	Proposed FY 2023/24	Forecasted FY 2024/25	Forecasted FY 2025/26	Forecasted FY 2026/27
<i>Proposed Revenue Adjustment</i>	5.5%	5.5%	5.5%	5.5%	5.5%
Present Average Monthly Bill ^[1]	\$120.96				
After Proposed Rate Adj. ^[2]	\$128.31	\$135.36	\$142.80	\$150.66	\$158.95
Monthly Bill Difference	\$7.35	\$7.05	\$7.44	\$7.86	\$8.28
Cumulative Bill Difference	\$7.35	\$14.40	\$21.85	\$29.71	\$37.99
<i>% Change to Monthly Bill</i>	6.1%	5.5%	5.5%	5.5%	5.5%

[1] – Current average bill assumes 9% flow adjustment factor and 8 HCF monthly consumption

[2] –Proposed average bill assumes a 10% flow adjustment factor and 8 HCF monthly consumption

This report provides a more detailed discussion of the sewer rate study revenue requirement, cost of service, and rate design analyses undertaken for the City.

Summary

The adequacy of the City’s sewer rates were reviewed by HDR through the development of a comprehensive sewer rate study. Based upon the analyses developed herein, which included the budgeted operating and capital expenses, HDR has proposed a comprehensive set of revenue recommendations for the sewer utility. The following sections of the report provide a more detailed discussion of the technical analyses undertaken, along with the findings, conclusions, and recommendations of the study.



1.0 Overview of the Rate Setting Process

1.1 Introduction

HDR Engineering, Inc. (HDR) was retained by the City of Belmont (City) to conduct a comprehensive sewer rate study. The objective in conducting a comprehensive sewer rate study is to develop cost-based and proportional rates which adequately fund the City's operation and maintenance (O&M) needs, along with the necessary capital improvements (i.e., capital infrastructure) for the utility. This study determines the adequacy of the existing sewer rates and provides the analytical framework for any needed future adjustments.

1.2 Generally Accepted Rate Setting Principles

As a practical matter, utilities should consider setting their rates around generally accepted or global principles and guidelines. Utility rates should be:

- ✓ Cost-based, equitable, and set at a level that meets the utility's full revenue requirement
- ✓ Easy for the customer to understand and easy for the utility to administer
- ✓ Designed to conform with generally accepted rate setting techniques
- ✓ Stable in their ability to provide adequate revenues to meet the utility's financial, operating, capital infrastructure and regulatory requirements
- ✓ Established at a level that is, from the customer's perspective, stable from year-to-year

These general principles and guidelines have historically been used by the City to establish their current sewer rates. For this study, they were again applied, in the development of the rate analyses developed for the City.

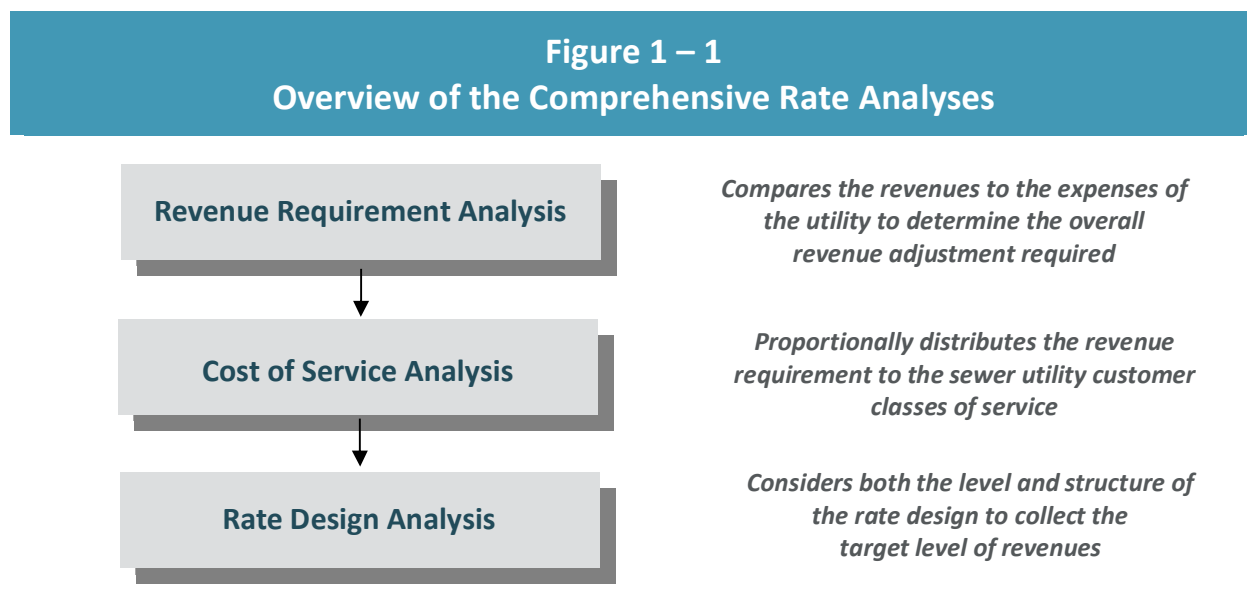
1.3 Prudent Financial Planning

Financial rate-setting policies and guidelines are integral to the process of developing a utility rate study. Financial policies are intended to provide guidance in the financial planning and rate-setting process, and in the day-to-day financial management of the City's utilities. Adoption of financial policies provides a strong foundation for the long-term financial sustainability of the utility and provides the outside financial community with a better understanding of the City's commitment to managing the utility in a financially prudent manner. As a part of the City's previous utility rate studies, key financial and rate-setting policies/targets were developed and established. These key financial policies address issues such as maintaining minimum reserves for cash flow and capital improvement purposes, minimum debt service coverage (DSC) ratios, and consistent and adequate rate funding of capital projects for the City. Each of the key financial planning and rate setting objectives were carried forward from the City's prior sewer rate studies.

“Financial policies are intended to provide guidance in the financial planning and rate-setting process...Adoption of financial policies provides a strong foundation for the long-term financial sustainability of the utility...”

1.4 Overview of the Rate Study Process

A comprehensive study generally consists of three interrelated analyses performed for the sewer utility. Figure 1 - 1 provides an overview of these analyses.



In a comprehensive rate study, the revenue requirement analysis is concerned with the overall funding sources (revenues) and expenses (both operating and capital) of the utility. From this analysis, a determination can be made as to the overall *level* of adjustment to rate revenues. Next, a cost of service analysis is performed to proportionally distribute the revenue requirement to the various types of customers served (e.g., residential, commercial). Finally, given the overall level of revenues to be collected, along with the proportional distribution of those costs, the last step of the rate study process in the design of rates to collect the appropriate level of revenues while considering the other rate design goals and objectives of the utility (e.g. revenue stability, conservation, ease of administration, customer understanding). However, a key component of the study is supporting the requirements of Proposition 218 for the proposed rates while considering rate design goals and objectives.

In the case of the City’s study, all three analyses (revenue requirement, cost of service, rate design) were conducted for the sewer utility. The results from each task of the rate study, were used as the basis for establishing cost-based and proportional rates for the City’s customers.

In developing this study, HDR utilized generally accepted cost of service and rate setting techniques and industry best practices in the development of the City’s sewer rate study.

1.5 Determining the Revenue Requirement

Most public utilities use the “cash basis” methodology for establishing their revenue requirement and setting rates. This revenue requirement methodology conforms to most public utility budgetary requirements and the calculation is easy to understand. Under the cash basis revenue requirement methodology, a public utility:

- ✓ Adds operation and maintenance (O&M) expenses to applicable taxes or transfer payments to determine total operating expenses. Operation and maintenance expenses include the materials, electricity, labor, supplies, etc., needed to keep the utility functioning.
- ✓ Calculates capital costs by adding debt service payments (principal and interest) to capital improvements financed with rate revenues. In lieu of including capital improvements financed with rate revenues, a utility sometimes includes (i.e., substitutes) annual depreciation expense to stabilize the annual revenue requirement from year-to-year.

Note that the two portions of the capital expense component (debt service and capital improvements financed from rates) are necessary under the cash basis methodology because utilities generally cannot finance all their capital facilities with strictly rates or long-term debt.

Under the cash basis revenue requirement methodology the sum of the operating expenses and capital costs equals the utility’s total revenue requirement during any period of time (see Table 1-1).

Table 1 – 1
Overview of the Sewer Utility Cash Basis Revenue Requirements

+	Sewer Operation and Maintenance Expenses
✓	Planning and Project Management
✓	Sanitary Sewer Operations
+	Repair and Replacement Funded from Rates
+	Debt Service (P + I) – Existing and Future
±	<u>Change in Working Capital</u>
=	Total Sewer Revenue Requirement
–	<u>Miscellaneous Revenues</u>
=	Net Revenue Requirement (Balance Required from Rates)

The analyses developed within this report utilized the cash basis methodology. This is consistent with past practices of the City’s utility rate-setting.

1.6 Analyzing the Sewer Cost of Service

After the total revenue requirement is determined, it is then distributed to the users (i.e., customers) receiving sewer service. The proportional distribution, as analyzed through a cost of service analysis, reflects the cost relationships for collecting and treating wastewater. The approach for establishing the cost of service analysis is based on the Water Environment Federation Manual of Practice No. 17 (WEF MOP 27). As discussed in the manual, a cost of service analysis requires three analytical steps. A cost of service analysis requires three analytical steps:

1. Costs are *functionalized* or grouped into the various cost categories related to providing service (e.g., for pumping; treatment, collection, etc.). This step is largely accomplished by the utility’s accounting system.
2. The functionalized costs are then *allocated* to specific cost components. Allocation refers

to the arrangement of the functionalized data into cost components. For example, sewer utility's costs are typically allocated as volume, strength (BOD/TSS), or customer-related.

3. Once the costs are allocated to the cost components, they are proportionally *distributed* to the customer classes of service (e.g., residential, non-residential, high-strength). The distribution is based on each customer class' relative contribution to the cost component (i.e., benefits received from and burdens placed on the system and its resources). For example, customer-related costs are distributed to each class of service based on the total number of customers in that class of service. Once costs are distributed, the revenues from each customer class of service required to achieve cost-based rates can be determined.

At the conclusion of the cost of service study, two key pieces of information are provided. First, the cost of service provides an understanding of the total revenues to be collected from each class of service. In other words the revenue requirement is, for example, \$10.0 million and the cost of service provides an proportional method to distribute that total cost of \$10.0 between the various sewer customer classes of service (e.g., residential, non-residential). The other important piece of information provided by the cost of service analysis is the average unit costs. Average unit costs are the distributed costs divided by the appropriate consumption (billing) units. This provides an understanding of the cost on a \$/customer/month and \$/hundred cubic feet (HCF) basis.

1.7 Designing Sewer Rates

The design of the proposed sewer rates for adoption by the City concludes the analytical portion of the rate study process. In designing proposed sewer rates, the results from both the revenue requirement and cost of service analysis is used to develop rates that achieve the overall goals and objectives of the City. These goals and objectives may include consideration of cost-based rates, but may also consider items such as ability to pay, continuity of past rate philosophy, conservation (efficient use), encouragement of economic development, ease of customer understanding and billing administration, legal requirements, etc. It is important to understand that cost of service is only one goal or objective in designing final sewer rates, however, it is an important one, and necessary to meet the proportionality requirements of Proposition 218.

1.8 Summary

This section of the report has provided a brief introduction to the general principles, techniques, and economic theory used to set sewer utility rates. These principles and methodologies have been the basis for the City's past utility rate studies and continue to be the basis for the City's current rate study. The next three sections of the report discuss the sewer utility rate study and the technical analyses undertaken.



2.0 Development of the Sewer Revenue Requirement

2.1 Introduction

This section of the City’s rate study report discusses the development of the sewer revenue requirement analyses and proposed sewer rate transition plan. The main objectives of the sewer rate study is to develop cost-based sewer rates while attempting to minimize the impacts to the utility’s customers. Provided below is a detailed discussion of the revenue requirement, along with our findings, conclusions and recommendations.

2.2 Determining the Sewer Utility Revenue Requirement

The starting point of the sewer revenue requirement analysis was the FY 2021/2022 budget. HDR developed a projection of revenues and expenses for future years based on assumed escalation (inflationary) factors. The sewer study developed future rate needs based on operating and capital needs over a five-year period, through FY 2026/2027. However, the focus for purposes of rate setting was the next two-year period (FY 2022/2023 and FY 2023/2024). A rate transition plan was developed to provide a smooth transition to fully funding the sewer utility over the long-term.

The sewer capital funding plan was developed from the City’s CIP plan as the starting point. That plan assumed the issuance of long-term debt to fund a portion of the City’s major capital improvement projects. This study updated the capital improvement funding analysis based on the City’s current capital plan and funding approach. As part of this, the City is anticipating the need to issue additional long-term debt to fund necessary capital improvements. A key consideration in issuing long-term debt is the establishment of rates sufficient to support repayment of the debt, but also sufficient to meet rate covenants associated with the debt (e.g., reserves, minimum debt service coverage). This study includes a transition to continue to strengthen the level of renewal and replacement and capital project funding over the 5-year planning period.

2.2.1 Determining the Time Period and Methodology

The first step in calculating the revenue requirement for the sewer utility was to establish a time frame for the revenue requirement analysis. For this study, the revenue requirement was developed from FY 2021/2022 to 2026/2027, with the focus for rate setting purposes of FY 2022/2023 and FY 2023/2024. Reviewing a multi-year time period is recommended in an attempt to identify any major expenses that may be on the horizon. By anticipating future financial requirements, the City can begin planning for these changes sooner, thereby minimizing short-term rate impacts and overall long-term rates.

The second step in determining the revenue requirement for the City was to decide on the basis of accumulating costs. For the City’s revenue requirement, a “cash basis” approach was utilized. The cash basis approach is the most commonly used methodology by municipal utilities to set their revenue requirement, and the method used in previous rate studies developed for the City by HDR. The actual revenue requirement developed for the City was customized to follow the

City’s system of accounts (budget documents). However, even with these modifications, the City’s sewer revenue requirement still contains the basic cost components of a cash basis methodology. Table 2-1 provides a summary of the cash basis approach used to develop the City’s sewer revenue requirement.

Table 2 – 1
Overview of the Cash Basis Revenue Requirements

+	Collection O&M Expenses
+	Treatment O&M Expenses
+	Repair & Replacement Funded from Rates
+	I/I Capital Funding
+	Debt Service (P + I) – Existing and Future
<u>±</u>	<u>Change in Working Capital</u>
=	Total Sewer Revenue Requirement
<u>-</u>	<u>Miscellaneous Revenues</u>
=	Net Revenue Requirement (Balance Required from Rates)

Given a time period around which to develop the revenue requirement and a method to accumulate the costs; the focus shifts to the development and projection of the revenues and expenses of the sewer utility.

The primary financial inputs in the development of the revenue requirement were the City’s 2021/2022 adopted operating budget, historical winter data customer characteristics (e.g., customer number and average winter consumption), and current adopted rates. Presented below is a detailed discussion of the steps and key assumptions contained in the development of the projections of the City’s sewer revenues and expenses.

2.2.2 Flow Impacts on Calculating Revenues

The City has a sewer rate structure that includes a fixed component as well as a volumetric component based on the customers’ winter water average consumption. Each year, the City requests the water consumption data from the Mid-Peninsula Water District to develop the proposed sewer rates, and resulting revenue forecast, for the next fiscal year. The City adopted a drought regulation factor during the 2016 rate study, which is now called the flow adjustment factor. This adjustment factor has been in place since that time. However, during the comprehensive rate study process the factor is updated to reflect current, and projected, consumption levels.

The flow adjustment factor was reviewed and adjusted based on billing flow data (average winter months) for the last three years. Mid-Peninsula Water District consumption for the winter period of FY 2019/2020 2020/2021, and 2021/2022 billing information (data is one year lag in billing data) was reviewed. Given the recent consumption patterns, current drought conditions and expected continuation of the drought conditions, and Mid-Pen outlining additional conservation

plans, the flow adjustment factor was increased to 10%. Table2-2 shows a summary of the average of the three years of winter flow average and the projected flow for FY 2022/2023.

Table 2 – 2 Summary of the Winter Water Flow Adjustment					
Component	2019/20	2020/21	2021/22	Average	Estimated 2022/23
Billed Winter Flow HCF ^[1]	794,305	722,463	807,524	774,764	722,463
% Adjustment Factor	<u>14%</u>	<u>9%</u>	<u>9%</u>		<u>10%</u>
Total HCF	905,508	787,485	880,202	857,731	794,710

[1] HCF = hundred cubic feet

By making this flow factor adjustment to the sewer billing units, the City will be projected to maintain target revenues during this next two year period as customer winter water is impacted by drought conditions, possible changes in the COVID pandemic, and future conservation efforts by Mid-Pen. Absent an adjustment to consumption levels, the City will need to adjust rates higher to reflect the reduced consumption levels. The flow adjustment factor will allow the City to maintain sufficient revenues during the next two year period given continued changing winter water consumption levels. The flow adjustment factor will be reviewed again during the next rate study and adjusted at that time, or depending on conditions, reset and rates set at adequate levels assuming no flow adjustment factor. The same formula for this adjustment will remain as follows (HCF = 100 cubic feet):

Formula: Actual Volume Usage x (1 + (flow adjustment factor)) = adjusted volume usage

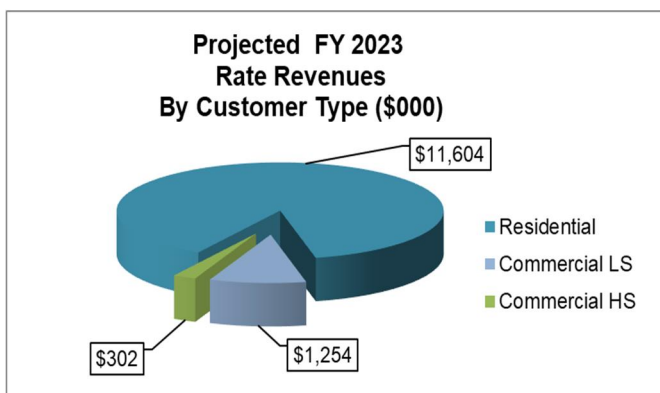
Example: 8 HCF x (1+ .10) = 8.80 HCF adjusted volume usage

It should also be noted that the majority of the City’s costs are fixed and do not vary depending on the level of sewer flows. The one cost that would vary is the cost of treatment from the Silicon Valley Clean Water (SVCW). The cost of treatment is flow based and would change as a result of decreased sewer flows. Given all of the above, a decline in annual winter water consumption, which is the basis for establishing sewer billing units and subsequent sewer rate revenues, will have an impact on the necessary rate adjustment to prudently fund the City’s operating and capital expenses.

2.2.3 Projection of Sewer Revenues

Once the billing units were developed based on the winter water data, the next step in developing the revenue requirement was to develop a projection of rate revenues, at present rate levels. In general, this process involved developing projected billing units for each customer group. The billing units for each customer group were then multiplied by the applicable current sewer rates. This method of independently calculating revenues assures the projected revenues used within the analysis tie to the projected billing units.

The vast majority of the City’s rate revenues are derived from residential customers. Currently, the City has two major classes of service: residential and non-residential customers. Non-residential customers are further categorized between low-strength and high-strength customers. In total, and at currently adopted rate levels, the City is projected to receive approximately \$13.2 million in rate revenue in FY 2022/2023. This is based on the projected winter water billing data, plus the flow adjustment factor of 10%. Future years are projected at an additional 1.0% annual customer growth.



In addition to rate revenues, the City also receives a variety of miscellaneous revenues which includes interest on investments, charge back revenues, standby fees, and other miscellaneous revenues. The utility is projected to annually receive approximately \$230,000 in miscellaneous revenues over the projected planning horizon.

On a combined basis, taking into account the rate revenues along with miscellaneous revenues, the City’s total projected revenues are expected to be approximately \$13.4 million in FY 2022/2023 increasing to approximately \$13.9 million in FY 2026/2027.

2.2.4 Projection of Sewer Operation and Maintenance Expenses

Operation and maintenance (O&M) expenses are incurred by the City to operate and maintain the existing plant in service. In general, O&M expenses are grouped into a number of different major functional categories (see Table 2-1). For each major functional category, the City maintains a number of subaccounts. To begin the process of projecting O&M expenses over the planning horizon, escalation factors were developed.

Escalation factors were developed for the basic types of expenses the City incurs: labor, benefits, materials and supplies, utilities, insurance, and miscellaneous expenses. The escalation factors used were in the range of two to seven percent per year, depending on the type of cost and recent inflationary trends. A major cost for the sewer utility is the cost of wastewater treatment from Silicon Valley Clean Water (SVCW). SVCW’s costs have been increasing due to their recent major capital projects, but also because of their operating cost associated with regulatory and utility cost increases. SVCW costs are allocated proportionally among the JPA members based on their capacity rights, average annual flow rates and strength of the sewer generated by each member agency. The SVCW budget for FY 2022/2023, for Belmont, of \$3.5 million in treatment costs was included in the study. The SVCW treatment costs was based on SVCW planning document and is increasing at approximately 4.7% annually over the five year period.

Provided below in Table 2-3 is a summary of the escalation factors used to develop the projected O&M expenses for FY 2022/2023 through 2026/2027.

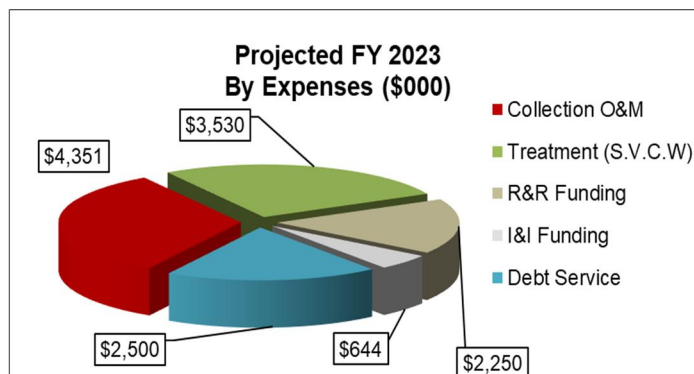
**Table 2 – 3
Overview of the Sewer Utility Escalation Factors**

	FY 2022/23 ^[1]	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
Revenues					
Rate Revenues (Growth)	0.0%	1.0%	1.0%	1.0%	1.0%
Other Revenues	N/A	N/A	N/A	N/A	N/A
Expense					
Labor	2.0%	2.0%	2.0%	2.0%	2.0%
Professional/Contractual	2.0%	2.0%	2.0%	2.0%	2.0%
Data Processing	3.0%	3.0%	3.0%	3.0%	3.0%
Benefits – Medical	7.0%	7.0%	7.0%	7.0%	7.0%
Benefits – Other	5.3%	5.3%	5.3%	5.3%	5.3%
Materials & Supplies	3.0%	3.0%	3.0%	3.0%	3.0%
Equipment/Vehicles	3.0%	3.0%	3.0%	3.0%	3.0%
Education/Training	2.0%	2.0%	2.0%	2.0%	2.0%
Indirect Expense	3.0%	3.0%	3.0%	3.0%	3.0%
Miscellaneous	3.0%	3.0%	3.0%	3.0%	3.0%
Utilities	5.0%	5.0%	5.0%	5.0%	5.0%
SVCW Treatment	4.2%	4.0%	8.7%	17.8%	-0.2%
Inflation Factor	2.7%	2.7%	2.7%	2.7%	2.7%

[1] Rate revenue for FY 2022/2023 was based on the projected billing units and current adopted sewer rates. Other revenues were calculated.

The development of the revenue requirement was based on the City’s FY 2021/2021 adopted budget. Using the escalation factors developed in Table 2 - 3, a forecast of future O&M expenses was developed. As noted, the SVCW treatment costs were based on the projection provided by SVCW. The revenue requirement maintained the overall functional nature of the City’s system of accounts (i.e., salaries and wages, benefits, supplies). It should be noted that no other significant changes or extraordinary increases over the FY 2021/2022 budget levels for operating expenses were assumed.

Total operation and maintenance expenses for the City are projected to be approximately \$7.9 million in FY 2022/2023. Of this amount, approximately 45% or \$3.5 million is related to SVCW wastewater treatment costs. The SVCW wastewater treatment costs are purchased services and are thus not a “locally controlled” sewer



cost. Over the planning horizon, the O&M expenses are projected to increase to approximately \$9.6 million by FY 2026/2027.

2.2.5 Projection of Sewer Capital Improvement Projects and Funding

A key component in the development of the City’s sewer revenue requirement was properly funding capital improvement needs. The sewer capital funding plan was developed from the City’s current capital improvement plan and ongoing master plan. The current plan assumes the issuance of long-term debt to fund a portion of the City’s major capital improvement projects. To fund the identified necessary capital improvements, long-term debt is issued in FY 2024/2025 and FY 2027/2028 in the amount of \$15 million for both issuances. A key consideration in issuing debt is the establishment of rates sufficient to support repayment of the debt, but also sufficient to meet rate covenants associated with the debt (e.g., minimum reserves, minimum debt service coverage ratios).

As noted, the prior rate studies, and this rate study, focused on setting proposed rates at a level that establishes a prudent funding level for renewal and replacement needs above annual depreciation expense. This study includes a transition to continue to strengthen the level of renewal and replacement and capital project funding over the 5-year planning. Renewal and replacement funding is approximately \$2.25 million in FY 2022/2023 increasing to \$3.65 million in FY 2026/2027.

In addition to the sewer capital plan, additional capital improvements have been outlined to reduce inflow and infiltration (I&I) in the sewer system. I&I rate funded capital is \$644,000 in FY 2022/2023 increasing to \$716,000 in FY 2026/2027. Shown below in Table 2–4 is a summary of the sewer capital improvement plan and funding.

Table 2 - 4 Summary of the Sewer Capital Improvement Plan (\$000s)					
	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
Total Sewer Capital Projects	\$8,055	\$8,260	\$7,935	\$8,335	\$8,535
Less: Funding Sources					
Operating Fund Reserves	\$0	\$0	\$0	\$0	\$0
Capital Fund Reserves ^[1]	5,805	5,660	4,985	5,035	4,885
Grants	0	0	0	0	0
<i>Total Funding Sources</i>	\$5,805	\$5,660	\$4,985	\$5,035	\$4,885
Sewer Capital from Rates	\$2,250	\$2,600	\$2,950	\$3,300	\$3,650
I&I Capital Funding	\$644	\$661	\$679	\$697	\$716

[1] Capital fund reserves are funded through periodic issuances of long-term debt

The City, based on the rate transition plan developed as part of this revenue requirement, is projected to have adequate resources to provide funding for these capital projects. Provided

below is an overview of the funding sources the City has used, and will continue to use, to fund the planned improvements over the next five-year period.

Rate Funding - A general financial guideline states that, at a minimum, a utility should annually fund from rates an amount equal to or greater than annual depreciation expense for renewal and replacement funding. In this case, annual depreciation expense reflects the City's current investment in sewer collection plant being depreciated or "losing" its useful life. Therefore, this portion of plant investment needs to be replaced to maintain the existing level of infrastructure. More importantly, for a sewer utility, a failure to maintain the collection system infrastructure could lead to infiltration and inflow (I&I) issues. With increased flows, the City's overall cost of wastewater treatment would, in turn, also increase. That being the case, it becomes very cost-effective to properly and adequately maintain the collection system in order to minimize I&I issues on the system. The City has taken a pro-active approach in past studies and in this analysis to maintain capital funding equal to greater than annual depreciation.

Capital Reserve Funding – The capital reserve can serve different purposes but capital reserves are primarily a means to set aside funds for larger capital projects that may require funding greater than the annual rate funding component provides. Maintaining adequate capital reserves help to smooth out the fluctuations in the capital improvement spending, but it also provides the City with greater financial flexibility during the planning and construction of the projects. As part of the current capital funding plan, there will be approximately \$41.1 million in capital projects over the five year period, with an annual average ending cash balance of \$7.8 million in capital reserves used as a funding source over the five-year rate setting period (2021 – 2025). Over the planning horizon, close attention should be given to the capital reserve balance as to not reduce fund balances below minimum targets. The target minimum capital reserve amount is typically set equal to two-year of capital projects.

Long-Term Debt – Another funding source for capital projects is from the issuance of long-term debt (e.g., low-interest loans, revenue bonds). While there are certain advantages and disadvantages with the issuance of long-term debt, it is important to weigh all of them when deciding whether to issue new debt or fund a project by other means. Long-term debt is often issued for major capital projects which have an immediate impact on rates and long-term debt is a financing mechanism to smoothly finance / fund the major capital project. For this analysis, the City is anticipating issuing additional long-term debt in FY 2024/2025 for \$15.0 million to fund necessary capital improvement projects.

2.2.6 Projection of Debt Service

The final component of the City's revenue requirement is annual debt service payments. The City currently has three outstanding debt obligations; the 2016 Refunding, and the 2016 and 2019 revenue bonds, amounting to a total annual debt service of approximately \$2.5 million for 2022/2023. In addition, the City has projected the need to issue additional long term debt during the projected five-year period. The City is expecting to issue approximately a \$15 million bond in FY 2024/2025 to fund capital project needs. The level of annual debt service payments resulting from this new issuances would increase the annual debt service by approximately \$975,000 and is estimated to start in FY 2024/2025.

2.2.7 Reserve Funding

This study has used reserve funding, or transfers to and from sewer reserve funds, to smooth and mitigate the rate adjustments in any particular year. Funds can be drawn down to mitigate the need for a rate adjustment, or increased to replenish reserves if they have been drawn down in prior years. In this analysis, change in working capital is primarily used to balance revenue requirements to the proposed rate adjustments. From year-to-year, the use of these reserves, or change in working capital, is very minimal.

2.2.8 Summary of the Sewer Revenue Requirement

Given the above projections of revenues and expenses, a summary of the revenue requirement for the sewer utility can be developed. In developing the final revenue requirement, consideration was given to the financial planning considerations of the City. In particular, emphasis was placed on attempting to minimize rates, yet still have adequate funds to support the operational and capital expenses, and the City's target financial metrics throughout the projected time period. Presented below in Table 2-5 is a summary of the sewer revenue requirement. A detailed analysis of the sewer revenue requirement can be found in Technical Appendix.

Table 2 – 5						
Summary of Sewer Revenue Requirement (\$000s)						
	Budget	Projected				
	2021/22^[1]	2022/23	2023/24	2024/25	2025/26	2026/27
Revenues						
Retail Rate Revenues	\$13,840	\$13,160	\$13,291	\$13,424	\$13,559	\$13,694
Other Revenues	<u>138</u>	<u>244</u>	<u>225</u>	<u>206</u>	<u>247</u>	<u>228</u>
Total Revenues	\$13,979	\$13,404	\$13,516	\$13,631	\$13,806	\$13,922
Expenses						
Collection O&M Expenses	\$4,155	\$4,351	\$4,488	\$4,630	\$4,778	\$4,931
Treatment O&M Expenses	3,387	3,530	3,670	3,990	4,700	4,690
Repair & Replace. Funding	1,900	2,250	2,600	2,950	3,300	3,650
I/I Capital Funding	627	644	661	679	697	716
Total Debt Service	2,502	2,500	2,500	3,479	3,474	3,477
Change in Working Capital +/-	<u>1,407</u>	<u>853</u>	<u>1,099</u>	<u>242</u>	<u>95</u>	<u>661</u>
Total Expenses	\$13,979	\$14,128	\$15,018	\$15,970	\$17,044	\$18,125
Balance/(Deficiency) of Funds	\$0	(\$724)	(\$1,502)	(\$2,339)	(\$3,238)	(\$4,204)
Cumulative as a % of Rates	0.0%	5.5%	11.3%	17.4%	23.9%	30.7%
Proposed Rate Adjustments	0.0%	5.5%	5.5%	5.5%	5.5%	5.5%
Debt Service Coverage Ratio						
Before Rate Adjustment	2.52	2.15	2.09	1.40	1.21	1.20
After Rate Adjustment	2.52	2.44	2.69	2.07	2.14	2.41

[1] Note: FY 2021/22 includes the revenues at the adopted rate levels from the prior rate study. Therefore, no rate adjustment is included in FY 2021/22.

It is important to note the “Balance/(Deficiency) of Funds” row in Table 2-5 is cumulative. That is, any adjustments in the initial years will reduce the deficiency in the later years. Rates need to be adjusted approximately 30.7% in order to adequately fund annual O&M expenses, annual repair and replacement funding, and the system’s capital needs over the five-year period. The size and timing of the adjustments is critical as it is proposed that the City set rates for a two year period. This is important as the rate transition plan, or proposed rate adjustments, have been developed for a 5-year period. Any adjustments to the proposed rate adjustments shown in the early years will result in the need for to adjust rates, more or less, in the future years depending upon the adjustments made in the early years. The graph illustrates the projected revenues, expenses, and reserve fund.

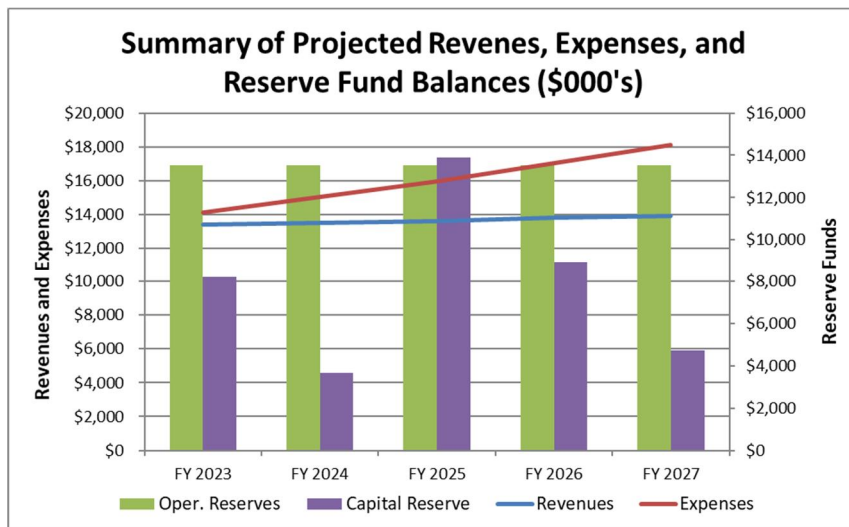


Table 2 – 5 shows the total deficiency of revenues before any sewer rate adjustments ranges from \$724,000 in FY 2022/2023 to \$4.2 million by FY 2026/2027. A 5.5% sewer revenue adjustment is proposed annually for each of the five years of the projected time period. As noted, this study is focused on the proposed rates for FY 2022/2023 and FY 2023/2024. The projected rate adjustments allow the City to meet three key prudent financial metric criteria, these are:

- Debt Service Coverage Ratios – DSC target of 2.0.
- Adequate Renewal and Replacement Funding – Annual renewal and replacement funding needs exceed depreciation over the 5-year plan.
- Maintain Prudent Reserve Fund Levels – Operating reserve target equal to annual minimum of 180 days of O&M; Capital project reserve target equal to two years of annual depreciation.

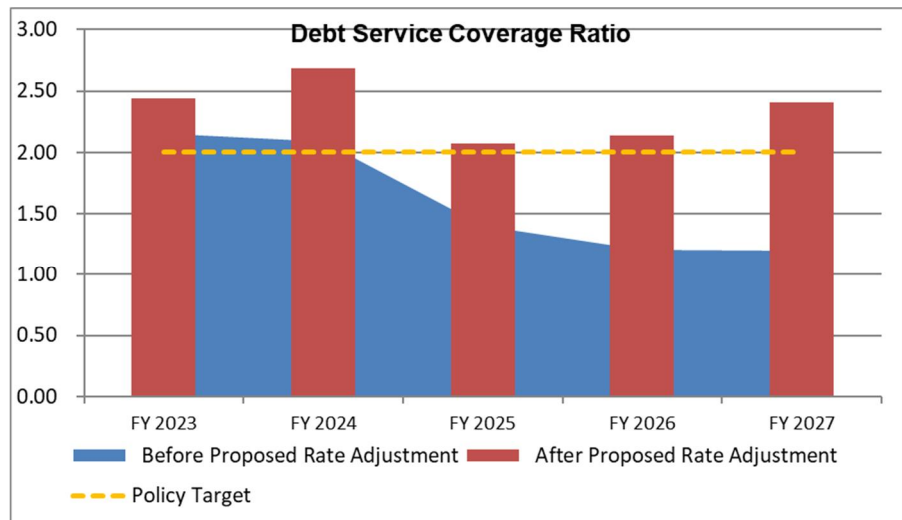
Meeting these three key criteria are critical to the City being able to fund/finance capital projects with long-term debt in the future. By adjusting rates the City is demonstrating to the outside financial community its willingness and commitment to maintain a strong financial position.

The revenue requirement developed in this sewer rate study will allow the City to develop cost-based rates that meet the City’s goals and objectives for maintaining the existing system and funding past deferred capital projects. The rate transition plan provides smooth increases in rates over a 5-year period.

2.2.9 Debt Service Coverage Ratios

Generally, revenue bonds contain covenants requiring rates to be set at an adequate level to assure repayment of the annual principal and interest debt obligations. The financial measure of rate adequacy is typically determined using a debt service coverage ratio (DSC). The DSC ratio is financial measure of the utility's ability to repay the debt. Based in the City's approach, the DSC ratio is set at a level such that revenues less operating expenses will be 2.00 times greater than the maximum annual debt service on the outstanding debt. That is, rates will be sufficient to pay projected O&M and have an additional annual debt service payment.

As noted above, the City has established a target of maintaining a 2.00 DSC ratio. At present rate levels, the sewer utility is meeting the policy minimum. However, absent any rate adjustments, the sewer system DSC ratio is declining as the capital plan assumes additional debt will be issued to pay for capital projects.

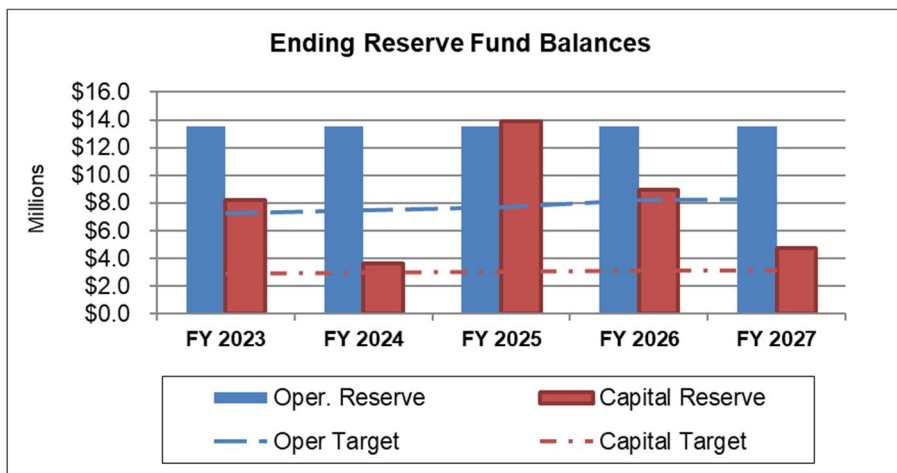


Financially, this means that the City's debt service payments are projected to increase over time and absent any rate adjustments, the City will not be meeting the policy minimum DSC. However, with the proposed rate adjustments the coverage ratios continue to be strong and above the target of 2.0 DSC ratio.¹ This is an important financial target as planning around the absolute minimum level (e.g., 1.25 bond requirement) can result in a technical default on the bonds if unplanned expenditures occur or revenues are lower than anticipated in a given year. Planning a minimum target DSC of 2.0 was recommended by the City's financial advisors during the most recent bond issues. A higher DSC ratio can result in a higher bond rating and lower interest rates and bond costs.

¹ A debt service coverage (DSC) ratio is an indicator of the amount of funds available to pay debt service after O&M expenses and other pre-debt obligations have been met. A DSC ratio of 1.25 means the utility has 25% more funds available to pay debt service than the amount of the debt service payment(s). For example, assuming a utility has a \$1.0 million debt service payment, a DSC of 1.25 means that the utility has \$1.25 million available to pay debt service (i.e. \$1.25 million ÷ \$1.0 million = 1.25 DSC).

2.2.10 Review of the Sewer Reserve Levels

There can be many different purposes for reserves. They are also a good indicator of the long-term financial health of the utility. The City’s sewer utility current has one reserve fund, however, for rate setting purposes it was split into two reserve funds: an operating reserve fund, and capital reserve fund. The operating fund reserve has a minimum ending fund balance target of 180 days of O&M expenses plus an emergency reserve of \$2.0 million, which is approximately \$7.3 million for FY 2022/2023. The capital fund reserve has a target minimum of approximately two years of annual depreciation expense or approximately \$3 million for FY 2022/2023. Taken together, the City’s minimum reserve is approximately \$10 million for FY 2022/2023 increasing to \$11.6 million by FY 2026/2027. Over this planning period, the City is projected to maintain



adequate operating and capital reserves and not fall below these recommended minimum reserve levels. The annual cash flow and ending reserve balances should be reviewed each year to make sure that the uses of funds does not place the reserve below the minimum level. Additionally, as the sewer reserves approach

the minimums, the need for rate adjustments should be evaluated so as to avoid future, large rate adjustments for customers. It should also be noted that the funding source for the capital reserve is through current, and future, long-term debt issuances which are placed in the capital reserve fund.

2.2.11 Consultant’s Conclusions

Based on the City’s revenue requirement analysis the proposed overall sewer rate adjustment should be adjusted annually by 5.5% over the projected five year period. These proposed rate adjustments are needed to fully fund the projected operating costs of the sewer utility and the annual capital improvement needs. HDR has reached this conclusion for the following reasons:

- Rate adjustments are necessary to continue to fund the City’s annual renewal and replacement needs.
- Rate adjustments are necessary to move towards more prudent financial metrics for debt service coverage ratio and reserve levels.
- The proposed rate adjustments maintain the City’s sewer system strong financial health, which is important as the City continues to maintain the existing system.

The rate transition plan presented in this study provides the City with the ability to meet the goals and objectives for the sewer system.

2.3 Summary

This section of the report has provided a discussion of the City's revenue requirement analysis. The revenue requirement analysis developed a financial plan to support the City's operating and capital needs for the sewer utility. The next section will discuss the cost of service analysis developed for the City.



3.0 Development of the Sewer Cost of Service Analysis

3.1 Introduction

A cost of service analysis is concerned with the proportional distribution of the total revenue requirement between the various customer classes of service. For the City's study, the customer classes of service are low strength (residential and commercial low) and high strength commercial. The previously developed revenue requirement for FY 2022/2023 was utilized in the development of the cost of service analysis.

In order to determine the proportional distribution of costs to each customer class of service on the sewer system, a cost of service analysis is conducted. As outlined in the WEF MOP #27, and to meet the requirements of Proposition 218, the cost of service functionalizes, allocates, and distributes the sewer revenue requirement to each of the classes of service in a proportional manner. In recent years, increasing emphasis has been placed on cost of service studies by government agencies, customers, utility regulatory commissions, and other parties. This interest has been generated in part by continued inflationary trends, increased operating and capital expenditures, and concerns of equity in rates among customers. Following the generally-accepted guidelines and principles of a cost of service analysis will inherently lead to rates which are equitable, cost-based, and not viewed as arbitrary or capricious in nature. Provided below is a detailed discussion of the cost of service analysis for the sewer utility.

3.2 Objectives of a Cost of Service Study

There are two primary objectives in conducting a cost of service study:

- Distribute the allocated the revenue requirement to the customer classes of service
- Derive average unit costs for subsequent rate designs

The objectives of a cost of service analysis are different from determining the revenue requirement. As noted in the previously, a revenue requirement analysis determines the utility's overall financial (revenue) needs, while the cost of service study determines the proportional manner to collect the revenue requirement.

The second rationale for conducting a cost of service analysis is to design the rates such that they properly reflect the costs incurred by the City to provide sewer service. For example, the City may incur costs related to flow or total volume, the strength of the wastewater flow, and customer cost components. Each of these types of costs may be collected in a slightly different manner to allow for the development of a rate that collects costs in the same manner as they are incurred.

In order to determine the cost to serve each customer class on a system, three basic analytical tasks are completed: functionalization, allocation, and distribution of the FY 2022/2023 revenue requirement. Each of these steps in the cost of service analysis is discussed in detail below.

3.3 Determining the Customer Class of Service

One of the first tasks of a cost of service analysis is determine the classes of service for the analysis. In determining classes of service, the objective is to group customers together into similar or homogeneous groups based upon wastewater flow and strength characteristics and/or sewer facility requirements. Based on the current rate schedules the classes of service used within the sewer study are:

- Low Strength
 - ✓ Residential
 - ✓ Non-Residential – Low
- High Strength
 - ✓ Non-Residential – High

In determining classes of service for cost of service purposes, the objective is to group customers together into similar or homogeneous groups based upon facility requirement and/or flow characteristics. In this case, low strength represents domestic level wastewater for the residential customers and those commercial customers with domestic strength wastewater flow. High strength represents those commercial customers with higher strength wastewater which is more costly to treat. Furthermore, the City is billed by SVCW based on the strength of the wastewater. In developing these customer classes of service, the costs of treatment can be distributed proportionately to reflect the impacts placed on the system.

3.4 General Cost of Service Procedures

In order to determine the cost to serve each customer class of service on the City’s system, a cost of service analysis is conducted. A cost of service study utilizes a three-step approach to review costs. These were previously discussed in our general overview in Section 1, and take the form of functionalization, allocation, and distribution. Provided below is a detailed discussion of the sewer cost of service study conducted for the City, and the specific steps taken within the analysis.

3.4.1 Functionalization of Costs

The first analytical step of the sewer cost of service study is called functionalization. Functionalization is the arrangement of sewer expenses and asset (infrastructure) data by major operating functions. This is generally accomplished through the utility’s system of

Terminology of a Cost of Service Analysis

Functionalization – The arrangement of the cost data by functional category (e.g. treatment, collection etc.).

Allocation – The assignment of functionalized costs to cost components (e.g. volume, strength, and customer related).

Distribution – Distributing the allocated costs to each customer class based on the proportional contribution to that specific cost component.

Volume Costs – Costs that are classified as volume related vary with the total flow of sewer (e.g. chemical use at the treatment facility).

Strength Costs – Costs classified as strength related refer to the wastewater treatment function. Typically, strength-related costs are further defined as biochemical oxygen demand (BOD) and suspended solids (SS). Customers with higher wastewater strength characteristics cost more to treat. Facilities are often designed and sized around meeting these costs.

Direct Assignment – Costs that can be clearly identified as belonging to a specific customer class.

accounts. In this study, the City's system of accounts was used to functionalize sewer plant assets and operating expenses.

3.4.2 Allocation of Costs

The second analytical task performed is the allocation of the functionalized expenses to cost components. This task reviews each cost and attempts to determine why the sewer cost was incurred and what type of need was being met (e.g. volume, strength, customer etc.). The cost classifiers used for the sewer utility cost of service study are as follows:

- **Volume Related Costs.** Volume-related costs are those that tend to vary according to the quantity of wastewater collected and treated. An example of a volume related cost is electricity for pumping of wastewater.
- **Strength Related Costs.** Strength related costs are those costs associated with the additional handling and treatment of high "strength" wastewater. Strength of wastewater is typically measured in biochemical oxygen demand (BOD) and total suspended solids (SS). Increased levels of BOD or SS generally equate to increased treatment costs. Pre-treatment is generally required if the discharge is known to regularly exceed the typical (i.e., domestic level) waste strength.
- **Customer Related Costs.** Customer-related costs vary with the addition or deletion of a customer. Customer related costs typically include the costs of billing, collecting, and accounting. Customer-related costs may also be further categorized as actual or weighted.
- **Revenue Related.** Some costs associated with the sewer utility may vary with the amount of revenue received by the utility. An example of a revenue related cost would be a utility tax which is based on gross utility revenue.
- **Direct Assignment.** Certain costs associated with operating the utility may be directly traced to a specific sewer customer or class of service. These costs are then directly assigned to that specific class of service. It should be noted there were not any costs that were directly assigned during the development of the City's cost of service analysis.

Once the costs have been allocated, the next step is to distribute the costs proportionally between the customer classes of service. Provided in the next section is a summary of the development of the distribution factors.

3.4.3 Development of Distribution Factors

Once the allocation process is complete, and the customer groups have been defined, the various allocated costs are distributed to the customer classes of service. The City's allocated costs were distributed using the following distribution factors:

- **Volume Distribution Factor:** Volume-related costs are distributed on the basis of contribution to wastewater flows. In order to develop this distribution factor, some knowledge of the contribution to flows must be determined. The assumed wastewater contribution by customer class for FY 2022/2023 was the basis for the development of the volume allocation factor. Sewer flows were projected based on historical winter water

billing for residential customers, and average water consumption for commercial customers.

- **Strength Distribution Factor:** Strength-related costs are allocated between biochemical oxygen demand (BOD) and suspended solids (SS). Both of these types of costs are distributed to the various classes of service based upon the relative estimated strengths that each class of service contributed to the overall flow at the plant. Strength factors for the low strength, and high strength, customers were based on industry standard data.
- **Customer Distribution Factor:** Customer costs within the cost of service study are distributed to the various customer classes of service based upon their respective customer counts. Two types of customer distribution factors were developed, actual and weighted. The actual customer distribution factor was based on the actual number of accounts for each customer class. The weighted customer factor was not used in the development of the cost of service study.
- **Revenue Related Distribution Factor:** The revenue related distribution factor was developed from the projected rate revenues for FY 2022/2023 for each customer group.

The development of distribution factors is based on generally accepted principles as developed in the WEF MOP #27 to meet the proportionality requirements of Proposition 218. Given the development of the distribution factors, the final step in the cost of service study is to distribute the allocated costs to the various customer classes of service.

3.4.4 Functionalization and Allocation of Sewer Plant in Service

The next step of the cost of service is the functionalization and allocation of sewer plant in service. In performing the functionalization of plant in service, HDR utilized the City's historical plant records. The allocation process included reviewing each group of assets and determining which cost classifiers the assets were related to. For example, the City's assets were allocated as: volume-related, strength-related, customer-related, or revenue-related. Provided below is a brief discussion of the allocation process used.

The City's system assets are collection in nature. In this study, the collection plant was classified as 65% volume and 35% actual customer to reflect a portion of the assets being in place to simply move wastewater away from the customer and to the treatment system as well as a portion being related to providing service based on the number of customers on the system. Table 3-1 shows the detail of the classification for the City's sewer plant in service. A more detailed exhibit of the City's functionalization and classification of plant investment can be found in the Sewer Technical Appendix.

**Table 3 - 1
Summary of the Allocation of Sewer Plant in Service**

Category	Volume Related	BOD Related	SS Related	Actual Customer	Direct Assign
Improvements	65%	0%	0%	35%	0%
Machinery & Equipment	100%	0%	0%	0%	0%

3.4.5 Functionalization and Allocation of Operating Expenses

Operating expenses are generally functionalized and allocated in a manner similar to the corresponding plant account. For example, maintenance of collection lines is typically allocated in the same manner (allocation percentages) as the plant account for collection lines. This approach to allocation of operating expenses was used for this analysis.

**Table 3 - 2
Summary of the Allocation of Sewer Expenses**

Category	Volume Related	BOD Related	SS Related	Actual Customer	Weighted Customer
SVCW Treatment	39%	29%	32%	0%	0%
Planning and Project Management, Sewer Operations, (Overall)	56%	1%	1%	26%	16%
Computer, Administrative Charge	0%	0%	0%	0%	100%

For the City’s study, the revenue requirement for FY 2022/2023 were functionalized, allocated, and distributed. As noted earlier, the City utilized a cash basis revenue requirement, which was comprised of operation and maintenance expenses, debt service, and capital additions funded from rates. The SVCW treatment costs were allocated based on the SVCW wholesale contract for billing. A more detailed review of the allocation of revenue requirement can be found in the Technical Appendix.

3.4.6 Major Assumptions of the Cost of Service Study

A number of key assumptions were used within the City’s cost of service study. Below is a brief discussion of the major assumptions used.

- The methodology used within the sewer cost of service study was based upon and is consistent with the methodology used in the City’s sewer comprehensive rate study conducted in prior years and industry standard approaches.
- The test period used for the sewer cost of service analysis was FY 2022/2023. The revenue and expense data was previously developed within the revenue requirement study.

- A cash basis approach was utilized which conforms to generally accepted sewer cost of service approaches and methodologies.
- The allocation of plant in service was developed based upon generally accepted cost allocation techniques. Furthermore, they were developed using the City-specific data.
- Customer volumes used within this study were provided for each class of service by the City through Mid Penn’s average winter billing data.
- Strength distribution factors were based on overall strength levels at the treatment plant within the City’s records.

3.5 Summary of the Cost of Service Analysis

Given the allocation and distribution of the FY 2022/2023 revenue requirement a summary of the distributed costs as compared to the current revenues can be developed. Provided in Table 3-2 is a summary of the cost of service analysis.

Table 3 – 2 Summary of the FY 2022/23 Sewer Cost of Service Analysis (\$000’s)				
Classes of Service	Present Rate Revenues	Distributed Costs	\$ Difference	% Difference
Low Strength				
Residential and Non-Residential	\$12,858	\$13,565	(\$707)	5.5%
High Strength				
Non-Residential	<u>302</u>	<u>318</u>	<u>(\$17)</u>	<u>5.5%</u>
Total	\$13,160	\$13,883	(\$724)	5.5%

The results of the cost of service analysis indicated no cost differences between the customer classes of service. It should be noted that the cost of service analysis developed by HDR is not a simple fixed/variable analysis. Rather, the cost of service analysis distributes costs between the various customer classes of service based on each customer classes proportional share of volume, strength, and customer-related costs. As the City continues to monitor rates and cost of service results through future studies, cost of service adjustments may be made as the results are driven by customer consumption. Given that, no adjustments in the cost relationships between the customer classes of service are recommended at this time.

3.6 Consultant’s Conclusions and Recommendations

The overall allocation of costs between low strength customers (e.g., residential and low strength non-residential) and high strength customers reflects the overall system average increase. In addition, it was noted that customers have been adjusting their water consumption habits and consumptive use has changed over the last several years, which has a direct impact on the rates charged in future years. As the City continues to monitor rates and cost of service results through future studies, cost of service adjustments may be made as the results are driven by customer consumption. Given that, no adjustments in the cost relationships between the customer classes of service are recommended at this time. As a result, the overall proposed revenue/rate adjustments will be applied equally across all customer groups.

3.7 Summary

This section of the study has provided a summary of the cost of service analysis developed for the City. This analysis was prepared using generally accepted cost of service techniques and principles. The next section of the study will review the present and proposed sewer rates for the City.

4.0 Development of the Sewer Rate Design

4.1 Introduction

The final step of the City's comprehensive sewer rate study is the design of sewer rates to collect the desired levels of revenues, based on the results of the prior analyses. In reviewing sewer rate designs, consideration is given to the level of the rates and the structure of the rates.

4.2 Rate Design Goals and Objectives

Prudent rate administration dictates that several criteria must be considered when setting utility rates. Some of these rate design criteria are listed below:

- ✓ Rates which are easy to understand from the customer's perspective.
- ✓ Rates which are easy for the utility to administer.
- ✓ Consideration of the customer's ability to pay.
- ✓ Continuity, over time, of the rate making philosophy.
- ✓ Policy considerations (encourage efficient use, economic development, etc.).
- ✓ Provide revenue stability from month to month and year to year.
- ✓ Promote efficient allocation of the resource.
- ✓ Equitable and non-discriminatory (cost-based).

Many contemporary rate economists and regulatory agencies recognize the last consideration, equitable and cost-based rates, should be of paramount importance and provide the primary guidance to utilities on rate structure and policy. It is important that the City provide its customers with a proper price signal as to what their consumption or usage is costing. This goal may be approached through rate level and structure. When developing the proposed rate designs, all the above listed criteria were taken into consideration. However, it should be noted that it is difficult, if not impossible, to design a rate that meets all the goals and objectives listed above. For example, it may be difficult to design a rate that takes into consideration the customer's ability to pay, and one which is cost-based. In designing rates, there are always trade-offs between these various goals and objectives.

4.3 Development of Cost Based Sewer Rates

As mentioned, developing cost-based and proportional rates is of paramount importance in developing proposed sewer rates. While always a key consideration in developing rates, meeting the legal requirements, and documenting the steps taken to meet the requirements, has been in the forefront with the recent legal challenges in the State of California on utility rates. Given this, the development of the City's proposed sewer rates have been developed to meet the legal requirements of California Constitution article XIII D, section 6 (Article XIII D). A key component of Article XIII D is the development of rates which reflect the cost of providing service and are proportionally distributed between the various customer classes of service. HDR would point out that there is no single methodology for equitably assigning costs to the various customer groups. The Water Environment Federation Manual of Practice #27 provides various methodologies which may be used to establish cost-based rates. Unfortunately, Article XII D is not prescriptive and does not provide a specific methodology for establishing rates. Given that, HDR developed

the City's proposed sewer rates based on generally accepted rate setting methodologies to meet the requirements of Article XIII D.

HDR is of the opinion that the proposed rates meet the legal requirements of Article XIII D. HDR reaches this conclusion based upon the following:

- **The revenue derived from sewer rates does not exceed the funds required to provide the property related service (i.e., sewer service).** The proposed rates are designed to collect the overall revenue requirement of the City's sewer system.
- **The revenues derived from sewer rates shall not be used for any purpose other than that for which the fee or charge is imposed.** The revenues derived from the City's sewer rates are used exclusively to operate and maintain the City's sewer system.
- **The amount of a fee or charge imposed upon a parcel or person as an incident of property ownership shall not exceed the proportional costs of the service attributable to the parcel.** The cost of service analysis focused exclusively on the issue of proportional assignment of costs to customer classes of service. The proposed rates have appropriately grouped customers into customer classes of service (low strength and high strength) that reflect the varying wastewater volumes and system requirements (i.e., the benefits they receive from and burdens they place on the system) of each customer class of service. The grouping of customers and rates into these classes of service creates the proportionality expected under Proposition 218 by having differing rates by customer classes of service which reflect both the level of revenue to be collected by the utility, and the manner in which these costs are incurred and equitably assigned to customer classes of service based upon their proportional impacts.

4.4 Present and Proposed Sewer Rates

The City's sewer rate is comprised of two components, a collection system component and a treatment system component. The collection system component is based on the costs to operate the City's sewer system, except for treatment costs. The treatment costs are based on the current treatment costs projections and can be adjusted as the City is notified of cost changes by the wholesale provider. Each parcels' sewer charge is the sum of the base charge and flow charges for both collection and treatment. The proposed sewer rate designs maintain their current rate structure.

For the five year rate period, the rates include a 10% flow adjustment factor that replaces the current 9% flow adjustment factor which was updated during the 2020 rate study. Mid-Peninsula Water District consumption billing data for the three year periods of FY 2019/2020 2020/2021, and 2021/2022 billing information was reviewed. Based on this data, along with the projected upcoming drought, the recommendation is to increase the flow adjustment factor from 9% to 10% for the two year rate setting period. The flow adjustment factor will allow the City to maintain sufficient revenues during the proposed rate period of FY 2022/2023 and FY 2023/2024. The flow adjustment factor will be reviewed again during the next rate study and a determination made as to adjust the flow adjustment factor or to eliminate, and restart, the flow adjustment factor.

The same formula for this adjustment will remain as follows: (HCF = 100 cubic feet)

Formula: Actual Volume Usage x (1 + (flow adjustment factor)) = adjusted volume usage

Example: 8 HCF x (1+ .10) = 8.8 HCF adjusted volume usage

Table 4-1 provides the present and proposed rates for the residential and non-residential customers for the next five fiscal years.

Table 4 – 1 Present and Proposed Sewer Rates (Annual)						
	Present Rates	Proposed Rates FY 2022/23	Proposed Rates FY 2023/24	Forecasted Rates FY 2024/25	Forecasted Rates FY 2025/26	Forecasted Rates FY 2026/27
COLLECTION						
<u>Residential</u>						
Base Charge	\$386.93	\$408.21	\$430.66	\$454.35	\$479.34	\$505.70
Flow Charge (\$/HCF) ^[1]	\$5.51	\$5.81	\$6.13	\$6.47	\$6.83	\$7.20
<u>Non-Residential</u>						
Base Charge	\$386.93	\$408.21	\$430.66	\$454.35	\$479.34	\$505.70
Flow Charge Low Strength (\$/HCF) ^[1]	\$5.51	\$5.81	\$6.13	\$6.47	\$6.83	\$7.20
Flow Charge High Strength (\$/HCF) ^[1]	\$10.70	\$11.29	\$11.91	\$12.56	\$13.26	\$13.98
TREATMENT						
<u>Residential</u>						
Base Charge	\$203.36	\$214.54	\$226.34	\$238.79	\$251.93	\$265.78
Flow Charge (\$/HCF) ^[1]	\$2.72	\$2.87	\$3.03	\$3.19	\$3.37	\$3.55
<u>Non-Residential</u>						
Base Charge	\$203.36	\$214.54	\$226.34	\$238.79	\$251.93	\$265.78
Flow Charge Low Strength (\$/HCF) ^[1]	\$2.72	\$2.87	\$3.03	\$3.19	\$3.37	\$3.55
Flow Charge High Strength (\$/HCF) ^[1]	\$5.30	\$5.59	\$5.90	\$6.22	\$6.57	\$6.93
COMBINED						
<u>Residential</u>						
Base Charge	\$590.29	\$622.76	\$657.01	\$693.14	\$731.27	\$771.49
Flow Charge (\$/HCF)	\$8.23	\$8.68	\$9.16	\$9.66	\$10.20	\$10.76
<u>Non-Residential</u>						
Base Charge	\$590.29	\$622.76	\$657.01	\$693.14	\$731.27	\$771.49
Flow Charge Low Strength (\$/HCF) ¹	\$8.23	\$8.68	\$9.16	\$9.66	\$10.20	\$10.76
Flow Charge High Strength (\$/HCF)	\$16.00	\$16.88	\$17.81	\$18.79	\$19.82	\$20.91

The above rates are based upon the rate transition plan developed from the revenue requirement and cost of service analyses. As noted above, the rate is split between collection

and treatment to allow the City to pass-through any increases in the wholesale treatment costs. All components of the rate structure – fixed and variable – are proposed to be increased to meet the target revenue levels based on the rate transition plan.

At present rates, a typical residential customer with 8 hundred cubic feet of winter water average would have a monthly bill of \$120.96 (8 HCF X 1.09 = 8.72 HCF). Under the proposed rates, with the proposed flow adjustment factor increased to 10%, the same customer would have a monthly bill of \$128.31 in FY 2022/23. The proposed rate adjustment for FY 2021 was 5.5%, however with the flow factor adjustment from 1.09 to 1.10, it results in an overall change to the bill of 6.1%. Table 4-2 shows the average residential bill for FY 2021 through FY 2025.

**Table 4 – 2
Present and Proposed Sewer Rates (Monthly)**

	Proposed FY 2022/23	Proposed FY 2023/24	Forecasted FY 2024/25	Forecasted FY 2025/26	Forecasted FY 2026/27
<i>Proposed Revenue Adjustment</i>	5.5%	5.5%	5.5%	5.5%	5.5%
Present Average Monthly Bill ^[1]	\$120.96				
After Proposed Rate Adj. ^[2]	\$128.31	\$135.36	\$142.80	\$150.66	\$158.95
Monthly Bill Difference	\$7.35	\$7.05	\$7.44	\$7.86	\$8.28
Cumulative Bill Difference	\$7.35	\$14.40	\$21.85	\$29.71	\$37.99
<i>% Change to Monthly Bill</i>	6.1%	5.5%	5.5%	5.5%	5.5%

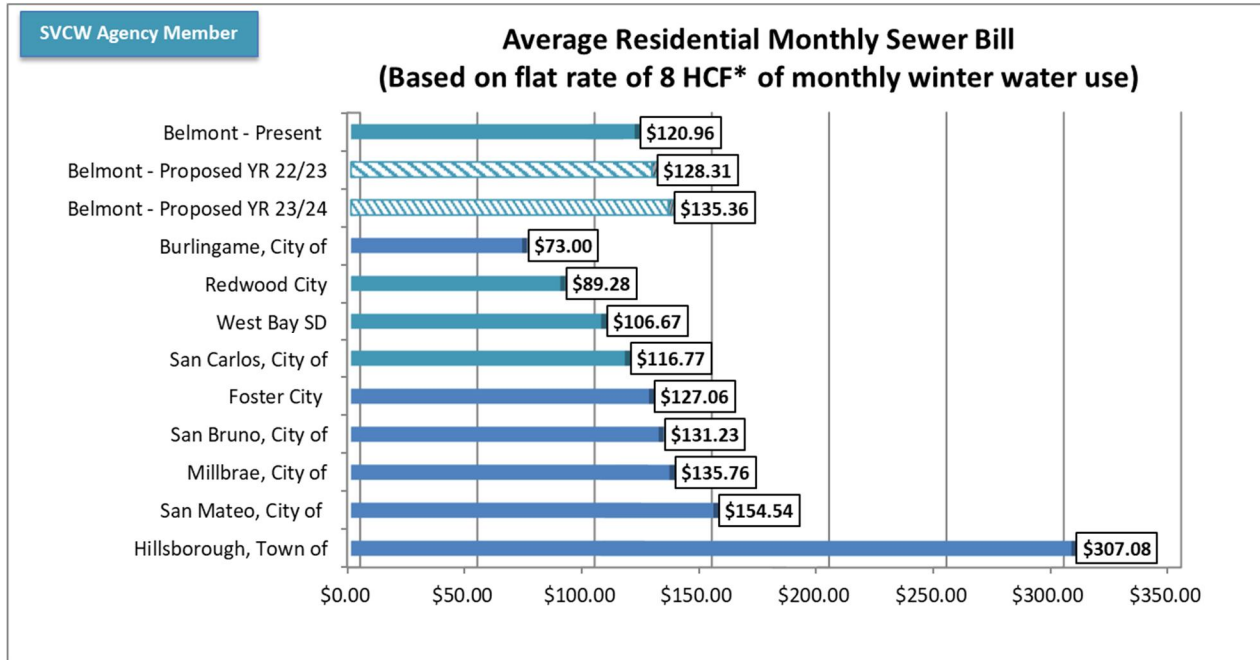
[1] – Current average bill assumes 9% flow adjustment factor and 8 HCF monthly consumption

[2] – Proposed average bill assumes a 10% flow adjustment factor and 8 HCF monthly consumption

As a point of reference, the proposed rates for FY 2022/2023 and FY 2023/2024 are the focus of this study and the only rates proposed for this study. Forecasted rates are for information only to provide the City with the expected future rates for planning purposes based on the assumptions of this study. Proposed rates for future periods will be developed as part of future comprehensive sewer rate studies.

4.5 Average Residential Local Bill Comparison

A comparison of the City’s current average residential rate to other local surrounding sewer utilities has been developed. Provided in the chart below is a comparison of the City’s current rate, and the proposed rates.



As can be seen in the above graph, with the potential adjustments, the City’s sewer rates remain very competitive, while funding O&M, increased renewal and replacements, and deferred capital costs.

4.6 Summary of the Sewer Rate Study

This completes the analysis for the City’s sewer rate study. The proposed sewer rates were developed using generally accepted rate making methods and principles. The proposed sewer rate adjustments for FY 2022/2023 through 2026/2027 are needed to adequately support the operating and capital needs of the City’s sewer system. Adoption of the proposed sewer rates for FY 2022/2023 and FY 2023/2024 are projected to provide adequate funding for the sewer utility over the two year period, while financially positioning the utility for anticipated future capital and operation needs. Even with these proposed annual adjustments, it is prudent for the City to annually revisit the sewer rates to confirm their ability to cover expenses and maintain the identified financial metrics (e.g., reserve targets, debt service coverage ratios).



Technical Appendix

City of Belmont
Sewer Cost of Service Study - Rate Transition Plan
Summary of Revenue Requirement
Exhibit 1

	Actual	Estimated	Budget	Projected							
	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30
Sources of Funds											
Operating Revenues	\$12,470,775	\$12,385,054	\$13,840,423	\$13,159,760	\$13,291,358	\$13,424,271	\$13,558,514	\$13,694,099	\$13,831,040	\$13,969,351	\$14,109,044
Other Revenue	357,950	138,406	138,406	244,382	224,573	206,328	247,355	227,596	210,700	255,966	245,044
Total Sources of Funds	\$12,828,725	\$12,523,459	\$13,978,828	\$13,404,143	\$13,515,931	\$13,630,600	\$13,805,869	\$13,921,696	\$14,041,741	\$14,225,317	\$14,354,089
Applications of Funds											
Collection O&M Expense	\$3,481,970	\$4,020,600	\$4,155,257	\$4,351,460	\$4,488,062	\$4,630,056	\$4,777,695	\$4,931,243	\$5,090,978	\$5,257,196	\$5,430,204
Treatment O&M Expenses	3,004,200	3,387,172	3,387,030	3,530,000	3,670,000	3,990,000	4,700,000	4,690,000	4,660,000	4,820,000	4,830,000
Repair and Replacement Funding	1,400,393	1,750,000	1,900,000	2,250,000	2,600,000	2,950,000	3,300,000	3,650,000	4,000,000	4,350,000	4,700,000
I/I Capital Funding	237,942	611,000	627,000	644,000	661,000	679,000	697,000	716,000	735,000	755,000	775,000
Total Debt Service	1,514,186	2,411,596	2,502,346	2,499,671	2,500,446	3,478,843	3,473,968	3,476,843	4,452,614	4,448,389	4,447,989
Change in Working Capital +/-	3,190,034	343,091	1,407,195	852,798	1,098,679	241,764	95,314	661,151	342,938	946,305	1,714,811
Total Revenue Requirements	\$12,828,725	\$12,523,459	\$13,978,828	\$14,127,929	\$15,018,187	\$15,969,663	\$17,043,977	\$18,125,236	\$19,281,531	\$20,576,890	\$21,898,004
Total Balance/(Deficiency)	\$0	\$0	\$0	(\$723,787)	(\$1,502,256)	(\$2,339,064)	(\$3,238,107)	(\$4,203,541)	(\$5,239,790)	(\$6,351,573)	(\$7,543,916)
Cumulative Balance as a % of Rate Revenues	0.0%	0.0%	0.0%	5.5%	11.3%	17.4%	23.9%	30.7%	37.9%	45.5%	53.5%
Proposed Rate Adjustment	0.0%	0.0%	0.0%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%
Additional Revenue from Adjustment	\$0	\$0	\$0	\$723,787	\$1,502,256	\$2,339,064	\$3,238,107	\$4,203,541	\$5,239,790	\$6,351,573	\$7,543,916
Total Balance/(Deficiency)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Additional Rate Adjustment Required	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Residential Bill Comparison (8 HCF X Adjustment Factor)											
Monthly											
After Proposed Rate Adjustment			\$120.96	\$128.31	\$135.36	\$142.80	\$150.66	\$158.95	\$167.69	\$176.91	\$186.64
Monthly Bill Difference				\$7.35	\$7.05	\$7.44	\$7.86	\$8.28	\$8.74	\$9.22	\$9.73
Cumulative Bill Difference				\$7.35	\$14.40	\$21.85	\$29.71	\$37.99	\$46.73	\$55.95	\$65.68
Debt Service Coverage Ratio (Revenue Bonds Only)											
Before Proposed Rate Adjustment	3.99	2.06	2.52	2.15	2.09	1.40	1.21	1.20	0.93	0.90	0.89
After Proposed Rate Adjustment	3.99	2.06	2.52	2.44	2.69	2.07	2.14	2.41	2.11	2.33	2.59
Ending Reserve Balances	\$0	\$0	\$26,678,149	\$21,725,947	\$17,164,626	\$27,421,390	\$22,481,704	\$18,257,855	\$29,574,126	\$26,843,764	\$25,231,908
Target Minimum (Operating + Capital)	\$0	\$0	\$9,927,000	\$10,194,000	\$10,432,000	\$10,761,000	\$11,292,000	\$11,474,000	\$11,647,000	\$11,921,000	\$12,137,000

City of Belmont
 Sewer Cost of Service Study
 Exhibit 2
 Data Assumptions

	Actual	Estimated	Budget	Projected							
	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30
Escalation Factors											
Revenues											
Rate Revenue	Actual	Actual	Estimated	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Other Revenues	Actual	Estimated	Budget	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Interest	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Fiat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Expenses											
Labor	Actual	Estimated	Budget	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Profess/Contractual	Actual	Estimated	Budget	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Data Processing	Actual	Estimated	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Benefits - Medical	Actual	Estimated	Budget	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
Benefits - Other	Actual	Estimated	Budget	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%
Materials & Supplies	Actual	Estimated	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Equipment/Vehicles	Actual	Estimated	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Education/Training	Actual	Estimated	Budget	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Indirect Expense	Actual	Estimated	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Miscellaneous	Actual	Estimated	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Utilities	Actual	Estimated	Budget	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
SVCW Treatment	Actual	Estimated	Budget	4.2%	4.0%	8.7%	17.8%	-0.2%	-0.6%	3.4%	0.2% Jan 2022, SVCW Long Range Plan, pg 156
Inflation			2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%
Revenue Bond Issue											
Term in Years	30	30	30	30	30	30	30	30	30	30	30
Rate	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%

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	Actual	Estimated	Budget	Projected							Notes	
	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29		FY 2029/30
REVENUES												
<i>Operating Revenues</i>												
6805 Sewer Use Fees - Rate Revenues	\$12,470,775	\$12,385,054	\$13,840,423	\$13,159,760	\$13,291,358	\$13,424,271	\$13,558,514	\$13,694,099	\$13,831,040	\$13,969,351	\$14,109,044	As Rate Revenue
Total Rate Revenues	\$12,470,775	\$12,385,054	\$13,840,423	\$13,159,760	\$13,291,358	\$13,424,271	\$13,558,514	\$13,694,099	\$13,831,040	\$13,969,351	\$14,109,044	
<i>Miscellaneous Revenues</i>												
6705 Public Works Service Charges	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	As Flat
6706 City CIP Chargeback	0	0	0	0	0	0	0	0	0	0	0	As Flat
6850 Sewer Lateral Certificate Fee	0	0	0	0	0	0	0	0	0	0	0	As Flat
7111 Interest Earnings - Investments	58,614	0	0	106,713	86,904	68,659	109,686	89,927	73,031	118,297	107,375	As Interest
7112 Other Interest Earnings	74,047	0	0	0	0	0	0	0	0	0	0	As Flat
7113 Interest Revenue - Change	85,656	0	0	0	0	0	0	0	0	0	0	As Flat
7252 Reimbursements	0	0	0	0	0	0	0	0	0	0	0	As Flat
Standby Charges	139,633	138,406	138,406	137,669	137,669	137,669	137,669	137,669	137,669	137,669	137,669	As Flat
Total Miscellaneous Revenues	\$357,950	\$138,406	\$138,406	\$244,382	\$224,573	\$206,328	\$247,355	\$227,596	\$210,700	\$255,966	\$245,044	
TOTAL REVENUES	\$12,828,725	\$12,523,459	\$13,978,828	\$13,404,143	\$13,515,931	\$13,630,600	\$13,805,869	\$13,921,696	\$14,041,741	\$14,225,317	\$14,354,089	
EXPENSES												
<i>Planning and Project Management (701)</i>												
<i>Personnel</i>												
8101 Regular Salaries	\$515,746	\$485,260	\$339,632	\$346,292	\$353,082	\$360,005	\$367,064	\$374,261	\$381,600	\$389,082	\$396,711	As Labor
8102 Permanent Part-Time	\$9,450	\$16,306	\$16,306	16,626	16,952	17,284	17,623	17,968	18,321	18,680	19,046	As Labor
8103 Temporary Part-Time	3,651	3,709	3,709	3,781	3,855	3,931	4,008	4,087	4,167	4,248	4,332	As Labor
8111 Overtime	272	0	0	0	0	0	0	0	0	0	0	As Labor
8119 Termination Pay	16,930	8,732	0	0	0	0	0	0	0	0	0	As Labor
8211 P.E.R.S. Retirement	99,291	96,474	69,390	73,068	76,941	81,018	85,312	89,834	94,595	99,609	104,888	As Benefits - Other
8232 Medicare	8,019	7,448	4,029	4,311	4,613	4,935	5,281	5,651	6,046	6,469	6,922	As Benefits - Medical
8233 Life & Disability Insurance	(206)	2,522	1,672	1,789	1,914	2,048	2,191	2,344	2,509	2,684	2,872	As Benefits - Medical
8235 State Unemployment Insurance	3,777	0	0	0	0	0	0	0	0	0	0	As Benefits - Other
8241 Dental Plan	4,290	3,625	2,579	2,759	2,952	3,159	3,380	3,617	3,870	4,141	4,431	As Benefits - Medical
8242 Vision Plan	1,003	910	602	645	690	738	790	845	904	967	1,035	As Benefits - Medical
8253 Allowances	(1,270)	840	1,050	1,106	1,164	1,226	1,291	1,359	1,431	1,507	1,587	As Benefits - Other
8259 Deferred Compensation	11,945	13,569	9,170	9,656	10,168	10,707	11,274	11,872	12,501	13,163	13,861	As Benefits - Other
8271 SEC 125 Benefits	75,168	67,495	47,776	51,120	54,698	58,527	62,624	67,008	71,698	76,717	82,087	As Benefits - Medical
8281 Benefit Prefunding	53,337	48,732	35,792	37,688	39,686	41,789	44,004	46,336	48,792	51,378	54,101	As Benefits - Other
8283 GASB 68 Pension Expense	58,705	0	0	0	0	0	0	0	0	0	0	As Benefits - Other
8284 GASB 75 OPEB Expense	(356,847)	0	0	0	0	0	0	0	0	0	0	As Benefits - Other
8285 Workers' Compensation	1,818	14,245	9,312	9,806	10,326	10,873	11,449	12,056	12,695	13,368	14,076	As Benefits - Other
Total Personnel	\$505,079	\$769,868	\$541,018	\$558,645	\$577,039	\$596,240	\$616,291	\$637,238	\$659,128	\$682,014	\$705,950	
<i>Supplies & Services</i>												
8351 Other Professional/Technical	\$27,358	\$4,000	\$5,000	\$5,098	\$5,198	\$5,300	\$5,404	\$5,510	\$5,618	\$5,728	\$5,840	As Profess/Contractual
8522 Liability Insurance Charge	11,561	17,376	7,668	7,898	8,135	8,379	8,630	8,889	9,156	9,431	9,714	As Miscellaneous
8531 Postage/Delivery Services	0	50	100	103	106	109	113	116	119	123	127	As Materials & Supplies
8532 Telephone	8,721	0	0	0	0	0	0	0	0	0	0	As Utilities
8550 Printing & Binding	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
8580 Travel & Training	2,193	1,000	3,000	3,060	3,121	3,184	3,247	3,312	3,378	3,446	3,515	As Education/Training
8591 Membership & Dues	3,484	5,000	6,000	6,120	6,242	6,367	6,495	6,624	6,757	6,892	7,030	As Education/Training
8599 Miscellaneous	1,154	2,500	4,000	4,120	4,244	4,371	4,502	4,637	4,776	4,919	5,067	As Miscellaneous
8610 General Supplies	469	1,000	1,000	1,030	1,061	1,093	1,126	1,159	1,194	1,230	1,267	As Materials & Supplies
8612 Small Tools	90	500	500	515	530	546	563	580	597	615	633	As Miscellaneous
8680 Books/Manuals/Subscriptions	0	100	200	206	212	219	225	232	239	246	253	As Miscellaneous
Total Supplies & Services	\$55,030	\$31,526	\$27,468	\$28,150	\$28,850	\$29,568	\$30,304	\$31,060	\$31,835	\$32,630	\$33,446	
<i>Administrative & Other</i>												
8307 Vehicle Usage Charge	\$13,358	\$16,089	\$13,471	\$13,875	\$14,291	\$14,720	\$15,162	\$15,617	\$16,085	\$16,568	\$17,065	As Equipment/Vehicles
8308 Computer Usage Charge	140,177	89,135	144,038	148,359	152,810	157,394	162,116	166,980	171,989	177,149	182,463	As Data Processing
8309 Building Maintenance Charge	38,001	35,036	35,487	36,552	37,648	38,778	39,941	41,139	42,373	43,645	44,954	As Miscellaneous
8310 Administrative Charge	134,099	155,767	156,784	161,488	166,332	171,322	176,462	181,756	187,208	192,825	198,609	As Miscellaneous
Total Administrative & Other	\$325,635	\$296,027	\$349,780	\$360,273	\$371,082	\$382,214	\$393,680	\$405,491	\$417,656	\$430,185	\$443,091	
Total Planning and Project Management (701)	\$885,744	\$1,097,421	\$918,266	\$947,069	\$976,971	\$1,008,022	\$1,040,276	\$1,073,788	\$1,108,619	\$1,144,830	\$1,182,487	

	Actual FY 2019/20	Estimated FY 2020/21	Budget FY 2021/22	Projected							Notes		
				FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29		FY 2029/30	
Sanitary Sewer Operations (710)													
<i>Personnel</i>													
8101	Regular Salaries	\$468,546	\$477,752	\$705,041	\$758,383	\$773,254	\$788,415	\$803,875	\$819,637	\$835,708	\$852,095	\$868,802	As Labor
8111	Overtime	3,510	6,385	6,385	6,511	6,638	6,769	6,901	7,037	7,175	7,315	7,459	As Labor
8112	Standby/Unscheduled	12,344	10,326	9,077	9,255	9,436	9,621	9,810	10,002	10,198	10,398	10,602	As Labor
8119	Termination Pay	3,722	19,625	0	0	0	0	0	0	0	0	0	As Labor
8211	P.E.R.S. Retirement	88,891	97,990	134,616	145,040	152,727	160,821	169,345	178,320	187,771	197,723	208,202	As Benefits - Other
8221	F.I.C.A. Social Security	4	0	0	0	0	0	0	0	0	0	0	As Benefits - Other
8232	Medicare	7,716	8,062	10,266	11,557	12,366	13,232	14,158	15,149	16,210	17,344	18,558	As Benefits - Medical
8233	Life & Disability Insurance	(256)	2,550	3,762	4,275	4,574	4,894	5,236	5,603	5,995	6,415	6,864	As Benefits - Medical
8241	Dental Plan	5,343	4,976	9,254	10,888	11,650	12,465	13,338	14,272	15,271	16,340	17,483	As Benefits - Medical
8242	Vision Plan	1,421	1,195	1,911	2,192	2,346	2,510	2,685	2,873	3,075	3,290	3,520	As Benefits - Medical
8253	Allowances	(988)	420	420	442	466	490	516	544	573	603	635	As Benefits - Other
8259	Deferred Compensation	11,128	12,643	23,417	26,299	27,693	29,161	30,706	32,334	34,047	35,852	37,752	As Benefits - Other
8271	SEC 125 Benefits	94,354	86,151	153,497	176,647	189,012	202,243	216,400	231,548	247,756	265,099	283,656	As Benefits - Medical
8281	Benefit Prefunding	50,999	51,873	76,855	83,985	88,436	93,123	98,058	103,255	108,728	114,491	120,559	As Benefits - Other
8282	Compensated Absences	(48,853)	0	0	0	0	0	0	0	0	0	0	As Labor
8285	Workers' Compensation	30,303	53,406	79,905	89,878	94,641	99,657	104,939	110,501	116,357	122,524	129,018	As Benefits - Other
	Total Personnel	\$728,185	\$833,354	\$1,214,405	\$1,325,351	\$1,373,238	\$1,423,401	\$1,475,968	\$1,531,075	\$1,588,864	\$1,649,488	\$1,713,111	
<i>Supplies & Services</i>													
8305	After Hours Dispatch Service	\$10,000	\$10,000	\$10,000	\$10,196	\$10,396	\$10,600	\$10,808	\$11,020	\$11,236	\$11,456	\$11,681	As Profess/Contractual
8311	Property Tax Admin Fee	44,145	45,469	46,197	46,197	46,659	47,126	47,597	48,073	48,554	49,039	49,529	As Rate Revenue
8351	Other Professional/Tech	110,462	81,000	94,000	95,843	97,722	99,639	101,592	103,584	105,615	107,686	109,798	As Profess/Contractual
8411	Water	9,879	9,000	12,000	12,600	13,200	13,892	14,586	15,315	16,081	16,885	17,729	As Utilities
8417	Other Waste Water Treatment	270,841	150,000	150,000	157,500	165,375	173,644	182,326	191,442	201,014	211,065	221,618	As Utilities
8418	S.V.C.W. Sewer Treatment	3,004,200	3,387,172	3,387,030	3,530,000	3,670,000	3,990,000	4,700,000	4,690,000	4,660,000	4,820,000	4,830,000	As SVCW Treatment
8430	Repair & Maintenance Service	18,558	18,000	20,000	20,600	21,218	21,855	22,510	23,185	23,881	24,597	25,335	As Miscellaneous
8441	Land/Building Rentals	56,000	56,000	56,000	57,680	59,410	61,193	63,028	64,919	66,867	68,873	70,939	As Miscellaneous
8442	Equipment/Vehicle Rental	3,709	3,800	2,000	2,060	2,122	2,185	2,251	2,319	2,388	2,460	2,534	As Equipment/Vehicles
8522	Liability Insurance Charge	263,891	541,217	500,000	515,000	530,450	546,364	562,754	579,637	597,026	614,937	633,385	As Equipment/Vehicles
8530	Communications	1,220	6,649	7,000	7,210	7,426	7,649	7,879	8,115	8,358	8,609	8,867	As Materials & Supplies
8532	Telephone	7,343	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
8580	Travel And Training	4,054	3,000	7,000	7,140	7,283	7,428	7,577	7,729	7,883	8,041	8,202	As Education/Training
8590	Street Access Fee	204,204	204,204	204,204	204,204	204,204	204,204	204,204	204,204	204,204	204,204	204,204	As Flat
8591	Memberships & Dues	3,891	6,000	8,000	8,160	8,323	8,490	8,659	8,833	9,009	9,189	9,373	As Education/Training
8599	Miscellaneous	2,327	2,500	2,500	2,575	2,652	2,732	2,814	2,898	2,985	3,075	3,167	As Miscellaneous
8610	General Supplies	7,665	7,000	5,000	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	As Materials & Supplies
8612	Small Tools	20,575	5,500	10,000	10,300	10,609	10,927	11,255	11,593	11,941	12,299	12,668	As Materials & Supplies
8613	Safety Equipment	15,136	10,000	15,000	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	As Miscellaneous
8632	Natural Gas & Electricity	50,530	47,023	48,000	50,400	52,920	55,566	58,344	61,262	64,325	67,541	70,918	As Utilities
8639	Gasoline	12,998	16,000	16,000	16,800	17,640	18,522	19,448	20,421	21,442	22,514	23,639	As Utilities
8641	Repair & Maintenance Supplies	51,224	30,000	40,000	41,200	42,436	43,709	45,020	46,371	47,762	49,195	50,671	As Miscellaneous
	Total Supplies & Services	\$4,172,852	\$4,639,534	\$4,639,931	\$4,816,265	\$4,991,294	\$5,347,577	\$6,095,164	\$6,124,104	\$6,134,452	\$6,336,262	\$6,389,593	
<i>Administrative & Other</i>													
8307	Vehicle Usage Charge	\$336,961	\$383,743	\$314,920	\$324,368	\$334,099	\$344,122	\$354,445	\$365,079	\$376,031	\$387,312	\$398,931	As Equipment/Vehicles
8308	Computer Usage Charge	99,681	120,865	124,449	128,182	132,028	135,989	140,068	144,270	148,599	153,057	157,648	As Data Processing
8309	Building Maintenance Ch	42,518	48,317	48,939	50,407	51,919	53,477	55,081	56,734	58,436	60,189	61,994	As Miscellaneous
8310	Administrative Support	117,414	147,204	148,093	152,536	157,112	161,825	166,680	171,680	176,831	182,136	187,600	As Miscellaneous
	Total Administrative & Other	\$596,575	\$700,129	\$636,401	\$655,493	\$675,158	\$695,413	\$716,275	\$737,763	\$759,896	\$782,693	\$806,174	
	Total Sanitary Sewer Operations (710)	\$5,497,612	\$6,173,018	\$6,490,737	\$6,797,109	\$7,039,690	\$7,466,391	\$8,287,407	\$8,392,942	\$8,483,212	\$8,768,444	\$8,908,877	
Sanitary Sewer Capital Operations (730)													
8351	Other Professional/Tech	\$5,074	\$4,100	\$4,100	\$4,223	\$4,350	\$4,480	\$4,615	\$4,753	\$4,896	\$5,042	\$5,194	As Miscellaneous
8310	Administrative Charge	97,740	133,233	129,184	133,060	137,051	141,163	145,398	149,760	154,252	158,880	163,646	As Miscellaneous
8599	Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	As Profess/Contractual
9030	Improvement Other Than Building	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
	Total Sanitary Sewer Capital Operations (730)	\$102,814	\$137,333	\$133,284	\$137,283	\$141,401	\$145,643	\$150,012	\$154,513	\$159,148	\$163,923	\$168,840	
	Total Operating & Maintenance Expense	\$6,486,170	\$7,407,772	\$7,542,287	\$7,881,460	\$8,158,062	\$8,620,056	\$9,477,695	\$9,621,243	\$9,750,978	\$10,077,196	\$10,260,204	

	Actual	Estimated	Budget	Projected								Notes
	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	
Repair and Replacement Funding	\$1,400,393	\$1,750,000	\$1,900,000	\$2,250,000	\$2,600,000	\$2,950,000	\$3,300,000	\$3,650,000	\$4,000,000	\$4,350,000	\$4,700,000	FY 2021 Approx. Depr. \$1,400,393
I/I Capital Funding Transfer	\$237,942	\$611,000	\$627,000	\$644,000	\$661,000	\$679,000	\$697,000	\$716,000	\$735,000	\$755,000	\$775,000	
Deferred Capital Funding (Debt Service)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Debt Service												
2016 Sewer Revenue Refunding	\$762,105	\$770,355	\$767,105	\$767,705	\$767,505	\$771,255	\$768,505	\$764,505	\$769,255	\$771,455	\$773,355	Debt Schedule
2016 Sewer Revenue	630,991	620,741	625,741	621,341	621,941	621,191	620,191	628,941	621,941	619,141	616,341	Debt Schedule
2019 Sewer Revenue	121,090	1,020,500	1,109,500	1,110,625	1,111,000	1,110,625	1,109,500	1,107,625	1,109,875	1,106,250	1,106,750	Debt Schedule
New Low Interest Loan	0	0	0	0	0	0	0	0	0	0	0	
New Revenue Bond 2024/2025	0	0	0	0	0	975,772	975,772	975,772	975,772	975,772	975,772	
New Revenue Bond 2027/2028	0	0	0	0	0	0	0	0	975,772	975,772	975,772	
Total Debt Service	\$1,514,186	\$2,411,596	\$2,502,346	\$2,499,671	\$2,500,446	\$3,478,843	\$3,473,968	\$3,476,843	\$4,452,614	\$4,448,389	\$4,447,989	
Change in Working Capital +/-												
Operating (Cash) Reserve Transfer	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Capital Reserve Transfer	3,190,034	343,091	1,407,195	852,798	1,098,679	241,764	95,314	661,151	342,938	946,305	1,714,811	
Change in Working Capital +/-	\$3,190,034	\$343,091	\$1,407,195	\$852,798	\$1,098,679	\$241,764	\$95,314	\$661,151	\$342,938	\$946,305	\$1,714,811	
TOTAL REVENUE REQUIREMENT	\$12,828,725	\$12,523,459	\$13,978,828	\$14,127,929	\$15,018,187	\$15,969,663	\$17,043,977	\$18,125,236	\$19,281,531	\$20,576,890	\$21,898,004	
Total Balance/(Deficiency) of Funds	\$0	\$0	\$0	(\$723,787)	(\$1,502,256)	(\$2,339,064)	(\$3,238,107)	(\$4,203,541)	(\$5,239,790)	(\$6,351,573)	(\$7,543,916)	
Total Incr. as a % of Current Rates				5.5%	11.3%	17.4%	23.9%	30.7%	37.9%	45.5%	53.5%	
Proposed Rate Adjustment				5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	
Additional Revenue from Rate Increase				\$723,787	\$1,502,256	\$2,339,064	\$3,238,107	\$4,203,541	\$5,239,790	\$6,351,573	\$7,543,916	
Balance/(Deficiency) of Funds				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Deficiency as a % of Retail Rate Revenues				0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Residential Bill Comparison (8 HCF X Adjustment Factor)												
Monthly												
After Proposed Rate Adjustment			\$120.96	\$128.31	\$135.36	\$142.80	\$150.66	\$158.95	\$167.69	\$176.91	\$186.64	
Monthly Bill Difference			\$7.35	\$7.05	\$7.05	\$7.44	\$7.86	\$8.28	\$8.74	\$9.22	\$9.73	
Cumulative Bill Difference			\$7.35	\$14.40	\$21.85	\$29.71	\$37.99	\$46.73	\$55.95	\$65.68	\$75.93	
Percentage overall change to bill			6.1%	11.2%	16.1%	20.8%	25.2%	29.4%	33.4%	37.1%		
Debt Service Coverage Ratio (Revenue Bonds Only)												
Before Proposed Rate Adjustment	3.99	2.06	2.52	2.15	2.09	1.40	1.21	1.20	0.93	0.90	0.89	Minimum 1.0/Min Target 1.25
After Proposed Rate Adjustment	3.99	2.06	2.52	2.44	2.69	2.07	2.14	2.41	2.11	2.33	2.59	Minimum 1.0/Min Target 1.25
Reserve Balances												
Operating (Cash) Reserve												
Beginning Reserve Balance			\$13,518,120	\$13,518,120	\$13,518,120	\$13,518,120	\$13,518,120	\$13,518,120	\$13,518,120	\$13,518,120	\$13,518,120	
Plus: To Reserves			0	0	0	0	0	0	0	0	0	
Less: Transfers to Capital Reserve			0	0	0	0	0	0	0	0	0	Needs to be (-)
Less: Other Uses of Funds			0	0	0	0	0	0	0	0	0	
Ending Reserve Balance			\$13,518,120	\$13,518,120	\$13,518,120	\$13,518,120	\$13,518,120	\$13,518,120	\$13,518,120	\$13,518,120	\$13,518,120	
Target Minimum = 180 Days of O&M			\$5,070,000	\$5,280,000	\$5,460,000	\$5,730,000	\$6,200,000	\$6,320,000	\$6,430,000	\$6,640,000	\$6,790,000	
Emergency/Litigation Reserve			\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	
Target Minimum			\$7,070,000	\$7,280,000	\$7,460,000	\$7,730,000	\$8,200,000	\$8,320,000	\$8,430,000	\$8,640,000	\$8,790,000	
Capital Project Reserve												
Beginning Reserve Balance			\$12,392,834	\$13,160,029	\$8,207,827	\$3,646,506	\$13,903,270	\$8,963,584	\$4,739,735	\$16,056,006	\$13,325,644	
Plus: To Reserves			1,407,195	852,798	1,098,679	241,764	95,314	661,151	342,938	946,305	1,714,811	
Plus: Bond Funds Year 1			0	0	0	15,000,000	0	0	0	0	0	Input from City Projections
Plus: Bond Funds Year 2			0	0	0	0	0	0	15,000,000	0	0	
Plus: Transfers from Operating Reserve			0	0	0	0	0	0	0	0	0	
Less: CIP			(640,000)	(5,805,000)	(5,660,000)	(4,985,000)	(5,035,000)	(4,885,000)	(4,026,667)	(3,676,667)	(3,326,667)	
Less: Other Uses of Funds			0	0	0	0	0	0	0	0	0	
Ending Reserve Balance			\$13,160,029	\$8,207,827	\$3,646,506	\$13,903,270	\$8,963,584	\$4,739,735	\$16,056,006	\$13,325,644	\$11,713,788	
Target Minimum = 2 Yr's of Ann Depr Exp			\$2,800,786	\$2,857,000	\$2,914,000	\$2,972,000	\$3,031,000	\$3,092,000	\$3,154,000	\$3,217,000	\$3,281,000	FY 2021 Depr. \$1,400,393 X 2
Connection Fee Reserve (Restricted)			\$5,704,970	\$6,704,970	\$7,704,970	\$8,704,970	\$9,704,970	\$10,704,970	\$11,704,970	\$12,704,970	\$13,704,970	

City of Belmont
 Sewer Cost of Service Study
 Exhibit 4
 Capital Improvement Projects

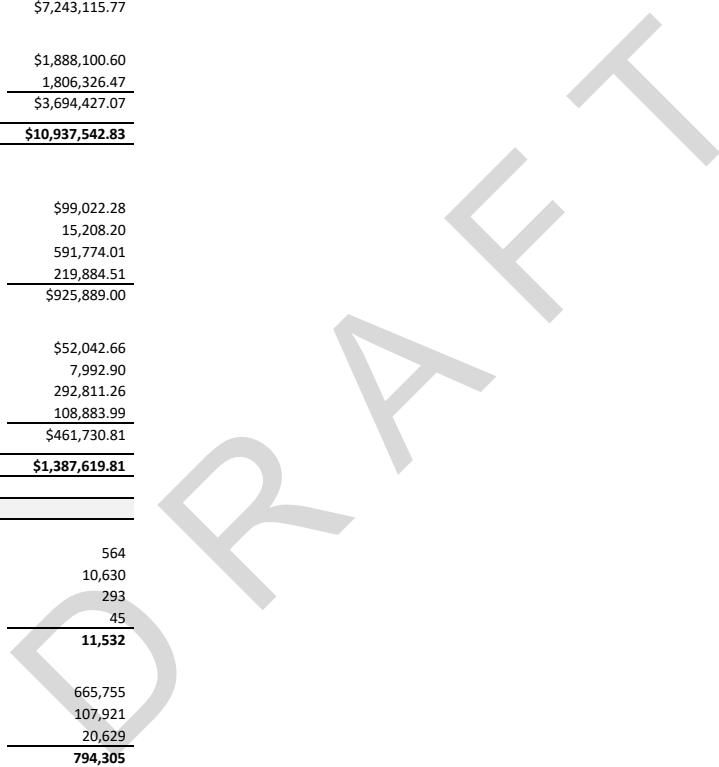
Capital Improvement Projects	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	Total	Notes
Total Sewer Capital	\$6,850,000	\$2,540,000	\$6,805,000	\$8,260,000	\$6,435,000	\$3,585,000	\$4,035,000	\$5,276,667	\$5,276,667	\$5,276,667	\$54,340,000	
Additional Master Plan Identified Capital Needs	\$0	\$0	\$1,250,000	\$0	\$1,500,000	\$4,750,000	\$4,500,000	\$2,750,000	\$2,750,000	\$2,750,000	\$20,250,000	
Less: Funding Sources												
Grants	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Reserves	5,100,000	640,000	5,805,000	5,660,000	4,985,000	5,035,000	4,885,000	4,026,667	3,676,667	3,326,667	43,140,000	
Additional Long-Term Debt	0	0	0	0	0	0	0	0	0	0	0	
Total Funding Sources	\$5,100,000	\$640,000	\$5,805,000	\$5,660,000	\$4,985,000	\$5,035,000	\$4,885,000	\$4,026,667	\$3,676,667	\$3,326,667	\$43,140,000	
Total Capital Improvement Funded Through Rates	\$1,750,000	\$1,900,000	\$2,250,000	\$2,600,000	\$2,950,000	\$3,300,000	\$3,650,000	\$4,000,000	\$4,350,000	\$4,700,000	\$31,450,000	FY 2021 Approx. Depr. \$1,400,393
I/I Capital Funding	\$611,000	\$627,000	\$644,000	\$661,000	\$679,000	\$697,000	\$716,000	\$735,000	\$755,000	\$775,000	\$6,900,000	FY 2021 Approx. Depr. \$234,197
	\$1,750,000	\$1,900,000	\$2,250,000	\$2,600,000	\$2,950,000	\$3,300,000	\$3,650,000	\$4,000,000	\$4,350,000	\$4,700,000		

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City of Belmont
 Sewer Cost of Service Study
 Exhibit 5A
 Revenue At Present Rates for 2019-2020

Use Description	Billing Units	0.14	Rate Per Billing Unit	Total
Standby Charge	564		\$245.40	\$138,405.60
Residential				
Collection				
Base Charge \$/Unit	10,630		\$337.96	\$3,592,514.80
Flow Charge \$/HCF	665,755	758,961	\$4.81	3,650,600.97
Total				\$7,243,115.77
Treatment				
Base Charge \$/Unit	10,630		\$177.62	\$1,888,100.60
Flow Charge \$/HCF	665,755	758,961	\$2.38	1,806,326.47
Total				\$3,694,427.07
Total Residential Revenue				\$10,937,542.83
Commercial				
Collection				
LS - Base Charge \$/Unit	293		\$337.96	\$99,022.28
HS - Base Charge \$/Unit	45		\$337.96	15,208.20
Low Strength Flow Charge \$/HCF	107,921	123,030	\$4.81	591,774.01
High Strength Flow Charge \$/HCF	20,629	23,517	\$9.35	219,884.51
Total	794,305	905,508		\$925,889.00
Treatment				
LS - Base Charge \$/Unit	293		\$177.62	\$52,042.66
HS - Base Charge \$/Unit	45		\$177.62	7,992.90
Low Strength Flow Charge \$/HCF	107,921	123,030	\$2.38	292,811.26
High Strength Flow Charge \$/HCF	20,629	23,517	\$4.63	108,883.99
Total				\$461,730.81
Total Commercial Revenue				\$1,387,619.81
Summary of Revenues at Present Rates				
Total Number of Billing Units				
Standby				564
Residential				10,630
LS Commercial				293
HS Commercial				45
Total				11,532
Total Annual Flow				
Residential				665,755
LS Commercial				107,921
HS Commercial				20,629
Total				794,305
Total Revenue				
Standby Charge Revenue				\$138,406
Residential Revenue				\$10,937,543
LS Commercial				1,035,650
HS Commercial				351,970
Total				\$12,325,163
Total Revenue				\$12,463,568

Estimated 2020 \$11,936,993
 \$526,575
 4.4%



City of Belmont
 Sewer Cost of Service Study
 Exhibit 5B
 Projected Revenue At Present Rates for 2020-2021

Use Description	Billing Units	0.09	Rate Per Billing Unit	Total
Standby Charge	561		\$245.40	\$137,669.40
Residential				
Collection				
Base Charge \$/Unit	11,129		\$361.62	\$4,024,361.16
Flow Charge \$/HCF	580,968	633,255	\$5.15	3,261,265.57
Total				\$7,285,626.73
Treatment				
Base Charge \$/Unit	10,748		\$190.05	\$2,042,580.75
Flow Charge \$/HCF	580,968	633,255	\$2.55	1,614,801.40
Total				\$3,657,382.15
Total Residential Revenue				\$10,943,008.88
Commercial				
Collection				
LS - Base Charge \$/Unit	200		\$361.62	\$72,324.00
HS - Base Charge \$/Unit	25		\$361.62	9,040.50
Low Strength Flow Charge \$/HCF	125,000	136,250	\$5.15	701,687.50
High Strength Flow Charge \$/HCF	16,495	17,980	\$10.00	179,795.50
Total	722,463	787,485		\$962,847.50
Treatment				
LS - Base Charge \$/Unit	200		\$190.05	\$38,010.00
HS - Base Charge \$/Unit	25		\$190.05	4,751.25
Low Strength Flow Charge \$/HCF	125,000	136,250	\$2.55	347,437.50
High Strength Flow Charge \$/HCF	16,495	17,980	\$4.95	88,998.77
Total				\$479,197.52
Total Commercial Revenue				\$1,442,045.02

Summary of Revenues at Present Rates

Total Number of Billing Units

Standby	561
Residential	11,129
LS Commercial	200
HS Commercial	25
Total	11,915

Total Annual Flow

Residential	580,968
LS Commercial	125,000
HS Commercial	16,495
Total	722,463

Total Revenue

Standby Charge Revenue	\$137,669
Residential Revenue	\$10,943,009
LS Commercial	1,159,459
HS Commercial	282,586
Total	\$12,385,054

Total Revenue	\$12,522,723
----------------------	---------------------

	2017-18	2018-19	2019-20	Average	2020-21
Billed HCF	778,645	754,965	794,305	775,972	722,463
% Adjustment Factor	0.14	0.14	0.14	0.14	0.09
Total HCF	887,655	860,660	905,508	884,608	787,485

City of Belmont
 Sewer Cost of Service Study
 Exhibit 5C
 Projected Revenue At Present Rates for 2021-2022

Use Description	Billing Units	0.09	Rate Per Billing Unit	Total
Standby Charge	555		\$245.40	\$136,197.00
Residential Collection				
Base Charge \$/Unit	10,748		\$386.93	\$4,158,650.10
Flow Charge \$/HCF	678,490	739,554	\$5.51	4,074,941.12
Total				\$8,233,591.22
Treatment				
Base Charge \$/Unit	10,748		\$203.36	\$2,185,674.63
Flow Charge \$/HCF	678,490	739,554	\$2.72	2,011,586.18
Total	97,521			\$4,197,260.81
Total Residential Revenue				\$12,430,852.03
Commercial Collection				
LS - Base Charge \$/Unit	208		\$386.93	\$80,479.21
HS - Base Charge \$/Unit	19		\$386.93	7,351.67
Low Strength Flow Charge \$/HCF	115,097	125,455	\$5.51	691,258.09
High Strength Flow Charge \$/HCF	13,938	15,193	\$10.70	162,561.03
Total	807,524	880,202		\$941,650.00
Treatment				
LS - Base Charge \$/Unit	208		\$203.36	\$42,297.71
HS - Base Charge \$/Unit	19		\$203.36	3,863.84
Low Strength Flow Charge \$/HCF	115,097	125,455	\$2.72	341,238.11
High Strength Flow Charge \$/HCF	13,938	15,193	\$5.30	80,520.89
Total				\$467,920.55
Total Commercial Revenue				\$1,409,570.55

Summary of Revenues at Present Rates

Total Number of Billing Units

Standby	555
Residential	10,748
LS Commercial	208
HS Commercial	19
Total	11,530

Total Annual Flow

Residential	678,490
LS Commercial	115,097
HS Commercial	13,938
Total	807,524

Total Revenue

Standby Charge Revenue	\$136,197
Residential Revenue	\$12,430,852
LS Commercial	1,155,273
HS Commercial	254,297
Total	\$13,840,423

Total Revenue	\$13,976,620
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	2018-19	2019-20	2020-21	Average	2021-22
Billed HCF	754,965	794,305	722,463	757,244	807,524
% Adjustment Factor	0.14	0.14	0.09		0.09
Total HCF	860,660	905,508	787,485	851,218	880,202

City of Belmont
 Sewer Cost of Service Study
 Exhibit 5D
 Projected Revenue At Present Rates for 2022-2023

Use Description	Billing Units	0.10	Rate Per	
			Billing Unit	Total
Standby Charge	555		\$245.40	\$136,197.00
Residential				
Collection				
Base Charge \$/Unit	10,748		\$386.93	\$4,158,650.10
Flow Charge \$/HCF	580,968	639,065	\$5.51	3,521,248.88
Total				\$7,679,898.98
Treatment				
Base Charge \$/Unit	10,748		\$203.36	\$2,185,674.63
Flow Charge \$/HCF	580,968	639,065	\$2.72	1,738,257.16
Total				\$3,923,931.79
Total Residential Revenue				\$11,603,830.77
Commercial				
Collection				
LS - Base Charge \$/Unit	208		\$386.93	\$80,479.21
HS - Base Charge \$/Unit	19		\$386.93	7,351.67
Low Strength Flow Charge \$/HCF	125,000	137,500	\$5.51	757,625.00
High Strength Flow Charge \$/HCF	16,495	18,145	\$10.70	194,146.15
Total	722,463	794,710		\$1,039,602.03
Treatment				
LS - Base Charge \$/Unit	208		\$203.36	\$42,297.71
HS - Base Charge \$/Unit	19		\$203.36	3,863.84
Low Strength Flow Charge \$/HCF	125,000	137,500	\$2.72	374,000.00
High Strength Flow Charge \$/HCF	16,495	18,145	\$5.30	96,165.85
Total				\$516,327.40
Total Commercial Revenue				\$1,555,929.43
Summary of Revenues at Present Rates				
Total Number of Billing Units				
Standby				555
Residential				10,748
LS Commercial				208
HS Commercial				19
Total				11,530
Total Annual Flow				
Residential				580,968
LS Commercial				125,000
HS Commercial				16,495
Total				722,463
Total Revenue				
Standby Charge Revenue				\$136,197
Residential Revenue				\$11,603,831
LS Commercial				1,254,402
HS Commercial				301,528
Total				\$13,159,760
Total Revenue				\$13,295,957

	2019-20	2020-21	2021-22	Average	2022-23
Billed HCF	794,305	722,463	807,524	774,764	722,463
% Adjustment Factor	0.14	0.09	0.09		0.100
Total HCF	905,508	787,485	880,202	857,731	794,710

City of Belmont
 Sewer Cost of Service Study
 Exhibit 6
 Development of the Volume Distribution Factor

	FY 2022/23 Annual Wastewater Flow (CCF) [1]	11.0% Inflow and Infiltration [2] [3]	Total Annual Flow at Plant (CCF)	Avg. Daily Flow At Plant (MGD) [4]	% of Total
Residential	580,968	63,907	644,875	1.32	80.4%
Commercial	125,000	13,750	138,750	0.28	17.3%
Commercial High S.	16,495	1,814	18,309	0.04	2.3%
	-----	-----	-----	-----	-----
Total Consumption	722,463	79,471	801,934	1.64	100.0%
			Estimated Plant Flow [4]	1.94	
Distribution Factor					(VOL)

Note:

[1] Based on 2021/22 customer's winter period consumption, plus estimated growth for FY 22/23

[2] Calculated based on billing report versus total plant flow.

- Inflow represents external groundwater that can enter the sewer at service connections where the pipe is broken, at defective joints, at connections to manholes, etc.
- Infiltration is water discharged to sewer from sources such as roof leaders, cellar, yard and drains from springs and other wet areas, storm sewers, catch basins, surface water runoff, etc

[3] Total I&I allocated to each class of service based on flow.

[4] City provided total flow for FY 2021/22 plus one year growth.

City of Belmont
 Sewer Cost of Service Study
 Exhibit 7
 Development of the Customer Distribution Factor

	Actual Customer		Customer Service & Accounting			
	Number of Units	% of Total	Number of Bills [1]	Weighting Factor	Weighted Customer	% of Total
Residential	10,748	97.9%	7,780	1.0	7,780	97.2%
Commercial	208	1.9%	208	1.0	208	2.6%
Commercial High S.	19	0.2%	19	1.0	19	0.2%
	-----	-----	-----		-----	-----
Total Customers	10,975	100.0%	8,007		8,007	100.0%
Distribution Factor		(AC)				(WCA)

Note:
 [1] Number of Residential bills from billing records.

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City of Belmont
 Sewer Cost of Service Study
 Exhibit 8
 Development of the Strength Distribution Factor

	Annual Flow (CCF)	Biochemical Oxygen Demand			Suspended Solids		
		Avg. Factor (mg/l) [1]	Calculated Pounds [2]	% of Total	Avg. Factor (mg/l) [1]	Calculated Pounds [2]	% of Total
Residential	644,875	250	1,006,337	77.2%	220	885,576	77.2%
Commercial	138,750	250	216,521	16.6%	220	190,539	16.6%
Commercial High S.	18,309	700	80,002	6.1%	616	70,402	6.1%
	-----		-----	-----		-----	-----
Total Strength	801,934		1,302,860	100.0%		1,146,517	100.0%
Distribution Factor				(BOD)			(SS)

Note:

[1] Average BOD and SS strength factors based on typical residential customer from similar studies. High strength based on 2.8 times residential based on WA State Dept Health, Rule Development Committee Issue Research Report, Wastewater Quality/Strength/Content, page 6 of 18.

[2] Calculated pounds equals (annual flow (x) 748 (x) strength factor mg/l (x) 8.34 /1,000,000)

City of Belmont

Sewer Cost of Service Study

Exhibit 9

Development of the Revenue Related Distribution Factor

	Projected Year	% of
	FY 2022/23	Total
Residential	\$11,603,831	88.2%
Commercial	1,254,402	9.5%
Commercial High S.	301,528	2.3%
	-----	-----
Total Rate Revenues	\$13,159,760	100.0%
Distribution Factor		(RR)

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City of Belmont
Sewer Cost of Service Study
Exhibit 10
Functionalization and Allocation of Plant in Service

	Total Plant FY 2021	Operating Volume (VOL)	Biochemical Oxygen Demand (BOD)	Suspended Solids (SS)	Customer Related		Revenue (RR)	Direct (DA)	Basis of Allocation	
					Weighted for:					
					Actual Customer (AC)	Customer Acct/Svcs (WCA)				
Sewer Operations (501)										
Land	\$14,793	\$9,615	\$0	\$0	\$5,178	\$0	\$0	\$0	65.0% VOL	35% AC
Improvements	8,442,998	5,487,949	0	0	2,955,049	0	0	0	65.0% VOL	35% AC
Machinery and Equipment	261,761	261,761	0	0	0	0	0	0	100.0% VOL	
Total Sewer Operations (501)	\$8,719,552	\$5,759,325	\$0	\$0	\$2,960,227	\$0	\$0	\$0		
Sewer Capital (503)										
Land	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	65.0% VOL	35% AC
Construction in Progress	5,254,615	3,415,500	0	0	1,839,115	0	0	0	65.0% VOL	35% AC
Improvements	33,530,504	21,794,828	0	0	11,735,676	0	0	0	65.0% VOL	35% AC
Machinery and Equipment	9,098	9,098	0	0	0	0	0	0	100.0% VOL	
Total Sewer Capital (503)	\$38,794,217	\$25,219,425	\$0	\$0	\$13,574,792	\$0	\$0	\$0		
TOTAL PLANT IN SERVICE	\$47,513,769	\$30,978,751	\$0	\$0	\$16,535,019	\$0	\$0	\$0		
Less: Accumulated Depreciation										
Improvements										
Sewer Operations (501)	(\$6,754,397)	(\$4,390,358)	\$0	\$0	(\$2,364,039)	\$0	\$0	\$0	As Sewer Operations (501)	
Sewer Capital (503)	(10,343,235)	(6,723,103)	0	0	(3,620,132)	0	0	0	As Sewer Capital (503)	
Total Accum Depr Imprv.	(\$17,097,632)	(\$11,113,461)	\$0	\$0	(\$5,984,171)	\$0	\$0	\$0		
Machinery and Equipment										
Sewer Operations (501)	(\$251,179)	(\$251,179)	\$0	\$0	\$0	\$0	\$0	\$0	As Sewer Operations (501)	
Sewer Capital (503)	(9,098)	(5,914)	0	0	(3,184)	0	0	0	As Sewer Capital (503)	
Total Accum Depr Mach & Equip	(\$260,277)	(\$257,093)	\$0	\$0	(\$3,184)	\$0	\$0	\$0		
Total Accumulated Depreciation	(\$17,357,909)	(\$11,370,554)	\$0	\$0	(\$5,987,356)	\$0	\$0	\$0		
Net Plant in Service	\$30,155,860	\$19,608,197	\$0	\$0	\$10,547,663	\$0	\$0	\$0		

City of Belmont
Sewer Cost of Service Study
Exhibit 11
Functionalization and Allocation of
Revenue Requirements

	Total FY 2022/23	Strength Related			Weighted for:		Revenue (RR)	Direct (DA)	Basis of Allocation
		Volume (VOL)	Biochemical Oxygen Demand (BOD)	Suspended Solids (SS)	Actual Customer (AC)	Customer Acct/Svcs (WCA)			
EXPENSES									
Planning and Project Management (701)									
<i>Personnel</i>									
Regular Salaries	\$346,292	\$225,169	\$0	\$0	\$121,123	\$0	\$0	\$0	As Net Plant In Svc
Permanent Part-Time	16,626	10,810	0	0	5,815	0	0	0	As Net Plant In Svc
Temporary Part-Time	3,781	2,459	0	0	1,323	0	0	0	As Net Plant In Svc
Overtime	0	0	0	0	0	0	0	0	As Net Plant In Svc
Termination Pay	0	0	0	0	0	0	0	0	As Net Plant In Svc
P.E.R.S. Retirement	73,068	47,511	0	0	25,557	0	0	0	As Net Plant In Svc
Medicare	4,311	2,803	0	0	1,508	0	0	0	As Net Plant In Svc
Life & Disability Insurance	1,789	1,163	0	0	626	0	0	0	As Net Plant In Svc
State Unemployment Insurance	0	0	0	0	0	0	0	0	As Net Plant In Svc
Dental Plan	2,759	1,794	0	0	965	0	0	0	As Net Plant In Svc
Vision Plan	645	419	0	0	225	0	0	0	As Net Plant In Svc
Allowances	1,106	719	0	0	387	0	0	0	As Net Plant In Svc
Deferred Compensation	9,656	6,279	0	0	3,377	0	0	0	As Net Plant In Svc
SEC 125 Benefits	51,120	33,240	0	0	17,880	0	0	0	As Net Plant In Svc
Benefit Prefunding	37,688	24,506	0	0	13,182	0	0	0	As Net Plant In Svc
GASB 68 Pension Expense	0	0	0	0	0	0	0	0	As Net Plant In Svc
GASB 75 OPEB Expense	0	0	0	0	0	0	0	0	As Net Plant In Svc
Workers' Compensation	9,806	6,376	0	0	3,430	0	0	0	As Net Plant In Svc
Total Personnel	\$558,645	\$363,247	\$0	\$0	\$195,398	\$0	\$0	\$0	
<i>Supplies & Services</i>									
Other Professional/Technical	\$5,098	\$3,315	\$0	\$0	\$1,783	\$0	\$0	\$0	As Net Plant In Svc
Liability Insurance Charge	7,898	5,136	0	0	2,763	0	0	0	As Net Plant In Svc
Postage/Delivery Services	103	67	0	0	36	0	0	0	As Net Plant In Svc
Telephone	0	0	0	0	0	0	0	0	As Net Plant In Svc
Printing & Binding	0	0	0	0	0	0	0	0	As Net Plant In Svc
Travel & Training	3,060	1,990	0	0	1,070	0	0	0	As Net Plant In Svc
Membership & Dues	6,120	3,979	0	0	2,141	0	0	0	As Net Plant In Svc
Miscellaneous	4,120	2,679	0	0	1,441	0	0	0	As Net Plant In Svc
General Supplies	1,030	670	0	0	360	0	0	0	As Net Plant In Svc
Small Tools	515	335	0	0	180	0	0	0	As Net Plant In Svc
Books/Manuals/Subscriptions	206	134	0	0	72	0	0	0	As Net Plant In Svc
Total Supplies & Services	\$28,150	\$18,304	\$0	\$0	\$9,846	\$0	\$0	\$0	
<i>Administrative & Other</i>									
Vehicle Usage Charge	\$13,875	\$9,022	\$0	\$0	\$4,853	\$0	\$0	\$0	As Net Plant In Svc
Computer Usage Charge	148,359	0	0	0	0	148,359	0	0	100% WCA
Building Maintenance Charge	36,552	23,767	0	0	12,785	0	0	0	As Net Plant In Svc
Administrative Charge	161,488	0	0	0	0	161,488	0	0	100% WCA
Total Administrative & Other	\$360,273	\$32,789	\$0	\$0	\$17,638	\$309,847	\$0	\$0	
Total Planning and Project Management (701)	\$947,069	\$414,340	\$0	\$0	\$222,882	\$309,847	\$0	\$0	

City of Belmont
 Sewer Cost of Service Study
 Exhibit 11
 Functionalization and Allocation of
 Revenue Requirements

	Total FY 2022/23	Strength Related			Weighted for:		Revenue (RR)	Direct (DA)	Basis of Allocation
		Volume (VOL)	Biochemical Oxygen Demand (BOD)	Suspended Solids (SS)	Actual Customer (AC)	Customer Acct/Svcs (WCA)			
Sanitary Sewer Operations (710)									
<i>Personnel</i>									
Regular Salaries	\$758,383	\$493,122	\$0	\$0	\$265,261	\$0	\$0	\$0	As Net Plant In Svc
Overtime	\$6,511	4,233	0	0	2,277	0	0	0	As Net Plant In Svc
Standby/Unscheduled	\$9,255	6,018	0	0	3,237	0	0	0	As Net Plant In Svc
Termination Pay	\$0	0	0	0	0	0	0	0	As Net Plant In Svc
P.E.R.S. Retirement	\$145,040	94,309	0	0	50,731	0	0	0	As Net Plant In Svc
F.I.C.A. Social Security	\$0	0	0	0	0	0	0	0	As Net Plant In Svc
Medicare	\$11,557	7,515	0	0	4,042	0	0	0	As Net Plant In Svc
Life & Disability Insurance	\$4,275	2,779	0	0	1,495	0	0	0	As Net Plant In Svc
Dental Plan	\$10,888	7,080	0	0	3,808	0	0	0	As Net Plant In Svc
Vision Plan	\$2,192	1,425	0	0	767	0	0	0	As Net Plant In Svc
Allowances	\$442	288	0	0	155	0	0	0	As Net Plant In Svc
Deferred Compensation	\$26,299	17,100	0	0	9,199	0	0	0	As Net Plant In Svc
SEC 125 Benefits	\$176,647	114,861	0	0	61,786	0	0	0	As Net Plant In Svc
Benefit Prefunding	\$83,985	54,609	0	0	29,375	0	0	0	As Net Plant In Svc
Compensated Absences	\$0	0	0	0	0	0	0	0	As Net Plant In Svc
Workers' Compensation	\$89,878	58,441	0	0	31,437	0	0	0	As Net Plant In Svc
Total Personnel	\$1,325,351	\$861,781	\$0	\$0	\$463,570	\$0	\$0	\$0	
<i>Supplies & Services</i>									
After Hours Dispatch Service	\$10,196	\$6,630	\$0	\$0	\$3,566	\$0	\$0	\$0	As Net Plant In Svc
Property Tax Admin Fee	46,197	30,039	0	0	16,158	0	0	0	As Net Plant In Svc
Other Professional/Tech	95,843	0	0	0	0	95,843	0	0	100% WCA
Water	12,600	8,193	0	0	4,407	0	0	0	As Net Plant In Svc
Other Waste Water Treatment	157,500	60,834	45,457	51,208	0	0	0	0	39% VOL 29% BOD 33% SS
S.V.C.W. Sewer Treatment	3,530,000	1,363,460	1,018,823	1,147,717	0	0	0	0	39% VOL 29% BOD 33% SS
Repair & Maintenance Service	20,600	13,395	0	0	7,205	0	0	0	As Net Plant In Svc
Land/Building Rentals	57,680	37,505	0	0	20,175	0	0	0	As Net Plant In Svc
Equipment/Vehicle Rental	2,060	1,339	0	0	721	0	0	0	As Net Plant In Svc
Liability Insurance Charge	515,000	334,868	0	0	180,132	0	0	0	As Net Plant In Svc
Communications	7,210	4,688	0	0	2,522	0	0	0	As Net Plant In Svc
Telephone	0	0	0	0	0	0	0	0	100% WCA
Travel And Training	7,140	4,643	0	0	2,497	0	0	0	As Net Plant In Svc
Street Access Fee	204,204	204,204	0	0	0	0	0	0	100.0% VOL
Memberships & Dues	8,160	5,306	0	0	2,854	0	0	0	As Net Plant In Svc
Miscellaneous	2,575	1,674	0	0	901	0	0	0	As Net Plant In Svc
General Supplies	5,150	3,349	0	0	1,801	0	0	0	As Net Plant In Svc
Small Tools	10,300	6,697	0	0	3,603	0	0	0	As Net Plant In Svc
Safety Equipment	15,450	10,046	0	0	5,404	0	0	0	As Net Plant In Svc
Natural Gas & Electricity	50,400	50,400	0	0	0	0	0	0	100.0% VOL
Gasoline	16,800	10,924	0	0	5,876	0	0	0	As Net Plant In Svc
Repair & Maintenance Supplies	41,200	26,789	0	0	14,411	0	0	0	As Net Plant In Svc
Total Supplies & Services	\$4,816,265	\$2,184,983	\$1,064,281	\$1,198,925	\$272,234	\$95,843	\$0	\$0	

	Total FY 2022/23	Strength Related			Weighted for:		Revenue (RR)	Direct (DA)	Basis of Allocation
		Volume (VOL)	Biochemical Oxygen Demand (BOD)	Suspended Solids (SS)	Actual Customer (AC)	Customer Acct/Svcs (WCA)			
<i>Administrative & Other</i>									
Vehicle Usage Charge	\$324,368	\$210,913	\$0	\$0	\$113,455	\$0	\$0	\$0	As Net Plant In Svc
Computer Usage Charge	128,182	0	0	0	0	128,182	0	0	100% WCA
Building Maintenance Ch	50,407	32,776	0	0	17,631	0	0	0	As Net Plant In Svc
Administrative Support	152,536	0	0	0	0	152,536	0	0	100% WCA
Total Administrative & Other	\$655,493	\$243,689	\$0	\$0	\$131,086	\$280,718	\$0	\$0	
Total Sanitary Sewer Operations (710)	\$6,797,109	\$3,290,453	\$1,064,281	\$1,198,925	\$866,889	\$376,561	\$0	\$0	
Sanitary Sewer Capital Operations (730)									
Other Professional/Tech	\$4,223	\$0	\$0	\$0	\$0	\$4,223	\$0	\$0	100% WCA
Administrative Charge	133,060	0	0	0	0	133,060	0	0	100% WCA
Miscellaneous	0	0	0	0	0	0	0	0	As Net Plant In Svc
Improvement Other Than Building	0	0	0	0	0	0	0	0	As Net Plant In Svc
Total Sanitary Sewer Capital Operations (730)	\$137,283	\$0	\$0	\$0	\$0	\$137,283	\$0	\$0	
Total Operating & Maintenance Expense	\$7,881,460	\$3,704,793	\$1,064,281	\$1,198,925	\$1,089,771	\$823,691	\$0	\$0	
Net Capital Funded Through Rates	\$2,894,000	1,881,761	0	0	1,012,239	0	0	0	As Net Plant In Svc
Deferred Capital Funding (Debt Service)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	As Net Plant In Svc
Debt Service									
2016 Sewer Revenue Refunding	\$767,705	\$499,184	\$0	\$0	\$268,521	\$0	\$0	\$0	As Net Plant In Svc
2016 Sewer Revenue	621,341	404,014	0	0	217,328	0	0	0	As Net Plant In Svc
2019 Sewer Revenue	1,110,625	722,160	0	0	388,465	0	0	0	As Net Plant In Svc
New Low Interest Loan	0	0	0	0	0	0	0	0	As Net Plant In Svc
New Revenue Bond 2024/2025	0	0	0	0	0	0	0	0	As Net Plant In Svc
Total Debt Service	\$2,499,671	\$1,625,357	\$0	\$0	\$874,314	\$0	\$0	\$0	
Change in Working Capital +/-	\$852,798	\$554,513	\$0	\$0	\$298,284	\$0	\$0	\$0	As Net Plant In Svc
TOTAL REVENUE REQUIREMENTS	\$14,127,929	\$7,766,424	\$1,064,281	\$1,198,925	\$3,274,609	\$823,691	\$0	\$0	
Less: Miscellaneous Revenue									
Public Works Service Charges	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	As Net Plant In Svc
City CIP Chargeback	0	0	0	0	0	0	0	0	As Net Plant In Svc
Sewer Lateral Certificate Fee	0	0	0	0	0	0	0	0	100% Vol
Interest Earnings - Investments	106,713	58,662	8,039	9,056	24,734	6,222	0	0	As Total Rev. Req.
Other Interest Earnings	0	0	0	0	0	0	0	0	As Total Rev. Req.
Interest Revenue - Change	0	0	0	0	0	0	0	0	As Total Rev. Req.
Reimbursements	0	0	0	0	0	0	0	0	As Total Rev. Req.
Standby Charges	137,669	75,680	10,371	11,683	31,909	8,026	0	0	As Total Rev. Req.
Total Miscellaneous Revenues	\$244,382	\$134,342	\$18,410	\$20,739	\$56,644	\$14,248	\$0	\$0	
NET REVENUE REQUIREMENTS FROM RATES	\$13,883,547	\$7,632,082	\$1,045,871	\$1,178,186	\$3,217,965	\$809,443	\$0	\$0	
% Net Revenue Requirement	100.0%	55.0%	7.5%	8.5%	23.2%	5.8%	0.0%	0.0%	

City of Belmont
Sewer Cost of Service Study
Exhibit 12
Allocation of Revenue Requirements

Allocation Components	Net Revenue Requirement	Residential	Commercial		Distribution Factor
			Low Strength	High Strength	
Volume Related	\$7,632,082	\$6,137,333	\$1,320,497	\$174,253	(VOL)
Strength Related					
Bio-oxygen Demand	\$1,045,871	\$807,837	\$173,813	\$64,222	(BOD)
Suspended Solids	1,178,186	910,038	195,802	72,346	(SS)
Total Strength Related	\$2,224,057	\$1,717,874	\$369,615	\$136,568	
Customer Related					
Actual Customer	\$3,217,965	\$3,151,407	\$60,987	\$5,571	(AC)
Weighted Customer	809,443	786,495	21,027	1,921	(WCA)
Total Customer Related	\$4,027,408	\$3,937,903	\$82,013	\$7,492	
Revenue Related	\$0	\$0	\$0	\$0	(RR)
Direct Assignment	\$0	\$0	\$0	\$0	(DA)
NET REVENUE REQUIREMENT	\$13,883,547	\$11,793,110	\$1,772,124	\$318,313	

City of Belmont
 Sewer Cost of Service Study
 Exhibit 13
 Summary of the Cost of Service Analysis

	FY 2022/23 Expenses	Commercial		
		Residential	Low Strength	High Strength
Revenues at Present Rates	\$13,159,760	\$11,603,831	\$1,254,402	\$301,528
Allocated Revenue Requirement	\$13,883,547	\$11,793,110	\$1,772,124	\$318,313
Balance/(Deficiency) of Funds	(\$723,787)	(\$189,279)	(\$517,722)	(\$16,785)
Required % Change in Rates	5.5%	1.6%	41.3%	5.6%
Proposed Rate Adjustment	5.5%			
Additional Revenue from Rate Adjustment	\$723,787	\$614,807	\$92,386	\$16,594
Proposed Adjustment Based on COSA	5.5%	5.3%	7.4%	5.5%

City of Belmont
 Sewer Cost of Service Study
 Exhibit 14
 Average Unit Cost

	Total	Commercial		
		Residential	Low Strength	High Strength
Volume - \$/100 cf [1]	\$9.60	\$9.60	\$9.60	\$9.60
Strength - \$/100 cf	\$2.80	\$2.69	\$2.69	\$7.53
Revenue/Direct - \$/100 cf	\$0.00	\$0.00	\$0.00	\$0.00
	-----	-----	-----	-----
Total \$/100 cf	\$12.40	\$12.29	\$12.29	\$17.13
Customer Costs - \$/account/annual	\$366.97	\$366.39	\$394.31	\$394.31
Average Total Cost \$/100 cf	\$17.47	\$18.45	\$12.89	\$17.54
Average Current Revenue \$/100 cf	\$16.56	\$18.16	\$9.12	\$16.62
Notes: [1] Volume per 100 cubic feet is based on annualized average monthly winter water usage values.				
Annual Cost - \$/account/year	\$1,265.04	\$1,097.26	\$8,520.06	\$16,753.30
Annual Revenue - \$/account/year	\$1,199.09	\$1,079.65	\$6,030.95	\$15,869.87
Basic Data:				
Annual Volume(/100 cf)	794,710	639,065	137,500	18,145
Number of Accounts	10,975	10,748	208	19



Proposition 218 Notice
