

DRAFT REPORT



South Tahoe Public Utility District *Comprehensive Sewer Rate Study*

April 2019



January 15, 2019

Mr. John Thiel
General Manager
South Tahoe Public Utility District
1275 Meadow Crest Drive
South Lake Tahoe, California 96150

Subject: Draft Comprehensive Sewer Rate Study Report

Dear Mr. Thiel:

HDR Engineering, Inc. (HDR) is pleased to present the draft report on the comprehensive sewer rate study conducted for the South Tahoe Public Utility District (District). A key objective in developing the District's comprehensive sewer rate study was to develop a financial plan and rates that generate adequate revenues to fund the operating and capital needs of the sewer utility. As well as determine the equity or fairness of the current rates by conducting a cost of service analysis. This report outlines the approach, methodology, findings, and conclusions of the comprehensive sewer rate study.

This report was developed utilizing the District's accounting, operating, and customer records. HDR has relied on this information to develop our analyses that form our findings, conclusions and recommendations. At the same time, this study was developed utilizing generally accepted rate setting principles and methodologies. The conclusions and recommendations contained within this report are intended to provide a financial plan that meets the operating and capital needs of the utility. Finally, this report provides the basis for developing and implementing rates that are cost-based, defensible, and equitable to the District's customers.

We appreciate the assistance provided by District staff in the development of this study. More importantly, we appreciate the opportunity to continue to assist District staff, management, and Board of Directors in establishing cost-based and equitable sewer rates.

Sincerely,
HDR Engineering, Inc.

Shawn Koorn
Associate Vice President



Table of Contents

Executive Summary.....	1
Overview of the Rate Study Process.....	1
Key Sewer Rate Study Results.....	2
Summary of the Revenue Requirement Analysis.....	2
Summary of the Cost of Service Analysis.....	7
Summary of the Rate Design Analysis.....	8
Summary.....	8
1 Introduction.....	9
1.1 Goals and Objectives.....	9
1.2 Overview of the Rate Study Process.....	10
1.3 Report Organization.....	10
1.4 Summary.....	11
2 Overview of the Rate Setting Process.....	12
2.1 Introduction.....	12
2.2 Generally Accepted Rate Setting Principle.....	12
2.3 Determining the Revenue Requirement.....	12
2.3.1 Public Utilities.....	12
2.4 Analyzing Cost of Service.....	13
2.5 Designing Rates.....	13
2.6 Economic Theory and Rate Setting.....	14
2.7 Summary.....	14
3 Development of the Revenue Requirement.....	15
3.1 Introduction.....	15
3.2 Establishing a Time Frame and Approach.....	15
3.3 Projection of Revenues.....	16
3.3.1 Projecting Sewer Rate Revenues.....	16
3.3.2 Property Tax Revenues.....	17
3.3.3 Projecting Miscellaneous Revenues.....	17
3.4 Projecting Operation and Maintenance Expenses.....	17
3.5 Projecting Capital Project Funding.....	18
3.6 Projection of Annual Debt Service.....	20
3.7 Summary of the Revenue Requirement Analysis.....	20
3.8 Consultant's Recommendations.....	22
3.9 Summary.....	22
4 Development of the Cost of Service.....	23
4.1 Objectives of a Cost of Service Study.....	23
4.2 Determining the Customer Class of Service.....	23
4.3 General Cost of Service Procedures.....	24
4.3.1 Functionalization of Costs.....	24
4.3.2 Classification of Costs.....	24
4.3.3 Development of Allocation Factors.....	25

4.4	Functionalization and Classification of Plant in Service	26
4.5	Functionalization and Classification of Operating Expenses	27
4.6	Major Assumptions of the Cost of Service Study	27
4.7	Summary Results of the Cost of Service Analysis	28
4.8	Consultant's Conclusions and Recommendations.....	31
4.9	Summary.....	31
5	Development of the Rate Designs	32
5.1	Introduction	32
5.2	Rate Design Criteria and Considerations	32
5.3	Development of Cost-Based Sewer Rates	32
5.4	Review of the Overall Rate Adjustment.....	33
5.5	Present and Proposed Rates.....	34
5.6	Summary of the Rate Design Analysis.....	34

Executive Summary

South Tahoe Public Utility District (District) retained HDR Engineering, Inc. (HDR) to perform a comprehensive rate study for its sewer utility. A comprehensive rate study determines the adequacy of the existing sewer rates and provides the basis to maintain cost-based and equitable rates. This report will describe the methodology, findings, and conclusions of the sewer rate study process undertaken for the District. The primary objectives of the study were to:

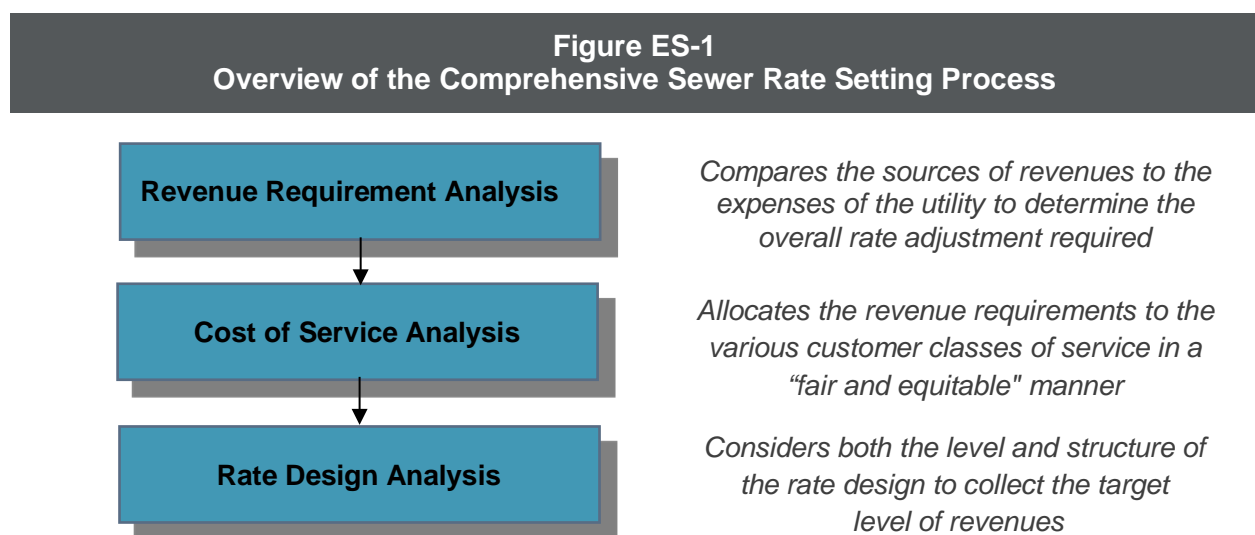
- ✓ Review the District's sewer rates to determine if the rates are meeting the goals and objectives of the District as well as sufficiently funding operational and capital expenses.
- ✓ Develop a financial plan for projecting operating and capital costs for the sewer utility for planning purposes.
- ✓ Provide the framework and methodology, based on generally accepted industry best practices, for the development of cost-based, proportional, and equitable sewer rates.
- ✓ Adopt rates through the Proposition 218 process that adequately fund the Districts operational and capital expenses over the next five-year period.

These objectives were the basis and starting point of the comprehensive sewer rate study analysis.

The District was established in 1950 to provide water and sewer services to the residents of South Lake Tahoe. The District treats 2.5 billion gallons of wastewater from approximately 15,000 customers. The District owns and maintains 330 miles of collection and force mains, 42 lift stations and a wastewater treatment plant.

Overview of the Rate Study Process

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



A revenue requirement analysis is concerned with the overall revenues and expenses, both operating and capital, of the sewer utility. From this analysis, a determination can be made as to the overall level of adjustment to revenues necessary to meet annual needs. Next, a cost of service analysis is performed to proportionally and equitably allocate the revenue requirement to the various types of customers served (e.g., single family, multi-family, hotel/motel, trailer park, and non-residential). Finally, once an overall level of rate adjustment is determined and an equitable allocation of those costs, the last step of the rate study process is 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, cost-based, continuity in philosophy) as developed as part of the cost of service analysis.

Key Sewer Rate Study Results

- ✓ A revenue requirement analysis was developed for the projected time period of FY 2019 through FY 2029 for the sewer utility.
- ✓ The Department's FY 2019 adopted budget for the sewer utility was used as the starting point of the analysis and 4.
- ✓ Operation and maintenance (O&M) expenses are projected to increase at inflationary levels with no assumed changes to levels of service or anticipated extraordinary expenses.
- ✓ A cost of service analysis was developed to review the equity of the existing rates and to proportionately allocate the revenue requirement among the various customer classes of service for the sewer utility and customers within each class.
- ✓ The results of the cost of service analyses provided the unit costs (i.e., cost basis) which were used to establish the proposed sewer rates.
- ✓ The Study has developed proposed rates for the FY 2020 – FY 2024 time period, by customer class of service.
- ✓ The proposed sewer revenue adjustments average 5.0% annually from FY 2020 through FY 2024, effective June 30 of each year.

Summary of the Revenue Requirement Analysis

The revenue requirement analysis is the first analytical step in the comprehensive sewer rate study process. This analysis determines the adequacy of the current revenues (rates) to fund annual operating expenses and capital improvement needs. From this analysis, a determination can be made as to the overall level of sewer revenue (rate) adjustments needed to provide adequate and prudent funding for the District's sewer system.

As a practical matter, a multi-year time frame is recommended in an attempt to identify and plan for any major expenses that may be on the horizon. By anticipating future financial requirements, the District can begin planning for these changes sooner, thereby minimizing short-term rate impacts while also stabilizing long-term rates. For the District's study, a 10-year projected time period was developed (FY 2020 – FY 2029) with a focus on the next 5-year period (FY 2020 – FY 2024) for rate setting purposes.

For the revenue requirement analysis a "cash basis" approach was utilized. The "cash basis" approach is the most commonly methodology used by municipal and special district utilities to set their revenue requirement and in its most basic form, it is composed of O&M expenses, taxes /

transfer payments, annual debt service payments, and rate funded capital projects. The primary inputs for the District's revenue requirement analysis were obtained from the District's budget documents, the historical billed customer data, and the sewer capital improvement plan. Budgeted O&M expenses were projected using inflationary factors for the District's various expenses to provide wastewater collection, conveyance, treatment, and disposal services over the projected time period. These inflationary factors were based on historical District specific increases in costs and planned changes based on the District's planning and financial projection studies and analyses.

The proper and adequate funding of capital projects is important to help maintain existing facilities, provide consistent levels of service and minimize rate impacts over time. A general financial guideline states that, at a minimum, a utility should fund an amount equal to or greater than annual depreciation expense through current rate revenue (i.e., rate funded capital). Annual depreciation expense reflects the current investment in plant being depreciated or "losing" its useful life. Therefore, this portion of plant investment needs to be replaced or repaired to maintain the existing level of infrastructure (and service levels). However, it must be kept in mind that, in theory, annual depreciation expense reflects an investment in infrastructure that was placed in service an average of 15 years ago, assuming a 30-year useful (i.e., depreciable life). It is important to note and understand that depreciation expense is not the same as replacement cost. Thus, funding an amount which exceeds the sewer utility's annual depreciation expense is reasonable and appropriate target to aspire to as the utility becomes more fiscally sound.

HDR and District staff worked with the District Board to review various capital funding scenarios. These included various levels of renewal and replacement funding and prioritization of system specific improvements. Based on these discussions with the Board, the final capital improvement funding plan was developed. In developing this financial plan, HDR and the District have attempted to minimize rate impacts while funding the planned capital improvement projects through a mix of long-term borrowing and rate funding. Provided in Table ES-1 is a summary of the proposed capital improvement funding plan.

Table ES-1
Overview of the Sewer Capital Improvement Plan (000's)

	Budget	Projected									
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Capitalized Engineering Costs	\$1,744	\$1,725	\$1,799	\$1,846	\$1,898	\$1,949	\$2,002	\$2,057	\$2,113	\$2,171	\$2,230
Capital Improvement Projects											
Budgeted Capital	\$7,926	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Data Driven - 5% Capital Projects	1,396	9,447	8,968	8,845	8,789	8,617	8,605	8,540	8,471	8,544	8,475
Capital Project Spending	\$11,065	\$11,172	\$10,767	\$10,691	\$10,686	\$10,566	\$10,608	\$10,597	\$10,584	\$10,715	\$10,705
Debt Service	\$2,337	\$2,681	\$2,866	\$3,059	\$3,260	\$3,500	\$3,242	\$3,038	\$3,289	\$3,057	\$3,057
Transfer to (From) Capital Reserve	(\$3,136)	(\$4,337)	\$1,529	(\$1,610)	(\$1,376)	(\$107)	\$605	\$3,118	\$1,838	(\$2,057)	(\$1,479)
Total Capital Investment	\$10,267	\$9,516	\$15,162	\$12,140	\$12,570	\$13,959	\$14,455	\$16,753	\$15,711	\$11,715	\$12,282
Capital Plan Funding											
Assumed Debt Issuance / Proceeds	\$2,461	\$2,461	\$4,000	\$4,000	\$4,000	\$5,000	\$5,000	\$7,000	\$5,000	\$0	\$0
Rate Funded Capital:											
Operating Reserve	7,421	6,671	11,042	8,039	8,448	8,821	9,319	9,627	10,634	11,667	12,202
Capital Improvement Charge	384	384	384	384	384	384	384	384	384	384	384
Total Capital Funding	\$10,267	\$9,516	\$15,162	\$12,140	\$12,570	\$13,959	\$14,455	\$16,753	\$15,711	\$11,715	\$12,282

Capital funding can come from a variety of sources, reserves, debt, grants and current rate funding (rate funded capital). For the District's capital funding plan, as provided in Table ES-1, a key element was funding the capital improvement needs through a mix of long-term borrowing and rate funding. As a note, the capital funding plan for the District's revenue requirement identifies two components that reflect annual rate funded capital. These are the capital Improvement charges and operating reserve transfer. These funding sources when combined are providing a significant amount of funding for capital which exceeds the District's annual depreciation \$4.6 million for minimum amount of capital funding required to properly maintain the utilities infrastructure. Over the analysis period, the plan estimates approximately \$9.8 million in rate funded capital which exceeds the minimum target level of funding.

As noted, the revenue requirement is comprised of O&M expenses, transfers/taxes, annual debt service payments, and rate funded capital. As outlined above, the O&M expenses were based on the most recent adopted budget for the District, in this case FY 2019. Future year projections were based on historical inflationary factors and known changes in costs during the 10-year period. Transfers were made to the capital fund to meet future capital improvement funding in combination with projected long-term borrowing. Annual debt service payments, both principal and interest, were funded annually based on the existing amortization schedules, and District developed projections for future long-term borrowing. Finally, rate funded capital was developed to meet future capital funding needs and industry standard approaches.

These components are summed to develop the total revenue requirement for the District's sewer utility. The results of the revenue requirement are presented in Table ES-2 and provide the basis for future revenue adjustments to meet operating and capital funding needs.

Table ES-2
Summary of the Revenue Requirement Analysis (000's)

	Budget	Projected									
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Sources of Funds											
Rates	\$14,364	\$14,380	\$14,396	\$14,412	\$14,427	\$14,443	\$14,459	\$14,475	\$14,491	\$14,507	\$14,523
Other Revenues	9,394	9,605	9,707	9,900	10,058	10,223	10,411	10,609	10,851	10,881	10,851
Total Sources of Funds	\$23,758	\$23,984	\$24,103	\$24,312	\$24,485	\$24,667	\$24,870	\$25,084	\$25,342	\$25,388	\$25,374
Applications of Funds											
Operations & Maintenance Expense	\$15,348	\$15,973	\$16,632	\$17,043	\$17,510	\$17,973	\$18,450	\$18,939	\$19,442	\$19,958	\$20,489
Rate Funded Capital:											
Capital Improvement Charge	384	384	384	384	384	384	384	384	384	384	384
Operating Reserve	7,421	6,671	11,042	8,039	8,448	8,821	9,319	9,627	10,634	11,667	12,202
Debt Service	3,121	3,513	3,834	4,155	4,476	4,877	4,771	4,825	5,226	4,882	4,538
To / (From) Reserves	(2,516)	(1,838)	(6,363)	(3,031)	(3,228)	(3,400)	(3,138)	(2,799)	(3,427)	(3,507)	(3,108)
Total Application of Funds	\$23,758	\$24,703	\$25,530	\$26,590	\$27,590	\$28,656	\$29,786	\$30,976	\$32,259	\$33,385	\$34,505
Balance/(Deficiency) of Funds	\$0	(\$719)	(\$1,427)	(\$2,278)	(\$3,105)	(\$3,989)	(\$4,916)	(\$5,891)	(\$6,917)	(\$7,997)	(\$9,132)
% Balance/(Deficiency) of Funds	0.0%	5.0%	9.9%	15.8%	21.5%	27.6%	34.0%	40.7%	47.7%	55.1%	62.9%
Proposed Rate Adjustments	0.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%

As shown in Table ES-2, revenues are insufficient to prudently fund the District's O&M and capital needs. It is important to note the annual revenue deficiencies in the Table ES-2 are cumulative. That is, any adjustments in the initial years will reduce the deficiency in the later years. Over the projected rate setting period FY 2020 – FY 2024, revenues need to be adjusted by approximately 27.6% to adequately and properly fund the District's sewer utility O&M and capital infrastructure needs.

Based on the revenue requirement analysis developed, HDR recommends the District increase the overall revenue levels of the sewer utility. Based on the plan developed in this report, the recommended annual adjustments of 5.0% will provide adequate funding for the time period of FY 2020 FY 2024 based on the assumptions developed as part of the rate study.

Summary of the Cost of Service Analysis

A cost of service analysis determines the equitable allocation of the revenue requirement to the various customer classes of service. The objective of the cost of service analysis is different from determining the revenue requirement. A cost of service analysis determines the proportional and equitable manner to collect that revenue requirement based on the customer class characteristics and facility requirements. A summary of the cost of service analysis for 2019 is shown in Table ES-3.

Class of Service	Present Revenue (FY 2020)	Allocated Costs	\$ Difference	% Difference
Single Family Residential	\$9,009	\$9,517	(\$507)	5.6%
Multi-family	2,255	2,349	(94)	4.2%
Motel/ Hotel/ Timeshare	1,481	1,536	(55)	3.7%
Trailer/Mobile Home Park/Campground	484	527	(43)	8.9%
Non-Residential	<u>1,150</u>	<u>1,169</u>	<u>(19)</u>	<u>1.7%</u>
Total	\$14,380	\$15,099	(\$719)	5.0%

Table ES-3 provides a comparison of the current rate revenues to the allocated costs. The difference between the rate revenues and allocated costs for each class of service represents the variance between the level of revenues currently received from each class of service and the equitable allocation of costs. In viewing these results, it is important to remember that a cost of service analysis is not an exact calculation. Rather, it reflects the current relationships between current customer revenues and current costs. These relationships change over time given budgetary changes and changes in customer usage patterns and characteristics. A customer class is generally considered being within a reasonable range of its Cost of Service when the customers cost of service change is within 5% of the overall rate adjustment. This is due to changing customer characteristics over time, and the use of a single year for cost allocation and revenues. As Table ES-3 shows each customer class is within 5% and thus considered within their cost of service. Given the results of the cost of service, the proposed revenues, and rates, will reflect the results of the cost of service analysis.

Summary of the Rate Design Analysis

Rates that meet the utility’s objectives are designed based on both the revenue requirement, the cost of service analysis, and the District’s philosophy on rates. The purpose of this study is to evaluate and develop cost-based and equitable sewer rates for the next 5 year period. It is recommended that rate be reevaluated periodically to make sure the adopted rates are collecting sufficient revenue to properly maintain adequate level of operations and investment in the system to provide future reliable operations.

The final step of the comprehensive sewer rate study process is the design of the sewer rates to collect the appropriate levels of revenue and reflect the results of the cost of service analysis. Provided in Table ES – 4 are the current and proposed sewer rates for the District. This study has not recommended any changes to the overall rate structure. However, the relationships between classes of services were adjusted to reflect the results of the cost of service analysis.

**Table ES-4
Current and Proposed Rates**

	Current	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Quarterly Charge by Class of Service per Billing Unit						
Single Family Residential	\$42.09	\$44.46	\$46.68	\$49.02	\$51.47	\$54.04
Multi-family	\$41.22	\$42.94	\$45.09	\$47.34	\$49.71	\$52.20
Motel/Hotel/Timeshare	\$40.69	\$42.21	\$44.32	\$46.54	\$48.86	\$51.31
Trailer/Mobile Home Park/Campground	\$38.73	\$42.16	\$44.27	\$46.48	\$48.81	\$51.25
Non-Residential	\$43.72	\$44.46	\$46.68	\$49.02	\$51.47	\$54.04

Summary

This completes the summary of the comprehensive rate study completed for the District’s sewer utility. Based on the Board discussion, and results of the comprehensive sewer rate study, the following recommendations have been developed:

- ✓ The revenue requirement analysis showed a deficiency of annual revenues to meet annual operating and capital needs. To maintain the revenue sufficiency of the sewer utility, proposed annual revenue adjustments of 5.0% are recommended in FY 2020 through FY 2024.
- ✓ The cost of service study resulted in minor cost differences between the various customer classes of service. As a result, it is recommended that rates be developed around the cost of service results, for each customer class of service.
- ✓ Proposed rates were developed that reflect the overall revenue needs and cost of service results for the next five-year period. It is recommended that the proposed rates be adopted for the next five-year period as they reflect the equitable and proportional allocation of costs.

A full and complete discussion of the development of the comprehensive rate study and the proposed rate adjustments can be found in following sections of this report.

1 Introduction

The South Tahoe Public Utility District (District) retained HDR Engineering, Inc. (HDR) to perform a comprehensive rate study for its sewer utility. A comprehensive rate study determines the adequacy of the existing sewer rates and provides the basis to maintain cost-based rates. This report describes the methodology, findings, and conclusions of the sewer rate study process undertaken for the District.

The District owns and operates the sewer collection and treatment systems serving the City of South Tahoe and surrounding communities. Wastewater collected by the District treated and then transported via pipeline out of the Tahoe Basin as required by law.

This study determined whether existing rates are adequate to meet the utility's operating and capital expenses with revenues received from customers. Rates set too low may result in insufficient funds to maintain system integrity. An additional component of this study involves adherence to legal requirements set in the California Constitution Article XIII D, or commonly referred to as proposition 218. This law requires sewer utilities to established rate methodologies which result in costs based rates which are then subject to a vote of its customers. The study provides a basis for making rate adjustments; as well as, addressing the equity of the District's current rates.

This study has been designed and intended to comply with the legal requirements of Proposition 218. This study has been developed using industry accepted sewer rate setting methodologies and best practices, along with District specific sewer system data and information.

1.1 Goals and Objectives

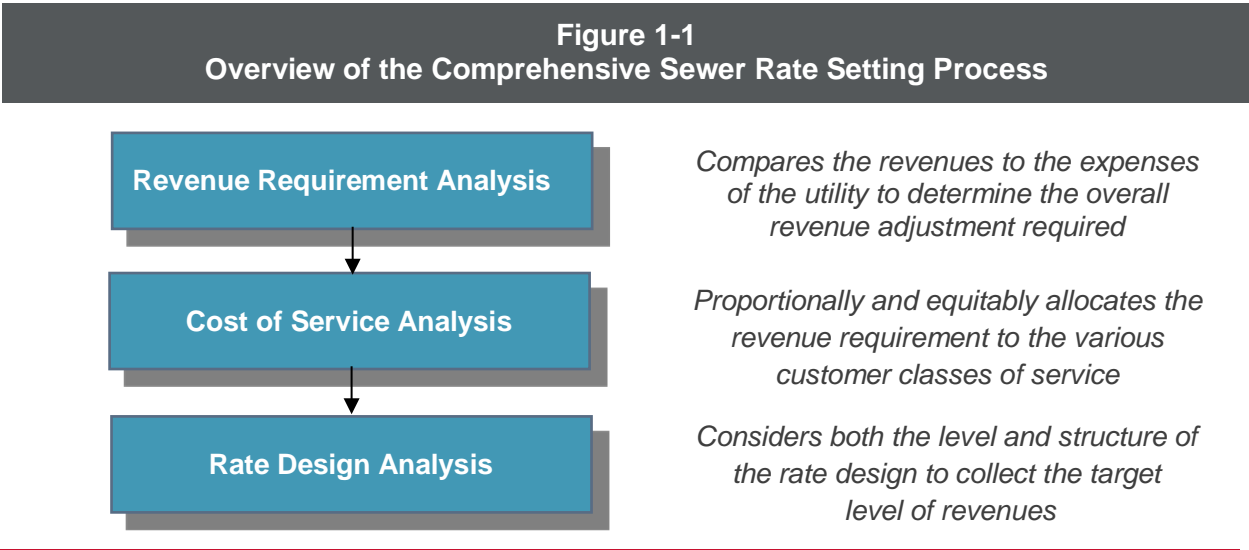
The District had a number of goals and objectives in mind prior to beginning the Study. These goals and objectives were discussed with District staff and the District Board to establish policies that ultimately guided the rate study to its conclusion. These goals and objectives were as follows:

- ✓ Develop the sewer study in a manner that is consistent with the principles and methodologies established by the Water Environment Federation (WEF), Manual of Practice No. 27, Financing and Charges for Sewer Systems.
- ✓ In financial planning and establishing the District's rates, review and utilize best industry practices, while recognizing and acknowledging the specific and unique characteristics of the District's sewer system and facilities.
- ✓ Review the District's rates utilizing "generally accepted" rate making methodologies to determine adequacy and equity of the sewer utility rates.
- ✓ Meet the District's financial planning criteria and goals, such as debt service coverage ratios, adequate funding of capital infrastructure, and maintenance of adequate and prudent reserve levels.
- ✓ Develop a final proposed financial plan which adequately supports the sewer utility's funding requirements, while attempting to minimize overall impacts to rates.
- ✓ Provide rates designed to meet the legal requirements of Article XIII D and recent legal decisions related to Article XIII D.

- Develop proposed rates that are cost-based reflective of the District’s specific costs.

1.2 Overview of the Rate Study Process

This Comprehensive study consists of three interrelated analysis performed for the sewer utility. Figure 1-1 provides an overview of these analyses.



A revenue requirement analysis is concerned with the overall funding sources and expenses of the utility. From this analysis, a determination can be made as to the overall level of adjustment to revenues (rates). Next, a cost of service analysis is performed to proportionally and equitably allocate the revenue requirement to the various types of customers served (e.g., residential, multifamily, non-residential). Finally, once an overall level of revenue (rate) adjustment is determined and an equitable and proportional allocation of those costs, the last step of the rate study process is 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, cost-based, continuity in philosophy). As a part of this study, HDR developed each of these analyses to analyze the District’s current sewer rates. At the same time HDR utilized “generally accepted” cost of service and rate setting techniques, methodologies and industry best practices in the development of the District’s sewer rate and fee study

1.3 Report Organization

This report is organized as follows:

- ✓ Section 2 provides background information about the utility rate setting process
- ✓ Section 3 reviews the revenue requirement analysis
- ✓ Section 4 reviews the cost of service analysis
- ✓ Section 5 reviews the rate design analysis

A technical appendices is attached at the end of the report which provides the detailed analysis used in preparation of this report.

1.4 Summary

This report will review the comprehensive sewer rate analysis prepared for the District. This report has been developed utilizing generally accepted rate setting methodologies. The next section of the report provides an overview of the basic theory and methodology used to establish cost-based rates. This provided the theoretical and methodological foundation for the development of the District's sewer rates.

2 Overview of the Rate Setting Process

2.1 Introduction

This section provides background information about the rate setting process, including descriptions of generally accepted principles, types of utilities, methods of determining revenue requirements, the cost of service approach, and rate design. This information is useful for gaining a better understanding of the details presented in Sections 3 through 5.

2.2 Generally Accepted Rate Setting Principle

As a practical matter, all utilities should consider setting 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 to understand and administer
- ✓ Designed to conform with generally accepted rate setting techniques
- ✓ Stable in their ability to provide adequate revenues for meeting the utility's financial, operating, and regulatory requirements
- ✓ Established at a level which is stable from year-to-year from a customer's perspective

2.3 Determining the Revenue Requirement

Because public and private utilities have very different administrative and financial characteristics, their methods differ for determining revenue requirements and setting rates.

2.3.1 Public Utilities

Most public utilities use the "cash basis" approach for establishing their revenue requirement and setting rates. This approach conforms to most public utility budgetary requirements and the calculation is easy to understand. A public utility totals its cash expenditures for a period of time to determine its required revenues. The revenue requirement for a public utility is usually comprised of the following costs or expenses:

- ✓ Total Operating Expenses: This includes a utility's operation and maintenance (O&M) expenses, plus any applicable taxes or transfer payments. Operation and maintenance expenses include the materials, electricity, labor, supplies, etc., needed to keep the utility functioning.
- ✓ Total Capital Expenses: Capital expenses are calculated by adding debt service payments (principal and interest) to Rate Funded Capital. In lieu of including capital improvements financed with rate revenues, a utility sometimes includes depreciation expense to stabilize the annual revenue requirement.

Under the cash basis approach, the sum of the capital and operating expenses equals the utility's revenue requirement during any period of time (see Table 2-1).

Note that the two portions of the capital expense component, debt service and capital improvements financed from rates, are necessary under the cash basis approach because utilities generally cannot finance all their capital facilities with long-term debt. An exception occurs if a public utility provides service to a large wholesale or contract customer. In this situation, a public utility may use the "utility basis" approach (see below) to earn a fair return on its investment.

Table 2-1 Cash versus Utility Basis Comparison	
Cash Basis	Utility Basis (Accrual)
+ O&M Expense	+ O&M Expense
+ Taxes or Transfer Payments	+ Taxes or Transfer Payments
+ Rate Funded Capital (≥ Depreciation)	+ Depreciation Expense
+ Debt service (Principal + Interest)	+ Return on Investment
<hr/>	<hr/>
= Total Revenue Requirement	= Total Revenue Requirement

2.4 Analyzing Cost of Service

After the total revenue requirement is determined, it is allocated to the users of the service. The allocation, usually analyzed through a cost of service study, reflects the cost relationships for producing and delivering services. A cost of service study requires three steps:

1. Costs are **functionalized** or grouped into the various cost categories related to providing service (pumping, treatment, collection, etc.). This step is often largely accomplished by the utility's chart of accounts within its accounting system.
2. The functionalized costs are then **classified** to specific cost components. Classification refers to the arrangement of the functionalized data into cost components. For example, a sewer utility's costs are typically classified as volume, strength, or customer-related.
3. Once the costs are classified into components, they are **allocated** to the customer classes of service (single family, Multifamily, etc.). The allocation is based on each customer class' relative, proportional, contribution to the cost component. For example, customer-related costs are allocated to each class of service based on the total number of customers in that class of service. Once costs are allocated, the required revenues for achieving cost-based rates can be determined.

2.5 Designing Rates

Rates that meet the utility's objectives are designed based on both the revenue requirement and the cost of service analyses. This approach results in rates that are strictly cost-based. In designing the final proposed rates, factors such as ability to pay, continuity of past rate philosophy, economic development, ease of administration, and customer understanding may be taken into consideration.

However, the proposed rates must take into consideration each customer class's proportionate share of the costs allocated through the cost of service analysis to meet legal requirements.

2.6 Economic Theory and Rate Setting

One of the major justifications for a comprehensive rate study is founded in economic theory. Economic theory suggests that the price of a commodity must roughly equal its cost if equity among customers is to be maintained. This statement's implications on utility rate designs are significant. For example, a sewer utility usually incurs strength-related costs in treating high-strength sewer. It follows that the customers who have higher strength sewer flows and create additional treatment costs should pay for those strength-related facilities in proportion to their contribution to total plant loadings. When costing and pricing techniques are refined, consumers have a more accurate picture of what the commodity costs to produce and deliver. This price-equals-cost concept provides much of the basis for the subsequent analysis and comments.

“Economic theory suggests that the price of a commodity must roughly equal its cost if equity among customers is to be maintained.”

2.7 Summary

This section of the report has provided a brief introduction to the general principles, techniques, and economic theory used to set utility rates. These principles and techniques will become the basis for the District's analysis. The next section will review the development of the financial and rate setting policies established for this study.



3 Development of the Revenue Requirement

3.1 Introduction

This section describes the development of the sewer revenue requirement analysis for the District's comprehensive sewer rate study. The revenue requirement analysis is the first analytical step in the comprehensive process. This analysis determines the adequacy (level) of the District's overall sewer rates. From this analysis, a determination can be made as to the overall level of sewer revenue (rate) adjustment needed to provide adequate and prudent funding for both operating and capital needs. One of the main objectives of a sewer rate study is to develop cost-based and equitable rates while minimizing the impacts to the utility's customers.

In developing the sewer revenue requirement, it was assumed the utility must financially "stand on its own" and be properly funded. As a result, the revenue requirement analysis as developed herein assumes the full and proper funding needed to operate and maintain the system on a financially sound and prudent basis over a long-term period. This results in stable rate levels from both the District's and customers perspective and minimizes large rate swings over time.

Provided below is a detailed discussion of the development of the revenue requirement analysis for the District's sewer utility.

3.2 Establishing a Time Frame and Approach

The first step in calculating the revenue requirement was to establish a time frame for the revenue requirement analysis. For this study, the revenue requirement was developed for a ten-year projected time period (FY 2020 – FY 2029). While a ten-year period was developed for purposes of reviewing the long-term financial health of the sewer utility, the focus for the adoption and implementation of rates was for the next five-year period of FY 2020 – FY 2024.

The second step in determining the revenue requirement for the District was to decide on the basis of accumulating costs. For the District's revenue requirement, a "cash basis" approach was utilized. As was discussed in Section 2, the cash basis approach is the most common methodology used by municipal utilities to set their revenue requirement. Section 2 of this report also provided a simple overview of the cash basis methodology. The actual revenue requirement developed for the District was customized to follow the District's system of accounts (budget documents). However, even with these modifications, the District's revenue requirement still contains the four basic cost components of a cash basis methodology. Table 3-1 provides a summary of the specific components within the cash basis approach used to develop the District's revenue requirement.

Table 3-1
Overview of the Sewer Utility Cash Basis Revenue Requirement

+ Sewer Operation and Maintenance Expenses
+ Rate Funded Capital[1]
+ Transfers to Reserves
<u>+ Debt Service (P + I) – Existing and Future</u>
= Total Sewer Revenue Requirement
<u>- Miscellaneous Revenues</u>
= Net Revenue Requirement (Balance Required from Rates)

[1] Rate Funded Capital
+ Total Sewer Capital Improvement Projects
Funding Sources Other than Rates
✓ Connection Fees
✓ Capital Reserves
<u>- ✓ Long term debt issues</u>
= Rate Funded Capital

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

The primary financial inputs in this process were the District's historical billing records, current adopted sewer operating budget, and current capital improvement plan. Presented below is a detailed discussion of the steps and key assumptions in the development of the District's sewer projected revenues and expenses.

3.3 Projection of Revenues

The starting point of the analysis is the projection of revenues received by the District for providing sewer services. These revenue sources include rate revenues, or revenues received from customers, as well as miscellaneous revenues received as part of operating a sewer utility. Provided below is a summary of the revenues received by the District's sewer utility.

3.3.1 Projecting Sewer Rate Revenues

The first 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 rates. This method of independently calculating rate revenues assures the projected rate revenues used within the analysis tie to the projected billing units. The projected billing units by class of service were based on historical billing records.

The majority of the District's rate revenues are derived from residential customers. Currently, the District has five major classes of service:

- ✓ Single family
- ✓ Multifamily
- ✓ Motel/Hotel/Timeshare
- ✓ Trailer/Mobile Home Park/Campground
- ✓ Non-Residential

In total, at present rates, the District is projected to receive approximately \$14.4 million in rate revenue in FY 2020. Over the planning horizon of this study, customer growth is assumed to increase 0.1% annually resulting in projected rate revenue in 2029 of \$14.5 million.

3.3.2 Property Tax Revenues

The District receives approximately \$8.2 million in property tax revenue and uses this revenue as a funding source for the sewer fund. The District expects property tax revenue to grow at an average of 2% per year increasing to an estimated \$9.8 million in FY 2029.

3.3.3 Projecting Miscellaneous Revenues

In addition to rate revenues and property tax, the District also receives a variety of miscellaneous revenues which includes Capacity fees, Permit fees, Interest and Penalty Fees, and Investment Interest to name the most significant. The sum of the miscellaneous revenue is approximately \$1.0 Million in FY 2019 and increases to \$1.1 million in FY 2029.

3.4 Projecting Operation and Maintenance Expenses

Operation and maintenance (O&M) expenses are incurred by the District to operate and maintain the existing infrastructure and provide sewer services to customers. In general, operation and maintenance expenses are grouped into a number of different functional categories. HDR reviewed the District's FY 2019 budget and determined it contained sufficient detail to develop the revenue requirement analysis. Therefore, in developing this analysis, HDR maintained the overall functional nature of the District's system of accounts (i.e., Plant Operations, Underground Repair, etc.).

Once the FY 2019 expenses were developed, escalation factors were developed for the basic types of expenses the District incurs: salaries, benefits, professional service, materials and supplies, equipment, Miscellaneous, and utilities. The escalation factors developed for the projection of the District's O&M expenses were in the range of two to four percent per year, depending on the type of cost and recent inflationary trends. Provided in Table 3-2 is a summary of the escalations factors used with the study.

**Table 3–2
Summary of the Escalation Factors**

Type of Expense	Average Escalation Rate
Salaries	3.4%
Benefits	3.4%
Professional Services	2.2%
Materials & Supplies	2.1%
Equipment	2.1%
Miscellaneous	2.1%
Utilities	2.0%

Total O&M expenses for the District are projected to be approximately \$15.3 million in FY 2019, increasing to approximately \$20.5 million by FY 2029 as a result of assumed inflation.

3.5 Projecting Capital Project Funding

A general financial guideline states that, at a minimum, a utility should fund an amount equal to or greater than annual depreciation expense through rates (Rate Funded Capital). The District’s annual depreciation for their sewer fund is approximately \$4.6 million. Annual depreciation expense reflects the current investment in plant being depreciated or “losing” its useful life. Therefore, this portion of infrastructure needs to be replaced to maintain the existing level of infrastructure. It must also be kept in mind that, in theory, annual depreciation expense reflects an investment in infrastructure an average of 15 years ago, assuming a 30-year depreciable (useful) life. Simply funding an amount equal to annual depreciation expense will not be sufficient to replace the existing or depreciated facility. Therefore, consideration should be given to funding within rates some amount greater than annual depreciation expense for renewals & replacements. Whenever possible, the District should be funding capital projects from current sewer rates in an amount greater than annual depreciation expense.

Adequately funding capital was a primary goal of the sewer rate study. The intention is to replace infrastructure based on condition and prior to infrastructure failure. Waiting for infrastructure failure is a costly method of system replacement and often results in more costly repairs, customer inconvenience and possible property damage. District staff and HDR provided the Board with various capital improvement plans and funding alternatives. Based on those discussions, the final capital improvement plan was developed for the sewer rate study.

The District uses their Capital Improvement Charge of \$384,000 per year for capital. In addition to the Capital Improvement Charge the District also transfers a variable amount from operations for capital spending on an annual basis. When combined the Capital Improvement Charge and operating transfer average \$9.8 million over the analysis period. Table 3-3 provides the planned capital expenditures and the means for which they will be funded.

**Table 3-3
Overview of the Sewer Capital Improvement Plan (000's)**

	Budget	Projected									
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Capitalized Engineering Costs	\$1,744	\$1,725	\$1,799	\$1,846	\$1,898	\$1,949	\$2,002	\$2,057	\$2,113	\$2,171	\$2,230
Capital Improvement Projects											
Budgeted Capital	\$7,926	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Data Driven - 5% Capital Projects	<u>1,396</u>	<u>9,447</u>	<u>8,968</u>	<u>8,845</u>	<u>8,789</u>	<u>8,617</u>	<u>8,605</u>	<u>8,540</u>	<u>8,471</u>	<u>8,544</u>	<u>8,475</u>
Capital Project Spending	\$11,065	\$11,172	\$10,767	\$10,691	\$10,686	\$10,566	\$10,608	\$10,597	\$10,584	\$10,715	\$10,705
Debt Service	\$2,337	\$2,681	\$2,866	\$3,059	\$3,260	\$3,500	\$3,242	\$3,038	\$3,289	\$3,057	\$3,057
Transfer to (From) Capital Reserve	(\$3,136)	(\$4,337)	\$1,529	(\$1,610)	(\$1,376)	(\$107)	\$605	\$3,118	\$1,838	(\$2,057)	(\$1,479)
Total Capital Investment	\$10,267	\$9,516	\$15,162	\$12,140	\$12,570	\$13,959	\$14,455	\$16,753	\$15,711	\$11,715	\$12,282
Capital Plan Funding											
Assumed Debt Issuance / Proceeds	\$2,461	\$2,461	\$4,000	\$4,000	\$4,000	\$5,000	\$5,000	\$7,000	\$5,000	\$0	\$0
Rate Funded Capital:											
Operating Reserve	7,421	6,671	11,042	8,039	8,448	8,821	9,319	9,627	10,634	11,667	12,202
Capital Improvement Charge	384	384	384	384	384	384	384	384	384	384	384
Total Capital Funding	\$10,267	\$9,516	\$15,162	\$12,140	\$12,570	\$13,959	\$14,455	\$16,753	\$15,711	\$11,715	\$12,282

As shown in Table 3-3, the District's capital improvement needs over the ten-year period will be funded through a mix of long-term borrowing, rate funded capital, and available reserves. As mentioned, the District annually transfers rate revenue to reserves to fund capital improvements. This approach results in capital funding from rates exceeding minimum target levels. However, this is a critical aspect of maintaining the District's infrastructure and should be reviewed continually to maintain sufficient funding for the long-term and ultimate replacement of system infrastructure.

3.6 Projection of Annual Debt Service

The District has 11 existing debt issues as of the FY 2019 budget. For these issues the repayment schedules were used to project forward in the analysis period. In addition the District intends to borrow approximately \$39 million to improve the sewer system over the ten year period. The District provided the terms of the borrowing for the future debt and assumed with an interest rate of 5% and a term of 20 years. Annual debt service payments, both principal and interest, are expected to increase from FY 2019 levels of \$3.1 million to an annual maximum of \$5.2 million.

It is important to note that HDR is not advising the District on the terms of any bond issuances but rather identifying the overall funding needs. The District will work with an independent financial advisor and District financial staff for the issuance of long-term debt. HDR is not acting in a municipal advisor role to the Department for the issuance of any long-term borrowing.

3.7 Summary of the Revenue Requirement Analysis

Given the above projections of revenues and expenses, a summary of the revenue requirement for the District's sewer utility can be developed. In developing the final revenue requirement, consideration was given to the financial planning considerations of the District. In particular, emphasis was placed on attempting to minimize rates, yet still have adequate funds to support the operational activities and capital projects throughout the projected time period. Presented in Table 3-4 is a summary of the sewer revenue requirement. A detailed analysis of the revenue requirement can be found in the Technical Appendices.

**Table 3-4
Summary of the Revenue Requirement Analysis (000"s)**

	Budget	Projected									
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Sources of Funds											
Rates	\$14,364	\$14,380	\$14,396	\$14,412	\$14,427	\$14,443	\$14,459	\$14,475	\$14,491	\$14,507	\$14,523
Other Revenues	<u>9,394</u>	<u>9,605</u>	<u>9,707</u>	<u>9,900</u>	<u>10,058</u>	<u>10,223</u>	<u>10,411</u>	<u>10,609</u>	<u>10,851</u>	<u>10,881</u>	<u>10,851</u>
Total Sources of Funds	\$23,758	\$23,984	\$24,103	\$24,312	\$24,485	\$24,667	\$24,870	\$25,084	\$25,342	\$25,388	\$25,374
Applications of Funds											
Operations & Maintenance Expense	\$15,348	\$15,973	\$16,632	\$17,043	\$17,510	\$17,973	\$18,450	\$18,939	\$19,442	\$19,958	\$20,489
Rate Funded Capital:											
Capital Improvement Charge	384	384	384	384	384	384	384	384	384	384	384
Operating Reserve	7,421	6,671	11,042	8,039	8,448	8,821	9,319	9,627	10,634	11,667	12,202
Debt Service	3,121	3,513	3,834	4,155	4,476	4,877	4,771	4,825	5,226	4,882	4,538
To / (From) Reserves	<u>(2,516)</u>	<u>(1,838)</u>	<u>(6,363)</u>	<u>(3,031)</u>	<u>(3,228)</u>	<u>(3,400)</u>	<u>(3,138)</u>	<u>(2,799)</u>	<u>(3,427)</u>	<u>(3,507)</u>	<u>(3,108)</u>
Total Application of Funds	\$23,758	\$24,703	\$25,530	\$26,590	\$27,590	\$28,656	\$29,786	\$30,976	\$32,259	\$33,385	\$34,505
Balance (Deficiency) of Funds	\$0	(\$719)	(\$1,427)	(\$2,278)	(\$3,105)	(\$3,989)	(\$4,916)	(\$5,891)	(\$6,917)	(\$7,997)	(\$9,132)
% Balance (Deficiency) of Funds	0.0%	-5.0%	-9.9%	-15.8%	-21.5%	-27.6%	-34.0%	-40.7%	-47.7%	-55.1%	-62.9%
Proposed Rate Adjustments	0.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%

It is important to note the annual deficiencies (line noted as “Bal/(Defic.) of Funds”) in Table 3-4 are cumulative. That is, any adjustment in the initial years will reduce the deficiency in the following years. The results of the revenue requirement analysis indicate a deficiency of funds over the planning period. The deficiency ranges from approximately \$0 in FY 2019 to \$9.1 million by FY 2029.

As noted, the focus of the study is the next five-year projected period of FY 2020 through FY 2024. Based on the results of the revenue requirement, rates are deficient approximately 27.6% over the next ten years. The calculation of the proposed rate adjustments are based on the annual balance or deficiency of funds. The annual balance or deficiency of funds is divided by the current rate revenues to determine the percentage rate adjustment necessary to fund annual operating and capital expenses. The proposed rate adjustments are calculated to collect the additional revenue equal to the deficiency in any year.

3.8 Consultant’s Recommendations

Based on the revenue requirement analysis developed, HDR recommends the District increase the overall revenue levels of the sewer utility based on the proposed rate adjustments shown in Table 3-5 during the next ten-year period. The first proposed rate adjustment would be in FY 2020 and reflect the results of the Cost of Service analysis. Subsequent years of adjustments are assumed to be applied across the board through FY 2024. As noted, additional future rate adjustments are necessary to maintain the sewer utility in a financially healthy manner. As noted, these are primarily driven by the need to maintain and improve sewer infrastructure over this time period. As the District continues to evaluate and review the capital funding needs, the future rate adjustments (FY 2025 – FY 2029) will be refined to reflect the Board’s funding approach and capital replacement needs.

Table 3-5 Ten-Year Rate Transition Plan									
FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
5%	5%	5%	5%	5%	5%	5%	5%	5%	5%

3.9 Summary

This section of the report has provided a review of the District’s sewer revenue requirement analysis. The revenue requirement developed a financial plan to support the District’s operating and capital infrastructure requirements for the sewer utility. The next section will discuss the cost of service analysis, which results in a proportional and equitable allocation of costs to the various customer’s served by the District.



4 Development of the Cost of Service

In the previous section, the revenue requirement analysis focused on the total sources and application of funds required to adequately fund the District's sewer utility operating and capital needs. This section of the report will discuss the development of the cost of service analysis. A cost of service analysis is concerned with the proportional and equitable allocation of the total revenue requirement between the various customer classes of service (e.g., single-family, multi-family, non-residential). The previously developed revenue requirement was classified and allocated in the following cost of service analysis.

In recent years, increasing emphasis has been placed on cost of service studies due to Proposition 218 legal requirements. Following the generally-accepted guidelines and principles of a cost of service analysis as outlined in the Water Environment Federation Manual of Practice No. 27 (WEF MOP #27) will inherently lead to rates which are equitable, cost-based, not viewed as arbitrary or capricious in nature and reflect the intent of Proposition 218.

4.1 Objectives of a Cost of Service Study

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

- ✓ Proportionally and equitably allocate the revenue requirement among the customer classes of service
- ✓ Derive average unit costs for subsequent rate designs

The objectives of the sewer cost of service analysis are different from determining revenue requirement. As noted in the previous section, a revenue requirement analysis determines the utility's overall financial needs, while the cost of service study determines the proportional and equitable manner to collect the revenue requirement from the various customer types.

The cost of service analysis results in unit costs which can be used to design sewer rates are designed which reflect the costs incurred by the customers. For example, a sewer utility incurs costs related to flow, strength, and customer-cost components. Each of these types of costs may be collected in a slightly different manner as to allow for the development of rates that collect costs in the same manner as they are incurred.

4.2 Determining the Customer Class of Service

The first step in a cost of service study is to determine the customer classes of service. Currently, the District has a separate rate schedule for single-family, multi-family, and various non-residential customers. HDR reviewed the customer classes of service with the District and recommends maintaining the current customer classes of service (i.e., rate schedules).

Based on this recommendation, the classes of service used within the cost of service analysis for cost of service purposes are:

- ✓ Single Family
- ✓ Multifamily
- ✓ Motel / Hotel / Timeshare
- ✓ Trailer / Mobile Home Park / Campground
- ✓ Non-Residential

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 requirements and/or flow characteristics.

4.3 General Cost of Service Procedures

A cost of service study utilizes a three-step approach to review costs which is outlined in WEF MOP #27, and outlined in Section 2 of this report. Provided below is a detailed discussion of the cost of service study conducted for the District's sewer utility, and the specific steps taken within the analysis.

4.3.1 Functionalization of Costs

The first analytical step in the cost of service process is called functionalization. Functionalization is the arrangement of expenses and asset (infrastructure) data by major operating functions within each utility. For example, a sewer utility generally incurs costs for pumping, treatment, collection, etc. Within this study, the functionalization of the cost data was largely accomplished through the District's system of accounts and asset data.

4.3.2 Classification of Costs

The second analytical task performed in a cost of service analysis is the classification process. Classification determines why the expenses were incurred or what type of need is being met. The District's plant accounts and revenue requirement were reviewed and classified using the following cost classifiers:

- ✓ **Volume Related Costs:** Volume related costs are those costs which tend to vary with the total quantity of sewer collected and treated. A majority of collection system costs and treatment costs are included in this component. An example of a volume-related cost is electricity used for pumping or treating sewer.
- ✓ **Strength Related Costs:** Strength related costs are those costs associated with the additional handling and treatment of high "strength" sewer. Strength of sewer is typically measured in biochemical oxygen demand (BOD)¹, and total suspended solids (SS)². Increased strength

¹ BOD is the amount of dissolved oxygen that must be present in water in order for microorganisms to decompose the organic matter in the wastewater.

² TSS is the entire amount of organic and inorganic particles dispersed in wastewater.

levels generally equate to increased treatment costs. Pre-treatment is generally required if the discharge is known to regularly exceed the typical waste strength.

- ✓ **Customer Related Costs:** Customer related costs vary with the number 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.
- ✓ **Direct Assignments:** Certain costs associated with operating the utility may be directly traced to a specific customer or class of service. These costs are then “directly assigned” to that specific class of service.

4.3.3 Development of Allocation Factors

Once the classification process is complete, the classified costs are allocated to each customer class of service. For the District’s study, classified costs were allocated to the various customer groups using the following allocation factors.

- ✓ **Volume Allocation Factor:** Volume related costs are generally allocated on the basis of contribution to sewer flows. In order to develop this allocation factor, some knowledge of the contribution to flows must be determined. Sewer Flows were developed based on the total flows received at the treatment plant and proportionate with the number of billing units which are based on customer equivalencies.
- ✓ **Strength Allocation Factor:** Strength related costs are classified between biochemical oxygen demand (BOD), and suspended solids (SS). These types of costs are allocated 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. The District’s strength characteristics by class of service were estimated within this study based on estimated industry standard values and the strength of sewer received at the treatment plant.
- ✓ **Customer Allocation Factor:** Customer costs within the cost of service study are allocated to the various customer classes of service based on their respective customer counts. The number of customers, by customer class of service, was developed within the revenue requirement study. Two types of customer allocation

Terminology of a Sewer Cost of Service Analysis

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

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

ALLOCATION – Allocating the classified costs to each class of service based upon each class’s 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 a treatment plant).

STRENGTH COSTS – Costs classified as strength related refer to the sewer treatment function. Different types of customers may have high sewer strength characteristics and high strength sewer costs more to treat. Facilities are often designed and sized around meeting these costs.

CUSTOMER COSTS – Costs classified as customer related vary with the number of customers on the system (e.g., billing costs).

DIRECT ASSIGNMENT – Costs that can be clearly identified as belonging to a specific customer group or group of customers.

CUSTOMER CLASSES OF SERVICE – The grouping of customers into similar groups based upon usage characteristics and/or facility requirements.

factors were developed, actual and weighted. Actual customer costs do not vary by the volume or strength characteristics of the class of service and are based on the actual number of customers for each class of service. A weighting factor was used to develop the weighted customer allocation factor. The weighted customer allocation factor attempts to reflect the disproportionate costs associated with various customers. These customers can be assigned a higher per customer cost because they require additional administrative costs and possible monitoring.

The development of the approach and allocation factors is based on generally accepted principles as outlined in the WEF MOP #27. Given the development of the approach and allocation factors, the final step in the cost of service study is to allocate the classified costs to the various customer classes of service.

4.4 Functionalization and Classification of Plant in Service

In performing the functionalization of plant in service (infrastructure), HDR utilized the District's historical plant records. Once the plant assets were functionalized, the analysis shifted to classification of the asset. The classification process included reviewing each group of assets and determining which cost classifiers the assets were related to. For example, the District's assets were classified as: volume related, strength related, customer related, revenue related, or directly assigned to a specific customer class or classes of service. Provided below is a brief discussion of the classification process used.

After a detailed review of the District's asset records, the functionalized plant (infrastructure) was classified based on generally accepted cost allocation methods and an understanding of the District's operations and facility requirements. Pump stations-Force Mains are sized to meet total sewer flows, and are considered 100% volume based. Subsurface Collection Lines were classified as 100% volume. In reviewing the design for the treatment plant, it was classified as 50% to volume-related, 25% biochemical oxygen demand (BOD)-related and, 25% suspended solids (SS)-related. The compost was allocated 100% suspended solids (SS). A more detailed exhibit of the District's functionalization and classification of sewer plant investment can be found in the Technical Appendix.

**Table 4-1
Summary of the Classification of Sewer Utility Plant in Service**

Plant Component	Vol.	Strength		Customer		Rev. Related	Direct Assign.
		BOD	SS	Actual Cust.	Weighted Cust.		
Subsurface Collection Lines	100%	0%	0%	0%	0%	0%	0%
Pump Station-Force Mains	100%	0%	0%	0%	0%	0%	0%
Treatment facilities	50%	25%	25%	0%	0%	0%	0%
Disposal Facilities	0%	55%	45%	0%	0%	0%	0%
Land & Easements	100%	0%	0%	0%	0%	0%	0%
CWIP	100%	0%	0%	0%	0%	0%	0%
General Plant	52%	26%	22%	0%	0%	0%	0%

4.5 Functionalization and Classification of Operating Expenses

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

For the District’s study, the revenue requirement for FY 2020 were functionalized, classified, and allocated. As noted earlier, the District utilized a cash basis revenue requirement, which was comprised of operation and maintenance expenses, debt service, and capital additions funded from rates. A more detailed review of the classification of revenue requirement can be found in the Technical Appendix, Exhibit 12.

**Table 4-2
Summary of the Classification of the Sewer Revenue Requirement (\$000)**

Total	Volume	Strength		Customer		Revenue Related	Direct Assignment
		BOD	Suspended Solids	Actual Customer	Weighted Customer		
\$15,099	\$9,609	\$2,623	\$2,282	\$194	\$470	\$0	(\$80)
100%	64%	17%	15%	1%	3%	0%	-1%

4.6 Major Assumptions of the Cost of Service Study

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

- ✓ The test period used for the cost of service analysis was FY 2020. The revenue and expense data was previously developed within the revenue requirement analysis.
- ✓ A “cash basis” approach was utilized which conforms to generally accepted sewer cost of service approaches and methodologies. Under the “cash basis” approach, the revenue requirements previously developed are allocated to each customer class of service.
- ✓ The classification of plant in service was developed based on generally accepted cost allocation techniques. Furthermore, the classification process was developed using the District specific data and the District’s operations.
- ✓ Customer volumes used within this study for purposes of developing the allocation factors were estimated for each class of service based on the number of billing units and the total volumes received at the treatment plant.

4.7 Summary Results of the Cost of Service Analysis

In summary form, the cost of service analysis began by functionalizing the District’s infrastructure records and operating expenses. The functionalized infrastructure and operating expenses were then classified into their various cost components. The individual classification totals were then allocated to the various customer classes of service based on the appropriate allocation factors. The allocated expenses for each customer group were then aggregated to determine each customer group’s overall revenue responsibility. A summary of the detailed cost responsibility developed for each class of service is shown below in Table 4-3.

Table 4-3 Summary of the Allocation of the Sewer Revenue Requirement (\$000)						
Cost Classifier	Total Costs	Single Family	Multi-family	Motel/ Hotel/ Timeshare	Trailer/ Mobile Home Park/ Camp-ground	Non-Res.
Volume	\$9,609	\$5,980	\$1,528	\$1,017	\$349	\$735
Bio-Chemical Oxy. Demand	2,623	1,622	415	276	95	216
Suspended Solids	2,282	1,404	359	239	82	199
Customer Related	665	591	48	5	1	20
Revenue Related	0	0	0	0	0	0
Direct Assignment	(80)	(80)	0	0	0	0
Total	\$15,099	\$9,517	\$2,349	\$1,536	\$527	\$1,169

The proportional and equitable allocation of costs reflects the benefits received from infrastructure in place to provide service and the resulting operating expenses for each customer class of service. Once the total costs of each class of service has been developed, it can be compared to the current revenues of each class of service. The difference between the rate revenues and allocated costs for each class of service represents the variance from current rate levels to reflect the cost of service analysis. It is important to remember that a cost of service analysis is not an exact calculation.

Rather it reflects the current relationships between current customer rate revenues and current costs. Cost of service relationships can change over time given changes in the way costs may be incurred, along with changes in customer characteristics. Table 4-4 provides the results of the cost of service analysis and shows the allocated costs per customer class.

**Table 4 - 4
Summary of the Cost of Service Analysis (\$000)**

Class of Service	Present Revenue (FY 2020)	Allocated Costs	\$ Difference	% Difference
Single Family Residential	\$9,009	\$9,517	(\$507)	5.6%
Multi-family	2,255	2,349	(94)	4.2%
Motel/ Hotel/ Timeshare	1,481	1,536	(55)	3.7%
Trailer/Mobile Home Park/Campground	484	527	(43)	8.9%
Non-Residential	<u>1,150</u>	<u>1,169</u>	<u>(19)</u>	<u>1.7%</u>
Total	\$14,380	\$15,099	(\$719)	5.0%

In reviewing the above results, it should also be understood that a cost of service analysis is based on one year's data and customer information, and customer characteristics may change over time. Therefore, it is appropriate to determine whether these findings are consistent over time, and when more firmly ascertained, make further cost of service adjustments at that time.

The other result of a cost of service analysis is the development of unit costs. Unit costs are based on the allocation of costs between the various Cost of Service characteristics divided by the appropriate volume or pounds by component. These unit costs can be helpful when developing equitable rate designs for sewer customers. Provided in Table 4-5 is a summary of the unit costs.

**Table 4-5
Summary of the Unit Costs (\$/CCF)**

	Flow	Biochem. Oxy. Demand (BOD)	Suspended Solids (SS)	Direct Assign.	Total	Per Billing Unit Cost
Single Family	\$5.42	\$1.47	\$1.27	(\$0.07)	\$8.10	\$44.46
Multifamily	5.42	1.47	1.27	0.00	8.17	42.94
Motel/Hotel/Timeshare	5.42	1.47	1.27	0.00	8.17	42.21
Trailer/Mobile Home Park/Campground	5.42	1.47	1.27	0.00	8.17	42.16
Non-Residential	<u>5.42</u>	<u>1.59</u>	<u>1.47</u>	<u>0.00</u>	<u>8.49</u>	<u>44.46</u>
System Average	\$5.42	\$1.48	\$1.29	(\$0.05)	\$8.15	\$43.90

These unit costs were developed based on the allocation of costs for each component, flow, BOD, and SS, divided by the estimated total system flow and based on the annual flow and sewer strength.

The District currently charges its customer classes on a billing unit rather than on a volume basis. This study does not recommend changing the District's rate structure at this time. Table 4-5 also shows the billing unit per customer class provided with grey shading.

4.8 Consultant's Conclusions and Recommendations

Unlike a revenue requirement which is a review of a period of time, a cost of service is an analysis of a single point in time. A cost of service analysis should be viewed with perspective the time of the analysis and what will happen in the future. Given the results of the cost of service analysis, and the requirements of Proposition 218, HDR recommends the implementation of the cost of service results, and use of the unit costs, to develop the proposed rates for FY 2020.

4.9 Summary

This section of the report has provided an analysis of the cost of service analysis developed for the District. This analysis was prepared using generally accepted cost of service techniques. The next section of the report will review the present and proposed sewer rates for the District.

5 Development of the Rate Designs

5.1 Introduction

The final step of a comprehensive rate study is the design of rates to collect the desired levels of revenues, based on the results of the revenue requirement and cost of service analyses. In reviewing sewer rate designs, consideration is given to the level of the rates and the structure of the rates. The level of the rates refers to the amount of annual revenues received through rates. The structure of the rate is how the customer is charged. The combination of the level of rates, and structure of rates, provides a price signal to the customer on how their use impacts the costs of the system.

5.2 Rate Design Criteria and Considerations

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 feel the last consideration, cost-based rates, should be of paramount importance and provide the primary guidance to utilities on rate structure and policy.

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 a utility's rate design goals and objectives.

5.3 Development of Cost-Based Sewer Rates

A key objective for this study is to meet the legal requirements of Proposition 218 and clearly document the steps taken to meet those requirements, which results in the development of cost-based and equitable sewer rates. Given this, the development of the District's proposed sewer rates have been closely reviewed 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 allocated between the various customer classes of service. HDR would point out that there is no single methodology for equitably assigning sewer costs to the various customer groups. The Water Environment Federation Manual of Practice No. 27 provides various and differing methodologies which may be used to establish cost-based sewer rates. Unfortunately, Article XII D is not prescriptive and does not provide a single or specific methodology for establishing legally compliant sewer rates. Given that, HDR conducted this study using generally accepted rate setting methodologies, tailored to the District's specific facilities and customers, in order meet the intent (i.e., requirements) of Article XIII D. Furthermore, the rate setting methodology used in the District's study are based on the WEF MOP #27 and are, therefore, reasonable and appropriate.

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 District'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 District's sewer rates are used exclusively to operate and maintain the District'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.** This cost of service analysis, and this report, has focused on the issue of proportional assignment of costs to customer classes of service in accordance with generally accepted cost of service principles. The proposed rates have appropriately grouped customers into customer classes of service (e.g., single family, multifamily, non-residential) that reflect the varying wastewater characteristics 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 equity and fairness 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.

5.4 Review of the Overall Rate Adjustment

As indicated in the revenue requirement and the cost of service analyses, the priority for the sewer utility was to transition the overall level of the sewer rates to meet financial needs. A rate transition plan was developed to prudently fund the utility's operating and capital infrastructure needs over the next 10 years though for rate design the study limited rates to a 5 year period. Provided in Table 5-1 is a summary of the proposed revenue adjustments for the next five-year period.

Table 5-1 Ten-Year Rate Transition Plan									
FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
- Rate Study Focus -									

While the revenue requirement analysis resulted in the proposed revenue transition plan, it does not take into consideration the allocation of costs between the various customer classes of service. In developing the final rates, the cost of service results were implemented.

5.5 Present and Proposed Rates

In developing the proposed rate designs, the District’s existing rate structures were reviewed. The existing rate structure is contemporary in nature and reflects industry standard rate setting methods. These rate structures reflect the cost impacts each customer places on the system. Provided in Table 5-2 is a summary of the current and proposed rates. As a note, cost of service adjustments were made by customer class. When comparing the rates in Table 5-2, they are the unit costs as developed in the cost of service analysis and provided in Table 4-5.

Table 5-2 Current and Proposed Rates						
	Current	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024

Quarterly Charge by Class of Service

Single Family Residential	\$42.09	\$44.46	\$46.68	\$49.02	\$51.47	\$54.04
Multi-family	41.22	42.94	45.09	47.34	49.71	52.20
Motel/Hotel/Timeshare	40.69	42.21	44.32	46.54	48.86	51.31
Trailer/Mobile Home Park/Campground	38.73	42.16	44.27	46.48	48.81	51.25
Non-Residential	43.72	44.46	46.68	49.02	51.47	54.04

As can be seen in Table 5-2 the present rates are a flat quarterly rate per billing unit.

5.6 Summary of the Rate Design Analysis

This completes the rate design analysis for the City’s sewer rate study. It is recommended that rates be adopted as shown in Table 5-2 which are designed to meet the District’s projected revenue requirement and reflect a proportional and equitable allocation of costs to each customer class of service.



Technical Appendix

South Tahoe PUD
Sewer Utility
Revenue Requirement Summary
Data Driven - 5%

	Budget	Projected									
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Revenue											
Rate Revenue at Current Rates	\$14,364	\$14,380	\$14,396	\$14,412	\$14,427	\$14,443	\$14,459	\$14,475	\$14,491	\$14,507	\$14,523
Miscellaneous Revenue	9,394	9,605	9,707	9,900	10,058	10,223	10,411	10,609	10,851	10,881	10,851
Total Revenue	\$23,758	\$23,984	\$24,103	\$24,312	\$24,485	\$24,667	\$24,870	\$25,084	\$25,342	\$25,388	\$25,374
Expenditures											
O&M Expenditures	\$15,348	\$15,973	\$16,632	\$17,043	\$17,510	\$17,973	\$18,450	\$18,939	\$19,442	\$19,958	\$20,489
Rate Funded Capital	384	384	384	384	384	384	384	384	384	384	384
Debt Service	3,121	3,513	3,834	4,155	4,476	4,877	4,771	4,825	5,226	4,882	4,538
Transfers	4,905	4,833	4,679	5,007	5,220	5,421	6,181	6,828	7,207	8,160	9,094
Total Revenue Requirement	\$23,758	\$24,703	\$25,530	\$26,590	\$27,590	\$28,656	\$29,786	\$30,976	\$32,259	\$33,385	\$34,505
Balance/Deficiency of Funds	\$0	(\$719)	(\$1,427)	(\$2,278)	(\$3,105)	(\$3,989)	(\$4,916)	(\$5,891)	(\$6,917)	(\$7,997)	(\$9,132)
Rate Adj. as a % of Rate Rev	0.0%	5.0%	9.9%	15.8%	21.5%	27.6%	34.0%	40.7%	47.7%	55.1%	62.9%
Proposed Rate Adjustment	6.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Rate Revenue After Adjustment	\$14,364	\$15,099	\$15,871	\$16,683	\$17,537	\$18,434	\$19,377	\$20,368	\$21,410	\$22,505	\$23,656
Debt Service Coverage Ratio											
After Rate Adjustment	2.14	1.99	1.86	1.85	1.83	1.79	1.96	2.07	2.05	2.31	2.60
Average Residential Quarterly Bill (3 Units)	\$126.27	\$132.58	\$139.21	\$146.17	\$153.48	\$161.16	\$169.21	\$177.67	\$186.56	\$195.89	\$205.68
\$ Change Per Quarterly	0.00	6.31	6.63	6.96	7.31	7.67	8.06	8.46	8.88	9.33	9.79
Cumulative \$ Change per Quarter	0.00	6.31	12.94	19.90	27.21	34.89	42.94	51.40	60.29	69.62	79.41

South Tahoe PUD
 Sewer Utility
 Revenue Requirement
 Exhibit 1 - Escalation Factors
 Data Driven - 5%

	<i>Budget</i>	<i>Projected</i>										<i>Notes</i>
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
Revenues												
Residential	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Multi-Family	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Non-Residential	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Property Tax	0.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Misc. Revenue	0.0%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Flat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Expenses												
Labor	Budget	5.1%	5.1%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Benefits	Budget	5.1%	5.1%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Retirement	Budget	2.5%	2.5%	1.5%	2.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
2% Escalation	Budget	2.5%	2.5%	1.5%	2.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Medical Benefits	Budget	2.5%	2.5%	1.5%	2.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Dental & Vision Benefits	Budget	2.5%	2.5%	1.5%	2.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Repairs & Maintenance	Budget	2.5%	2.5%	1.5%	2.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Worker's Compensation	Budget	2.5%	2.5%	1.5%	2.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
OPEB	Budget	2.5%	2.5%	1.5%	2.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Petroleum Products	Budget	2.5%	2.5%	1.5%	2.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Materials & Supplies	Budget	2.5%	2.5%	1.5%	2.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Equipment	Budget	2.5%	2.5%	1.5%	2.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Miscellaneous	Budget	2.5%	2.5%	1.5%	2.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Utilities	Budget	2.0%	2.5%	1.5%	2.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Professional Services	Budget	3.5%	2.5%	1.5%	2.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Insurance	Budget	3.0%	2.5%	1.5%	2.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Flat	Budget	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Investment Interest	0.0%	0.0%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
New Long-Term Debt Assumptions												
Revenue Bond												
Rate	4.5%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Term	10	10	10	10	10	10	10	10	10	10	10	10
Low Interest Loan												
Rate	2.6%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Term	20	20	20	20	20	20	20	20	20	20	20	20

South Tahoe PUD
 Sewer Utility
 Revenue Requirement
 Exhibit 2 - Revenues & Expenses
 Data Driven - 5%

	Budget	Projected										Notes
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
Revenues												
Rate Revenues												
Single Family Residential	\$8,999,473	\$9,009,449	\$9,019,382	\$9,029,315	\$9,039,248	\$9,049,182	\$9,059,115	\$9,069,048	\$9,078,981	\$9,088,915	\$9,098,848	Calc'd in Cust Data Tab
Multi-family	2,252,384	2,254,899	2,257,372	2,259,845	2,262,318	2,264,792	2,267,265	2,269,738	2,272,211	2,274,684	2,277,158	Calc'd in Cust Data Tab
Motel/ Hotel/ Timeshare	1,479,122	1,480,790	1,482,418	1,484,046	1,485,673	1,487,301	1,488,928	1,490,556	1,492,184	1,493,811	1,495,439	Calc'd in Cust Data Tab
Trailer/Mobile Home Park/Campground	483,893	484,435	485,055	485,674	486,294	486,914	487,533	488,153	488,773	489,392	490,012	Calc'd in Cust Data Tab
Non-Residential	1,149,005	1,150,186	1,151,410	1,152,634	1,153,858	1,155,082	1,156,307	1,157,531	1,158,755	1,159,979	1,161,203	Calc'd in Cust Data Tab
Total Rate Revenues	\$14,363,878	\$14,379,759	\$14,395,637	\$14,411,514	\$14,427,392	\$14,443,270	\$14,459,148	\$14,475,026	\$14,490,904	\$14,506,782	\$14,522,660	
Other Revenues												
Plant Dumping Fees	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	As Flat
Repairs	500	503	505	508	510	513	515	518	520	523	526	As Misc. Revenue
Returned Check Charges	2,000	2,010	2,020	2,030	2,040	2,051	2,061	2,071	2,081	2,092	2,102	As Misc. Revenue
Permit Fee Revenue	22,000	22,110	22,221	22,332	22,443	22,556	22,668	22,782	22,896	23,010	23,125	As Misc. Revenue
Capacity Fees	384,300	384,300	384,300	384,300	384,300	384,300	384,300	384,300	384,300	384,300	384,300	As Flat
Secured Taxes	8,101,200	8,343,800	8,510,536	8,680,207	8,853,811	9,030,347	9,210,814	9,394,210	9,581,534	9,777,785	9,973,961	As Property Tax
Unsecured Taxes	160,000	163,200	166,464	169,793	173,189	176,653	180,186	183,790	187,466	191,215	195,039	As Property Tax
Sale of Surplus Assets	0	0	0	0	0	0	0	0	0	0	0	As Misc. Revenue
Realized Gain/Loss on Investment	0	0	0	0	0	0	0	0	0	0	0	As Misc. Revenue
Investment Interest	370,000	333,000	264,000	283,000	262,000	246,000	248,000	258,000	307,000	336,000	304,000	Based on Investment Rate
Rents and Leases	55,000	55,275	55,551	55,829	56,108	56,389	56,671	56,954	57,239	57,525	57,813	As Misc. Revenue
State Homeowner Exemption	79,800	80,199	80,600	81,003	81,408	81,815	82,224	82,635	83,048	83,464	83,881	As Misc. Revenue
Interest and Penalty Charges	130,000	130,650	131,303	131,960	132,620	133,283	133,949	134,619	135,292	135,968	136,648	As Misc. Revenue
Amin Fee - New Service	0	0	0	0	0	0	0	0	0	0	0	As Flat
Contractor Plan & Specs Fees	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	As Flat
Other Miscellaneous Revenue	47,500	47,500	47,500	47,500	47,500	47,500	47,500	47,500	47,500	47,500	47,500	As Flat
Local Aid	0	0	0	0	0	0	0	0	0	0	0	As Flat
Street Light Revenue	23,000	23,000	23,000	23,000	23,000	23,000	23,000	23,000	23,000	23,000	23,000	As Flat
Total Other Revenues	\$9,394,300	\$9,604,547	\$9,707,000	\$9,900,461	\$10,057,930	\$10,223,405	\$10,410,888	\$10,609,379	\$10,850,877	\$10,881,382	\$10,850,895	
Total Revenues	\$23,758,178	\$23,984,305	\$24,102,637	\$24,311,976	\$24,485,322	\$24,666,675	\$24,870,036	\$25,084,405	\$25,341,780	\$25,388,164	\$25,373,554	

South Tahoe PUD
 Sewer Utility
 Revenue Requirement
 Exhibit 2 - Revenues & Expenses
 Data Driven - 5%

	Budget	Projected										Notes
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
Expenses												
Non-Crew												
Salaries & Wages	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	As Labor
Benefits	0	0	0	0	0	0	0	0	0	0	0	As Benefits
Professional Services	0	0	0	0	0	0	0	0	0	0	0	As Professional Services
Insurance	121,000	124,630	127,728	129,677	132,607	135,259	137,965	140,724	143,538	146,409	149,337	As Insurance
Petroleum Products	0	0	0	0	0	0	0	0	0	0	0	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	500	513	525	533	545	556	567	579	590	602	614	As Miscellaneous
Printing and Publications	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Rents and Leases	192,000	196,800	201,693	204,770	209,397	213,585	217,856	222,213	226,658	231,191	235,815	As Miscellaneous
Repairs and Maintenance	3,000	3,075	3,151	3,199	3,271	3,337	3,404	3,472	3,541	3,612	3,684	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Utilities	1,938,100	1,976,862	2,026,009	2,056,919	2,103,397	2,145,465	2,188,374	2,232,141	2,276,784	2,322,320	2,368,766	As Utilities
Misc Expenses	200	205	210	213	218	222	227	231	236	241	246	As Miscellaneous
Other Operating Exp	601,000	616,025	631,340	640,972	655,455	668,565	681,936	695,575	709,486	723,676	738,149	As Miscellaneous
Non Operating Exp	196,000	200,900	205,895	209,036	213,759	218,034	222,395	226,843	231,380	236,007	240,728	As Miscellaneous
Total Non-Crew	\$3,051,800	\$3,119,009	\$3,196,551	\$3,245,320	\$3,318,650	\$3,385,023	\$3,452,724	\$3,521,778	\$3,592,214	\$3,664,058	\$3,737,339	
Plant Operations												
Salaries & Wages	\$149,325	\$156,881	\$164,819	\$169,764	\$174,856	\$180,102	\$185,505	\$191,070	\$196,803	\$202,707	\$208,788	As Labor
Benefits	72,425	76,090	79,940	82,338	84,808	87,352	89,973	92,672	95,452	98,316	101,265	As Benefits
Professional Services	100	104	106	108	110	112	115	117	119	122	124	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	0	0	0	0	0	0	0	0	0	0	0	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	750	769	788	800	818	834	851	868	885	903	921	As Miscellaneous
Printing and Publications	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	100	102	105	107	109	111	113	116	118	120	123	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	1,800	1,845	1,891	1,920	1,963	2,002	2,042	2,083	2,125	2,167	2,211	As Miscellaneous
Utilities	0	0	0	0	0	0	0	0	0	0	0	As Utilities
Misc Expenses	200	205	210	213	218	222	227	231	236	241	246	As Miscellaneous
Other Operating Exp	130,000	133,250	136,563	138,646	141,779	144,615	147,507	150,457	153,466	156,536	159,666	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Plant Operations	\$354,700	\$369,245	\$384,422	\$393,895	\$404,662	\$415,352	\$426,334	\$437,615	\$449,205	\$461,111	\$473,344	

South Tahoe PUD
 Sewer Utility
 Revenue Requirement
 Exhibit 2 - Revenues & Expenses
 Data Driven - 5%

	Budget	Projected										Notes
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
Operations												
Salaries & Wages	\$1,707,825	\$1,794,241	\$1,885,030	\$1,941,580	\$1,999,828	\$2,059,823	\$2,121,617	\$2,185,266	\$2,250,824	\$2,318,349	\$2,387,899	As Labor
Benefits	930,125	977,189	1,026,635	1,057,434	1,089,157	1,121,832	1,155,487	1,190,151	1,225,856	1,262,632	1,300,511	As Benefits
Professional Services	0	0	0	0	0	0	0	0	0	0	0	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	1,000	1,025	1,050	1,066	1,090	1,112	1,135	1,157	1,180	1,204	1,228	As Petroleum Products
Operating Supplies	205,100	210,199	215,425	218,712	223,653	228,126	232,689	237,343	242,090	246,931	251,870	As Materials & Supplies
Office Expenses	3,100	3,178	3,256	3,306	3,381	3,449	3,517	3,588	3,660	3,733	3,807	As Miscellaneous
Printing and Publications	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	32,400	33,206	34,031	34,550	35,331	36,038	36,758	37,493	38,243	39,008	39,788	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	23,000	23,575	24,161	24,530	25,084	25,586	26,097	26,619	27,152	27,695	28,249	As Miscellaneous
Utilities	400	408	418	425	434	443	452	461	470	479	489	As Utilities
Misc Expenses	800	820	840	853	872	890	908	926	944	963	983	As Miscellaneous
Other Operating Exp	213,000	218,325	223,753	227,167	232,300	236,946	241,684	246,518	251,448	256,477	261,607	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Operations	\$3,116,750	\$3,262,165	\$3,414,600	\$3,509,623	\$3,611,131	\$3,714,243	\$3,820,345	\$3,929,523	\$4,041,867	\$4,157,471	\$4,276,431	
Electric												
Salaries & Wages	\$174,225	\$183,041	\$192,303	\$198,072	\$204,014	\$210,134	\$216,438	\$222,931	\$229,619	\$236,508	\$243,603	As Labor
Benefits	104,875	110,182	115,757	119,230	122,806	126,491	130,285	134,194	138,220	142,366	146,637	As Benefits
Professional Services	0	0	0	0	0	0	0	0	0	0	0	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	2,500	2,562	2,626	2,666	2,726	2,781	2,836	2,893	2,951	3,010	3,070	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	875	897	919	933	954	973	993	1,013	1,033	1,054	1,075	As Miscellaneous
Printing and Publications	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	71,500	73,278	75,099	76,245	77,968	79,527	81,118	82,740	84,395	86,083	87,805	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	4,550	4,664	4,780	4,853	4,962	5,062	5,163	5,266	5,371	5,479	5,588	As Miscellaneous
Utilities	1,000	1,020	1,045	1,061	1,085	1,107	1,129	1,152	1,175	1,198	1,222	As Utilities
Misc Expenses	450	461	473	480	491	501	511	521	531	542	553	As Miscellaneous
Other Operating Exp	3,300	3,383	3,467	3,519	3,599	3,671	3,744	3,819	3,896	3,974	4,053	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Electric	\$363,275	\$379,487	\$396,468	\$407,059	\$418,606	\$430,246	\$442,218	\$454,529	\$467,191	\$480,213	\$493,606	

South Tahoe PUD
 Sewer Utility
 Revenue Requirement
 Exhibit 2 - Revenues & Expenses
 Data Driven - 5%

	Budget	Projected										Notes
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
Heavy Maintenance												
Salaries & Wages	\$599,950	\$630,307	\$662,201	\$682,067	\$702,529	\$723,605	\$745,313	\$767,672	\$790,703	\$814,424	\$838,856	As Labor
Benefits	345,525	363,009	381,377	392,818	404,603	416,741	429,243	442,120	455,384	469,045	483,117	As Benefits
Professional Services	0	0	0	0	0	0	0	0	0	0	0	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	6,500	6,662	6,827	6,931	7,088	7,230	7,374	7,522	7,672	7,826	7,982	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	600	615	630	640	654	667	681	694	708	722	737	As Miscellaneous
Printing and Publications	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	109,575	112,299	115,091	116,847	119,487	121,877	124,314	126,801	129,337	131,924	134,562	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	7,200	7,380	7,563	7,679	7,852	8,009	8,170	8,333	8,500	8,670	8,843	As Miscellaneous
Utilities	50	51	52	53	54	55	56	58	59	60	61	As Utilities
Misc Expenses	500	513	525	533	545	556	567	579	590	602	614	As Miscellaneous
Other Operating Exp	7,500	7,688	7,879	7,999	8,180	8,343	8,510	8,680	8,854	9,031	9,212	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Heavy Maintenance	\$1,077,400	\$1,128,523	\$1,182,146	\$1,215,567	\$1,250,993	\$1,287,084	\$1,324,229	\$1,362,459	\$1,401,806	\$1,442,303	\$1,483,984	
Field Operations												
Salaries & Wages	\$67,275	\$70,679	\$74,255	\$76,483	\$78,778	\$81,141	\$83,575	\$86,082	\$88,665	\$91,325	\$94,065	As Labor
Benefits	29,650	31,150	32,726	33,708	34,720	35,761	36,834	37,939	39,077	40,249	41,457	As Benefits
Professional Services	1,000	1,035	1,061	1,077	1,101	1,123	1,146	1,169	1,192	1,216	1,240	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	500	512	525	533	545	556	567	579	590	602	614	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	500	513	525	533	545	556	567	579	590	602	614	As Miscellaneous
Printing and Publications	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	100	102	105	107	109	111	113	116	118	120	123	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	1,675	1,717	1,760	1,786	1,827	1,863	1,901	1,939	1,977	2,017	2,057	As Miscellaneous
Utilities	0	0	0	0	0	0	0	0	0	0	0	As Utilities
Misc Expenses	100	103	105	107	109	111	113	116	118	120	123	As Miscellaneous
Other Operating Exp	46,100	47,253	48,427	49,166	50,277	51,283	52,308	53,354	54,421	55,510	56,620	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Field Operations	\$146,900	\$153,064	\$159,490	\$163,501	\$168,011	\$172,506	\$177,125	\$181,872	\$186,749	\$191,762	\$196,913	

	Budget	Projected										Notes
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
Underground Repair												
Salaries & Wages	\$791,675	\$831,734	\$873,819	\$900,034	\$927,035	\$954,846	\$983,492	\$1,012,996	\$1,043,386	\$1,074,688	\$1,106,928	As Labor
Benefits	451,975	474,845	498,872	513,838	529,253	545,131	561,485	578,329	595,679	613,550	631,956	As Benefits
Professional Services	0	0	0	0	0	0	0	0	0	0	0	As Professional Services
Insurance	5,000	5,150	5,278	5,359	5,480	5,589	5,701	5,815	5,931	6,050	6,171	As Insurance
Petroleum Products	37,500	38,432	39,388	39,989	40,892	41,710	42,544	43,395	44,263	45,148	46,051	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	1,500	1,538	1,576	1,600	1,636	1,669	1,702	1,736	1,771	1,806	1,842	As Miscellaneous
Printing and Publications	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	174,050	178,377	182,812	185,601	189,795	193,591	197,462	201,412	205,440	209,549	213,740	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	11,200	11,480	11,765	11,945	12,215	12,459	12,708	12,962	13,222	13,486	13,756	As Miscellaneous
Utilities	3,450	3,519	3,606	3,662	3,744	3,819	3,896	3,973	4,053	4,134	4,217	As Utilities
Misc Expenses	400	410	420	427	436	445	454	463	472	482	491	As Miscellaneous
Other Operating Exp	5,000	5,125	5,252	5,333	5,453	5,562	5,673	5,787	5,903	6,021	6,141	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Underground Repair	\$1,481,750	\$1,550,610	\$1,622,789	\$1,667,786	\$1,715,939	\$1,764,821	\$1,815,117	\$1,866,869	\$1,920,120	\$1,974,913	\$2,031,294	
Pumps												
Salaries & Wages	\$562,450	\$590,910	\$620,810	\$639,434	\$658,617	\$678,376	\$698,727	\$719,689	\$741,280	\$763,518	\$786,424	As Labor
Benefits	315,900	331,885	348,678	359,138	369,912	381,010	392,440	404,213	416,340	428,830	441,695	As Benefits
Professional Services	0	0	0	0	0	0	0	0	0	0	0	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	14,550	14,912	15,282	15,516	15,866	16,184	16,507	16,837	17,174	17,518	17,868	As Petroleum Products
Operating Supplies	5,000	5,124	5,252	5,332	5,452	5,561	5,673	5,786	5,902	6,020	6,140	As Materials & Supplies
Office Expenses	700	718	735	747	763	779	794	810	826	843	860	As Miscellaneous
Printing and Publications	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	75,575	77,454	79,379	80,591	82,412	84,060	85,741	87,456	89,205	90,989	92,809	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	3,000	3,075	3,151	3,200	3,272	3,337	3,404	3,472	3,542	3,612	3,685	As Miscellaneous
Utilities	3,000	3,060	3,136	3,184	3,256	3,321	3,387	3,455	3,524	3,595	3,667	As Utilities
Misc Expenses	325	333	341	347	354	362	369	376	384	391	399	As Miscellaneous
Other Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Pumps	\$980,500	\$1,027,470	\$1,076,766	\$1,107,487	\$1,139,905	\$1,172,989	\$1,207,042	\$1,242,095	\$1,278,176	\$1,315,316	\$1,353,545	

South Tahoe PUD
 Sewer Utility
 Revenue Requirement
 Exhibit 2 - Revenues & Expenses
 Data Driven - 5%

	Budget	Projected										Notes
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
Equipment Repair												
Salaries & Wages	\$134,250	\$141,043	\$148,180	\$152,625	\$157,204	\$161,920	\$166,778	\$171,781	\$176,934	\$182,242	\$187,710	As Labor
Benefits	77,300	81,211	85,321	87,880	90,517	93,232	96,029	98,910	101,877	104,934	108,082	As Benefits
Professional Services	0	0	0	0	0	0	0	0	0	0	0	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	6,500	6,662	6,827	6,931	7,088	7,230	7,374	7,522	7,672	7,826	7,982	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	800	820	840	853	872	890	908	926	944	963	983	As Miscellaneous
Printing and Publications	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	62,025	63,567	65,147	66,141	67,636	68,989	70,368	71,776	73,211	74,675	76,169	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	2,200	2,255	2,311	2,346	2,399	2,447	2,496	2,546	2,597	2,649	2,702	As Miscellaneous
Utilities	0	0	0	0	0	0	0	0	0	0	0	As Utilities
Misc Expenses	300	308	315	320	327	334	340	347	354	361	368	As Miscellaneous
Other Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Equipment Repair	\$283,375	\$295,866	\$308,942	\$317,098	\$326,043	\$335,042	\$344,294	\$353,808	\$363,591	\$373,651	\$383,996	
Laboratory												
Salaries & Wages	\$271,175	\$284,896	\$299,312	\$308,292	\$317,540	\$327,067	\$336,879	\$346,985	\$357,394	\$368,116	\$379,160	As Labor
Benefits	128,900	135,422	142,275	146,543	150,939	155,467	160,131	164,935	169,883	174,980	180,229	As Benefits
Professional Services	5,000	5,175	5,304	5,385	5,506	5,616	5,729	5,843	5,960	6,079	6,201	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	1,600	1,640	1,681	1,706	1,745	1,780	1,815	1,852	1,889	1,926	1,965	As Petroleum Products
Operating Supplies	31,500	32,283	33,086	33,591	34,350	35,036	35,737	36,452	37,181	37,925	38,683	As Materials & Supplies
Office Expenses	2,750	2,819	2,889	2,933	2,999	3,059	3,120	3,183	3,246	3,311	3,378	As Miscellaneous
Printing and Publications	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	12,050	12,350	12,657	12,850	13,140	13,403	13,671	13,944	14,223	14,508	14,798	As Repairs & Maintenance
Research Monitoring	24,000	24,600	25,212	25,596	26,175	26,698	27,232	27,777	28,332	28,899	29,477	As Miscellaneous
Travel/Educ/Memberships	10,300	10,558	10,820	10,985	11,233	11,458	11,687	11,921	12,159	12,402	12,650	As Miscellaneous
Utilities	0	0	0	0	0	0	0	0	0	0	0	As Utilities
Misc Expenses	100	103	105	107	109	111	113	116	118	120	123	As Miscellaneous
Other Operating Exp	4,000	4,100	4,202	4,266	4,362	4,450	4,539	4,629	4,722	4,816	4,913	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Laboratory	\$491,375	\$513,945	\$537,541	\$552,252	\$568,099	\$584,145	\$600,654	\$617,637	\$635,109	\$653,084	\$671,576	

South Tahoe PUD
 Sewer Utility
 Revenue Requirement
 Exhibit 2 - Revenues & Expenses
 Data Driven - 5%

	Budget	Projected										Notes
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
Water Reuse												
Salaries & Wages	\$338,550	\$355,681	\$373,678	\$384,888	\$396,435	\$408,328	\$420,578	\$433,195	\$446,191	\$459,577	\$473,364	As Labor
Benefits	168,825	177,368	186,342	191,933	197,691	203,621	209,730	216,022	222,503	229,178	236,053	As Benefits
Professional Services	48,000	49,680	50,915	51,692	52,860	53,917	54,995	56,095	57,217	58,362	59,529	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	17,800	18,243	18,696	18,981	19,410	19,798	20,194	20,598	21,010	21,430	21,859	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	800	820	840	853	872	890	908	926	944	963	983	As Miscellaneous
Printing and Publications	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Rents and Leases	14,700	15,068	15,442	15,678	16,032	16,353	16,680	17,013	17,353	17,701	18,055	As Miscellaneous
Repairs and Maintenance	65,150	66,770	68,430	69,474	71,043	72,464	73,914	75,392	76,900	78,438	80,007	As Repairs & Maintenance
Research Monitoring	15,000	15,375	15,757	15,998	16,359	16,686	17,020	17,360	17,708	18,062	18,423	As Miscellaneous
Travel/Educ/Memberships	6,625	6,791	6,959	7,066	7,225	7,370	7,517	7,668	7,821	7,977	8,137	As Miscellaneous
Utilities	14,100	14,382	14,740	14,964	15,303	15,609	15,921	16,239	16,564	16,895	17,233	As Utilities
Misc Expenses	500	513	525	533	545	556	567	579	590	602	614	As Miscellaneous
Other Operating Exp	279,825	286,821	293,951	298,436	305,179	311,283	317,509	323,859	330,336	336,943	343,682	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Water Reuse	\$969,875	\$1,007,509	\$1,046,277	\$1,070,496	\$1,098,955	\$1,126,876	\$1,155,533	\$1,184,946	\$1,215,138	\$1,246,127	\$1,277,937	
Administration												
Salaries & Wages	\$207,850	\$218,367	\$229,417	\$236,299	\$243,388	\$250,690	\$258,210	\$265,957	\$273,935	\$282,153	\$290,618	As Labor
Benefits	83,225	87,436	91,860	94,616	97,455	100,378	103,390	106,491	109,686	112,977	116,366	As Benefits
Professional Services	750	776	796	808	826	842	859	876	894	912	930	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	1,100	1,127	1,155	1,173	1,200	1,223	1,248	1,273	1,298	1,324	1,351	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	1,950	1,999	2,048	2,080	2,127	2,169	2,213	2,257	2,302	2,348	2,395	As Miscellaneous
Printing and Publications	100	103	105	107	109	111	113	116	118	120	123	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	750	769	788	800	818	834	851	868	885	903	921	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	5,150	5,279	5,410	5,493	5,617	5,729	5,844	5,960	6,080	6,201	6,325	As Miscellaneous
Utilities	0	0	0	0	0	0	0	0	0	0	0	As Utilities
Misc Expenses	1,250	1,281	1,313	1,333	1,363	1,391	1,418	1,447	1,476	1,505	1,535	As Miscellaneous
Other Operating Exp	4,500	4,613	4,727	4,799	4,908	5,006	5,106	5,208	5,312	5,419	5,527	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Administration	\$306,625	\$321,749	\$337,619	\$347,507	\$357,809	\$368,374	\$379,252	\$390,453	\$401,987	\$413,863	\$426,091	

South Tahoe PUD
 Sewer Utility
 Revenue Requirement
 Exhibit 2 - Revenues & Expenses
 Data Driven - 5%

	Budget	Projected										Notes
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
Board of Directors												
Salaries & Wages	\$11,765	\$12,360	\$12,986	\$13,375	\$13,777	\$14,190	\$14,616	\$15,054	\$15,506	\$15,971	\$16,450	As Labor
Benefits	68,875	72,360	76,021	78,302	80,651	83,071	85,563	88,130	90,774	93,497	96,302	As Benefits
Professional Services	21,250	21,994	22,541	22,884	23,402	23,870	24,347	24,834	25,331	25,837	26,354	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	0	0	0	0	0	0	0	0	0	0	0	As Petroleum Products
Operating Supplies	0											As Materials & Supplies
Office Expenses	950	974	998	1,013	1,036	1,057	1,078	1,099	1,121	1,144	1,167	As Miscellaneous
Printing and Publications	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	0	0	0	0	0	0	0	0	0	0	0	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	37,000	37,925	38,868	39,461	40,352	41,160	41,983	42,822	43,679	44,552	45,443	As Miscellaneous
Utilities	0	0	0	0	0	0	0	0	0	0	0	As Utilities
Misc Expenses	250	256	263	267	273	278	284	289	295	301	307	As Miscellaneous
Other Operating Exp	6,200	6,355	6,513	6,612	6,762	6,897	7,035	7,176	7,319	7,466	7,615	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Board of Directors	\$146,290	\$152,224	\$158,189	\$161,915	\$166,252	\$170,522	\$174,905	\$179,405	\$184,024	\$188,768	\$193,638	
Human Resources												
Salaries & Wages	\$115,675	\$121,528	\$127,677	\$131,508	\$135,453	\$139,517	\$143,702	\$148,013	\$152,454	\$157,027	\$161,738	As Labor
Benefits	58,950	61,933	65,067	67,019	69,029	71,100	73,233	75,430	77,693	80,024	82,425	As Benefits
Professional Services	24,450	25,306	25,935	26,331	26,926	27,464	28,013	28,574	29,145	29,728	30,323	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	0	0	0	0	0	0	0	0	0	0	0	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	1,300	1,333	1,366	1,386	1,418	1,446	1,475	1,505	1,535	1,565	1,597	As Miscellaneous
Printing and Publications	8,350	8,559	8,772	8,905	9,107	9,289	9,474	9,664	9,857	10,054	10,255	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	45,700	46,836	48,001	48,733	49,834	50,831	51,847	52,884	53,942	55,021	56,121	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	15,400	15,785	16,177	16,424	16,795	17,131	17,474	17,823	18,180	18,543	18,914	As Miscellaneous
Utilities	0	0	0	0	0	0	0	0	0	0	0	As Utilities
Misc Expenses	150	154	158	160	164	167	170	174	177	181	184	As Miscellaneous
Other Operating Exp	1,800	1,845	1,891	1,920	1,963	2,002	2,042	2,083	2,125	2,167	2,211	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Human Resources	\$271,775	\$283,278	\$295,043	\$302,386	\$310,688	\$318,947	\$327,432	\$336,150	\$345,107	\$354,311	\$363,768	

South Tahoe PUD
 Sewer Utility
 Revenue Requirement
 Exhibit 2 - Revenues & Expenses
 Data Driven - 5%

	Budget	Projected										Notes
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
Public Outreach												
Salaries & Wages	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	As Labor
Benefits	0	0	0	0	0	0	0	0	0	0	0	As Benefits
Professional Services	76,000	78,660	80,616	81,846	83,695	85,369	87,076	88,818	90,594	92,406	94,254	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	0	0	0	0	0	0	0	0	0	0	0	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	4,600	4,715	4,832	4,906	5,017	5,117	5,219	5,324	5,430	5,539	5,650	As Miscellaneous
Printing and Publications	7,500	7,688	7,879	7,999	8,180	8,343	8,510	8,680	8,854	9,031	9,212	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	0	0	0	0	0	0	0	0	0	0	0	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	2,000	2,050	2,101	2,133	2,181	2,225	2,269	2,315	2,361	2,408	2,456	As Miscellaneous
Utilities	0	0	0	0	0	0	0	0	0	0	0	As Utilities
Misc Expenses	25	26	26	27	27	28	28	29	30	30	31	As Miscellaneous
Other Operating Exp	27,250	27,931	28,626	29,062	29,719	30,313	30,920	31,538	32,169	32,812	33,468	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Public Outreach	\$117,375	\$121,069	\$124,079	\$125,972	\$128,819	\$131,395	\$134,023	\$136,704	\$139,438	\$142,226	\$145,071	
Finance												
Salaries & Wages	\$207,125	\$217,606	\$228,616	\$235,475	\$242,539	\$249,815	\$257,310	\$265,029	\$272,980	\$281,169	\$289,604	As Labor
Benefits	85,350	89,669	94,206	97,032	99,943	102,941	106,030	109,211	112,487	115,861	119,337	As Benefits
Professional Services	89,825	92,969	95,280	96,734	98,920	100,898	102,916	104,974	107,074	109,215	111,400	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	0	0	0	0	0	0	0	0	0	0	0	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	3,050	3,126	3,204	3,253	3,326	3,393	3,461	3,530	3,601	3,673	3,746	As Miscellaneous
Printing and Publications	1,500	1,538	1,576	1,600	1,636	1,669	1,702	1,736	1,771	1,806	1,842	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	1,625	1,665	1,707	1,733	1,772	1,807	1,844	1,880	1,918	1,956	1,996	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	4,150	4,254	4,360	4,426	4,526	4,617	4,709	4,803	4,899	4,997	5,097	As Miscellaneous
Utilities	0	0	0	0	0	0	0	0	0	0	0	As Utilities
Misc Expenses	350	359	368	373	382	389	397	405	413	421	430	As Miscellaneous
Other Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Finance	\$392,975	\$411,185	\$429,316	\$440,626	\$453,044	\$465,530	\$478,368	\$491,568	\$505,142	\$519,100	\$533,452	

South Tahoe PUD
 Sewer Utility
 Revenue Requirement
 Exhibit 2 - Revenues & Expenses
 Data Driven - 5%

	Budget	Projected										Notes
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
Accounting												
Salaries & Wages	\$185,100	\$194,466	\$204,306	\$210,435	\$216,748	\$223,251	\$229,948	\$236,847	\$243,952	\$251,271	\$258,809	As Labor
Benefits	102,200	107,371	112,804	116,188	119,674	123,264	126,962	130,771	134,694	138,735	142,897	As Benefits
Professional Services	21,000	21,735	22,275	22,615	23,126	23,589	24,061	24,542	25,033	25,533	26,044	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	0	0	0	0	0	0	0	0	0	0	0	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	1,250	1,281	1,313	1,333	1,363	1,391	1,418	1,447	1,476	1,505	1,535	As Miscellaneous
Printing and Publications	300	308	315	320	327	334	340	347	354	361	368	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	1,675	1,717	1,759	1,786	1,827	1,863	1,900	1,938	1,977	2,017	2,057	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	5,150	5,279	5,410	5,493	5,617	5,729	5,844	5,960	6,080	6,201	6,325	As Miscellaneous
Utilities	0	0	0	0	0	0	0	0	0	0	0	As Utilities
Misc Expenses	100	103	105	107	109	111	113	116	118	120	123	As Miscellaneous
Other Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Non Operating Exp	24,350	24,959	25,579	25,970	26,556	27,087	27,629	28,182	28,745	29,320	29,907	As Miscellaneous
Total Accounting	\$341,125	\$357,218	\$373,868	\$384,247	\$395,348	\$406,619	\$418,216	\$430,150	\$442,429	\$455,064	\$468,065	
Purchasing												
Salaries & Wages	\$94,925	\$99,728	\$104,774	\$107,918	\$111,155	\$114,490	\$117,925	\$121,462	\$125,106	\$128,859	\$132,725	As Labor
Benefits	58,900	61,880	65,011	66,962	68,971	71,040	73,171	75,366	77,627	79,956	82,355	As Benefits
Professional Services	1,000	1,035	1,061	1,077	1,101	1,123	1,146	1,169	1,192	1,216	1,240	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	300	307	315	320	327	334	340	347	354	361	368	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	1,050	1,076	1,103	1,120	1,145	1,168	1,191	1,215	1,240	1,264	1,290	As Miscellaneous
Printing and Publications	300	308	315	320	327	334	340	347	354	361	368	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	22,500	23,059	23,633	23,993	24,535	25,026	25,527	26,037	26,558	27,089	27,631	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	375	384	394	400	409	417	426	434	443	452	461	As Miscellaneous
Utilities	0	0	0	0	0	0	0	0	0	0	0	As Utilities
Misc Expenses	50	51	53	53	55	56	57	58	59	60	61	As Miscellaneous
Other Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Purchasing	\$179,400	\$187,830	\$196,659	\$202,163	\$208,025	\$213,987	\$220,122	\$226,436	\$232,933	\$239,619	\$246,499	

South Tahoe PUD
 Sewer Utility
 Revenue Requirement
 Exhibit 2 - Revenues & Expenses
 Data Driven - 5%

	Budget	Projected										Notes
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
Information Technology												
Salaries & Wages	\$192,625	\$202,372	\$212,612	\$218,990	\$225,560	\$232,327	\$239,296	\$246,475	\$253,870	\$261,486	\$269,330	As Labor
Benefits	98,200	103,169	108,389	111,641	114,990	118,440	121,993	125,653	129,422	133,305	137,304	As Benefits
Professional Services	15,000	15,525	15,911	16,154	16,519	16,849	17,186	17,530	17,880	18,238	18,603	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	0	0	0	0	0	0	0	0	0	0	0	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	57,750	59,194	60,665	61,591	62,983	64,242	65,527	66,838	68,174	69,538	70,929	As Miscellaneous
Printing and Publications	300	308	315	320	327	334	340	347	354	361	368	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	106,600	109,250	111,966	113,675	116,243	118,568	120,939	123,358	125,825	128,342	130,909	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	11,250	11,531	11,818	11,998	12,269	12,515	12,765	13,020	13,281	13,546	13,817	As Miscellaneous
Utilities	650	663	679	690	705	720	734	749	764	779	794	As Utilities
Misc Expenses	250	256	263	267	273	278	284	289	295	301	307	As Miscellaneous
Other Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Information Technology	\$482,625	\$502,268	\$522,619	\$535,325	\$549,869	\$564,272	\$579,065	\$594,259	\$609,866	\$625,896	\$642,362	
Customer Service												
Salaries & Wages	\$231,750	\$243,477	\$255,796	\$263,470	\$271,374	\$279,516	\$287,901	\$296,538	\$305,434	\$314,597	\$324,035	As Labor
Benefits	130,725	137,340	144,289	148,618	153,076	157,669	162,399	167,271	172,289	177,457	182,781	As Benefits
Professional Services	4,000	4,140	4,243	4,308	4,405	4,493	4,583	4,675	4,768	4,863	4,961	As Professional Services
Insurance	4,000	4,120	4,222	4,287	4,384	4,471	4,561	4,652	4,745	4,840	4,937	As Insurance
Petroleum Products	0	0	0	0	0	0	0	0	0	0	0	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	22,300	22,858	23,426	23,783	24,321	24,807	25,303	25,809	26,325	26,852	27,389	As Miscellaneous
Printing and Publications	7,650	7,841	8,036	8,159	8,343	8,510	8,680	8,854	9,031	9,212	9,396	As Miscellaneous
Rents and Leases	1,050	1,076	1,103	1,120	1,145	1,168	1,191	1,215	1,240	1,264	1,290	As Miscellaneous
Repairs and Maintenance	31,800	32,591	33,401	33,910	34,677	35,370	36,078	36,799	37,535	38,286	39,052	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	1,200	1,230	1,261	1,280	1,309	1,335	1,362	1,389	1,417	1,445	1,474	As Miscellaneous
Utilities	125	128	131	133	136	138	141	144	147	150	153	As Utilities
Misc Expenses	250	256	263	267	273	278	284	289	295	301	307	As Miscellaneous
Other Operating Exp	15,000	15,375	15,757	15,998	16,359	16,686	17,020	17,360	17,708	18,062	18,423	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Customer Service	\$449,850	\$470,431	\$491,928	\$505,332	\$519,801	\$534,442	\$549,502	\$564,995	\$580,933	\$597,329	\$614,196	

South Tahoe PUD
 Sewer Utility
 Revenue Requirement
 Exhibit 2 - Revenues & Expenses
 Data Driven - 5%

	Budget	Projected										Notes
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
Inspections												
Salaries & Wages	\$171,200	\$179,863	\$188,964	\$194,633	\$200,472	\$206,486	\$212,680	\$219,061	\$225,633	\$232,402	\$239,374	As Labor
Benefits	89,000	93,503	98,235	101,182	104,217	107,344	110,564	113,881	117,297	120,816	124,441	As Benefits
Professional Services	0	0	0	0	0	0	0	0	0	0	0	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	3,600	3,690	3,781	3,839	3,926	4,004	4,084	4,166	4,249	4,334	4,421	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	1,900	1,948	1,996	2,026	2,072	2,114	2,156	2,199	2,243	2,288	2,334	As Miscellaneous
Printing and Publications	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	2,225	2,280	2,337	2,373	2,426	2,475	2,524	2,575	2,626	2,679	2,732	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	1,350	1,384	1,418	1,440	1,472	1,502	1,532	1,562	1,594	1,626	1,658	As Miscellaneous
Utilities	2,675	2,729	2,796	2,839	2,903	2,961	3,020	3,081	3,142	3,205	3,269	As Utilities
Misc Expenses	50	51	53	53	55	56	57	58	59	60	61	As Miscellaneous
Other Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Inspections	\$272,000	\$285,447	\$299,580	\$308,384	\$317,543	\$326,941	\$336,618	\$346,583	\$356,844	\$367,410	\$378,290	
Water Conservation												
Salaries & Wages	\$41,075	\$43,153	\$45,337	\$46,697	\$48,098	\$49,541	\$51,027	\$52,558	\$54,135	\$55,759	\$57,432	As Labor
Benefits	25,725	27,027	28,394	29,246	30,123	31,027	31,958	32,917	33,904	34,921	35,969	As Benefits
Professional Services	0	0	0	0	0	0	0	0	0	0	0	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	400	410	420	427	436	445	454	463	472	482	491	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	750	769	788	800	818	834	851	868	885	903	921	As Miscellaneous
Printing and Publications	660	677	693	704	720	734	749	764	779	795	811	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	100	102	105	107	109	111	113	116	118	120	123	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	1,250	1,281	1,313	1,333	1,363	1,391	1,418	1,447	1,476	1,505	1,535	As Miscellaneous
Utilities	0	0	0	0	0	0	0	0	0	0	0	As Utilities
Misc Expenses	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Other Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Water Conservation	\$69,960	\$73,419	\$77,051	\$79,313	\$81,668	\$84,083	\$86,571	\$89,132	\$91,769	\$94,485	\$97,282	

South Tahoe PUD
 Sewer Utility
 Revenue Requirement
 Exhibit 2 - Revenues & Expenses
 Data Driven - 5%

	Budget	Projected										Notes
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
Total Operations & Maintenance Expense	\$15,347,700	\$15,973,009	\$16,631,942	\$17,043,253	\$17,509,861	\$17,973,438	\$18,449,687	\$18,938,965	\$19,441,637	\$19,958,079	\$20,488,679	
	0	4.1%	4.1%	2.5%	2.7%	2.6%	2.6%	2.7%	2.7%	2.7%	2.7%	
Rate Funded Capital (Capital Improvement Charge)	\$384,300	\$384,300	\$384,300	\$384,300	\$384,300	\$384,300	\$384,300	\$384,300	\$384,300	\$384,300	\$384,300	
Debt Service												
2012 Refunding of 2004	\$1,015,259	\$1,015,259	\$1,015,259	\$1,015,259	\$1,015,259	\$1,015,259	\$507,630	\$0	\$0	\$0	\$0	Financial Plan
2013 Refunding of Union Bank	687,839	687,839	687,839	687,839	687,839	687,839	687,839	687,839	687,839	343,919	0	Financial Plan
2013 SRF - ERB Liner = 2.7%	86,029	86,029	86,029	86,029	86,029	86,029	86,029	86,029	86,029	86,029	86,029	Financial Plan
2012 SRF - LPPS Generator - 2.7%	168,973	168,973	168,973	168,973	168,973	168,973	168,973	168,973	168,973	168,973	168,973	Financial Plan
2014 SRF - Headworks Dem - 2.7%	59,442	59,442	59,442	59,442	59,441	59,442	59,442	59,442	59,442	59,442	59,442	Financial Plan
2012 BBVA Loan - HW Const. - 3.65%	462,533	462,533	462,533	462,533	462,533	462,533	462,533	462,533	462,533	462,533	462,533	Financial Plan
2019 SRF - DVR Imp. Phase 1 - 1.67%	374,212	374,212	374,212	374,212	374,212	374,212	374,212	374,212	374,212	374,212	374,212	Financial Plan
2019 SRF - LPPS Power Upgrades - 1.67%	187,681	187,681	187,681	187,681	187,681	187,681	187,681	187,681	187,681	187,681	187,681	Financial Plan
2020 SRF - Treatment Plant Gen - 2.1%	0	392,045	392,045	392,045	392,045	392,045	392,045	392,045	392,045	392,045	392,045	Financial Plan
2019 SRF - Primary Clarifier I - 1.7%	29,374	29,374	29,374	29,374	29,374	29,374	29,374	29,374	29,374	29,374	29,374	Financial Plan
SRF - Aeration Basin 2 Rehab - 1.7%	47,785	47,785	47,785	47,785	47,785	47,785	47,785	47,785	47,785	47,785	47,785	Financial Plan
Scenario B - Increased Borrowing	0	0	320,970	641,941	962,911	1,364,124	1,765,337	2,327,035	2,728,248	2,728,248	2,728,248	Financial Plan
Customer Refunds	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,001	2,002	Financial Plan
New Low Interest Loan	0	0	0	0	0	0	0	0	0	0	0	Calculated @ 1.1% for 20 yrs
New Revenue Bond	0	0	0	0	0	0	0	0	0	0	0	Calculated @ 3.1% for 10 yrs
Total Debt Service	\$3,121,126	\$3,513,170	\$3,834,141	\$4,155,111	\$4,476,080	\$4,877,294	\$4,770,878	\$4,824,946	\$5,226,159	\$4,882,241	\$4,538,322	
		12.6%	9.1%	8.4%	7.7%	9.0%	-2.2%	1.1%	8.3%	-6.6%	-7.0%	
To / (From) Reserves												
To / (From) Capital Reserve	\$7,421,343	\$6,671,038	\$11,041,821	\$8,038,504	\$8,448,119	\$8,820,984	\$9,318,862	\$9,626,609	\$10,633,710	\$11,666,721	\$12,202,190	
To / (From) Capital Reserve for DS Principal	(2,337,000)	(2,681,000)	(2,866,000)	(3,059,000)	(3,260,000)	(3,500,000)	(3,242,000)	(3,038,000)	(3,289,000)	(3,057,000)	(3,057,000)	
To / (From) Water Fund	0	0	(3,000,000)	0	0	0	0	0	0	0	0	
To/(From) Operating Reserve	(179,291)	(164,142)	(124,784)	(134,422)	(133,907)	(149,318)	(68,153)	(96,880)	(156,357)	(36,349)	(38,899)	
To / (From) Rate Stabilization	0	154,722	(692,752)	(158,727)	(154,942)	(152,160)	(228,629)	(225,856)	(382,574)	(413,326)	(12,356)	
To / (From) Debt Reserve	0	852,207	320,970	320,970	320,969	401,214	401,213	561,698	401,213	(0)	0	
Total To / (From) Reserves	\$4,905,052	\$4,832,825	\$4,679,255	\$5,007,326	\$5,220,239	\$5,420,720	\$6,181,293	\$6,827,570	\$7,206,992	\$8,160,045	\$9,093,936	
Total Revenue Requirements	\$23,758,178	\$24,703,304	\$25,529,637	\$26,589,990	\$27,590,480	\$28,655,751	\$29,786,157	\$30,975,781	\$32,259,088	\$33,384,666	\$34,505,237	
Balance / (Deficiency) of Funds	\$0	(\$718,999)	(\$1,427,000)	(\$2,278,015)	(\$3,105,158)	(\$3,989,076)	(\$4,916,121)	(\$5,891,377)	(\$6,917,307)	(\$7,996,502)	(\$9,131,683)	
Rate Adjust. as a % of Rate Rev	0.0%	5.0%	9.9%	15.8%	21.5%	27.6%	34.0%	40.7%	47.7%	55.1%	62.9%	
Proposed Rate Adjustment	6.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	
Months of Adjustment	12	12	12	12	12	12	12	12	12	11	10	
Add'l Rev from Proposed Adj.	\$0	\$718,988	\$1,475,553	\$2,271,615	\$3,109,193	\$3,990,409	\$4,917,493	\$5,892,789	\$6,918,761	\$7,997,998	\$9,133,223	
Net Bal/(Def) of Funds After Rate Adj.	\$0	(\$11)	\$48,553	(\$6,400)	\$4,035	\$1,333	\$1,372	\$1,412	\$1,454	\$1,496	\$1,540	
Additional Rate Increase Needed	0.0%	0.0%	-0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

	Budget	Projected										Notes	
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029		
Debt Service Coverage Ratio													
Before Rate Adjustment	2.14	1.79	1.48	1.31	1.13	0.97	0.93	0.85	0.72	0.67	0.58		
After Rate Adjustment	2.14	1.99	1.86	1.85	1.83	1.79	1.96	2.07	2.05	2.31	2.60		
Average Residential Quarterly Bill (3 Units)	\$126.27	\$132.58	\$139.21	\$146.17	\$153.48	\$161.16	\$169.21	\$177.67	\$186.56	\$195.89	\$205.68		
\$ Change Per Quarterly		6.31	6.63	6.96	7.31	7.67	8.06	8.46	8.88	9.33	9.79		
Cumulative \$ Change per Quarterly		6.31	12.94	19.90	27.21	34.89	42.94	51.40	60.29	69.62	79.41		
Cash Reserves													
Operating Reserve													
Beginning Balance	\$3,143,324	\$3,322,615	\$3,486,746	\$3,660,083	\$3,788,105	\$3,926,047	\$4,076,698	\$4,146,224	\$4,244,516	\$4,402,327	\$4,440,172	\$4,480,172	
Plus: Additions	179,291	164,131	173,337	128,022	137,942	150,651	69,526	98,293	157,811	37,845	40,438		
Less: Uses of Funds	0	0	0	0	0	0	0	0	0	0	0		
Ending Balance	\$3,322,615	\$3,486,746	\$3,660,083	\$3,788,105	\$3,926,047	\$4,076,698	\$4,146,224	\$4,244,516	\$4,402,327	\$4,440,172	\$4,480,611		
Target Balance (90 Days O&M)	\$3,322,615	\$3,486,746	\$3,660,083	\$3,788,105	\$3,926,047	\$4,076,698	\$4,146,224	\$4,244,516	\$4,402,327	\$4,440,172	\$4,480,611		
Capital Reserve													
Beginning Balance	\$14,578,951	\$11,443,269	\$7,106,674	\$8,899,374	\$7,572,638	\$6,458,944	\$6,598,145	\$7,451,611	\$10,827,222	\$12,972,006	\$11,251,499	\$11,251,499	
Plus: Additions	0	0	1,792,699	0	0	139,202	853,465	3,375,612	2,144,783	0	0	0	
Less: Uses of Funds	(3,135,682)	(4,336,595)	0	(1,326,736)	(1,113,694)	0	0	0	0	(1,720,507)	(1,175,129)		
Ending Balance	\$11,443,269	\$7,106,674	\$8,899,374	\$7,572,638	\$6,458,944	\$6,598,145	\$7,451,611	\$10,827,222	\$12,972,006	\$11,251,499	\$10,076,370		
Target Balance: Average Annual Capital Improv.	\$8,783,852	\$9,021,000	\$9,265,000	\$9,515,000	\$9,772,000	\$10,036,000	\$10,307,000	\$10,585,000	\$10,871,000	\$11,165,000	\$11,466,000		2.7% / Yr. Growth
Rate Stabilization													
Beginning Balance	\$6,869,134	\$6,869,134	\$7,023,856	\$6,331,104	\$6,172,377	\$6,017,436	\$5,865,275	\$5,636,646	\$5,410,790	\$5,028,216	\$4,614,890	\$4,614,890	
Plus: Additions	0	154,722	0	0	0	0	0	0	0	0	0	0	
Less: Uses of Funds	0	0	(692,752)	(158,727)	(154,942)	(152,160)	(228,629)	(225,856)	(382,574)	(413,326)	(12,356)		
Ending Balance	\$6,869,134	\$7,023,856	\$6,331,104	\$6,172,377	\$6,017,436	\$5,865,275	\$5,636,646	\$5,410,790	\$5,028,216	\$4,614,890	\$4,602,534		
Target Balance: (?)	\$6,869,134	\$7,023,856	\$6,331,104	\$6,172,377	\$6,017,436	\$5,865,275	\$5,636,646	\$5,410,790	\$5,028,216	\$4,614,890	\$4,602,534		
Debt Reserve													
Beginning Balance	\$955,866	\$955,866	\$1,808,073	\$2,129,043	\$2,450,013	\$2,770,983	\$3,172,197	\$3,573,409	\$4,135,108	\$4,536,320	\$4,536,320	\$4,536,320	
Plus: Additions	0	852,207	320,970	320,970	320,969	401,214	401,213	561,698	401,213	0	0	0	
Less: Uses of Funds	0	0	0	0	0	0	0	0	0	(0)	0		
Ending Balance	\$955,866	\$1,808,073	\$2,129,043	\$2,450,013	\$2,770,983	\$3,172,197	\$3,573,409	\$4,135,108	\$4,536,320	\$4,536,320	\$4,536,320		

South Tahoe PUD
Sewer Utility
Revenue Requirement
Exhibit 3 - Capital Improvement Plan
Data Driven - 5%

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	Notes
Annual CIP												
Engineering												
Salaries & Benefits	\$820,350	\$861,860	\$905,470	\$932,634	\$960,613	\$989,431	\$1,019,114	\$1,049,688	\$1,081,178	\$1,113,614	\$1,147,022	As Labor
Benefits	351,250	369,023	387,696	399,327	411,307	423,646	436,355	449,446	462,929	476,817	491,121	As Benefits
Professional Services	533,500	454,373	465,669	472,773	483,456	493,125	502,988	513,047	523,308	533,774	544,450	As Professional Services
Insurance	0	0	0	0	0	0	0	0	0	0	0	As Insurance
Petroleum Products	5,300	5,432	5,567	5,652	5,779	5,895	6,013	6,133	6,256	6,381	6,509	As Petroleum Products
Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Materials & Supplies
Office Expenses	6,325	6,483	6,644	6,746	6,898	7,036	7,177	7,320	7,467	7,616	7,768	As Miscellaneous
Printing and Publications	125	128	131	133	136	139	142	145	148	151	154	As Miscellaneous
Rents and Leases	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Repairs and Maintenance	4,100	4,202	4,306	4,372	4,471	4,560	4,652	4,745	4,839	4,936	5,035	As Repairs & Maintenance
Research Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Travel/Educ/Memberships	16,300	16,708	17,123	17,384	17,777	18,132	18,495	18,865	19,242	19,627	20,020	As Miscellaneous
Utilities	2,500	2,550	2,613	2,653	2,713	2,767	2,823	2,879	2,937	2,996	3,056	As Utilities
Misc Expenses	625	641	657	667	682	695	709	723	738	753	768	As Miscellaneous
Other Operating Exp	3,375	3,459	3,545	3,599	3,681	3,754	3,830	3,906	3,984	4,064	4,145	As Miscellaneous
Non Operating Exp	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous
Total Engineering	\$1,743,750	\$1,724,858	\$1,799,421	\$1,845,940	\$1,897,513	\$1,949,182	\$2,002,296	\$2,056,897	\$2,113,026	\$2,170,728	\$2,230,047	
Baseline Capital Plan												
Tallac Creek Sewer Crossing	\$100,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Breakpoint Chamber Modification	565,500	0	0	0	0	0	0	0	0	0	0	
700 hp Pump Luther Pass Pump Station	410,000	0	0	0	0	0	0	0	0	0	0	
Fallen Leaf Lake System	400,000	0	0	0	0	0	0	0	0	0	0	
Upper Truckee March Adaptive Management	75,000	0	0	0	0	0	0	0	0	0	0	
Scada Upgrades	100,000	0	0	0	0	0	0	0	0	0	0	
Replace Treatment Plant Generator	3,600,000	0	0	0	0	0	0	0	0	0	0	
Forcemain Bypass Upper Truckee PS	250,000	0	0	0	0	0	0	0	0	0	0	
Forcemain Bypass AI Tahoe	350,000	0	0	0	0	0	0	0	0	0	0	
Piping - Wastewater Treatment Plant	100,000	0	0	0	0	0	0	0	0	0	0	
Wet Well Improvements	50,000	0	0	0	0	0	0	0	0	0	0	
SpS Improvements (TBD)	1,000,000	0	0	0	0	0	0	0	0	0	0	
Water Reuse Road Improvements	150,000	0	0	0	0	0	0	0	0	0	0	
Water Reuse Vault Improvements	50,000	0	0	0	0	0	0	0	0	0	0	
Blower System Improvements	100,000	0	0	0	0	0	0	0	0	0	0	
Emergency Generator Blower	125,000	0	0	0	0	0	0	0	0	0	0	
Sewer System Upgrades (TBD)	500,000	0	0	0	0	0	0	0	0	0	0	
Total Baseline Capital Plan	\$7,925,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	

South Tahoe PUD
 Sewer Utility
 Revenue Requirement
 Exhibit 3 - Capital Improvement Plan
 Data Driven - 5%

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	Notes
Scenario Capital Outlays	\$1,396,200	\$9,447,200	\$8,968,000	\$8,844,600	\$8,788,600	\$8,616,900	\$8,605,400	\$8,540,400	\$8,471,200	\$8,543,800	\$8,474,572	
Total Capital Projects & Engineering	\$11,065,450	\$11,172,058	\$10,767,421	\$10,690,540	\$10,686,113	\$10,566,082	\$10,607,696	\$10,597,297	\$10,584,226	\$10,714,528	\$10,704,619	
Transfer to (From) Capital Reserve	(\$3,135,682)	(\$4,336,595)	\$1,792,699	(\$1,326,736)	(\$1,113,694)	\$139,202	\$853,465	\$3,375,612	\$2,144,783	(\$1,720,507)	(\$1,175,129)	
Debt Service Principal	\$2,337,000	\$2,681,000	\$2,866,000	\$3,059,000	\$3,260,000	\$3,500,000	\$3,242,000	\$3,038,000	\$3,289,000	\$3,057,000	\$3,057,000	
Capital Spending	\$10,266,768	\$9,516,463	\$15,426,121	\$12,422,804	\$12,832,419	\$14,205,284	\$14,703,162	\$17,010,909	\$16,018,010	\$12,051,021	\$12,586,490	
Less: Outside Funding Sources												
Operating Reserve	7,421,343	6,671,038	11,041,821	8,038,504	8,448,119	8,820,984	9,318,862	9,626,609	10,633,710	11,666,721	12,202,190	
Assumed Debt Issuance / Proceeds	\$2,461,125	\$2,461,125	\$4,000,000	\$4,000,000	\$4,000,000	\$5,000,000	\$5,000,000	\$7,000,000	\$5,000,000	\$0	\$0	
Low Interest Loans	0	0	0	0	0	0	0	0	0	0	0	
Revenue Bonds	0	0	0	0	0	0	0	0	0	0	0	
Total Funding Sources	\$9,882,468	\$9,132,163	\$15,041,821	\$12,038,504	\$12,448,119	\$13,820,984	\$14,318,862	\$16,626,609	\$15,633,710	\$11,666,721	\$12,202,190	
Rate Funded Capital	\$384,300	\$384,300	\$384,300	\$384,300	\$384,300	\$384,300	\$384,300	\$384,300	\$384,300	\$384,300	\$384,300	

South Tahoe PUD
 Sewer Utility
 Revenue Requirement
 Exhibit 5 - Revenue at Present Rates
 Data Driven - 5%

	Effective 30-Jun-17 June. 30 2018		2017			2018	Total
			Q1	Q2	Q3	Q1	
Single Family Residential							
Sites	\$0.00	\$0.00	16,034	16,050	16,075	16,082	16,060
Billing Units	39.71	\$42.09	53,313	53,403	53,531	53,568	53,454
Revenue			\$2,117,059	\$2,120,633	\$2,125,716	\$2,254,677	\$8,618,085
Multi-family							
Sites	\$0.00	\$0.00	1,294	1,293	1,294	1,295	1,294
Billing Units	38.89	\$41.22	13,662	13,653	13,661	13,667	13,661
Revenue			\$531,315	\$530,965	\$531,276	\$563,354	\$2,156,910
Motel/ Hotel/ Timeshare							
Sites	\$0.00	\$0.00	138	135	135	135	136
Billing Units	38.39	\$40.69	9,105	9,077	9,090	9,079	9,088
Revenue			\$349,541	\$348,466	\$348,965	\$369,425	\$1,416,397
Trailer/Mobile Home Park/Campground							
Sites							
Recreation	\$0.00	\$0.00	12	12	12	12	12
Trailer/Mobile Home Park	\$0.00	\$0.00	19	19	19	19	19
Total # of Sites			31	31	31	31	31
Billing Units							
Recreation	\$36.54	\$38.73	705	705	705	705	705
Trailer/Mobile Home Park	\$36.54	\$38.73	2,446	2,446	2,446	2,336	2,419
Total # of Billing Units			3,151	3,151	3,151	3,041	3,124
Revenue			\$115,138	\$115,138	\$115,138	\$117,778	\$463,191

South Tahoe PUD
 Sewer Utility
 Revenue Requirement
 Exhibit 5 - Revenue at Present Rates
 Data Driven - 5%

	Effective 30-Jun-17 June. 30 2018		2017			2018	Total
			Q1	Q2	Q3	Q1	
Non-Residential							
Sites							
Commercial	\$0.00	\$0.00	435	435	437	437	436
Fire	\$0.00	\$0.00	5	5	5	5	5
Auto Repair Garage	\$0.00	\$0.00	9	9	9	9	9
Gas Station	\$0.00	\$0.00	12	12	12	12	12
Laundry	\$0.00	\$0.00	3	3	3	3	3
Medium Commercial	\$0.00	\$0.00	12	12	12	12	12
Restaurant	\$0.00	\$0.00	50	50	50	50	50
Retail	\$0.00	\$0.00	1	1	1	1	1
School	\$0.00	\$0.00	12	12	12	12	12
Total # of Sites			539	539	541	541	540
Billing Units							
Commercial	\$41.25	\$43.72	4667	4674	4696	4696	4,683
Fire	\$41.25	\$43.72	26	26	26	26	26
Auto Repair Garage	\$41.25	\$43.72	41	41	41	41	41
Gas Station	\$41.25	\$43.72	66	66	66	66	66
Laundry	\$41.25	\$43.72	124	124	124	124	124
Medium Commercial	\$41.25	\$43.72	330	330	330	330	330
Restaurant	\$41.25	\$43.72	531	531	531	531	531
Retail	\$41.25	\$43.72	5	5	5	5	5
School	\$41.25	\$43.72	764	764	764	764	764
Total # of Billing Units			6554	6561	6583	6583	6570.25
Revenue			\$270,353	\$270,641	\$271,549	\$287,809	\$1,100,351

South Tahoe PUD
Sewer Utility
Revenue Requirement
Exhibit 5 - Revenue at Present Rates
Data Driven - 5%

	Effective		2017			2018	Total
	30-Jun-17	June. 30 2018	Q1	Q2	Q3	Q1	
Summary							
Number of Customers							
Single Family Residential			16,034	16,050	16,075	16,082	16,060
Multi-family			1,294	1,293	1,294	1,295	1,294
Motel/ Hotel/ Timeshare			138	135	135	135	136
Trailer/Mobile Home Park/Campground			31	31	31	31	31
Non-Residential			539	539	541	541	540
Total			18,036	18,048	18,076	18,084	18,061
Consumption							
Single Family Residential			53,313	53,403	53,531	53,568	53,454
Multi-family			13,662	13,653	13,661	13,667	13,661
Motel/ Hotel/ Timeshare			9,105	9,077	9,090	9,079	9,088
Trailer/Mobile Home Park/Campground			3,151	3,151	3,151	3,041	3,124
Non-Residential			6,554	6,561	6,583	6,583	6,570
Total			85,785	85,845	86,016	85,938	85,896
Revenues							
Single Family Residential			\$2,117,059	\$2,120,633	\$2,125,716	\$2,254,677	\$8,618,085
Multi-family			531,315	530,965	531,276	563,354	2,156,910
Motel/ Hotel/ Timeshare			349,541	348,466	348,965	369,425	1,416,397
Trailer/Mobile Home Park/Campground			115,138	115,138	115,138	117,778	463,191
Non-Residential			270,353	270,641	271,549	287,809	1,100,351
Total			\$3,383,405	\$3,385,843	\$3,392,644	\$3,593,042	\$13,754,934
							\$13,547,110
							207,824
							1.5%

South Tahoe PUD
 Customer Data Projection
 Revenue Requirement
 Exhibit 6 - Customer Data
 Data Driven - 5%

	Present Rate	Input	Projected										Notes
		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
Single Family Residential													
Sites		16,060	16,078	16,096	16,114	16,132	16,150	16,168	16,186	16,204	16,222	16,240	As Residential
Billing Units	\$42.09	53,454	53,513	53,572	53,631	53,690	53,749	53,808	53,867	53,926	53,985	54,044	As Residential
Revenue		\$8,999,473	\$9,009,449	\$9,019,382	\$9,029,315	\$9,039,248	\$9,049,182	\$9,059,115	\$9,069,048	\$9,078,981	\$9,088,915	\$9,098,848	
Multi-family													
Sites		1,294	1,295	1,296	1,297	1,298	1,299	1,300	1,301	1,302	1,303	1,304	As Multi-Family
Billing Units	\$41.22	13,661	13,676	13,691	13,706	13,721	13,736	13,751	13,766	13,781	13,796	13,811	As Multi-Family
Revenue		\$2,252,384	\$2,254,899	\$2,257,372	\$2,259,845	\$2,262,318	\$2,264,792	\$2,267,265	\$2,269,738	\$2,272,211	\$2,274,684	\$2,277,158	
Motel/ Hotel/ Timeshare													
Sites		136	136	136	136	136	136	136	136	136	136	136	As Non-Residential
Billing Units	\$40.69	9,088	9,098	9,108	9,118	9,128	9,138	9,148	9,158	9,168	9,178	9,188	As Non-Residential
Revenue		\$1,479,122	\$1,480,790	\$1,482,418	\$1,484,046	\$1,485,673	\$1,487,301	\$1,488,928	\$1,490,556	\$1,492,184	\$1,493,811	\$1,495,439	
Trailer/Mobile Home Park/Campground													
Sites													
Recreation		12	12	12	12	12	12	12	12	12	12	12	As Non-Residential
Trailer/Mobile Home Park		19	19	19	19	19	19	19	19	19	19	19	As Non-Residential
Total # of Sites		31	31	31	31	31	31	31	31	31	31	31	
Billing Units													
Recreation	\$38.73	705	706	707	708	709	710	711	712	713	714	715	As Non-Residential
Trailer/Mobile Home Park	\$38.73	2,419	2,421	2,424	2,427	2,430	2,433	2,436	2,439	2,442	2,445	2,448	As Non-Residential
Total # of Billing Units		3,124	3,127	3,131	3,135	3,139	3,143	3,147	3,151	3,155	3,159	3,163	
		\$483,893	\$484,435	\$485,055	\$485,674	\$486,294	\$486,914	\$487,533	\$488,153	\$488,773	\$489,392	\$490,012	

South Tahoe PUD
 Customer Data Projection
 Revenue Requirement
 Exhibit 6 - Customer Data
 Data Driven - 5%

	Present Rate	Input	Projected										Notes
		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
Non-Residential													
Sites													
Commercial		436	436	436	436	436	436	436	436	436	436	436	As Non-Residential
Fire		5	5	5	5	5	5	5	5	5	5	5	As Non-Residential
Auto Repair Garage		9	9	9	9	9	9	9	9	9	9	9	As Non-Residential
Gas Station		12	12	12	12	12	12	12	12	12	12	12	As Non-Residential
Laundry		3	3	3	3	3	3	3	3	3	3	3	As Non-Residential
Medium Commercial		12	12	12	12	12	12	12	12	12	12	12	As Non-Residential
Restaurant		50	50	50	50	50	50	50	50	50	50	50	As Non-Residential
Retail		1	1	1	1	1	1	1	1	1	1	1	As Non-Residential
School		12	12	12	12	12	12	12	12	12	12	12	As Non-Residential
Total # of Sites		540	540	540	540	540	540	540	540	540	540	540	
Billing Units													
			0										
Commercial	\$43.72	4,683	4,688	4,693	4,698	4,703	4,708	4,713	4,718	4,723	4,728	4,733	As Non-Residential
Fire	\$43.72	26	26	26	26	26	26	26	26	26	26	26	As Non-Residential
Auto Repair Garage	\$43.72	41	41	41	41	41	41	41	41	41	41	41	As Non-Residential
Gas Station	\$43.72	66	66	66	66	66	66	66	66	66	66	66	As Non-Residential
Laundry	\$43.72	124	124	124	124	124	124	124	124	124	124	124	As Non-Residential
Medium Commercial	\$43.72	330	330	330	330	330	330	330	330	330	330	330	As Non-Residential
Restaurant	\$43.72	531	532	533	534	535	536	537	538	539	540	541	As Non-Residential
Retail	\$43.72	5	5	5	5	5	5	5	5	5	5	5	As Non-Residential
School	\$43.72	764	765	766	767	768	769	770	771	772	773	774	As Non-Residential
Total # of Billing Units		6,570	6,577	6,584	6,591	6,598	6,605	6,612	6,619	6,626	6,633	6,640	0.103%
Revenue		1,149,005	1,150,186	1,151,410	1,152,634	1,153,858	1,155,082	1,156,307	1,157,531	1,158,755	1,159,979	1,161,203	

South Tahoe PUD
 Sewer Utility
 Development of Allocation Factors
 Exhibit 7 - Volume

	<i>Volume</i>		
	Wastewater (CCF)[2]	Wastewater Flow (MGD)	% of Total
Single Family Residential	1,102,311	2.26	62.2%
Multi-family	281,711	0.58	15.9%
Motel/ Hotel/ Timeshare	187,409	0.38	10.6%
Trailer/Mobile Home Park/Campground	64,413	0.13	3.6%
Non-Residential	135,479	0.28	7.6%
	-----	-----	-----
Total	1,771,324	3.63	100.0%
	Actual Production ^[1]	3.63	

South Tahoe PUD
 Sewer Utility
 Development of Allocation Factors
 Exhibit 8 - Strength

	Bio-Chemical Oxygen Demand			Total Suspended Solids			
	Annual Flow MGD	Avg Factor mg/l	Calculated lbs	% of Total	Avg Factor mg/l	Calculated lbs	% of Total
Single Family Residential	2.26	240	4,525	61.8%	195	3,676	61.5%
Multi-family	0.58	240	1,156	15.8%	195	939	15.7%
Motel/ Hotel/ Timeshare	0.38	240	769	10.5%	195	625	10.5%
Trailer/Mobile Home Park/Campground	0.13	240	264	3.6%	195	215	3.6%
Non-Residential	0.28	260	601	8.2%	225	521	8.7%
	-----		-----	-----		-----	-----
	3.63		7,315.82	100.0%		5,976.81	100.0%
			8550.6704	(BOD)		6973.702498	(SS)

mg per lbs = 453,592

South Tahoe PUD
 Sewer Utility
 Development of Allocation Factors
 Exhibit 9 - Customer

	<i>Actual Customer</i>		<i>Billing Units</i>		<i>Customer Service & Accounting</i>		
	Number of Customers	% of Total	Number of Billing Units	% of Total	Weighting Factor	Weighted Customer	% of Total
Single Family Residential	16,078	88.9%	53,513	62.2%	1.00	16,078	88.9%
Multi-family	1,295	7.2%	13,676	15.9%	1.00	1,295	7.2%
Motel/ Hotel/ Timeshare	136	0.8%	9,098	10.6%	1.00	136	0.8%
Trailer/Mobile Home Park/Campground	31	0.2%	3,127	3.6%	1.00	31	0.2%
Non-Residential	540	3.0%	6,577	7.6%	1.00	540	3.0%
<i>Total</i>	18,080	100.0%	85,991	100.0%		18,080	100.0%

Allocation Factor

(AC)

(BU)

(WCA)

South Tahoe PUD
 Sewer Utility
 Development of Allocation Factors
 Exhibit 10 - Revenue

	Revenue Related	
	FY 2020	
	Revenue at	% of
	Present Rates	Total
Single Family Residential	\$9,009,449	62.7%
Multi-family	2,254,899	15.7%
Motel/ Hotel/ Timeshare	1,480,790	10.3%
Trailer/Mobile Home Park/Campground	484,435	3.4%
Non-Residential	1,150,186	8.0%
	-----	-----
Total	\$14,379,759	100.0%

Allocation Factor **(RR)**

Notes

[1]

South Tahoe PUD
Sewer Utility
Functionalization and Classification
Exhibit 11 - Plant In Service

	Total Plant 2017 Rplmt	Volume (VOL)	Bio-Chemical Oxygen Demand (BOD)	Total Suspended Solids (SS)	Customer Related		Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification
					Actual Customer (AC)	Weighted for: Customer Billing Units (BU)			
Capital Assets									
Subsurface Collection Lines	\$21,321,725	\$21,321,725	\$0	\$0	\$0	\$0	\$0	\$0	\$0 100% (VOL)
Pump Station-Force Mains	17,673,984	17,673,984	0	0	0	0	0	0	0 100% (VOL)
Treatment Facilities	58,210,547	29,105,274	14,552,637	14,552,637	0	0	0	0	0 50% (VOL)/ 25% (BOD)/ 25% (SS)
Disposal Facilities	76,131,630	0	41,900,309	34,231,321	0	0	0	0	0 55% (BOD)/ 45% (SS)
Land & Easements	22,842,871	22,842,871	0	0	0	0	0	0	0 100% (VOL)
CWIP	21,985,547	21,985,547	0	0	0	0	0	0	0 100% (VOL)
<hr/>									
Total Plant Before General	\$218,166,305	\$112,929,401	\$56,452,946	\$48,783,958	\$0	\$0	\$0	\$0	\$0
General Plant	9,440,895	4,886,889	2,442,936	2,111,069	0	0	0	0	0 As Plant Before General
<hr/>									
Total Plant In Service	\$227,607,199	\$117,816,291	\$58,895,882	\$50,895,027	\$0	\$0	\$0	\$0	\$0
<hr/>									
Depreciation									
Subsurface Collection Lines	\$15,725,784	\$15,725,784	\$0	\$0	\$0	\$0	\$0	\$0	\$0 As Subsurface Above
Pump Station-Force Mains	12,938,874	12,938,874	0	0	0	0	0	0	0 As Pumpstations Above
Treatment Facilities	28,732,754	14,366,377	7,183,188	7,183,188	0	0	0	0	0 As Treatment Above
Disposal Facilities	36,436,872	0	20,053,639	16,383,233	0	0	0	0	0 As Disposal Above
Land & Easements	0	0	0	0	0	0	0	0	0 As Land & Easements Above
CWIP	0	0	0	0	0	0	0	0	0 As CWIP Above
<hr/>									
Total Plant Net of Depreciation	\$93,834,284	\$43,031,035	\$27,236,827	\$23,566,422	\$0	\$0	\$0	\$0	\$0
General Plant	\$8,131,232	\$3,728,864	\$2,360,214	\$2,042,154	\$0	\$0	\$0	\$0	\$0 As Plant Depreciation
<hr/>									
Net Plant In Service	\$125,641,684	\$71,056,392	\$29,298,841	\$25,286,452	\$0	\$0	\$0	\$0	\$0

South Tahoe PUD
 Sewer Utility
 Functionalization and Classification
 Exhibit 12 - Revenue Requirement

	Total Expenses FY 2020	Volume (VOL)	Oxygen Demand (BOD)	Total Suspended Solids (SS)	Customer Related		Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification
					Actual Customer (AC)	Weighted for: Customer Billing Units (BU)			
Expenses									
Non-Crew									
Salaries & Wages	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 As Plant Before General
Benefits	0	0	0	0	0	0	0	0	0 As Plant Before General
Professional Services	0	0	0	0	0	0	0	0	0 As Plant Before General
Insurance	124,630	64,512	32,249	27,868	0	0	0	0	0 As Plant Before General
Petroleum Products	0	0	0	0	0	0	0	0	0 As Plant Before General
Operating Supplies	0	0	0	0	0	0	0	0	0 As Plant Before General
Office Expenses	513	265	133	115	0	0	0	0	0 As Plant Before General
Printing and Publications	0	0	0	0	0	0	0	0	0 As Plant Before General
Rents and Leases	196,800	101,870	50,924	44,006	0	0	0	0	0 As Plant Before General
Repairs and Maintenance	3,075	1,591	796	688	0	0	0	0	0 As Plant Before General
Research Monitoring	0	0	0	0	0	0	0	0	0 As Plant Before General
Travel/Educ/Memberships	0	0	0	0	0	0	0	0	0 As Plant Before General
Utilities	1,976,862	1,023,283	511,535	442,044	0	0	0	0	0 As Plant Before General
Misc Expenses	205	106	53	46	0	0	0	0	0 As Plant Before General
Other Operating Exp	616,025	318,873	159,403	137,749	0	0	0	0	0 As Plant Before General
Non Operating Exp	200,900	103,992	51,985	44,923	0	0	0	0	0 As Plant Before General
Total Non-Crew	\$3,119,009	\$1,614,492	\$807,078	\$697,439	\$0	\$0	\$0	\$0	\$0
Plant Operations									
Salaries & Wages	\$156,881	\$78,440	\$39,220	\$39,220	\$0	\$0	\$0	\$0	\$0 As Treatment Facilities
Benefits	76,090	38,045	19,022	19,022	0	0	0	0	0 As Treatment Facilities
Professional Services	104	52	26	26	0	0	0	0	0 As Treatment Facilities
Insurance	0	0	0	0	0	0	0	0	0 As Treatment Facilities
Petroleum Products	0	0	0	0	0	0	0	0	0 As Treatment Facilities
Operating Supplies	0	0	0	0	0	0	0	0	0 As Treatment Facilities
Office Expenses	769	384	192	192	0	0	0	0	0 As Treatment Facilities
Printing and Publications	0	0	0	0	0	0	0	0	0 As Treatment Facilities
Rents and Leases	0	0	0	0	0	0	0	0	0 As Treatment Facilities
Repairs and Maintenance	102	51	26	26	0	0	0	0	0 As Treatment Facilities
Research Monitoring	0	0	0	0	0	0	0	0	0 As Treatment Facilities
Travel/Educ/Memberships	1,845	923	461	461	0	0	0	0	0 As Treatment Facilities
Utilities	0	0	0	0	0	0	0	0	0 As Treatment Facilities
Misc Expenses	205	103	51	51	0	0	0	0	0 As Treatment Facilities
Other Operating Exp	133,250	66,625	33,313	33,313	0	0	0	0	0 As Treatment Facilities
Non Operating Exp	0	0	0	0	0	0	0	0	0 As Treatment Facilities
Total Plant Operations	\$369,245	\$184,623	\$92,311	\$92,311	\$0	\$0	\$0	\$0	\$0

South Tahoe PUD
 Sewer Utility
 Functionalization and Classification
 Exhibit 12 - Revenue Requirement

	Total Expenses FY 2020	Volume (VOL)	Oxygen Demand (BOD)	Total Suspended Solids (SS)	Customer Related		Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification
					Actual Customer (AC)	Weighted for: Customer Billing Units (BU)			
Operations									
Salaries & Wages	\$1,794,241	\$928,753	\$464,280	\$401,208	\$0	\$0	\$0	\$0	\$0 As Plant Before General
Benefits	977,189	505,822	252,859	218,508	0	0	0	0	0 As Plant Before General
Professional Services	0	0	0	0	0	0	0	0	0 As Plant Before General
Insurance	0	0	0	0	0	0	0	0	0 As Plant Before General
Petroleum Products	1,025	530	265	229	0	0	0	0	0 As Plant Before General
Operating Supplies	210,199	108,805	54,391	47,002	0	0	0	0	0 As Plant Before General
Office Expenses	3,178	1,645	822	711	0	0	0	0	0 As Plant Before General
Printing and Publications	0	0	0	0	0	0	0	0	0 As Plant Before General
Rents and Leases	0	0	0	0	0	0	0	0	0 As Plant Before General
Repairs and Maintenance	33,206	17,188	8,592	7,425	0	0	0	0	0 As Plant Before General
Research Monitoring	0	0	0	0	0	0	0	0	0 As Plant Before General
Travel/Educ/Memberships	23,575	12,203	6,100	5,272	0	0	0	0	0 As Plant Before General
Utilities	408	211	106	91	0	0	0	0	0 As Plant Before General
Misc Expenses	820	424	212	183	0	0	0	0	0 As Plant Before General
Other Operating Exp	218,325	113,012	56,494	48,819	0	0	0	0	0 As Plant Before General
Non Operating Exp	0	0	0	0	0	0	0	0	0 As Plant Before General
Total Operations	\$3,262,165	\$1,688,594	\$844,121	\$729,450	\$0	\$0	\$0	\$0	\$0
Electric									
Salaries & Wages	\$183,041	\$94,747	\$47,364	\$40,930	\$0	\$0	\$0	\$0	\$0 As Plant Before General
Benefits	110,182	57,033	28,511	24,638	0	0	0	0	0 As Plant Before General
Professional Services	0	0	0	0	0	0	0	0	0 As Plant Before General
Insurance	0	0	0	0	0	0	0	0	0 As Plant Before General
Petroleum Products	2,562	1,326	663	573	0	0	0	0	0 As Plant Before General
Operating Supplies	0	0	0	0	0	0	0	0	0 As Plant Before General
Office Expenses	897	464	232	201	0	0	0	0	0 As Plant Before General
Printing and Publications	0	0	0	0	0	0	0	0	0 As Plant Before General
Rents and Leases	0	0	0	0	0	0	0	0	0 As Plant Before General
Repairs and Maintenance	73,278	37,931	18,961	16,386	0	0	0	0	0 As Plant Before General
Research Monitoring	0	0	0	0	0	0	0	0	0 As Plant Before General
Travel/Educ/Memberships	4,664	2,414	1,207	1,043	0	0	0	0	0 As Plant Before General
Utilities	1,020	528	264	228	0	0	0	0	0 As Plant Before General
Misc Expenses	461	239	119	103	0	0	0	0	0 As Plant Before General
Other Operating Exp	3,383	1,751	875	756	0	0	0	0	0 As Plant Before General
Non Operating Exp	0	0	0	0	0	0	0	0	0 As Plant Before General
Total Electric	\$379,487	\$196,434	\$98,196	\$84,857	\$0	\$0	\$0	\$0	\$0

South Tahoe PUD
 Sewer Utility
 Functionalization and Classification
 Exhibit 12 - Revenue Requirement

	Total Expenses FY 2020	Volume (VOL)	Oxygen Demand (BOD)	Total Suspended Solids (SS)	Customer Related		Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification
					Actual Customer (AC)	Weighted for: Customer Billing Units (BU)			
Heavy Maintenance									
Salaries & Wages	\$630,307	\$326,266	\$163,099	\$140,942	\$0	\$0	\$0	\$0	\$0 As Plant Before General
Benefits	363,009	187,904	93,932	81,172	0	0	0	0	0 As Plant Before General
Professional Services	0	0	0	0	0	0	0	0	0 As Plant Before General
Insurance	0	0	0	0	0	0	0	0	0 As Plant Before General
Petroleum Products	6,662	3,448	1,724	1,490	0	0	0	0	0 As Plant Before General
Operating Supplies	0	0	0	0	0	0	0	0	0 As Plant Before General
Office Expenses	615	318	159	138	0	0	0	0	0 As Plant Before General
Printing and Publications	0	0	0	0	0	0	0	0	0 As Plant Before General
Rents and Leases	0	0	0	0	0	0	0	0	0 As Plant Before General
Repairs and Maintenance	112,299	58,129	29,059	25,111	0	0	0	0	0 As Plant Before General
Research Monitoring	0	0	0	0	0	0	0	0	0 As Plant Before General
Travel/Educ/Memberships	7,380	3,820	1,910	1,650	0	0	0	0	0 As Plant Before General
Utilities	51	26	13	11	0	0	0	0	0 As Plant Before General
Misc Expenses	513	265	133	115	0	0	0	0	0 As Plant Before General
Other Operating Exp	7,688	3,979	1,989	1,719	0	0	0	0	0 As Plant Before General
Non Operating Exp	0	0	0	0	0	0	0	0	0 As Plant Before General
Total Heavy Maintenance	\$1,128,523	\$584,157	\$292,018	\$252,348	\$0	\$0	\$0	\$0	\$0
Field Operations									
Salaries & Wages	\$70,679	\$70,679	\$0	\$0	\$0	\$0	\$0	\$0	\$0 As Subsurface Collection Lines
Benefits	31,150	31,150	0	0	0	0	0	0	0 As Subsurface Collection Lines
Professional Services	1,035	1,035	0	0	0	0	0	0	0 As Subsurface Collection Lines
Insurance	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Petroleum Products	512	512	0	0	0	0	0	0	0 As Subsurface Collection Lines
Operating Supplies	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Office Expenses	513	513	0	0	0	0	0	0	0 As Subsurface Collection Lines
Printing and Publications	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Rents and Leases	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Repairs and Maintenance	102	102	0	0	0	0	0	0	0 As Subsurface Collection Lines
Research Monitoring	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Travel/Educ/Memberships	1,717	1,717	0	0	0	0	0	0	0 As Subsurface Collection Lines
Utilities	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Misc Expenses	103	103	0	0	0	0	0	0	0 As Subsurface Collection Lines
Other Operating Exp	47,253	47,253	0	0	0	0	0	0	0 As Subsurface Collection Lines
Non Operating Exp	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Total Field Operations	\$153,064	\$153,064	\$0	\$0	\$0	\$0	\$0	\$0	\$0

South Tahoe PUD
 Sewer Utility
 Functionalization and Classification
 Exhibit 12 - Revenue Requirement

	Total Expenses FY 2020	Volume (VOL)	Oxygen Demand (BOD)	Total Suspended Solids (SS)	Customer Related		Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification
					Actual Customer (AC)	Weighted for: Customer Billing Units (BU)			
Underground Repair									
Salaries & Wages	\$831,734	\$831,734	\$0	\$0	\$0	\$0	\$0	\$0	\$0 As Subsurface Collection Lines
Benefits	474,845	474,845	0	0	0	0	0	0	0 As Subsurface Collection Lines
Professional Services	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Insurance	5,150	5,150	0	0	0	0	0	0	0 As Subsurface Collection Lines
Petroleum Products	38,432	38,432	0	0	0	0	0	0	0 As Subsurface Collection Lines
Operating Supplies	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Office Expenses	1,538	1,538	0	0	0	0	0	0	0 As Subsurface Collection Lines
Printing and Publications	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Rents and Leases	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Repairs and Maintenance	178,377	178,377	0	0	0	0	0	0	0 As Subsurface Collection Lines
Research Monitoring	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Travel/Educ/Memberships	11,480	11,480	0	0	0	0	0	0	0 As Subsurface Collection Lines
Utilities	3,519	3,519	0	0	0	0	0	0	0 As Subsurface Collection Lines
Misc Expenses	410	410	0	0	0	0	0	0	0 As Subsurface Collection Lines
Other Operating Exp	5,125	5,125	0	0	0	0	0	0	0 As Subsurface Collection Lines
Non Operating Exp	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Total Underground Repair	\$1,550,610	\$1,550,610	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pumps									
Salaries & Wages	\$590,910	\$590,910	\$0	\$0	\$0	\$0	\$0	\$0	\$0 As Pumpstations-Force Mains
Benefits	331,885	331,885	0	0	0	0	0	0	0 As Pumpstations-Force Mains
Professional Services	0	0	0	0	0	0	0	0	0 As Pumpstations-Force Mains
Insurance	0	0	0	0	0	0	0	0	0 As Pumpstations-Force Mains
Petroleum Products	14,912	14,912	0	0	0	0	0	0	0 As Pumpstations-Force Mains
Operating Supplies	5,124	5,124	0	0	0	0	0	0	0 As Pumpstations-Force Mains
Office Expenses	718	718	0	0	0	0	0	0	0 As Pumpstations-Force Mains
Printing and Publications	0	0	0	0	0	0	0	0	0 As Pumpstations-Force Mains
Rents and Leases	0	0	0	0	0	0	0	0	0 As Pumpstations-Force Mains
Repairs and Maintenance	77,454	77,454	0	0	0	0	0	0	0 As Pumpstations-Force Mains
Research Monitoring	0	0	0	0	0	0	0	0	0 As Pumpstations-Force Mains
Travel/Educ/Memberships	3,075	3,075	0	0	0	0	0	0	0 As Pumpstations-Force Mains
Utilities	3,060	3,060	0	0	0	0	0	0	0 As Pumpstations-Force Mains
Misc Expenses	333	333	0	0	0	0	0	0	0 As Pumpstations-Force Mains
Other Operating Exp	0	0	0	0	0	0	0	0	0 As Pumpstations-Force Mains
Non Operating Exp	0	0	0	0	0	0	0	0	0 As Pumpstations-Force Mains
Total Pumps	\$1,027,470	\$1,027,470	\$0	\$0	\$0	\$0	\$0	\$0	\$0

South Tahoe PUD
 Sewer Utility
 Functionalization and Classification
 Exhibit 12 - Revenue Requirement

	Total Expenses FY 2020	Volume (VOL)	Oxygen Demand (BOD)	Total Suspended Solids (SS)	Customer Related		Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification
					Actual Customer (AC)	Weighted for: Customer Billing Units (BU)			
Equipment Repair									
Salaries & Wages	\$141,043	\$73,008	\$36,496	\$31,539	\$0	\$0	\$0	\$0	\$0 As General Plant
Benefits	81,211	42,037	21,014	18,160	0	0	0	0	0 As General Plant
Professional Services	0	0	0	0	0	0	0	0	0 As General Plant
Insurance	0	0	0	0	0	0	0	0	0 As General Plant
Petroleum Products	6,662	3,448	1,724	1,490	0	0	0	0	0 As General Plant
Operating Supplies	0	0	0	0	0	0	0	0	0 As General Plant
Office Expenses	820	424	212	183	0	0	0	0	0 As General Plant
Printing and Publications	0	0	0	0	0	0	0	0	0 As General Plant
Rents and Leases	0	0	0	0	0	0	0	0	0 As General Plant
Repairs and Maintenance	63,567	32,904	16,449	14,214	0	0	0	0	0 As General Plant
Research Monitoring	0	0	0	0	0	0	0	0	0 As General Plant
Travel/Educ/Memberships	2,255	1,167	584	504	0	0	0	0	0 As General Plant
Utilities	0	0	0	0	0	0	0	0	0 As General Plant
Misc Expenses	308	159	80	69	0	0	0	0	0 As General Plant
Other Operating Exp	0	0	0	0	0	0	0	0	0 As General Plant
Non Operating Exp	0	0	0	0	0	0	0	0	0 As General Plant
Total Equipment Repair	\$295,866	\$153,149	\$76,558	\$66,158	\$0	\$0	\$0	\$0	\$0
Laboratory									
Salaries & Wages	\$284,896	\$0	\$156,798	\$128,099	\$0	\$0	\$0	\$0	\$0 55% (BOD)/ 45% (SS)
Benefits	135,422	0	74,532	60,890	0	0	0	0	0 55% (BOD)/ 45% (SS)
Professional Services	5,175	0	2,848	2,327	0	0	0	0	0 55% (BOD)/ 45% (SS)
Insurance	0	0	0	0	0	0	0	0	0 55% (BOD)/ 45% (SS)
Petroleum Products	1,640	0	902	737	0	0	0	0	0 55% (BOD)/ 45% (SS)
Operating Supplies	32,283	0	17,768	14,516	0	0	0	0	0 55% (BOD)/ 45% (SS)
Office Expenses	2,819	0	1,551	1,267	0	0	0	0	0 55% (BOD)/ 45% (SS)
Printing and Publications	0	0	0	0	0	0	0	0	0 55% (BOD)/ 45% (SS)
Rents and Leases	0	0	0	0	0	0	0	0	0 55% (BOD)/ 45% (SS)
Repairs and Maintenance	12,350	0	6,797	5,553	0	0	0	0	0 55% (BOD)/ 45% (SS)
Research Monitoring	24,600	0	13,539	11,061	0	0	0	0	0 55% (BOD)/ 45% (SS)
Travel/Educ/Memberships	10,558	0	5,810	4,747	0	0	0	0	0 55% (BOD)/ 45% (SS)
Utilities	0	0	0	0	0	0	0	0	0 55% (BOD)/ 45% (SS)
Misc Expenses	103	0	56	46	0	0	0	0	0 55% (BOD)/ 45% (SS)
Other Operating Exp	4,100	0	2,257	1,843	0	0	0	0	0 55% (BOD)/ 45% (SS)
Non Operating Exp	0	0	0	0	0	0	0	0	0 55% (BOD)/ 45% (SS)
Total Laboratory	\$513,945	\$0	\$282,858	\$231,087	\$0	\$0	\$0	\$0	\$0

South Tahoe PUD
 Sewer Utility
 Functionalization and Classification
 Exhibit 12 - Revenue Requirement

	Total Expenses FY 2020	Volume (VOL)	Oxygen Demand (BOD)	Total Suspended Solids (SS)	Customer Related		Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification
					Actual Customer (AC)	Weighted for: Customer Billing Units (BU)			
Water Reuse									
Salaries & Wages	\$355,681	\$355,681	\$0	\$0	\$0	\$0	\$0	\$0	\$0 100% (VOL)
Benefits	177,368	177,368	0	0	0	0	0	0	0 100% (VOL)
Professional Services	49,680	49,680	0	0	0	0	0	0	0 100% (VOL)
Insurance	0	0	0	0	0	0	0	0	0 100% (VOL)
Petroleum Products	18,243	18,243	0	0	0	0	0	0	0 100% (VOL)
Operating Supplies	0	0	0	0	0	0	0	0	0 100% (VOL)
Office Expenses	820	820	0	0	0	0	0	0	0 100% (VOL)
Printing and Publications	0	0	0	0	0	0	0	0	0 100% (VOL)
Rents and Leases	15,068	15,068	0	0	0	0	0	0	0 100% (VOL)
Repairs and Maintenance	66,770	66,770	0	0	0	0	0	0	0 100% (VOL)
Research Monitoring	15,375	15,375	0	0	0	0	0	0	0 100% (VOL)
Travel/Educ/Memberships	6,791	6,791	0	0	0	0	0	0	0 100% (VOL)
Utilities	14,382	14,382	0	0	0	0	0	0	0 100% (VOL)
Misc Expenses	513	513	0	0	0	0	0	0	0 100% (VOL)
Other Operating Exp	286,821	286,821	0	0	0	0	0	0	0 100% (VOL)
Non Operating Exp	0	0	0	0	0	0	0	0	0 100% (VOL)
Total Water Reuse	\$1,007,509	\$1,007,509	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Administration									
Salaries & Wages	\$218,367	\$113,033	\$56,505	\$48,829	\$0	\$0	\$0	\$0	\$0 As Plant Before General
Benefits	87,436	45,260	22,625	19,552	0	0	0	0	0 As Plant Before General
Professional Services	776	402	201	174	0	0	0	0	0 As Plant Before General
Insurance	0	0	0	0	0	0	0	0	0 As Plant Before General
Petroleum Products	1,127	584	292	252	0	0	0	0	0 As Plant Before General
Operating Supplies	0	0	0	0	0	0	0	0	0 As Plant Before General
Office Expenses	1,999	1,035	517	447	0	0	0	0	0 As Plant Before General
Printing and Publications	103	53	27	23	0	0	0	0	0 As Plant Before General
Rents and Leases	0	0	0	0	0	0	0	0	0 As Plant Before General
Repairs and Maintenance	769	398	199	172	0	0	0	0	0 As Plant Before General
Research Monitoring	0	0	0	0	0	0	0	0	0 As Plant Before General
Travel/Educ/Memberships	5,279	2,732	1,366	1,180	0	0	0	0	0 As Plant Before General
Utilities	0	0	0	0	0	0	0	0	0 As Plant Before General
Misc Expenses	1,281	663	332	286	0	0	0	0	0 As Plant Before General
Other Operating Exp	4,613	2,388	1,194	1,031	0	0	0	0	0 As Plant Before General
Non Operating Exp	0	0	0	0	0	0	0	0	0 As Plant Before General
Total Administration	\$321,749	\$166,547	\$83,256	\$71,946	\$0	\$0	\$0	\$0	\$0

South Tahoe PUD
 Sewer Utility
 Functionalization and Classification
 Exhibit 12 - Revenue Requirement

	Total Expenses FY 2020	Volume (VOL)	Oxygen Demand (BOD)	Total Suspended Solids (SS)	Customer Related		Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification
					Actual Customer (AC)	Weighted for: Customer Billing Units (BU)			
Board of Directors									
Salaries & Wages	\$12,360	\$6,398	\$3,198	\$2,764	\$0	\$0	\$0	\$0	\$0 As Plant Before General
Benefits	72,360	37,456	18,724	16,180	0	0	0	0	0 As Plant Before General
Professional Services	21,994	11,385	5,691	4,918	0	0	0	0	0 As Plant Before General
Insurance	0	0	0	0	0	0	0	0	0 As Plant Before General
Petroleum Products	0	0	0	0	0	0	0	0	0 As Plant Before General
Operating Supplies	0	0	0	0	0	0	0	0	0 As Plant Before General
Office Expenses	974	504	252	218	0	0	0	0	0 As Plant Before General
Printing and Publications	0	0	0	0	0	0	0	0	0 As Plant Before General
Rents and Leases	0	0	0	0	0	0	0	0	0 As Plant Before General
Repairs and Maintenance	0	0	0	0	0	0	0	0	0 As Plant Before General
Research Monitoring	0	0	0	0	0	0	0	0	0 As Plant Before General
Travel/Educ/Memberships	37,925	19,631	9,814	8,480	0	0	0	0	0 As Plant Before General
Utilities	0	0	0	0	0	0	0	0	0 As Plant Before General
Misc Expenses	256	133	66	57	0	0	0	0	0 As Plant Before General
Other Operating Exp	6,355	3,290	1,644	1,421	0	0	0	0	0 As Plant Before General
Non Operating Exp	0	0	0	0	0	0	0	0	0 As Plant Before General
Total Board of Directors	\$152,224	\$78,796	\$39,390	\$34,039	\$0	\$0	\$0	\$0	\$0
Human Resources									
Salaries & Wages	\$121,528	\$62,907	\$31,447	\$27,175	\$0	\$0	\$0	\$0	\$0 As Plant Before General
Benefits	61,933	32,058	16,026	13,849	0	0	0	0	0 As Plant Before General
Professional Services	25,306	13,099	6,548	5,659	0	0	0	0	0 As Plant Before General
Insurance	0	0	0	0	0	0	0	0	0 As Plant Before General
Petroleum Products	0	0	0	0	0	0	0	0	0 As Plant Before General
Operating Supplies	0	0	0	0	0	0	0	0	0 As Plant Before General
Office Expenses	1,333	690	345	298	0	0	0	0	0 As Plant Before General
Printing and Publications	8,559	4,430	2,215	1,914	0	0	0	0	0 As Plant Before General
Rents and Leases	0	0	0	0	0	0	0	0	0 As Plant Before General
Repairs and Maintenance	46,836	24,244	12,119	10,473	0	0	0	0	0 As Plant Before General
Research Monitoring	0	0	0	0	0	0	0	0	0 As Plant Before General
Travel/Educ/Memberships	15,785	8,171	4,085	3,530	0	0	0	0	0 As Plant Before General
Utilities	0	0	0	0	0	0	0	0	0 As Plant Before General
Misc Expenses	154	80	40	34	0	0	0	0	0 As Plant Before General
Other Operating Exp	1,845	955	477	413	0	0	0	0	0 As Plant Before General
Non Operating Exp	0	0	0	0	0	0	0	0	0 As Plant Before General
Total Human Resources	\$283,278	\$146,633	\$73,301	\$63,344	\$0	\$0	\$0	\$0	\$0

South Tahoe PUD
 Sewer Utility
 Functionalization and Classification
 Exhibit 12 - Revenue Requirement

	Total Expenses FY 2020	Volume (VOL)	Oxygen Demand (BOD)	Total Suspended Solids (SS)	Customer Related		Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification
					Actual Customer (AC)	Weighted for: Customer Billing Units (BU)			
Public Outreach									
Salaries & Wages	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 100% (AC)
Benefits	0	0	0	0	0	0	0	0	0 100% (AC)
Professional Services	78,660	0	0	0	78,660	0	0	0	0 100% (AC)
Insurance	0	0	0	0	0	0	0	0	0 100% (AC)
Petroleum Products	0	0	0	0	0	0	0	0	0 100% (AC)
Operating Supplies	0	0	0	0	0	0	0	0	0 100% (AC)
Office Expenses	4,715	0	0	0	4,715	0	0	0	0 100% (AC)
Printing and Publications	7,688	0	0	0	7,688	0	0	0	0 100% (AC)
Rents and Leases	0	0	0	0	0	0	0	0	0 100% (AC)
Repairs and Maintenance	0	0	0	0	0	0	0	0	0 100% (AC)
Research Monitoring	0	0	0	0	0	0	0	0	0 100% (AC)
Travel/Educ/Memberships	2,050	0	0	0	2,050	0	0	0	0 100% (AC)
Utilities	0	0	0	0	0	0	0	0	0 100% (AC)
Misc Expenses	26	0	0	0	26	0	0	0	0 100% (AC)
Other Operating Exp	27,931	0	0	0	27,931	0	0	0	0 100% (AC)
Non Operating Exp	0	0	0	0	0	0	0	0	0 100% (AC)
Total Public Outreach	\$121,069	\$0	\$0	\$0	\$121,069	\$0	\$0	\$0	\$0
Finance									
Salaries & Wages	\$217,606	\$112,639	\$56,308	\$48,659	\$0	\$0	\$0	\$0	\$0 As Plant Before General
Benefits	89,669	46,415	23,203	20,051	0	0	0	0	0 As Plant Before General
Professional Services	92,969	48,123	24,057	20,789	0	0	0	0	0 As Plant Before General
Insurance	0	0	0	0	0	0	0	0	0 As Plant Before General
Petroleum Products	0	0	0	0	0	0	0	0	0 As Plant Before General
Operating Supplies	0	0	0	0	0	0	0	0	0 As Plant Before General
Office Expenses	3,126	1,618	809	699	0	0	0	0	0 As Plant Before General
Printing and Publications	1,538	796	398	344	0	0	0	0	0 As Plant Before General
Rents and Leases	0	0	0	0	0	0	0	0	0 As Plant Before General
Repairs and Maintenance	1,665	862	431	372	0	0	0	0	0 As Plant Before General
Research Monitoring	0	0	0	0	0	0	0	0	0 As Plant Before General
Travel/Educ/Memberships	4,254	2,202	1,101	951	0	0	0	0	0 As Plant Before General
Utilities	0	0	0	0	0	0	0	0	0 As Plant Before General
Misc Expenses	359	186	93	80	0	0	0	0	0 As Plant Before General
Other Operating Exp	0	0	0	0	0	0	0	0	0 As Plant Before General
Non Operating Exp	0	0	0	0	0	0	0	0	0 As Plant Before General
Total Finance	\$411,185	\$212,842	\$106,399	\$91,945	\$0	\$0	\$0	\$0	\$0

South Tahoe PUD
 Sewer Utility
 Functionalization and Classification
 Exhibit 12 - Revenue Requirement

	Total Expenses FY 2020	Volume (VOL)	Oxygen Demand (BOD)	Total Suspended Solids (SS)	Customer Related		Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification
					Actual Customer (AC)	Weighted for: Customer Billing Units (BU)			
Accounting									
Salaries & Wages	\$194,466	\$100,661	\$50,320	\$43,484	\$0	\$0	\$0	\$0	\$0 As Plant Before General
Benefits	107,371	55,579	27,784	24,009	0	0	0	0	0 As Plant Before General
Professional Services	21,735	11,251	5,624	4,860	0	0	0	0	0 As Plant Before General
Insurance	0	0	0	0	0	0	0	0	0 As Plant Before General
Petroleum Products	0	0	0	0	0	0	0	0	0 As Plant Before General
Operating Supplies	0	0	0	0	0	0	0	0	0 As Plant Before General
Office Expenses	1,281	663	332	286	0	0	0	0	0 As Plant Before General
Printing and Publications	308	159	80	69	0	0	0	0	0 As Plant Before General
Rents and Leases	0	0	0	0	0	0	0	0	0 As Plant Before General
Repairs and Maintenance	1,717	889	444	384	0	0	0	0	0 As Plant Before General
Research Monitoring	0	0	0	0	0	0	0	0	0 As Plant Before General
Travel/Educ/Memberships	5,279	2,732	1,366	1,180	0	0	0	0	0 As Plant Before General
Utilities	0	0	0	0	0	0	0	0	0 As Plant Before General
Misc Expenses	103	53	27	23	0	0	0	0	0 As Plant Before General
Other Operating Exp	0	0	0	0	0	0	0	0	0 As Plant Before General
Non Operating Exp	24,959	12,919	6,458	5,581	0	0	0	0	0 As Plant Before General
Total Accounting	\$357,218	\$184,907	\$92,434	\$79,877	\$0	\$0	\$0	\$0	\$0
Purchasing									
Salaries & Wages	\$99,728	\$51,622	\$25,806	\$22,300	\$0	\$0	\$0	\$0	\$0 As Plant Before General
Benefits	61,880	32,031	16,012	13,837	0	0	0	0	0 As Plant Before General
Professional Services	1,035	536	268	231	0	0	0	0	0 As Plant Before General
Insurance	0	0	0	0	0	0	0	0	0 As Plant Before General
Petroleum Products	307	159	80	69	0	0	0	0	0 As Plant Before General
Operating Supplies	0	0	0	0	0	0	0	0	0 As Plant Before General
Office Expenses	1,076	557	278	241	0	0	0	0	0 As Plant Before General
Printing and Publications	308	159	80	69	0	0	0	0	0 As Plant Before General
Rents and Leases	0	0	0	0	0	0	0	0	0 As Plant Before General
Repairs and Maintenance	23,059	11,936	5,967	5,156	0	0	0	0	0 As Plant Before General
Research Monitoring	0	0	0	0	0	0	0	0	0 As Plant Before General
Travel/Educ/Memberships	384	199	99	86	0	0	0	0	0 As Plant Before General
Utilities	0	0	0	0	0	0	0	0	0 As Plant Before General
Misc Expenses	51	27	13	11	0	0	0	0	0 As Plant Before General
Other Operating Exp	0	0	0	0	0	0	0	0	0 As Plant Before General
Non Operating Exp	0	0	0	0	0	0	0	0	0 As Plant Before General
Total Purchasing	\$187,830	\$97,226	\$48,603	\$42,000	\$0	\$0	\$0	\$0	\$0

South Tahoe PUD
 Sewer Utility
 Functionalization and Classification
 Exhibit 12 - Revenue Requirement

	Total Expenses FY 2020	Volume (VOL)	Oxygen Demand (BOD)	Total Suspended Solids (SS)	Actual Customer (AC)	Customer Related		Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification
						Weighted for:				
						Customer Billing Units (BU)	Customer Srvct. Acct. (WCA)			
Information Technology										
Salaries & Wages	\$202,372	\$104,754	\$52,366	\$45,252	\$0	\$0	\$0	\$0	\$0	As Plant Before General
Benefits	103,169	53,403	26,696	23,070	0	0	0	0	0	As Plant Before General
Professional Services	15,525	8,036	4,017	3,472	0	0	0	0	0	As Plant Before General
Insurance	0	0	0	0	0	0	0	0	0	As Plant Before General
Petroleum Products	0	0	0	0	0	0	0	0	0	As Plant Before General
Operating Supplies	0	0	0	0	0	0	0	0	0	As Plant Before General
Office Expenses	59,194	30,640	15,317	13,236	0	0	0	0	0	As Plant Before General
Printing and Publications	308	159	80	69	0	0	0	0	0	As Plant Before General
Rents and Leases	0	0	0	0	0	0	0	0	0	As Plant Before General
Repairs and Maintenance	109,250	56,551	28,270	24,429	0	0	0	0	0	As Plant Before General
Research Monitoring	0	0	0	0	0	0	0	0	0	As Plant Before General
Travel/Educ/Memberships	11,531	5,969	2,984	2,578	0	0	0	0	0	As Plant Before General
Utilities	663	343	172	148	0	0	0	0	0	As Plant Before General
Misc Expenses	256	133	66	57	0	0	0	0	0	As Plant Before General
Other Operating Exp	0	0	0	0	0	0	0	0	0	As Plant Before General
Non Operating Exp	0	0	0	0	0	0	0	0	0	As Plant Before General
Total Information Technology	\$502,268	\$259,989	\$129,967	\$112,312	\$0	\$0	\$0	\$0	\$0	
Customer Service										
Salaries & Wages	\$243,477	\$0	\$0	\$0	\$0	\$0	\$243,477	\$0	\$0	100% (WCA)
Benefits	137,340	0	0	0	0	0	137,340	0	0	100% (WCA)
Professional Services	4,140	0	0	0	0	0	4,140	0	0	100% (WCA)
Insurance	4,120	0	0	0	0	0	4,120	0	0	100% (WCA)
Petroleum Products	0	0	0	0	0	0	0	0	0	100% (WCA)
Operating Supplies	0	0	0	0	0	0	0	0	0	100% (WCA)
Office Expenses	22,858	0	0	0	0	0	22,858	0	0	100% (WCA)
Printing and Publications	7,841	0	0	0	0	0	7,841	0	0	100% (WCA)
Rents and Leases	1,076	0	0	0	0	0	1,076	0	0	100% (WCA)
Repairs and Maintenance	32,591	0	0	0	0	0	32,591	0	0	100% (WCA)
Research Monitoring	0	0	0	0	0	0	0	0	0	100% (WCA)
Travel/Educ/Memberships	1,230	0	0	0	0	0	1,230	0	0	100% (WCA)
Utilities	128	0	0	0	0	0	128	0	0	100% (WCA)
Misc Expenses	256	0	0	0	0	0	256	0	0	100% (WCA)
Other Operating Exp	15,375	0	0	0	0	0	15,375	0	0	100% (WCA)
Non Operating Exp	0	0	0	0	0	0	0	0	0	100% (WCA)
Total Customer Service	\$470,431	\$0	\$0	\$0	\$0	\$0	\$470,431	\$0	\$0	

South Tahoe PUD
 Sewer Utility
 Functionalization and Classification
 Exhibit 12 - Revenue Requirement

	Total Expenses FY 2020	Volume (VOL)	Oxygen Demand (BOD)	Total Suspended Solids (SS)	Customer Related		Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification
					Actual Customer (AC)	Weighted for: Customer Billing Units (BU)			
Inspections									
Salaries & Wages	\$179,863	\$179,863	\$0	\$0	\$0	\$0	\$0	\$0	\$0 As Subsurface Collection Lines
Benefits	93,503	93,503	0	0	0	0	0	0	0 As Subsurface Collection Lines
Professional Services	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Insurance	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Petroleum Products	3,690	3,690	0	0	0	0	0	0	0 As Subsurface Collection Lines
Operating Supplies	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Office Expenses	1,948	1,948	0	0	0	0	0	0	0 As Subsurface Collection Lines
Printing and Publications	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Rents and Leases	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Repairs and Maintenance	2,280	2,280	0	0	0	0	0	0	0 As Subsurface Collection Lines
Research Monitoring	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Travel/Educ/Memberships	1,384	1,384	0	0	0	0	0	0	0 As Subsurface Collection Lines
Utilities	2,729	2,729	0	0	0	0	0	0	0 As Subsurface Collection Lines
Misc Expenses	51	51	0	0	0	0	0	0	0 As Subsurface Collection Lines
Other Operating Exp	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Non Operating Exp	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Total Inspections	\$285,447	\$285,447	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Water Conservation									
Salaries & Wages	\$43,153	\$0	\$0	\$0	\$43,153	\$0	\$0	\$0	\$0 100% (AC)
Benefits	27,027	0	0	0	27,027	0	0	0	0 100% (AC)
Professional Services	0	0	0	0	0	0	0	0	0 100% (AC)
Insurance	0	0	0	0	0	0	0	0	0 100% (AC)
Petroleum Products	410	0	0	0	410	0	0	0	0 100% (AC)
Operating Supplies	0	0	0	0	0	0	0	0	0 100% (AC)
Office Expenses	769	0	0	0	769	0	0	0	0 100% (AC)
Printing and Publications	677	0	0	0	677	0	0	0	0 100% (AC)
Rents and Leases	0	0	0	0	0	0	0	0	0 100% (AC)
Repairs and Maintenance	102	0	0	0	102	0	0	0	0 100% (AC)
Research Monitoring	0	0	0	0	0	0	0	0	0 100% (AC)
Travel/Educ/Memberships	1,281	0	0	0	1,281	0	0	0	0 100% (AC)
Utilities	0	0	0	0	0	0	0	0	0 100% (AC)
Misc Expenses	0	0	0	0	0	0	0	0	0 100% (AC)
Other Operating Exp	0	0	0	0	0	0	0	0	0 100% (AC)
Non Operating Exp	0	0	0	0	0	0	0	0	0 100% (AC)
Total Water Conservation	\$73,419	\$0	\$0	\$0	\$73,419	\$0	\$0	\$0	\$0

South Tahoe PUD
 Sewer Utility
 Functionalization and Classification
 Exhibit 12 - Revenue Requirement

	Total Expenses FY 2020	Volume (VOL)	Oxygen Demand (BOD)	Total Suspended Solids (SS)	Customer Related		Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification
					Actual Customer (AC)	Weighted for: Customer Billing Units (BU)			
Total Operations & Maintenance Expense	\$15,973,009	\$9,592,487	\$3,066,492	\$2,649,111	\$194,488	\$0	\$470,431	\$0	\$0
Rate Funded Capital (Capital Improvement Charge)	384,300	198,925	99,442	85,933	0	0	0	0	0 As Plant Before General
Debt Service									
2012 Refunding of 2004	\$1,015,259	\$525,528	\$262,710	\$227,021	\$0	\$0	\$0	\$0	\$0 As Plant Before General
2013 Refunding of Union Bank	687,839	356,046	177,986	153,807	0	0	0	0	0 As Plant Before General
2013 SRF - ERB Liner = 2.7%	86,029	86,029	0	0	0	0	0	0	0 As Subsurface Collection Lines
2012 SRF - LPPS Generator - 2.7%	168,973	168,973	0	0	0	0	0	0	0 As Pumpstations-Force Mains
2014 SRF - Headworks Dem - 2.7%	59,442	29,721	14,861	14,861	0	0	0	0	0 As Treatment Facilities
2012 BBVA Loan - HW Const. - 3.65%	462,533	462,533	0	0	0	0	0	0	0 As Subsurface Collection Lines
2019 SRF - DVR Imp. Phase 1 - 1.67%	374,212	193,703	96,831	83,677	0	0	0	0	0 As Plant Before General
2019 SRF - LPPS Power Upgrades - 1.67%	187,681	187,681	0	0	0	0	0	0	0 As Pumpstations-Force Mains
2020 SRF - Treatment Plant Gen - 2.1%	392,045	196,022	98,011	98,011	0	0	0	0	0 As Treatment Facilities
2019 SRF - Primary Clarifier I - 1.7%	29,374	14,687	7,343	7,343	0	0	0	0	0 As Treatment Facilities
SRF - Aeration Basin 2 Rehab - 1.7%	47,785	24,735	12,365	10,685	0	0	0	0	0 As Plant Before General
Future - Pump Station Imp	0	0	0	0	0	0	0	0	0 As Pumpstations-Force Mains
Secondary Clarifiers Rhb	0	0	0	0	0	0	0	0	0 As Treatment Facilities
Harvey Place ESP	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Bijiou Relief Sewer	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Scenario B - Increased Borrowing	0	0	0	0	0	0	0	0	0 As Subsurface Collection Lines
Customer Refunds	2,000	1,035	518	447	0	0	0	0	0 As Plant Before General
New Low Interest Loan	0	0	0	0	0	0	0	0	0 As Plant Before General
New Revenue Bond	0	0	0	0	0	0	0	0	0 As Plant Before General
Total Debt Service	\$3,513,170	\$2,246,694	\$670,624	\$595,852	\$0	\$0	\$0	\$0	\$0
To / (From) Reserves									
To / (From) Capital Reserve	\$6,671,038	\$3,453,129	\$1,726,205	\$1,491,704	\$0	\$0	\$0	\$0	\$0 As Plant Before General
To / (From) Capital Reserve for DS Principal	(2,681,000)	(1,387,766)	(693,738)	(599,496)	0	0	0	0	0 As Plant Before General
To / (From) Water Fund	0	0	0	0	0	0	0	0	0 As Plant Before General
To/(From) Operating Reserve	(164,142)	(84,965)	(42,473)	(36,704)	0	0	0	0	0 As Plant Before General
To / (From) Rate Stabilization	154,722	80,089	40,036	34,597	0	0	0	0	0 As Plant Before General
To / (From) Debt Reserve	852,207	441,128	220,518	190,561	0	0	0	0	0 As Plant Before General
Total To / (From) Reserves	\$4,832,825	\$2,501,615	\$1,250,547	\$1,080,663	\$0	\$0	\$0	\$0	\$0
Total Revenue Requirements	\$24,703,304	\$14,539,720	\$5,087,105	\$4,411,560	\$194,488	\$0	\$470,431	\$0	\$0

South Tahoe PUD
Sewer Utility
Functionalization and Classification
Exhibit 12 - Revenue Requirement

	Total Expenses FY 2020	Volume (VOL)	Oxygen Demand (BOD)	Total Suspended Solids (SS)	Customer Related		Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification
					Actual Customer (AC)	Weighted for: Customer Billing Units (BU)			
Less: Other Income									
Plant Dumping Fees	\$18,000	\$9,000	\$4,500	\$4,500	\$0	\$0	\$0	\$0	As Treatment Facilities
Repairs	503	503	0	0	0	0	0	0	As Subsurface Collection Lines
Returned Check Charges	2,010	2,010	0	0	0	0	0	0	100% (VOL)
Permit Fee Revenue	22,110	11,445	5,721	4,944	0	0	0	0	As Plant Before General
Capacity Fees	384,300	198,925	99,442	85,933	0	0	0	0	As Transfer to Reserve for Capital
Secured Taxes	8,343,800	4,319,000	2,159,051	1,865,749	0	0	0	0	As Plant Before General
Unsecured Taxes	163,200	84,477	42,230	36,493	0	0	0	0	As Plant Before General
Sale of Surplus Assets	0	0	0	0	0	0	0	0	As Plant Before General
Realized Gain/Loss on Investment	0	0	0	0	0	0	0	0	As Plant Before General
Investment Interest	333,000	172,371	86,167	74,462	0	0	0	0	As Plant Before General
Rents and Leases	55,275	28,612	14,303	12,360	0	0	0	0	As Plant Before General
State Homeowner Exemption	80,199	0	0	0	0	0	0	80,199	100% (DA)
Interest and Penalty Charges	130,650	67,628	33,807	29,215	0	0	0	0	As Plant Before General
Amin Fee - New Service	0	0	0	0	0	0	0	0	100% (AC)
Contractor Plan & Specs Fees	1,000	518	259	224	0	0	0	0	As Plant Before General
Other Miscellaneous Revenue	47,500	24,587	12,291	10,621	0	0	0	0	As Plant Before General
Local Aid	0	0	0	0	0	0	0	0	As Plant Before General
Street Light Revenue	23,000	11,905	5,952	5,143	0	0	0	0	As Plant Before General
Total Other Income	\$9,604,547	\$4,930,982	\$2,463,722	\$2,129,643	\$0	\$0	\$0	\$0	\$80,199
Net Revenue Requirements	\$15,098,758	\$9,608,739	\$2,623,382	\$2,281,917	\$194,488	\$0	\$470,431	\$0	(\$80,199)

South Tahoe PUD
Sewer Utility
Cost of Service Summary
Exhibit 13 - Allocation by Component - Vol., Strength

Classification Components	FY 2020	Single Family Residential	Multi-family	Motel/ Hotel/ Timeshare	Trailer/Mobile Home Park/Campground	Non-Residential	
Volume	\$9,608,739	\$5,979,608	\$1,528,173	\$1,016,622	\$349,415	\$734,922	(VOL)
Bio-Chemical Oxygen Demand	\$2,623,382	\$1,622,447	\$414,639	\$275,840	\$94,807	\$215,650	(BOD)
Total Suspended Solids	\$2,281,917	\$1,403,543	\$358,695	\$238,623	\$82,015	\$199,041	(SS)
Customer Related							
Actual Customer	\$194,488	\$172,953	\$13,930	\$1,463	\$333	\$5,809	(AC)
Customer Billing Units	0	0	0	0	0	0	(BU)
Customer Srvc Acct.	470,431	418,340	33,695	3,539	807	14,050	(WCA)
Total Customer Related	\$664,919	\$591,292	\$47,626	\$5,002	\$1,140	\$19,859	
Revenue Related	0	0	0	0	0	0	(RR)
Direct Assign.	(\$80,199)	(\$80,199)	\$0	\$0	\$0	0	(DA)
Net Revenue Requirement	\$15,098,758	\$9,516,691	\$2,349,133	\$1,536,086	\$527,377	\$1,169,472	

South Tahoe PUD
 Sewer Utility
 Cost of Service Summary
 Exhibit 15 - Summary of Cost Allocation

	FY 2020	Single Family Residential	Multi-family	Motel/ Hotel/ Timeshare	Trailer/Mobile Home Park/Campground	Non-Residential	Source
Revenues at Present Rates	\$14,379,759	\$9,009,449	\$2,254,899	\$1,480,790	\$484,435	1,150,186	
Allocated Revenue Requirement	\$15,098,758	\$9,516,691	\$2,349,133	\$1,536,086	\$527,377	\$1,169,472	
Subtotal Balance/(Deficiency) of Funds	(\$718,999)	(\$507,242)	(\$94,234)	(\$55,296)	(\$42,942)	(\$19,286)	
% Change Over Present Rates	5.0%	5.6%	4.2%	3.7%	8.9%	1.7%	

South Tahoe PUD
 Sewer Utility
 Cost of Service Summary
 Exhibit 15 - Average Unit Cost

	FY 2020	Single Family Residential	Multi-family	Motel/ Hotel/ Timeshare	Trailer/Mobile Home Park/Campground	Non-Residential
Volume Costs - \$/CCF	\$5.42	\$5.42	\$5.42	\$5.42	\$5.42	\$5.42
BOD Costs - \$/CCF	\$1.48	\$1.47	\$1.47	\$1.47	\$1.47	\$1.59
Total Suspended Solids Costs - \$/CCF	\$1.29	\$1.27	\$1.27	\$1.27	\$1.27	\$1.47
Direct Assign. Costs - \$/CCF	(\$0.05)	(\$0.07)	\$0.00	\$0.00	\$0.00	\$0.00
Total Allocated Costs - \$/CCF	\$8.15	\$8.10	\$8.17	\$8.17	\$8.17	\$8.49
Current Consumption Rates	\$8.12	\$8.17	\$8.00	\$7.90	\$7.52	\$8.49
Customer - \$ / Qtr	\$1.70	\$2.39	\$0.87	\$0.14	\$0.09	\$0.76
Vol & Strength - \$ / Qtr	\$42.20	\$42.07	\$42.07	\$42.07	\$42.07	\$43.70
	\$43.90	\$44.46	\$42.94	\$42.21	\$42.16	\$44.46
Rate Rev \$/Billing Unit	\$41.81	\$42.09	\$41.22	\$40.69	\$38.73	\$43.72
Allocated Rev Req \$/Billing Unit	\$43.90	\$44.46	\$42.94	\$42.21	\$42.16	\$44.45
Basic Data						
Annualized Water Flows - CCF	1,771,324	1,102,311	281,711	187,409	64,413	135,479
No. of Customers	18,080	16,078	1,295	136	31	540
No. of Billing Units	85,991	53,513	13,676	9,098	3,127	6,577

South Tahoe PUD
 Sewer Utility
 Rate Design
 Exhibit 16 - Summary of Rate Design

		Current	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Single Family Residential	\$/Billing Unit/Quarter	\$42.09	\$44.46	\$46.68	\$49.02	\$51.47	\$54.04
Multi-family	\$/Billing Unit/Quarter	41.22	42.94	45.09	47.34	49.71	52.20
Motel/ Hotel/ Timeshare	\$/Billing Unit/Quarter	40.69	42.21	44.32	46.54	48.86	51.31
Trailer/Mobile Home Park/Campground	\$/Billing Unit/Quarter	38.73	42.16	44.27	46.48	48.81	51.25
Non-Residential	\$/Billing Unit/Quarter	43.72	44.46	46.68	49.02	51.47	54.04

