



Rate Study Update

FINAL REPORT
February 10, 2021

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Section I. INTRODUCTION

I.A. INTRODUCTION

In 2015, CHS Engineers, LLC (CHS) was retained by King County Water District 49 (District) to complete a Water System Plan Update (WSP). The results of the effort identified an updated capital improvement plan (CIP), which includes a recommendation for construction of a new reservoir to be funded through new debt. FCS GROUP (FCS) initially evaluated the financial impact of the CIP and associated new debt projections on the District's rates. Since the completion of the original study, the District has secured a revenue bond and a low interest loan and has established actual repayment terms. This study update will focus on updating the analysis to take into consideration the actual debt service obligations and take into account the most recent budget information. This study update includes the following key elements:

- Review and monitor fiscal policies for compliance.
- Assess revenue needs for a multi-year period that includes adequate funding for operations and maintenance, capital projects, debt service, and fiscal policy achievement.
- Incorporate the capital plan from the WSP and repayment schedules associated with the new bond and loan issues.
- Develop and recommend rate structures that generate sufficient revenue to meet the District's financial obligations on a standalone, self-supporting basis.
- Identify the portion of rate revenues associated with providing fire protection.
- Write a report documenting the rate study process, assumptions, findings and recommendations.
- Present and discuss findings with staff and Board members.

The key factors, conclusions and recommendations for each of the key task areas of the study are summarized in this report.

Section II. RATE SETTING PRINCIPLES AND METHODOLOGY

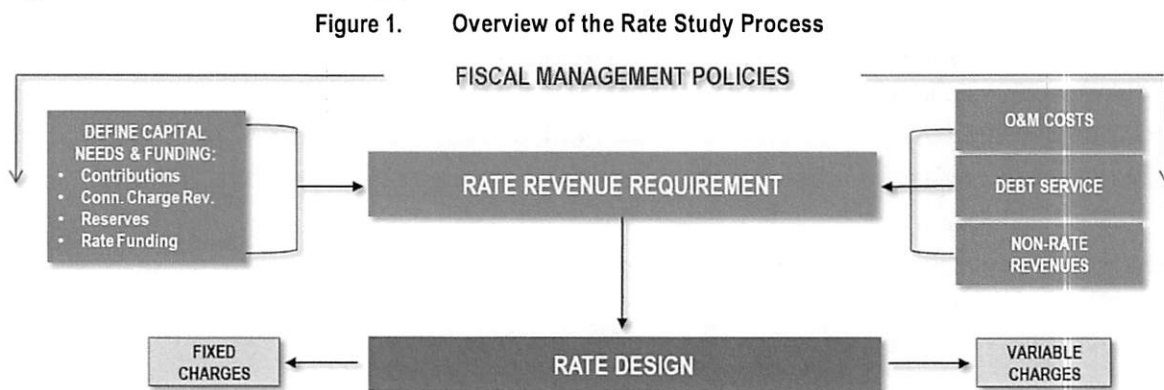
II.A. INTRODUCTION

The methods used to establish user rates are based on principles that are generally accepted and widely followed throughout the industry. These principles are designed to produce rates that equitably recover costs from each class of customer by setting the appropriate level of revenue to be collected from ratepayers and establishing a rate structure to equitably collect those revenues.

The primary tasks of the rate study are listed below:

- **Revenue Requirement Analysis.** This analysis identifies the total revenue requirement to fully fund the water system on a self-supporting basis, considering operating and maintenance expenditures, capital funding needs, debt requirements and fiscal policy objectives.
- **Rate Design Analysis.** This analysis includes the development of rates that generate sufficient revenue to meet the system’s revenue requirement forecast and addresses the District’s pricing goals and objectives.

Figure 1 illustrates the rate study process.



II.B. REVENUE REQUIREMENT

A revenue requirement analysis forms the basis for a long-range financial plan and multi-year rate management strategy for the District. It also enables the District to set utility rate structures which fully recover the total cost of operating the water system: capital improvement and replacement, operations, maintenance, general administration, fiscal policy attainment, cash reserve management, and debt repayment. Linking rate levels to a financial plan such as this helps to enable not only sound financial performance for the District, but also a clear and reasonable relationship between the costs imposed on utility customers and the costs incurred to provide service.

A revenue requirement analysis includes the following core elements to form a complete portrayal of the District’s financial obligations:

- **Fiscal Policy Analysis.** Identifies formal and informal fiscal policies of the District to ensure that current policies are maintained, including reserve levels, capital/system replacement funding and debt service coverage.
- **Operating Forecast.** Identifies future annual non-capital costs associated with the operation, maintenance, and administration of the system.
- **Capital Funding Plan.** Defines a strategy for funding the District's capital improvement/equipment replacement program, including an analysis of available resources from rate revenues, debt financing, and any special resources that may be readily available (e.g. grants, outside contributions, etc.). Identifies if additional funding sources are needed.
- **Revenue Sufficiency Testing.** Evaluates the sufficiency of revenues in meeting all financial obligations, including any coverage requirements associated with long-term debt.
- **Rate Strategy Development.** Designs a forward-looking strategy for adjusting rates to fully fund all financial obligations on an annual basis over the projection period.

II.C. RATE DESIGN

The principal consideration of rate design is for the rate structure to generate sufficient revenues for the system which are reasonably commensurate with the cost of providing service. The pricing structure is largely dictated by the objectives of the system. Most rate structures consist of a combination of fixed and variable charges. Fixed charges typically attempt to cover system costs that do not vary with usage, but in practice only recover a portion of those costs (as the majority of utility costs are fixed in nature). Variable charges typically serve two functions, equitably recovering variable costs such as electricity and encouraging customers to use the system efficiently (e.g. conservation).

Section III. RATE STUDY

III.A. INTRODUCTION

King County Water District No. 49 (the “District”), was incorporated in 1933. The District lies close to the eastern shore of Puget Sound and encompasses approximately 3.32 square miles of mostly developed urban land, including portions of the cities of Burien, Normandy Park and SeaTac. As estimated by the District, the District currently has a population of approximately 16,000 residential and commercial users. The District’s offices are located in the City of Burien.

The District’s water supply and distribution system supplies water to approximately 4,100 metered accounts and includes a storage reservoir, a booster pump station facility and a transmission/distribution system consisting of approximately 59 miles of water mains and 640 fire hydrants with associated isolation valves, control valves and water services. The District’s service area is primarily residential with localized commercial development, including retail stores, shops and restaurants. There are also some existing industrial and warehouse complexes within the service area.

III.B. REVENUE REQUIREMENT

III.B.1. Operating Forecast

This study uses 2020 and 2021 budget documents as the primary basis for forecasting 2020 through 2029 expenses. The complete forecast can be found in the detailed financial model delivered to the District.

The ensuing discussion highlights the key assumptions used to develop the District’s operating forecast.

III.B.1.a Reserves

- **Operating Reserves.** A minimum of 150 days of operating and maintenance (O&M) expenses (\$1.3 million to \$1.9 million), per the District’s financial policies as documented in Resolution 17-1271.
- **Capital Contingency Reserves.** A target of \$350,000, per the District’s financial policies as documented in Resolution 17-1271. The capital contingency reserve can be used to help meet the 150 day operating target.

III.B.1.b Operating Revenues

- **Retail Rate Revenue.** Retail rate revenue projections were derived by applying the annual growth rates to an estimate of 2020 year end revenues.
- **Non-Rate Revenue.** Non-rate revenue consists primarily of penalties, miscellaneous and interest income revenue (based on budget provided by District).
- **Customer Growth.** Growth rate for accounts and consumption was assumed at 1.00 percent per year (based on discussion with District staff).
- **Interest Earnings.** 0.50 percent in 2020 and 2021, increasing to 1.00 percent per year thereafter (based discussions with District staff).

III.B.1.c O&M Expenses

- **General Cost Inflation.** 2.50 percent per year (based on the 2019 average Consumer Price Index (CPI) and discussion with District staff).
- **Construction Cost Inflation.** The provided capital improvement program was assumed to be based on 2020 dollars. To project costs beyond 2020 an annual escalation rate of 3.50 percent per year was applied to each project to the year of construction (based on the Engineering News Records (ENR) 20-City three-year average and discussion with District staff).
- **Labor Cost Inflation.** Tied to general cost inflation at 2.50 percent per year for the majority of the forecast period. Labor cost inflation increases to 3.00 percent in 2022 and 2023, based on discussions with District staff.
- **Benefit Cost Inflation.** 5.00 percent per year (based on discussions with District staff).
- **Taxes.** State excise taxes were calculated based on projected revenue and prevailing tax rates.
- **New FTE.** A new entry level field employee is forecast to start in April of 2021. The partial year salary is assumed at \$62,000 including benefit expenses. Starting in 2022 the assumed full year wages and benefits are \$86,400.

III.B.1.d Debt Service

- **Existing Debt.** The District's existing debt consists of one (1) 2017 revenue bond, which includes the refinancing of the 2007 bond, and three (3) Public Works Trust Fund (PWTF) loans. Over the study period, annual existing debt service ranges from an average of \$776,000 to \$719,000 per year as the 2000 and 2005 PWTF loan are fully repaid.
- **New Debt.** One new debt issuance of \$8.0 million is anticipated within the rate study period to help fund the storage reservoir project. The District has secured a low interest PWTF loan and has started to draw the proceeds in 2020. The estimated annual debt service payments are projected to begin in 2021 and range from \$186,000 to \$570,000 based on the assumed timing of the loan draws.

III.B.1.e System Reinvestment

- System reinvestment funding policies aim to ensure system integrity through reinvestment in capital infrastructure. There are a variety of funding benchmarks – utilities most commonly use annual depreciation expense to establish an annual funding provision. Based on the District's financial records, the District's 2019 annual depreciation was \$581,000. While annual depreciation is a good starting point for funding capital reinvestment, it is below replacement cost. Ideally the District would develop an asset management plan, which would identify the actual needs of the system. The WSP CIP informally addresses this to some degree. Most of the projects recommended in the 20-year CIP are projects to replace the existing mains due to their age and/or substandard material.
- To avoid additional rate pressure, this study does not incorporate full depreciation funding for annual system reinvestment funding. Instead, system reinvestment funding is phased in over time starting at \$325,000 in 2020 increasing to \$700,000 by 2029 – 67 percent of estimated annual depreciation. The District should revisit the system reinvestment phase-in strategy during the next rate study update.

III.B.2. Capital Funding Plan

The District's 2020 through 2029 capital plan includes \$23.3 million in anticipated expenditures on capital projects. The projects include: Additional Storage Reservoir and Booster Pump Station Improvements, Water Main Replacement Projects and a District Office project. The capital funding

strategy envisions funding these projects through a mix of available cash balances (including interest), system reinvestment funding, transfers above minimum operating target balances to capital and new debt service through a Public Works Trust Fund loan. **Table 1** provides a summary of the funding sources for the capital funding expenditures. A detailed capital plan can be found in the excel model provided to the District.

Table 1. Capital Funding Summary

Year	Capital Costs	System Reinvestment	Cash	New Debt	Total Funding
2020	\$ 4,612,928	\$ 325,000	\$ 3,087,928	\$ 1,200,000	\$ 4,612,928
2021	9,050,040	450,000	1,800,040	6,800,000	9,050,040
2022	-	-	-	-	-
2023	524,424	524,424	-	-	524,424
2024	1,121,718	550,000	571,718	-	1,121,718
2025	5,561,935	575,000	4,986,935	-	5,561,935
2026	-	-	-	-	-
2027	854,972	650,000	204,972	-	854,972
2028	1,006,042	675,000	331,042	-	1,006,042
2029	536,982	536,982	-	-	536,982
Total	\$ 23,269,039	\$ 4,286,405	\$ 10,982,634	\$ 8,000,000	\$ 23,269,039

III.B.3. Summary of Revenue Requirement

The operating forecast components of O&M expenses, debt service and rate-funded system reinvestment come together to form the multi-year revenue requirement. The revenue requirement compares the overall revenue available to the District to the expenses and evaluates the sufficiency of rates on an annual basis. **Table 2** provides a summary of the revenue requirement forecast.

Table 2. Revenue Requirement Summary

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Revenues										
Rate Revenues Under Existing Rates	\$ 4,410,093	\$ 4,454,194	\$ 4,498,736	\$ 4,543,724	\$ 4,589,161	\$ 4,635,053	\$ 4,681,403	\$ 4,728,217	\$ 4,775,499	\$ 4,823,254
Non-Rate Revenues	169,398	188,249	192,955	192,574	192,769	194,190	173,503	176,392	180,798	185,321
Total Revenues	\$ 4,579,492	\$ 4,642,443	\$ 4,691,691	\$ 4,736,298	\$ 4,781,930	\$ 4,829,243	\$ 4,854,906	\$ 4,904,609	\$ 4,956,297	\$ 5,008,575
Expenses										
Cash Operating Expenses	\$ 3,109,256	\$ 3,492,527	\$ 3,629,071	\$ 3,751,964	\$ 3,875,377	\$ 4,003,277	\$ 4,135,838	\$ 4,273,243	\$ 4,415,681	\$ 4,563,349
Existing Debt Service	774,235	777,555	778,192	778,130	775,543	772,357	751,417	519,688	752,684	752,279
New Debt Service	-	186,385	569,574	562,567	555,560	548,554	541,547	534,541	527,534	520,527
Rate Funded System Reinvestment	325,000	450,000	450,000	525,000	550,000	575,000	625,000	650,000	675,000	700,000
Total Expenses	\$ 4,208,491	\$ 4,906,468	\$ 5,426,836	\$ 5,617,661	\$ 5,756,481	\$ 5,899,187	\$ 6,053,803	\$ 6,077,472	\$ 6,370,898	\$ 6,536,155
Net Surplus (Deficiency)	\$ 371,001	\$ (264,024)	\$ (735,145)	\$ (881,363)	\$ (974,551)	\$ (1,069,945)	\$ (1,198,897)	\$ (1,172,863)	\$ (1,414,601)	\$ (1,527,579)
Total Surplus (Deficiency)	\$ 371,001	\$ (264,024)	\$ (735,145)	\$ (881,363)	\$ (974,551)	\$ (1,069,945)	\$ (1,198,897)	\$ (1,172,863)	\$ (1,414,601)	\$ (1,527,579)

Key findings of the revenue requirement analysis include:

- Starting in 2021, rate revenue at current levels are not sufficient to meet the District’s financial obligations; the annual deficiency is \$264,000 in 2021, increasing to \$1.53 million by 2029.
- Rate increases are needed due to:
 - » New debt service necessary to complete the capital program ranging from \$186,000 in 2021 to \$520,000 in 2028. This added debt service increases total debt service from \$775,000 in 2020 to \$1.3 million by 2022 when the full payments on the 2020 P WTF loan begin;
 - » Phasing-in annual system reinvestment; and
 - » Operating and maintenance cost increases.

Table 3 provides a summary of the existing bi-monthly water rates.

Table 3. Existing Bi-Monthly Water Rates

Description	2020 Existing
Fixed Bi-Monthly	
Single Family	\$ 40.32
Multi Family	\$ 31.37
Commercial	
5/8"-3/4"	\$ 66.60
1"	165.77
1.5"	332.44
2"	530.77
3"	1,061.51
4"	1,658.63
6"	2,253.61
8"	5,307.72
Discount	\$ 20.16
Irrigation	
5/8"-3/4"	\$ 32.55
1"	81.54
1.5"	165.77
2"	266.13
Volume Charge (per ccf)	
Single Family	
Block 1 (0-10ccf)	\$ 3.88
Block 2 (11-16 ccf)	4.78
Block 3 (17+ ccf)	6.57
Multi Family/ Commercial	\$ 4.48
Discount	\$ 3.88
Irrigation	\$ 6.57
Unmetered Water	\$ 5.67

III.C.2. Proposed Monthly Water Rates

The proposed water rates do not include any structural change. The overall increases are applied equally to all classes across the board to each fixed and variable charge. **Table 4** provides a summary of the proposed rates for the 10-year rate setting period. Rates shown in **Table 4** do not include the City of Burien taxes.

- To meet the total projected financial obligations of the District, rate increases are proposed at 4.10 percent per year from 2021 through 2024 and 3.25 percent 2025 through 2028 before dropping to 2.0 percent thereafter. With prudent financial management at the District, this rate path has not deviated from the original rate path proposed in the 2017 study.
 - » 2021 rate increase assumes April 1st implementation; and
 - » 2022 rate increase and thereafter are assumed January 1st of each year.
- With the proposed rate adjustments, the District is expected to meet its minimum operating and capital balance targets and bond coverage requirements in every year of the study period.
- With the updated O&M expenses and debt requirements, the District will need to use approximately \$1.3 million in reserves to cover all financial obligations from 2021-2026 as the new debt service is realized.

III.C. RATE DESIGN

The principal objective of the rate design stage is to develop rate structures that collect the appropriate level of revenue identified in the revenue requirement and cost of service analysis. As a cost of service analysis was not performed in this study, recommended rates were determined by applying the aggregate revenue adjustments across-the-board (equally to all components and classes) to the existing rate structure.

III.C.1. Existing Bi-Monthly Rates

The District's existing rates are composed of a fixed bi-monthly charge and a volume charge per 100 cubic feet (ccf) of water consumption.

- Fixed charges do not change by meter size for single family or multi-family customers, however multi-family customers are assessed the fixed charge per unit;
- Fixed charges vary by meter size for commercial and irrigation customers, increasing with the size of the meter;
- Single family volume charge is based on a three (3) tier structure, where the per ccf cost increases as more water is used;
- The volume rate for all other classes is based on a uniform rate structure, where all usage is charged at the same rate based on the class;
- A discounted rate is available; and
- Rates shown in **Table 3** do not include the City of Burien taxes.



Water District #49
Water Rate Study
 Functional Allocation

Allocation of Plant in Service										
Plant in Service	Total Costs	FUNCTIONS OF WATER SERVICE							TOTAL	ALLOCATION BASIS
		CUSTOMER	METERS & SERVICES	BASE	PEAK	FIRE PROTECTION	TAXES	AS ALL OTHERS		
Supply/ Treatment	\$ 15,468	0.00%	0.00%	51.28%	48.72%	0.00%	0.00%	0.00%	100.00%	As Peak to Average Ratio
Pumping	2,820,630	0.00%	0.00%	19.88%	36.65%	43.48%	0.00%	0.00%	100.00%	As Pumping Analysis
Storage	8,149,111	0.00%	0.00%	66.25%	10.13%	23.63%	0.00%	0.00%	100.00%	As Storage Analysis
Transmission & Distribution	16,736,892	0.00%	0.00%	45.18%	42.92%	11.89%	0.00%	0.00%	100.00%	As T&D Incremental
Meters & Services	1,017,146	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	As Meters & Services
Hydrants	1,309,115	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	As Fire
General	2,961,874	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	As All Other
Total Utility Plant	\$ 33,010,236	\$ -	\$ 1,017,146	\$ 13,529,365	\$ 9,050,347	\$ 6,451,504	\$ -	\$ 2,961,874	\$ 33,010,236	
Water Service Functions		0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	-	100.00%	
Allocation of "As All Others"		\$ -	\$ 100,260	\$ 1,333,592	\$ 892,095	\$ 635,926	\$ -	\$ (2,961,874)	\$ -	
TOTAL	\$ 33,010,236	\$ -	\$ 1,117,407	\$ 14,862,958	\$ 9,942,442	\$ 7,087,430	\$ -	\$ -	\$ 33,010,236	
Allocation Percentages		0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	

Allocation of Pumping										
Pumps [a]	Pumping Capacity (gpm)	FUNCTIONS OF WATER SERVICE							TOTAL	ALLOCATION BASIS
		CUSTOMER	METERS & SERVICES	BASE	PEAK	FIRE PROTECTION	TAXES	AS ALL OTHERS		
Pump 1	800	0.00%	0.00%	51.28%	48.72%	0.00%	0.00%	0.00%	100.00%	As Peak to Average Ratio
Pump 2	800	0.00%	0.00%	51.28%	48.72%	0.00%	0.00%	0.00%	100.00%	As Peak to Average Ratio
New BPS Pump 1	800	0.00%	0.00%	63.00%	37.00%	0.00%	0.00%	0.00%	100.00%	As New BPS
New BPS Pump 2	800	0.00%	0.00%	63.00%	37.00%	0.00%	0.00%	0.00%	100.00%	As New BPS
New BPS Pump 3	2,000	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	As Peak
New BPS Pump 4	2,000	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	As Fire
New BPS Pump 5	2,000	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	As Fire
Total Pumping	9,200	-	-	1,829	3,371	4,000	-	-	9,200	
Water Service Functions		0.00%	0.00%	19.88%	36.65%	43.48%	0.00%	-	100.00%	
Allocation of "As All Others"		-	-	-	-	-	-	-	-	
TOTAL	9,200	-	-	1,829	3,371	4,000	-	-	9,200	
Allocation Percentages		0.00%	0.00%	19.88%	36.65%	43.48%	0.00%	0.00%	100.00%	

[a] Source: CHS email 2/7/19

APPENDIX

With the increased borrowing associated with the capital program, the District will need to use approximately \$1.3 million in reserves to cover all financial obligations from 2021-2026 as the new debt service is realized.

We recommend that the District revisit the study findings during the annual budget cycle to check that the assumptions used are still appropriate and no significant changes have occurred that would alter the results of the study. The District should continue to monitor the financial status of the system, adjusting the rate strategy as needed.

The detailed technical exhibits developed as part of the rate study can be found in the excel model provided to the District. A separate appendix is attached to show the details behind the fire protection share of the revenue requirement.

Table 4. Proposed Bi-Monthly Water Rates

Description	2020 Existing	2021	2022	2023	2024	2025	2026	2027	2028	2029
Fixed Bi-Monthly										
Single Family	\$ 40.32	\$ 41.97	\$ 43.69	\$ 45.48	\$ 47.34	\$ 48.88	\$ 50.47	\$ 52.11	\$ 53.80	\$ 54.88
Multi Family	\$ 31.37	\$ 32.66	\$ 34.00	\$ 35.39	\$ 36.84	\$ 38.04	\$ 39.28	\$ 40.56	\$ 41.88	\$ 42.72
Commercial										
5/8"-3/4"	\$ 66.60	\$ 69.33	\$ 72.17	\$ 75.13	\$ 78.21	\$ 80.75	\$ 83.37	\$ 86.08	\$ 88.88	\$ 90.66
1"	165.77	172.57	179.65	187.02	194.69	201.02	207.55	214.30	221.26	225.69
1.5"	332.44	346.07	360.26	375.03	390.41	403.10	416.20	429.73	443.70	452.57
2"	530.77	552.53	575.18	598.76	623.31	643.57	664.49	686.09	708.39	722.56
3"	1,061.51	1,105.03	1,150.34	1,197.50	1,246.60	1,287.11	1,328.94	1,372.13	1,416.72	1,445.05
4"	1,658.63	1,726.63	1,797.42	1,871.11	1,947.83	2,011.13	2,076.49	2,143.98	2,213.66	2,257.93
6"	2,253.61	2,346.01	2,442.20	2,542.33	2,646.57	2,732.58	2,821.39	2,913.09	3,007.77	3,067.93
8"	5,307.72	5,525.34	5,751.88	5,987.71	6,233.21	6,435.79	6,644.95	6,860.91	7,083.89	7,225.57
Discount	\$ 20.16	\$ 20.99	\$ 21.85	\$ 22.75	\$ 23.68	\$ 24.45	\$ 25.24	\$ 26.06	\$ 26.91	\$ 27.45
Irrigation										
5/8"-3/4"	\$ 32.55	\$ 33.88	\$ 35.27	\$ 36.72	\$ 38.23	\$ 39.47	\$ 40.75	\$ 42.07	\$ 43.44	\$ 44.31
1"	81.54	84.88	88.36	91.98	95.75	98.86	102.07	105.39	108.82	111.00
1.5"	165.77	172.57	179.65	187.02	194.69	201.02	207.55	214.30	221.26	225.69
2"	266.13	277.04	288.40	300.22	312.53	322.69	333.18	344.01	355.19	362.29
Volume Charge (per ccf)										
Single Family										
Block 1 (0-10ccf)	\$ 3.88	\$ 4.04	\$ 4.21	\$ 4.38	\$ 4.56	\$ 4.71	\$ 4.86	\$ 5.02	\$ 5.18	\$ 5.28
Block 2 (11-16 ccf)	4.78	4.98	5.18	5.39	5.61	5.79	5.98	6.17	6.37	6.50
Block 3 (17+ ccf)	6.57	6.84	7.12	7.41	7.71	7.96	8.22	8.49	8.77	8.95
Multi Family/Commercial	\$ 4.48	\$ 4.66	\$ 4.85	\$ 5.05	\$ 5.26	\$ 5.43	\$ 5.61	\$ 5.79	\$ 5.98	\$ 6.10
Discount	\$ 3.88	\$ 4.04	\$ 4.21	\$ 4.38	\$ 4.56	\$ 4.71	\$ 4.86	\$ 5.02	\$ 5.18	\$ 5.28
Irrigation	\$ 6.57	\$ 6.84	\$ 7.12	\$ 7.41	\$ 7.71	\$ 7.96	\$ 8.22	\$ 8.49	\$ 8.77	\$ 8.95
Unmetered Water	\$ 5.67	\$ 5.90	\$ 6.14	\$ 6.39	\$ 6.65	\$ 6.87	\$ 7.09	\$ 7.32	\$ 7.56	\$ 7.71

III.D. FIRE PROTECTION SHARE OF REVENUE REQUIREMENT

Beginning January 1st, 2021, the City of Burien has begun charging an 8.00 percent tax on the customers served by King County Water District #49 that reside within the City limits. While this new tax will apply to the rate revenues generated from customers, it does not apply to revenues derived from governmental activities, such as providing fire protection. In order to identify the portion of revenue related to fire protection, the functional allocation developed during the 2016 and 2019 rate and general facilities (GFCs) rate study was utilized. Incorporating the functional allocation into the current rate update indicates that approximately 15.00 percent of the overall revenue requirement is associated with providing fire protection. Adjusting the 8.00 percent City tax for the fire protection, results in a net tax rate of 6.80 percent. The detailed functional allocation can be found in the appendix to this report.

III.E. SUMMARY

District rate revenues at current levels are not sufficient to fund ongoing water system obligations. **Table 2** shows an operating deficit of \$264,000 in 2021 – given anticipated increases in operating costs, system reinvestment funding phase in and the new debt service associated with the capital improvement program. This deficit would increase to \$1.53 million by 2029 without a rate adjustment. To meet the revenue requirement, the revenue strategy proposes a 4.10 percent increase each year from 2021 through 2024 and 3.25 percent each year from 2025 through 2028, before dropping to 2.00 percent in 2029. The 2021 rate increase assumes April 1st implementation. All future increases assume January 1st effective dates. The rate forecast shown in **Table 4** assumes that these increases are applied equally to all classes and charges and no structural changes are proposed.



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Allocation of Storage											
Function	Million Gallons of Storage [a]	FUNCTIONS OF WATER SERVICE								TOTAL	ALLOCATION BASIS
		CUSTOMER	METERS & SERVICES	BASE	PEAK	FIRE PROTECTION	TAXES	AS ALL OTHERS			
Operational Storage	0.12	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	As Base
Equalizing Storage	0.41	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	As Peak
Fire Suppression	0.95	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	As Fire
Emergency (Standby) Storage	2.55	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	As Base
Dead/Unusable	0.17	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	As All Other
Total Storage	4.19	-	-	2.66	0.41	0.95	-	0.17	-	4.19	
Water Service Functions		0.00%	0.00%	66.25%	10.13%	23.63%	0.00%	-	-	100.00%	
Allocation of "As All Others"		-	-	0.12	0.02	0.04	-	(0.17)	-	-	
TOTAL	4.19	-	-	2.78	0.42	0.99	-	-	-	4.19	
Allocation Percentages		0.00%	0.00%	66.25%	10.13%	23.63%	0.00%	0.00%	0.00%	100.00%	

[a] Source: CHS email 2/7/19

Allocation of Transmission & Distribution - Incremental Fire Cost Methodology												
Main Size	Length [a]	Replacement Cost per lf [b]	Estimated Cost	Incremental Fire Cost	FUNCTIONS OF WATER SERVICE					TOTAL	ALLOCATION BASIS	
					BASE	PEAK	FIRE PROTECTION	TAXES	AS ALL OTHERS			
<4" (assumes 2")	3,796	\$ 132	\$ 501,072		51.28%	48.72%	0.00%	0.00%	0.00%	100.00%	As Peak to Average Ratio	
4-in	11,832	242	2,863,344		51.28%	48.72%	0.00%	0.00%	0.00%	100.00%	As Peak to Average Ratio	
6-in	39,928	297	11,858,616		51.28%	48.72%	0.00%	0.00%	0.00%	100.00%	As Peak to Average Ratio	
8-in	218,160	352	76,792,320	\$ 11,998,800	43.27%	41.11%	15.63%	0.00%	0.00%	100.00%	8" Fire Increment	
10-in	21,400	380	8,121,300	588,500	47.57%	45.19%	7.25%	0.00%	0.00%	100.00%	10" Fire Increment	
12-in	22,114	396	8,757,144	364,881	49.15%	46.69%	4.17%	0.00%	0.00%	100.00%	12" Fire Increment	
16-in	-	-	-	-	51.28%	48.72%	0.00%	0.00%	0.00%	100.00%	As Peak to Average Ratio	
18-in	-	-	-	-	51.28%	48.72%	0.00%	0.00%	0.00%	100.00%	As Peak to Average Ratio	
20-in	-	-	-	-	51.28%	48.72%	0.00%	0.00%	0.00%	100.00%	As Peak to Average Ratio	
24-in	-	-	-	-	51.28%	48.72%	0.00%	0.00%	0.00%	100.00%	As Peak to Average Ratio	
30-in	-	-	-	-	51.28%	48.72%	0.00%	0.00%	0.00%	100.00%	As Peak to Average Ratio	
Total T&D	317,230		\$108,893,796	\$ 12,952,181	\$ 49,200,828	\$ 46,740,787	\$ 12,952,181	\$ -	\$ -	\$ 108,893,796		
Water Service Functions					45.18%	42.92%	11.89%	0.00%	-	100.00%		
Allocation of "As All Others"					-	-	-	-	-	-		
TOTAL	317,230		\$108,893,796	\$ 12,952,181	\$ 49,200,828	\$ 46,740,787	\$ 12,952,181	\$ -	\$ -	\$ 108,893,796		
Allocation Percentages					45.18%	42.92%	11.89%	0.00%	0.00%	100.00%		

[a] & [b] Source: CHS email 2/7/19



Water District #49
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Allocation of Operating Expenses										
Test Year =>		2021								
Description	Total Costs	FUNCTIONS OF WATER SERVICE							TOTAL	ALLOCATION BASIS
		CUSTOMER	METERS & SERVICES	BASE	PEAK	FIRE PROTECTION	TAXES	AS ALL OTHERS		
Excise Taxes [Extra]	\$ 228,472	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	As Taxes
	-	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	As Taxes
Operation and Maintenance Expense										
Salaries Outside Employees	\$ 349,325	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
Power & Other Utilities	60,202	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
Materials, Supplies and Parts	220,626	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
Street Lights	95,338	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	As All Other
Transportation Expenses	13,290	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
Miscellaneous Expenses	1,366,828	0.00%	0.00%	51.28%	48.72%	0.00%	0.00%	0.00%	100.00%	As Supply/ Treatment
General and Administrative Expenses										
Salaries Inside Employees	\$ 360,000	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
Employees Benefits	344,084	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
Office Supplies and Postage	18,734	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	As Customer
Insurance - Vehicles, Liability and Work Comp	50,443	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
Legal and Accounting	128,626	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
Engineering & Professional Services	144,067	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
Fees and Miscellaneous Expenses	50,094	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
New FTE										
Salary	\$ 35,100	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
Benefits [Extra]	27,300	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
Total Operating Expenses	\$ 3,492,527	\$ 18,734	\$ 60,360	\$ 1,503,809	\$ 1,202,964	\$ 382,851	\$ 228,472	\$ 95,338	\$ 3,492,527	
% Water Functions		0.59%	1.90%	47.46%	37.96%	12.08%			100.00%	
Allocation of "As All Others" & "Taxes"		\$ 1,914	\$ 6,168	\$ 153,673	\$ 122,930	\$ 39,123	\$ (228,472)	\$ (95,338)	\$ -	
TOTAL	\$ 3,492,527	\$ 20,648	\$ 66,529	\$ 1,657,482	\$ 1,325,894	\$ 421,974	\$ -	\$ -	\$ 3,492,527	
Allocation Percentages		0.59%	1.90%	47.46%	37.96%	12.08%	0.00%	0.00%	100.00%	



Water District #49
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Test Year =>		FUNCTIONS OF WATER SERVICE								
REVENUE REQUIREMENT	2021	FUNCTIONS OF WATER SERVICE							TOTAL	ALLOCATION BASIS
	Total Costs	CUSTOMER	METERS & SERVICES	BASE	PEAK	FIRE PROTECTION	TAXES	AS ALL OTHERS		
OPERATING AND CAPITAL EXPENSES										
Cash Operating Expenses	\$ 3,492,527	0.59%	1.90%	47.46%	37.96%	12.08%	0.00%	0.00%	100.00%	As O&M
Existing Debt Service	856,500	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
New Debt Service	107,440	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
Rate Funded System Reinvestment	450,000	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
Total Expenses	\$ 4,906,468	0.42%	2.33%	46.76%	35.70%	14.79%	0.00%	0.00%	100.00%	
OTHER REVENUES AND ADJUSTMENTS										
Less:										
Operating Fund & Debt Reserve Fund Interest Earnings	\$ -	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	As All Other
General Facilities Charge Revenue Towards Debt	-	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
Fees and Other Services	(96,860)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	As All Other
Other Revenues / Street Lights	(91,388)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	As All Other
Plus										
Additional (Reduction of) Taxes Due to Rate Increases	6,123	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	As Taxes
Net Cash Flow After Rate Increase	(148,399)	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
Partial Year Adjustment	60,874	0.00%	3.39%	45.03%	30.12%	21.47%	0.00%	0.00%	100.00%	As Plant In Service
Rate Revenue Requirement	\$ 4,636,816	\$ 20,648	\$ 111,428	\$ 2,254,704	\$ 1,725,401	\$ 706,761	\$ 6,123	\$ (188,249)	\$ 4,636,816	
Water Service Functions		0.43%	2.31%	46.79%	35.80%	14.67%			100.00%	
Allocation of "As All Other" & "Taxes"		(780)	(4,211)	(85,214)	(65,209)	(26,711)	(6,123)	188,249		
Rate Revenue Requirement	\$ 4,636,816	\$ 19,868	\$ 107,217	\$ 2,169,491	\$ 1,660,191	\$ 680,050	\$ -	\$ -	\$ 4,636,816	
Allocation Percentages		0.43%	2.31%	46.79%	35.80%	14.67%	0.00%	0.00%	100.00%	