City of Anacortes

SEWER RATE DESIGN AND WATER/SEWER GENERAL FACILITIES CHARGES

May 2020

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May 29, 2020

Fred Buckenmeyer, Public Works Director
City of Anacortes
904 6th Street
P.O. Box 547
Anacortes, WA 98221

Subject: Sewer Utility Rate Design and Water/Sewer GFCs

Dear Mr. Buckenmeyer:

FCS GROUP is pleased to submit this final report summarizing the results of the sewer utility rate design and water/sewer general facility charge (GFC) study. In November 2018, FCS GROUP conducted a revenue requirement forecast for the sewer utility. Overall increases of 7% per year were adopted by Council in order to meet operating and capital needs with a moderate amount of debt. This report summarizes Phase II of the study. It includes a cost of service analysis, an analysis of several sewer rate design issues, and updated GFCs for both water and sewer utilities. This analysis was presented to the City Council in September 2019. The City Council adopted new water and sewer GFCs in November 2019 and a new schedule of sewer rates in December 2019.

This report documents the Phase II analysis for future reference. In addition, it compares the adopted water and sewer rates and GFCs with the rates and GFCs recommended in the September 2019 presentation and the 2017 water rate study. It includes suggestions for changes if the City intends for its rates and GFCs to match the recommended levels after adjusting for the impact of City and State taxes. The tables in this report include the April 2020 increase in the State B&O tax rate from 1.5% to 1.75%.

It has been a pleasure to work with you and other City staff on this effort. Please let us know if you have any questions or need additional information. We can be reached at (425) 867-1802.

Sincerely,

Gordon Wilson
Senior Program Manager

Tage Aaker
Project Manager

Amanda Levine
Analyst

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Section I. INTRODUCTION

The City of Anacortes contracted with FCS GROUP to perform a sewer rate study. The study had two phases.

- Phase I: Sewer revenue requirement update.
  - Purpose is to identify the amount of rate revenue the sewer utility needs to cover operating, capital and debt service costs over a multi-year period.
- Phase II: Sewer cost of service and rate design, and general facility charge (GFC) update for both water and sewer.
  - Purpose is to ensure that sewer revenue is recovered from customer classes in an equitable manner.
  - Purpose is to develop an updated, defensible GFC for the water and sewer utilities.

Phase I was completed in 2018 and the results presented to the City Council in November 2018. The Council adopted a plan of overall sewer rate increases of 7% per year through 2024.

Phase II was completed and presented to the Council in September 2019. The Council adopted new GFCs in November 2019. In December 2019, the Council adopted a revised sewer rate schedule that incorporated the findings of the cost-of-service analysis and rate design study.

This report provides documentation of the Phase II analysis for future reference. In addition, it reconciles the 2020 adopted water and sewer rates and GFCs with the rates and GFCs recommended in the September 2019 presentation and the 2017 water rate study. It includes suggestions for changes if the City intends for its rates and GFCs to match the recommended levels after adjusting for the impact of City and State taxes. The tables in this report include the April 2020 increase in the State B&O tax rate from 1.5% to 1.75%.

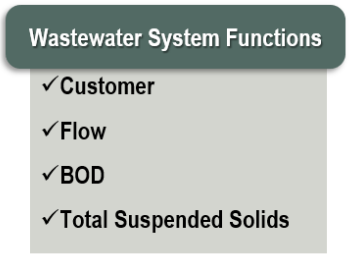
Section II. Sewer Cost of Service Analysis

A cost-of-service analysis (COSA) identifies how costs should be equitably distributed among customer classes. This cost allocation is based on industry-standard methodology, along with City-specific usage characteristics and design standards applicable to each class. The most equitable distribution of rate burden to each class—as revealed by the COSA—is compared with the current actual distribution of the rate burden, and this comparison shows where a relative shift in rates is needed.

ALLOCATION TO SYSTEM FUNCTIONS

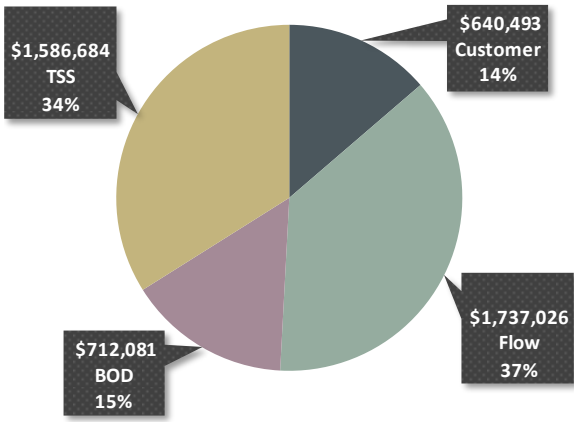
The first step in the COSA process is for the sewer utility budget to be allocated to cost pools representing different functions of wastewater service. **Exhibit 1** shows the functional cost categories for the sewer utility.

Exhibit 1: COSA Process Step 1



Some budget categories are spread across more than one function. Treatment plant expenses as a group were assigned 10% to Customer, 40% to Flow, 25% to BOD (biochemical oxygen demand, a measure of wastewater strength), and 25% to Total Suspended Solids (TSS). Solids handling costs were assigned 100% to TSS, and pumping expenses were assigned 100% to Flow. Collection system administration expenses were divided between Customer (21%) and Flow (79%) based on the estimated proportion of lineal feet between sewer laterals (since there is one lateral per customer) and sewer mains. **Exhibit 2** shows the results of the wastewater functional allocation.

Exhibit 2: Cost Allocation to Wastewater Functions



ALLOCATION TO CUSTOMER CLASSES

The City's customer classes are Single Family Residential and four different strength levels of Non-Single Family (commercial and multi-family). After the initial allocation of costs to system functions, we develop allocation factors to spread the cost of each system function to the various customer classes. For example, we use number of accounts to allocate Customer costs and winter average water use to allocate Flow-related costs.

For the BOD and Total Suspended Solids functions, costs are allocated to customer groups based on winter average water use, adjusted by the concentration limit for each high-strength class. For example, typical residential strength (or "domestic strength") for BOD is defined as a concentration of up to 300 milligrams per liter (mg/l), and that is also the maximum BOD concentration for the non-single family SIC 1 class. The BOD limit for the SIC 2 class is 500 mg/l, which is 1.67 times the SIC 1 limit of 300 mg/l. In allocating BOD costs, we multiply the winter average water use of the SIC 2 customer class by 1.67, to account for the fact that SIC 2 customers generate higher demands for the treatment of BOD. The same approach is taken for the other high-strength commercial classes. As it happens, the concentration thresholds for Total Suspended Solids are the same as for BOD—300 mg/l for domestic strength; 500 mg/l for SIC 2, and 700 mg/l for SIC 3. (SIC 4 customers receive separate charges for flow, individually measured BOD, and individually measured TSS.)

After we allocate the function costs to customer classes, we can compare what the distribution of the rate burden *should be* (according to the cost-of-service analysis) with what the distribution of the rate burden *actually is* (according to recent billing data). This comparison is shown in **Exhibit 3**. It reveals that in Anacortes, the single family class has been paying for 75% of the rate burden, while it should pay only 63% of the rate burden. To match each group's share of cost causation, single family rates should go down (in relative terms) by 16% and non-single family rates should go up (also in relative terms) by 47%. We say "in relative terms" because the shift that is needed occurs in the context of 7% overall rate increases needed each year, and it would likely take several years of gradual adjustment to reach the right balance between the cost of service and the distribution of the rate burden. Even so, it is clear that non-single family rates should go up faster than 7% per year, while single family rates should go up more slowly than 7% per year.

Exhibit 3: Summary of Allocation to Customer Class (rounded)

Customer Type	2018 Actual Collected		2018 Cost of Service		COSA Rate Adjustment
Single Family	$3.5 million	75%	$2.9 million	63%	-16%
Non-Single Family	$1.2 million	25%	$1.7 million	37%	47%
Total	$4.7 million	100%	$4.7 million	100%	0%

Reason for Difference between Single Family and Non-Single Family Cost Share

Why should there be a shift in rate burden to the non-single family class? Non-single family rates are currently the same as single family rates for comparable strength and meter size. Shouldn't that lead to an equitable distribution of the rate burden? The answer is that non-single family users generate much higher flows per account. The Customer function (which is allocated equally to all customers) represents 14% of all costs, so if 14% of the City's sewer revenue were generated from fixed charges, cost-of-service equity could be achieved with the same rates between groups. But for the sake of revenue stability, 66% of sewer revenue comes from the fixed charge. And because non-single family customers use so much more water for a given meter size, they pay less per hundred cubic feet (ccf).

Exhibit 4 shows that among customers with 5/8" x 3/4" meters, single family accounts average just over 5 ccf per month in usage, while non-single family accounts average 33.5 ccf per month. They pay the same fixed charge. As a result, revenue from the fixed charge averages $6.66 per ccf for single family customers but only $1.01 per ccf for non-single family customers.

Exhibit 4: Example – Single Family vs. Non-Single Family Usage for 5/8" x 3/4" Meters

2018 Usage - 5/8"x3/4" meters	Single Family	Non-Single Family
2018 Billed Usage (ccf/mo)	32,743	14,698
Number of Customers	6,464	439
Average ccf/mo per Customer	5.1	33.5
2018 Monthly Fixed Charge	$ 33.75	$ 33.75
Avg Fixed Charge per ccf	$ 6.66	$ 1.01

Looking at all customers (not just those with 5/8" x 3/4" meters), **Exhibit 5** shows that the average charge per ccf for non-single family is currently just over half that of the single family class. After a cost-of-service adjustment, the average charge per ccf for the two groups would be nearly equal.

Exhibit 5: Average Charge per ccf - Current vs. Cost-of-Service

Average Charge per Hundred Cubic Feet (ccf)	Current Rate Design	After COSA Adjustment
Single Family	$10.03	$8.42
Non-Single Family	$5.49	$8.05

COSA = Cost-of-Service Analysis

PHASE-IN FOR COST-OF-SERVICE ADJUSTMENT

When large cost-of-service adjustments are needed, a phase-in period is advisable. **Exhibit 6** shows a hypothetical 5-year phase-in plan for a cost-of-service shift, simplified but similar to what is proposed for Anacortes. Because of the 7% overall rate increases, the single family class must still increase, but not as much as the non-single family class. After 2024, the COSA phase-in is complete, so starting in 2025, both classes see the same rate increases. Also in 2025, the planned series of 7% rate increases are complete. Here we assume an inflationary rate increase of 3% for 2025.

Exhibit 6: Illustration - 5-Year Phase-In for Cost-of-Service Adjustment

Hypothetical 5-year Phase-In for Cost-of-Service Adjustment	Single Family			Non-Single Family		
	Across the Board	Cost of Service	Combined Increase	Across the Board	Cost of Service	Combined Increase
2020	7%	-3%	4%	7%	10%	17%
2021	7%	-3%	4%	7%	10%	17%
2022	7%	-3%	4%	7%	10%	17%
2023	7%	-3%	4%	7%	10%	17%
2024	7%	-3%	4%	7%	10%	17%
2025	3%	0%	3%	3%	0%	3%

ATB = Across-the-Board, COS = Cost-of-Service

Section III. Sewer Rate Design Issues

Based on input from the staff and our review of the existing rate design, we identified some specific questions for the sewer rate design analysis. How should the fixed charge for small meters be handled? How should the duplexes and triplexes be classified? Should the Average Winter Water Use (AWWU) tiers for single family customers be continued or modified? The following rate design discussion addresses these questions. Two of these issues are easy to resolve, and one is more complicated. In each case the City Council adopted the recommended approach in the 2020 sewer rates.

FIXED CHARGE FOR SMALL METERS

The issue here is the treatment of two meter sizes: 5/8" x 3/4" and 3/4" x 3/4". In the City's customer base, 3/4" x 3/4" meters are uncommon—about 100 meters out of 7,300 total meters. In contrast, the 5/8" x 3/4" meter size is the most common, representing 95% of the total customer base. The 3/4" x 3/4" meters were sometimes installed in homes in past years, but there is not a clear difference between homes with 3/4" x 3/4" meters and those with 5/8" x 3/4" meters. Many utilities combine those two meter sizes for the purposes of ratemaking. In Anacortes prior to 2020, the two meter sizes paid the same fixed charge for water rates but separate fixed charges for sewer rates.

Our suggestion was that these two meter sizes be combined for sewer rates just as they were already for water rates. This change has a negligible effect on sewer rates because there are so few 3/4" x 3/4" meters.

CLASSIFICATION OF DUPLEX AND TRIPLEX

Prior to 2020, triplexes were classified as commercial customers, but duplexes were considered "residential" customers and charged two times the single family rate. The result was that often duplexes paid more than triplexes. Presumably, this was not the city's intent. We suggested that the city create two classes for sewer: single family and non-single family. The non-single family class would include duplexes and triplexes as well as other multi-family and commercial customers. For the non-single family class, there would still be wastewater strength classification (e.g. SIC 1, SIC2).

The water utility has three classes—multi-family is broken out from commercial—because seasonal peaking is a major consideration in water ratemaking. That is not the case for the sewer utility, so for sewer ratemaking, it is not necessary to group multi-family separately from commercial.

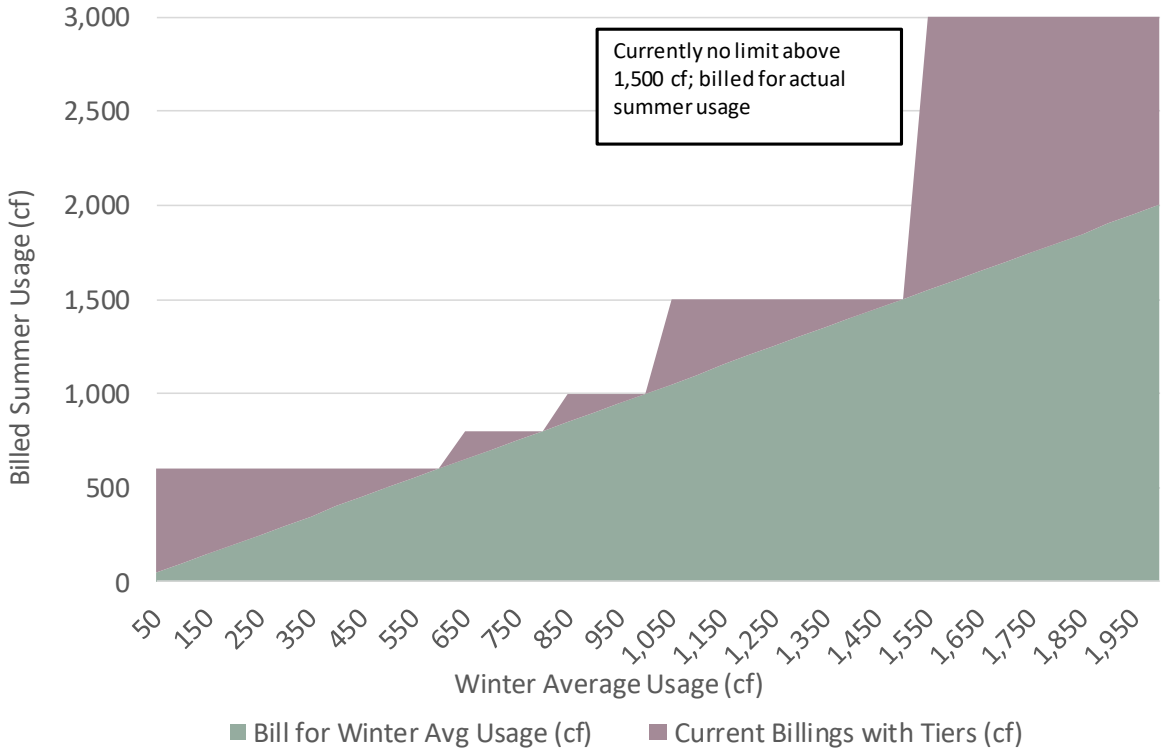
USAGE TIERS FOR SINGLE FAMILY CUSTOMERS

The City uses AWWU to charge for the following summer's sewer volume charges. This is a typical approach among sewer utilities that have a volume charge. Its purpose is to avoid charging sewer volume charges based on summer irrigation water, which does not enter the sewer system.

However, for Anacortes single family customers, prior to 2020 the average winter water usage was grouped into tiers for billing purposes. These tiers were complicated and hard to explain. In addition, the tiers resulted in a lot of billing for unused water. If the AWWU fell within a given tier, then the following summer, customers were billed for the *upper limit* for that tier, rather than their actual average. Furthermore, the top tier had no maximum, so those customers received sewer charges for

all of their summer irrigation use. As a result, approximately 10% of the billed usage was actually unused water. **Exhibit 7** shows this overstatement graphically.

Exhibit 7: Summer Billing Based on Winter Average Usage, With and Without Tiers



The lavender color represents billings in excess of actual usage. We recommended that the City switch from tiers to an individual cap. Each customer's winter average would create a cap for the following twelve months. If the actual usage is less than the cap, the bill is based on actual usage. According to the staff, this approach is compatible with the City's existing billing system.

Taking this approach will reduce billed usage by approximately 10% in 2020. To compensate for the expected drop in billed usage, there needs to be a one-time adjustment of just over 11% to the stated volume rates. This adjustment will not mean that single family customers' actual bills will be 11% higher, because on average, single family customers will also see less of their usage billed. But it does mean that the rate schedule will show a higher rate than it would otherwise.

Non-single family customers will be affected, too. The AWWU tiers were only used for single family customers. But because single family customers' billed volume was overstated, the published volume rates were lower than they would have been with accurate volumes. This distortion in ratemaking was an advantage to non-single family customers, because non-single family rates were pegged to the single family rates. So when single family rates were artificially low, non-single family volume rates ended up artificially low also, but without the offsetting effect of billing for too much volume. As a result, the correction for this distortion—increasing volume rates by over 11% in 2020—does affect non-single family customers, and the impact on them is not offset by an average reduction in billed volume.

Section IV. Impact of Cost of Service Shift

In the rate tables below, the recommended rate design solutions are assumed, including discontinuing the AWWU tiers for single family customers, combining the 3/4" x 3/4" meters with 5/8" x 3/4" meters, and moving duplexes to the "non-single family" class. As a result of moving from the AWWU tiers to an individual cap, a one-time increase of just over 11% in volume rates was assumed for 2020, in addition to the other rate design changes.

In addition to these changes, an important decision the Council had to make was whether to implement the cost-of-service shift. Overall sewer rate increases are planned at 7% per year through 2024. Prior to 2020, single family and non-single family fixed rates were the same for a given meter size, and the non-single family SIC 1 volume rate was linked to the single family volume rate.

After implementing the one-time increase in volume rates and other rate design adjustments, the cost-of-service analysis calls for decoupling the single family and non-single family rates, with single family rates growing by less than 7% per year and non-single family rates growing by more than 7% per year through 2024. If an across-the-board strategy were adopted instead of accepting the cost-of-service analysis, both sets of rates would grow by 7% per year through 2024, and the rates for the two groups would remain linked.

We presented to the City Council the impact of both options. **Exhibit 8** shows the potential rate forecast *without* the cost-of-service shift—that is, with across-the-board increases.

Exhibit 8: Rate Schedule without Cost-of-Service Shift

Rate Schedule	2019	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Annual Rate Increase Goal		7%	7%	7%	7%	7%	Annual Increase to Each Rate				
Monthly Fixed Charge											
Single Family											
0.625	$38.91	$41.63	$44.55	$47.67	$51.00	$54.57	7.0%	7.0%	7.0%	7.0%	7.0%
0.75	$46.71	$41.63	$44.55	$47.67	$51.00	$54.57	-10.9%	7.0%	7.0%	7.0%	7.0%
1	$54.50	$58.32	$62.40	$66.76	$71.44	$76.44	7.0%	7.0%	7.0%	7.0%	7.0%
1.5	$70.04	$74.94	$80.19	$85.80	$91.81	$98.23	7.0%	7.0%	7.0%	7.0%	7.0%
Non-Single Family											
0.625	$38.91	$41.63	$44.55	$47.67	$51.00	$54.57	7.0%	7.0%	7.0%	7.0%	7.0%
0.75	$46.71	$41.63	$44.55	$47.67	$51.00	$54.57	-10.9%	7.0%	7.0%	7.0%	7.0%
1	$54.50	$58.32	$62.40	$66.76	$71.44	$76.44	7.0%	7.0%	7.0%	7.0%	7.0%
1.5	$70.04	$74.94	$80.19	$85.80	$91.81	$98.23	7.0%	7.0%	7.0%	7.0%	7.0%
2	$112.87	$120.77	$129.22	$138.27	$147.95	$158.31	7.0%	7.0%	7.0%	7.0%	7.0%
3	$428.10	$458.07	$490.13	$524.44	$561.15	$600.43	7.0%	7.0%	7.0%	7.0%	7.0%
4	$544.86	$583.00	$623.81	$667.48	$714.20	$764.19	7.0%	7.0%	7.0%	7.0%	7.0%
6	$817.29	$874.50	$935.72	$1,001.22	$1,071.30	$1,146.29	7.0%	7.0%	7.0%	7.0%	7.0%
Usage Charges											
Single Family per CF	$0.02770	$0.03277	$0.03506	$0.03752	$0.04014	$0.04295	18.3%	7.0%	7.0%	7.0%	7.0%
Non-Single Family											
SIC 1 per CF	$0.02770	$0.03277	$0.03506	$0.03752	$0.04014	$0.04295	18.3%	7.0%	7.0%	7.0%	7.0%
SIC 2 per CF	$0.03459	$0.04092	$0.04379	$0.04685	$0.05013	$0.05364	18.3%	7.0%	7.0%	7.0%	7.0%
SIC 3 per CF	$0.06730	$0.07966	$0.08524	$0.09121	$0.09759	$0.10442	18.4%	7.0%	7.0%	7.0%	7.0%
SIC 4 per CF	$0.01095	$0.01296	$0.01387	$0.01484	$0.01588	$0.01699	18.4%	7.0%	7.0%	7.0%	7.0%
SIC 4 per Pound BOD	$1.45241	$1.55408	$1.66286	$1.77926	$1.90381	$2.03708	7.0%	7.0%	7.0%	7.0%	7.0%
SIC 4 per Pound TSS	$0.88622	$0.94826	$1.01463	$1.08566	$1.16165	$1.24297	7.0%	7.0%	7.0%	7.0%	7.0%

The highlighted costs show the relevant changes. The table shows that in the first year (2020), volume rates would increase between 18.3% and 18.4% for both single family and non-single family classes. While this change would apply to both customer classes equally, its impact would be more notable for non-single family customers, because they generate much more flow than single family

customers. For non-single family customers on average, the volume charge represents 59% of their total bill, compared to 25% for single family customers. In the across-the-board scenario, all rates after 2020 would increase at 7% per year.

Exhibit 9 shows the same forecast *with* the cost-of-service shift.

Exhibit 9: Rate Schedule with Cost-of-Service Shift

Rate Schedule	2019	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Annual Rate Increase Goal		7%	7%	7%	7%	7%	Annual Increase to Each Rate				
Monthly Fixed Charge											
Single Family											
0.625	$38.91	$40.27	$41.68	$43.14	$44.65	$46.21	3.5%	3.5%	3.5%	3.5%	3.5%
0.75	$46.71	$40.27	$41.68	$43.14	$44.65	$46.21	-13.8%	3.5%	3.5%	3.5%	3.5%
1	$54.50	$56.40	$58.38	$60.42	$62.54	$64.73	3.5%	3.5%	3.5%	3.5%	3.5%
1.5	$70.04	$72.51	$75.05	$77.68	$80.40	$83.21	3.5%	3.5%	3.5%	3.5%	3.5%
Non-Single Family											
0.625	$38.91	$45.09	$52.62	$60.84	$69.78	$79.52	15.9%	16.7%	15.6%	14.7%	14.0%
0.75	$46.71	$45.09	$52.62	$60.84	$69.78	$79.52	-3.5%	16.7%	15.6%	14.7%	14.0%
1	$54.50	$63.15	$73.70	$85.21	$97.74	$111.37	15.9%	16.7%	15.6%	14.7%	14.0%
1.5	$70.04	$81.19	$94.75	$109.54	$125.65	$143.18	15.9%	16.7%	15.6%	14.7%	14.0%
2	$112.87	$130.81	$152.66	$176.49	$202.44	$230.69	15.9%	16.7%	15.6%	14.7%	14.0%
3	$428.10	$496.17	$579.06	$669.43	$767.87	$875.01	15.9%	16.7%	15.6%	14.7%	14.0%
4	$544.86	$631.50	$736.99	$852.01	$977.30	$1,113.66	15.9%	16.7%	15.6%	14.7%	14.0%
6	$817.29	$947.25	$1,105.49	$1,278.02	$1,465.96	$1,670.50	15.9%	16.7%	15.6%	14.7%	14.0%
Usage Charges											
Single Family per CF	$0.02770	$0.03178	$0.03289	$0.03405	$0.03524	$0.03647	14.7%	3.5%	3.5%	3.5%	3.5%
Non-Single Family											
SIC 1 per CF	$0.02770	$0.03548	$0.04141	$0.04787	$0.05491	$0.06257	28.1%	16.7%	15.6%	14.7%	14.0%
SIC 2 per CF	$0.03459	$0.04431	$0.05172	$0.05979	$0.06858	$0.07815	28.1%	16.7%	15.6%	14.7%	14.0%
SIC 3 per CF	$0.06730	$0.08626	$0.10067	$0.11638	$0.13350	$0.15212	28.2%	16.7%	15.6%	14.7%	14.0%
SIC 4 per CF	$0.01095	$0.01403	$0.01638	$0.01894	$0.02172	$0.02475	28.2%	16.7%	15.6%	14.7%	14.0%
SIC 4 per Pound BOD	$1.45241	$1.67476	$1.95453	$2.25957	$2.59185	$2.95348	15.3%	16.7%	15.6%	14.7%	14.0%
SIC 4 per Pound TSS	$0.88622	$1.02189	$1.19259	$1.37872	$1.58147	$1.80212	15.3%	16.7%	15.6%	14.7%	14.0%

In December 2019, the City Council adopted 2020 sewer rates with the cost-of-service shift, as shown in **Exhibit 9**. As intended, this rate table progressively shifts the rate burden from single family to non-single family over the five-year period from 2020 through 2024.

For most non-single family customers, the fixed charge increases by between 16% and 14% per year over that period. The volume charge has the same pattern except that the first year includes the one-time adjustment, so that non-single family volume charges increase by just over 28% in 2020.

For most single family customers, the fixed and volume charges increase by 3.5% per year through 2024, except that the 2020 volume charge shows an increase of 14.7%.

For both single family and non-single family classes, customers with 3/4" x 3/4" meters would see one-time decreases in their 2020 fixed charge as a result of being grouped with 5/8" x 3/4" meters.

Most duplexes would also see a one-time decrease in 2020. (Only duplexes with very high water usage would be an exception.) A typical duplex (with a 5/8" x 3/4" meter) paid a 2019 fixed charge of 2 x $38.91 = $77.82 per month. After moving to the non-single family category but only being charged once, the fixed charge for a typical duplex in 2020 is $45.09 per month. If this duplex uses an average of 10.2 ccf per month of water (twice the average single family usage for that meter size), the volume charge would increase from $28.25 in 2019 to $36.19 in 2020. The combined monthly bill for a typical duplex would therefore decrease from $106.07 in 2019 to $81.28 in 2020. By 2024, however, the advantage of the classification change will be reversed for most duplexes—the savings in the fixed charge will be more than offset by higher volume charges.

Section V. General Facilities Charge (GFC) – Water & Sewer

Part of the scope of work for this study was to update the City's general facilities charges (GFCs) for both water and sewer systems.

GFCs are designed to recover from new development a proportionate share of the cost of capital facilities. GFCs are one time charges, not ongoing rates. They are payable at the time a structure is newly connected to the water or sewer system or a structure is redeveloped to a higher level of demand. GFC revenue may only be used for capital expenditures. The GFC calculation may be based on both future and existing cost components. GFCs recover the cost of system facilities, not property-specific facilities. For that reason, sewer laterals or water service lines that connect to individual properties are excluded from the calculation, as are water meters.

GENERAL METHODOLOGY

The general methodology for a GFC is to divide applicable capital costs (the numerator) by the applicable customer base (the denominator).

Cost Basis

The numerator, or *cost basis*, includes the cost of both existing assets and future planned capital improvements.

- **The cost of the existing system** includes the original cost of existing assets plus construction work in progress. Assets are excluded if they had outside funding such as grants, developer donations, or cost sharing from other agencies. Depreciation is not deducted; instead, the focus is on what the utility actually paid at the time the asset was placed in service. Interest on the asset cost is added for up to 10 years, using interest rates prevailing at the time of construction.

  We subtract outstanding debt principal, net of cash balances (but not less than zero). The rationale for that adjustment is that outstanding debt principal represents assets acquired but not yet paid for by existing ratepayers, so newly connecting property owners will be paying a share of that debt principal through their monthly rates. However, cash balances represent money that *has* already been collected from existing ratepayers—money that offsets the cost of future debt principal payments.

- **The cost of future improvements** includes projects in the 10-year adopted Capital Improvement Plan (CIP). Future capital costs are expressed in current dollars, not inflated dollars. Repair and replacement projects are excluded, since they do not add capacity or functionality to the system. CIP projects that are included are items like improvements, regulatory upgrades and expansions.

Units

The unit of measurement for the customer base (the denominator) may be equivalent residential units (ERUs), meter capacity equivalents (MCEs), or some other metric that can be converted to ERUs or MCEs. The choice of units in the GFC calculation depends on how the GFC is administered. In Anacortes, the water GFC is administered based on MCEs. The sewer GFC is administered based on ERUs. Sewer ERUs are calculated at the time the charge is applied, based on the nature and scale of

the development. In general, one ERU is intended to represent 192 gallons per day (gpd) of metered water usage. **Appendix A** contains a table and language from the Anacortes Municipal Code showing how a sewer ERU is defined for particular types of development.

The total denominator includes the number of ERUs or MCEs that can be served by existing capacity, plus the growth in capacity made possible by future capital projects.

GFC Calculation

In Washington, there is more than one method that can be used to construct a defensible GFC. Here we use the *average integrated method*, which provides stability over time and equity between new and existing customers. It is a simple calculation. The total cost (existing plus future assets) divided by the total MCEs or ERUs (existing capacity plus growth allowed by future capital investment) equals the General Facilities Charge. The GFC represents the average unit cost of capacity.

The following narrative describes how the general methodology for GFCs is applied to Anacortes.

WATER GFC

Water Cost Basis

Exhibit 10 shows the existing cost basis for the Anacortes retail water system. Anacortes also owns the regional water supply system, and only about 11% of the cost of the regional assets is borne by City retail customers. So the $75 million deduction shown in this table not only subtracts developer or grant-funded assets but also 89% of the cost of the regional assets. After the various adjustments shown in the table, the existing cost basis for the retail water system is $105.2 million.

Exhibit 10: Water GFC: Existing Cost Basis

Existing Cost Basis				
PLANT-IN-SERVICE				
Utility Capital Assets			$	148,873,122
less: Contributed Capital and Regional Assets				(75,044,559)
plus: Interest on Non-Contributed Plant				30,992,943
plus: Construction-Work-in-Progress				3,878,801
2018 Year-end Estimated Cash Balances	$	2,234,596		
less: Debt Principal Outstanding		(5,731,950)		
less: Net Debt Principal Outstanding			$	(3,497,354)
TOTAL EXISTING COST BASIS			**$**	**105,202,953**

The future cost basis is shown in **Exhibit 11**. After subtracting repair and replacement projects from the total CIP, the future cost basis for the Anacortes retail water system is $14.5 million.

Exhibit 11: Water GFC: Future Cost Basis

Future Cost Basis		
CAPITAL IMPROVEMENT PLAN (2019-2024)		
Total Citywide Projects (Retail System Only)	$	16,169,940
less: Repair & Replacement (R&R) Projects	$	(1,645,622)
Total	**$**	**14,524,318**
TOTAL FUTURE COST BASIS	**$**	**14,524,318**

Water Units and Results

The City charges its water GFC based on meter capacity-equivalents (MCEs), so the total customer base (the denominator in the calculation) is the total capacity of the retail water system expressed in MCEs. In a typical water GFC study, the system capacity figure comes from the capacity of the water treatment plant. However, in the case of Anacortes, the water treatment plant is a regional plant, which also serves four other municipal systems and two large oil refineries. It has far more available capacity than the City's retail customers might ever need, so water supply is not really the limiting factor for system capacity. However, the 2011 Water Comprehensive Plan ("Comp Plan") contains capacity data for the retail system's storage facilities. This analysis assumes that storage is the limiting factor for the retail system capacity.

The data in the Comp Plan still has to be converted to the right units: MCEs for buildout capacity. Data from a previous water rate study (in **Exhibit 12)** shows that as of 2015, the City retail water system had 9,907 MCEs.

Exhibit 12: Anacortes 2015 Meter Capacity-Equivalents

Meter Size	Meter Count	MCEs per Meter	Total MCEs
5/8" x 3/4"	7,365	1.00	7,365
3/4" x 3/4"	132	1.50	198
1"	221	2.50	553
1 1/2"	71	5.00	355
2"	114	8.00	912
3"	14	16.00	224
4"	6	25.00	150
6"	3	50.00	150
Total	7,926		9,907

The capacity estimates in the Comp Plan Tables 6-8 and 6-9 (Storage Analysis for Low and Mid Zones) are for average daily demand (ADD), expressed in gallons per day (gpd). Those tables provide estimates for 2015, 2029, and full buildout. **Exhibit 13** shows that the growth in storage capacity from 2015 to the full buildout is projected to be 67%. Applying that growth factor to the 2015 MCEs yields an estimated buildout storage capacity of 16,593 MCEs.

Exhibit 13: Conversion from Average Daily Demand (gpd) to MCEs

Average Daily Demand (gpd)	2015	2029	Max
Low Zone (Table 6-8)	2,240,000	2,731,564	3,626,540
High-Mid Zone (Table 6-9)	955,186	1,057,140	1,725,243
Total ERUs	3,195,186	3,788,704	5,351,783
% Growth in System Capacity		19%	**67%**
Existing MCEs			9,907
Plus % increase			67%
Assumed future retail capacity in MCEs			16,593
Assumed growth in MCEs			6,687

The total cost basis divided by the buildout number of MCEs yields a water GFC of $7,215, as shown on **Exhibit 14**. The previous water GFC was $2,787, so the updated water GFC represents an increase of $4,429 per MCE. These figures exclude State and City taxes.

Exhibit 14: Updated Water GFC

Water GFC			
Charge Components	**Cost Basis**	**MCEs**	**Charge**
Component for Existing Assets	$ 105,202,953	16,593	**$ 6,340**
Component for Future Assets	$ 14,524,318	16,593	**$ 875**
	$ 119,727,271		**$ 7,215**
TOTAL GFC PER MCE (excluding State and City taxes)			**$7,215**
Previous GFC			$2,787
% Increase/(Decrease) from Previous GFC (excluding taxes)			158.9%
Increase/(Decrease) ($) from Previous GFC (excluding taxes)			$4,429

SEWER GFC

Sewer Cost Basis

The sewer cost basis was calculated with the same methodology that was used for the water utility. For sewer, there is no outstanding debt principal, and there is no regional system to take into account. **Exhibit 15** shows that the existing cost basis for the sewer GFC is about $81.8 million.

Exhibit 15: Sewer GFC: Existing Cost Basis

Existing Cost Basis		
PLANT-IN-SERVICE		
Utility Capital Assets		$ 59,738,290
less: Contributed Capital		(8,093,254)
plus: Interest on Non-Contributed Plant		26,298,376
plus: Construction-Work-in-Progress		3,810,540
2018 Year-end Estimated Cash Balances	$ 4,987,927	
less: Debt Principal Outstanding	-	
less: Net Debt Principal Outstanding		$ -
TOTAL EXISTING COST BASIS		**$ 81,753,952**

For the future cost basis, the City asked to see the potential impact of a major combined sewer overflow (CSO) project. For that impact, we were given a total CSO project cost of $25 million, and we assumed that half of that amount would be funded by project substitution, so the CIP would only increase by $12.5 million. The following GFC calculations—including the future cost basis figures in **Exhibit 16**—are shown with and without the CSO project. This project has not yet been added to the CIP, and the GFC adopted by the Council in November 2019 excluded the CSO project. If it is later added to the adopted CIP, it can be added to the GFC.

Exhibit 16: Sewer GFC: Future Cost Basis With and Without CSO Project

Future Cost Basis with and without Combined Sewer Overflow (CSO) Project		
CAPITAL IMPROVEMENT PLAN (2019-2024)		
Total Citywide Projects		$ 15,105,000
less: Provision for Repair & Replacement		$ (1,262,165)
Future Cost Basis excluding CSO Project		**$ 13,842,835**
Combined Sewer Overflow (CSO) Project	$ 25,000,000	
Offset: Substitution of Existing CIP Projects	(12,500,000)	
Future Cost Basis including CSO Project		**$ 26,342,835**

Sewer Units and Results

The City charges the sewer GFC based on equivalent residential units (ERUs). The detailed ERU calculations for a new or remodeled building are shown in **Appendix A**. The sewer ERU is generally based on an assumed winter average water usage of 192 gallons per day.

Exhibit 17 shows how the number of existing ERUs are estimated, based on a recent download of sewer customer data. (In this download, multi-family—including duplexes, triplexes, and four-plexes—are included in the commercial class.) Commercial ERUs are based on commercial winter average water usage, converted to gallons per day and then divided by 192 gpd per ERU. Single family ERUs are assumed to be one ERU per account. The total is 8,873 current sewer ERUs.

Exhibit 17: Existing Sewer ERUs

Existing Sewer ERUs		
Winter Avg Commercial Water Usage (cf/yr)	21,625,620	cubic feet
Winter Avg Commercial Water Usage (gpd)	443,177.09	gpd (Gallons per Day)
Definition of ERU (per Comp Plan)	192	gpd per ERU
Commercial gpd converted to ERUs	2,308.2	ERUs
Plus: Single Family Residential Accounts	6,564.8	Accounts
Commercial ERUs + Residential Accounts	8,873.0	ERUs

Table 5-3 of the 2015 Wastewater Comprehensive Plan has estimates of both existing and buildout average-day flow (in million gallons per day). The relationship between those two numbers implies a 27% increase between current conditions and buildout. As shown in **Exhibit 18**, this increase corresponds to a total of 11,245 ERUs at buildout.

Exhibit 18: Sewer GFC: Customer Base

Customer Base			
From Wastewater Comp Plan:			
Average-day MGD - Existing Service Area	2.02		
Average-day MGD - 2036 Buildout	2.56		
Percentage Increase to Buildout	**27%**		
Existing Customers (assumes 192 gpd per ERU)		8,873	ERUs
Future Customers		2,372	ERUs
System Capacity in Equivalent Residential Units		**11,245**	**ERUs**

The cost basis divided by 11,245 ERUs results in a sewer GFC of $8,501, as shown on **Exhibit 19**. This represents a decrease of $589 per ERU from the previous level. These figures exclude taxes.

Exhibit 19: Sewer GFC: Resulting Charge Without CSO Project

Resulting Charge without CSO Project				
Charge Components		**Cost Basis**	**ERUs**	**Charge**
Component for Existing Assets	$	81,753,952	11,245	**$ 7,270**
Component for Future Assets	$	13,842,835	11,245	**$ 1,231**
	$	95,596,787		**$ 8,501**
TOTAL GFC PER ERU (excluding State and City taxes)				**$ 8,501**
Previous GFC (excluding taxes)				$9,091
% Increase/(Decrease) from previous GFC (excluding taxes)				-6.5%
Increase/(Decrease) ($) from previous GFC (excluding taxes)				($589)

Exhibit 20 shows that if a CSO reduction project is added the CIP and the GFC, and if it increases the cost basis by $12.5 million, then the GFC would increase to $9,613, which is $1,112 more than the GFC adopted in November 2019. Again, these are pre-tax figures.

Exhibit 20: Sewer GFC: Resulting Charge With CSO Project

Resulting Charge with CSO Project			
Charge Components	**Cost Basis**	**ERUs**	**Charge**
Component for Existing Assets	$ 81,753,952	11,245	**$ 7,270**
Component for Future Assets	$ 26,342,835	11,245	**$ 2,343**
	$ 108,096,787		**$ 9,613**
TOTAL GFC PER ERU (excludng State and City taxes)			**$ 9,613**
GFC Adopted in November 2019 (excluding taxes)			$8,501
% Increase/(Decrease) from previous GFC (excluding taxes)			13.1%
Increase/(Decrease) ($) from previous GFC (excluding taxes)			$1,112

COMBINED WATER AND SEWER GFC

Exhibit 21 summarizes the GFCs adopted in November 2019. Without the CSO project, the sewer GFC decreased slightly. The water GFC, on the other hand, increased significantly. The combined GFC increase was $3,839.

These figures assume that taxes are excluded. Past practice has been to add City and State taxes to rates and GFCs at the point of sale. However, the City has now begun to incorporate taxes into the stated amount for both GFCs and rates. The impact of this change is discussed in Section VI.

Exhibit 21: Combined Water and Sewer GFC excluding Taxes

	Current Charge excl. Taxes	Revised Charge excl. Taxes	Dollar Change	Percent Change
Without Sewer CSO Project:				
Water	$ 2,787	$ 7,215	$ 4,428	159%
Sewer	$ 9,091	$ 8,501	$ (590)	-6%
Total	$11,877	$15,716	$3,839	32%

SCALING UP THE WATER GFC

The sewer GFC is characterized as a charge per ERU. The number of ERUs is determined at the time the charge is administered, and the per-ERU rate is multiplied by the number of ERUs.

The water GFC is characterized as a separate charge for each size meter. The previous multiples for the larger meter sizes did not match the meter capacity equivalents recommended by the American Water Works Association (AWWA). Instead, the implied multiples for the larger meters were too small. Our recommendation is that the AWWA meter capacity-equivalent multiples be used to scale up the GFCs for larger meter sizes. **Exhibit 22** shows the 2019 GFC schedule, the multiples implied by that schedule, the updated GFC ($7,215 per MCE) with the previous multiples, and finally the updated GFC with the AWWA multiples. Our recommendation was the updated GFC with AWWA multiples. and that recommendation was accepted by the City Council. Again, these figures exclude the effect of taxes, which is discussed in Section VI.

Exhibit 22: Water GFC by Meter Size, Excluding Taxes

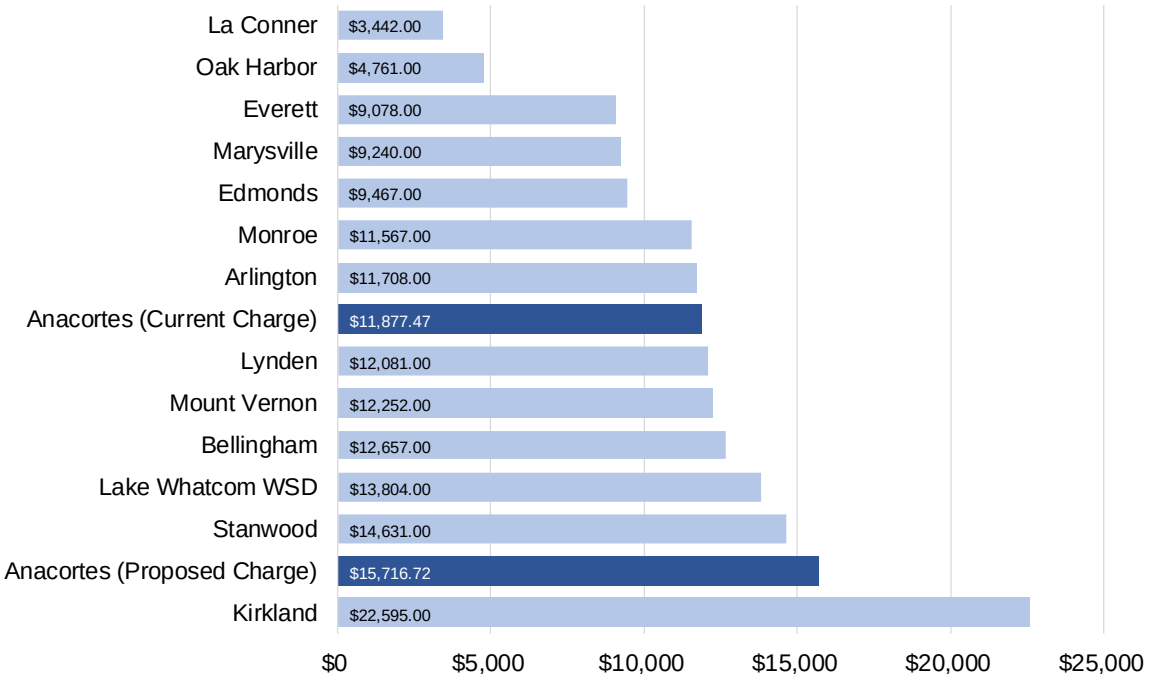
Meter Size	2019 GFC	Implied Multiples	Updated GFC with Previous Multiples	AWWA Multiples Based on 5/8"x3/4"	Updated GFC with AWWA Multiples - Before Taxes
Water					
3/4"	$2,787	1.00	$7,215	1.00	$7,215
1"	$3,762	1.35	$9,741	2.50	$18,039
1 1/2'	$7,525	2.70	$19,482	5.00	$36,077
2"	$12,040	4.32	$31,171	8.00	$57,724
3'	$24,079	8.64	$62,342	16.00	$115,448
4"	$37,624	13.50	$97,409	25.00	$180,387
6"	$75,248	27.00	$194,818	50.00	$360,774
8"	$120,397	43.20	$311,709	80.00	$577,239
10"	$173,071	62.10	$448,082	115.00	$829,781

GFCs shown here exclude the impact of taxes.
3/4" category includes both 5/8" x 3/4" and 3/4" x 3/4".

COMPARATIVE SURVEY

Exhibit 23 shows how the recommended water and sewer GFCs for Anacortes compare with those of other water and sewer utilities in the northwest part of Washington. It shows that Anacortes is currently in the middle of the group, and with the recommended changes would move near the top of the group. However, it is worth noting that each utility has a different type of infrastructure, with different cycles of investment and reinvestment. In addition, these rankings are partly a function of how recently a city's GFCs have been updated. For example, Oak Harbor's sewer GFC of $1,680 probably does not yet reflect the capital cost of its new treatment plant.

Exhibit 23: Jurisdictional Survey: Combined Water and Sewer GFC



Section VI. Reconciliation of Adopted to Recommended Rates and GFCs

CITY AND STATE TAXES

In the past, the City included the impact of State taxes but not the City utility tax in its water or sewer rate schedules. Instead, the City utility tax was added as a separate item on the customer bill and the revenue received directly into the General Fund. Beginning in 2019, based on input from the State Auditor's Office about the best way to account for these tax revenues, the City has included the City tax in the stated utility rates and credited the revenue into the utility funds, after which the tax revenue is transferred from the utility funds to the General Fund.

The sewer cost-of-service and rate design analysis described earlier in this report was based on adopted 2019 rates, and the City tax was already incorporated into the rate tables. However, for the water utility, our most recent analysis and rate schedule was prepared in 2017, so the rate tables we presented included the impact of State taxes but not City taxes. In preparing the 2019 and 2020 rates for City Council action, the staff had to add the impact of the City tax to the tables we had provided.

For the GFCs, our understanding is that the City's intent with this most recent update is to incorporate both the City and the applicable State taxes into the GFC tables, so that GFCs and rates alike fully incorporate the impact of all applicable taxes.

Applicable Tax Rates

The applicable tax rates for both rate revenue and GFC revenue are shown in **Exhibit 24**.

Exhibit 24: City and State Tax Rates

Applicable Tax Rates					
	City Tax	State Tax on GFCs	Combined City plus State Tax on GFCs	State Tax on Water Sales	State Tax on Sewer Rate Revenue*
Gross Receipts Rate	7.00%	1.75%	8.75%	5.029%	2.3806%
Markup Rate: X%/(1-X%)	7.53%	1.78%	9.59%	5.295%	2.4387%

** Composite of two different tax rates, specific to Anacortes*

The first row shows the stated rate for these taxes, which are all *gross receipts* taxes. That is, the tax is applied to the total revenue, including revenue collected to pay the tax itself. For instance, if a utility generates $100 of revenue and the gross receipts tax rate is 10%, the tax would be $10, leaving the utility with $90 of revenue for its own purposes.

The second row shows the equivalent "markup rate" for each type of tax. With a *markup tax*, the stated tax rate is applied to the amount excluding the tax itself. An example of a markup tax is the retail sales tax—$100 worth of taxable purchases with a sales tax rate of 10% would result in tax collected of $10 and a total payment of $110.

In order to incorporate the impact of City or State taxes into its rate schedules and collect the right amount of revenue, the City needs to start with the rates absent the tax, and then add a markup percentage. A gross receipts tax rate can be converted to an equivalent markup rate by dividing the tax percentage by the difference between that tax percentage and 100%. For example, a 10% gross

receipts tax is equivalent to a markup percentage of 10%/90% = 11.11%. The equivalent markup percentage is always higher, and the larger the tax, the more of a discrepancy there is between the stated rate and what must be added to the bill to recover the right amount of revenue.

In Anacortes, the City utility tax is applied to both rate revenue and GFC revenue. Its gross receipts rate is 7%, so its markup rate is 7.53%.

The State tax applicable to GFC revenue is the State Business & Occupations (B&O) tax, which used to be a 1.5% gross receipts tax. However, effective April 1, 2020, the B&O rate was increased to 1.75% for businesses generating at least $1 million in revenue subject to the B&O tax (after deductions). Anacortes utilities are well above the $1 million threshold, so going forward, the City should assume a State B&O tax rate of 1.75% (markup 1.78%). This B&O rate applies to GFCs, non-rate revenue, and the share of sewer rate revenue (currently 70%) that is allocated to treatment and transmission purposes as opposed to collection purposes.

State taxes applicable to water and sewer rate revenue are already built into the rate schedules, and the recent change in the State B&O tax rate is not significant enough to change the planned annual water and sewer rate increases. So no further adjustment is needed to the rate schedules we have previously provided.

Intended Rate Changes

Our understanding is that the City's intent is to implement the rates we recommended in our most recent rate studies, while adding the impact of the City tax. For water, this means across-the-board increases of 7% in 2019 and 4% in 2020 and 2021, plus a 7.53% markup for the City tax. (The forecast horizon for our 2017 water rate study ends in 2021.) For sewer, this means the 2020 cost-of-service rates as presented to the Council in September 2019 (and above in this report), which already include the City tax and an overall increase of 7%. Following 2020, there will need to be annual 7% overall sewer rate increases in 2021 through 2024, with continued implementation of the five-year phase-in of the cost-of-service shift.

RECONCILIATION OF RATE TABLES

At the staff's request, we compared the water and sewer rates and GFCs actually adopted for 2020 with what would be implied by our original forecasts after accounting for applicable taxes.

For water and sewer rates, this comparison is displayed in **Exhibit 25** (shown over the next two pages). It shows the rates from our forecast documents, first without and then with an adjustment for the City tax. The yellow-shaded column represents what we believe to be the City's intended 2020 rates for each customer class and type of charge. The green-shaded column shows the difference, if any, between the intended 2020 rates and the rates actually adopted.

For sewer, the adopted rates match the tables we presented to the Council in September 2019, except for a transcription error in the per-pound TSS charge for SIC 4 commercial customers.

For water, the adopted rates are uniformly short of the forecast rates by about 3.7%. For 2019, the intent was to add a 7% across-the-board increase at the same time as incorporating the City tax markup rate of 7.53%. It appears that the rates adopted for 2019 were short and the discrepancy was carried forward into the 2020 rates. Of the various discrepancies shown in this reconciliation, this is the most concerning, because it means the water utility is receiving insufficient revenue to fund its operating, capital and debt service costs.

Exhibit 25: Comparison of Recommended and Adopted Rates

Rates - Recommended Compared to Adopted	FCS GROUP Forecast 2019	FCS GROUP Forecast 2020	Including City Tax 2019	Including City Tax 2020	Adopted 2019	Adopted 2020	Difference	Comments
Water Rates								
Forecast already includes State tax.								
Residential								
Monthly Fixed Charge:								2019 adopted rates were 3.7%
5/8" x 3/4"	$19.18	$19.94	$20.62	$21.45	$19.86	$20.66	$0.79	short. They were to have had a 7%
3/4"	$19.18	$19.94	$20.62	$21.45	$19.86	$20.66	$0.79	increase plus adding City tax
1"	$32.04	$33.32	$34.45	$35.82	$33.19	$34.51	$1.31	(7.53% markup). After the 4%
1.5"	$63.87	$66.43	$68.68	$71.43	$66.16	$68.81	$2.62	increase in 2020, adopted rates
2"	$102.24	$106.33	$109.93	$114.33	$105.91	$110.14	$4.19	are still short by the same amount.
Usage Charge per CF	$0.02131	$0.02217	$0.02292	$0.02383	$0.02206	$0.02294	$0.00089	"
Multi-Family								
Monthly Fixed Charge:								
5/8" x 3/4"	$21.43	$22.29	$23.05	$23.97	$22.20	$23.09	$0.88	"
3/4"	$21.43	$22.29	$23.05	$23.97	$22.20	$23.09	$0.88	"
1"	$35.79	$37.22	$38.48	$40.02	$37.07	$38.55	$1.47	"
1.5"	$71.37	$74.22	$76.74	$79.81	$73.93	$76.89	$2.92	"
2"	$114.24	$118.81	$122.84	$127.75	$118.34	$123.07	$4.68	"
3"	$228.48	$237.62	$245.68	$255.51	$236.68	$246.15	$9.36	"
4"	$357.09	$371.37	$383.97	$399.32	$369.90	$384.70	$14.62	"
6"	$714.38	$742.96	$768.15	$798.88	$740.01	$769.62	$29.26	"
8"	$1,143.06	$1,188.78	$1,229.09	$1,278.26	$1,184.07	$1,231.43	$46.83	"
Usage Charge per CF	$0.02381	$0.02477	$0.02561	$0.02663	$0.02472	$0.02571	$0.00092	"
Commercial								
Monthly Fixed Charge:								
5/8" x 3/4"	$28.80	$29.95	$30.97	$32.21	$29.83	$31.03	$1.18	"
3/4"	$28.80	$29.95	$30.97	$32.21	$29.83	$31.03	$1.18	"
1"	$48.09	$50.01	$51.71	$53.78	$49.81	$51.81	$1.97	"
1.5"	$95.90	$99.73	$103.12	$107.24	$99.34	$103.31	$3.93	"
2"	$153.51	$159.65	$165.06	$171.66	$159.02	$165.38	$6.28	"
3"	$307.02	$319.30	$330.12	$343.33	$318.03	$330.75	$12.58	"
4"	$479.82	$499.02	$515.94	$536.58	$497.04	$516.92	$19.66	"
6"	$959.93	$998.32	$1,032.18	$1,073.47	$994.37	$1,034.14	$39.33	"
8"	$1,535.94	$1,597.37	$1,651.55	$1,717.61	$1,591.04	$1,654.69	$62.92	"
Usage Charge per CF	$0.03200	$0.03328	$0.03441	$0.03579	$0.03314	$0.03447	$0.00132	"

Exhibit 25, continued: Comparison of Recommended and Adopted Rates

Rates - Recommended Compared to Adopted	FCS GROUP Forecast Including City Tax 2019	2020	2019	2020	Adopted 2019	Adopted 2020	Difference	Comments
Sewer Rates								
Forecast already includes City and State taxes.								
Single Family								
Monthly Fixed Charge:								
5/8" x 3/4"	$38.91	$40.27	$38.91	$40.27	$38.91	$40.27	$0.00	No discrepancy between adopted
3/4"	$46.71	$40.27	$46.71	$40.27	$46.71	$40.27	$0.00	and recommended.
1"	$54.50	$56.40	$54.50	$56.40	$54.50	$56.40	$0.00	"
1.5"	$70.04	$72.51	$70.04	$72.51	$70.04	$72.51	$0.00	"
Usage Charge per CF	$0.02770	$0.03178	$0.02770	$0.03178	$0.02770	$0.03178	$0.00000	"
Non-Single Family								
5/8" x 3/4"	$38.91	$45.09	$38.91	$45.09	$38.91	$45.09	$0.00	"
3/4"	$46.71	$45.09	$46.71	$45.09	$46.71	$45.09	$0.00	"
1"	$54.50	$63.15	$54.50	$63.15	$54.50	$63.15	$0.00	"
1.5"	$70.04	$81.19	$70.04	$81.19	$70.04	$81.19	$0.00	"
2"	$112.87	$130.81	$112.87	$130.81	$112.87	$130.81	$0.00	"
3"	$428.10	$496.17	$428.10	$496.17	$428.10	$496.17	$0.00	"
4"	$544.86	$631.50	$544.86	$631.50	$544.86	$631.50	$0.00	"
6"	$817.29	$947.25	$817.29	$947.25	$817.29	$947.25	$0.00	"
Usage Charges								
SIC 1 per CF	$0.02770	$0.03548	$0.02770	$0.03548	$0.02770	$0.03548	$0.00000	"
SIC 2 per CF	$0.03459	$0.04431	$0.03459	$0.04431	$0.03459	$0.04431	$0.00000	"
SIC 3 per CF	$0.06730	$0.08626	$0.06730	$0.08626	$0.06733	$0.08626	$0.00000	"
SIC 4 per CF	$0.01095	$0.01403	$0.01095	$0.01403	$0.01095	$0.01403	$0.00000	"
SIC 4 per Pound BOD	$1.45241	$1.67476	$1.45241	$1.67476	$1.45241	$1.67476	$0.00000	"
SIC 4 per Pound TSS	$0.88622	$1.02189	$0.88622	$1.02189	$0.88622	$1.21890	($0.19701)	Transcription error for 2020.

RECONCILIATION OF GFCS

We performed the same reconciliation with the recommended and adopted GFCs. This comparison is shown in **Exhibit 26**.

Our assumption is that the City's intent is to incorporate both City and State taxes into the stated GFCs. If that is the case, both water and sewer GFCs should be adjusted, but in opposite directions.

The adopted water GFCs assume a State tax rate of 5.029%. While that is the tax rate applicable to revenue from water sales, GFC revenue is taxed at the lower B&O rate of 1.75%. Therefore, the adopted water GFCs are currently higher than necessary.

For the sewer GFC, the adopted rate incorporates the City tax but not the State tax. Adding in the State tax (once again, at the 1.75% B&O rate) would increase the sewer GFC by $175 per ERU.

NEXT STEPS

If the City's intent is for its adopted rate and GFC tables to match the FCS GROUP forecasts while incorporating the impact of all applicable City and State taxes, there should be a correcting ordinance or resolution replacing the current adopted numbers with the numbers shown in the yellow-shaded columns of **Exhibits 25 and 26**. The most important of these adjustments would be to the water rates, which are currently 3.7% less than the overall level needed to fund water system costs. This Council action is needed to ensure that published utility rates and GFCs are consistent with previous Council decisions.

Exhibit 26: Comparison of Recommended and Adopted GFCs

GFCs - Recommended Compared to Adopted	FCS GROUP Forecast 2019	FCS GROUP Forecast 2020	Incl. City & State Tax 2019	Incl. City & State Tax 2020	Adopted 2019	Adopted 2020	Difference	Comments
Water GFC								
5/8" x 3/4"	$2,787	$7,215	$3,054	$7,907	$2,787	$8,169	($262)	Adopted uses 5.029% State tax.
3/4"	$2,787	$7,215	$3,054	$7,907	$2,787	$8,169	($262)	Current State tax for GFCs is 1.75%.
1"	$3,762	$18,039	$4,123	$19,769	$3,762	$20,424	($655)	"
1.5"	$7,525	$36,077	$8,246	$39,536	$7,525	$40,847	($1,311)	"
2"	$12,040	$57,724	$13,194	$63,259	$12,040	$65,355	($2,096)	"
3"	$24,079	$115,448	$26,388	$126,518	$24,079	$130,711	($4,193)	"
4"	$37,624	$180,387	$41,232	$197,684	$37,624	$204,236	($6,552)	"
6"	$75,248	$360,774	$82,464	$395,369	$75,248	$408,471	($13,102)	"
8"	$120,397	$577,239	$131,942	$632,591	$120,397	$653,554	($20,963)	"
10"	$173,071	$829,781	$189,667	$909,349	$173,071	$939,484	($30,135)	"
Sewer GFC								
Sewer GFC per ERU	$9,091	$8,501	$9,962	$9,316	$9,091	$9,141	$175	Adopted adds City tax only.

Section VII. Summary of Recommendations

This study examined two major topics: the sewer rate design and the GFCs for both water and sewer. It also provided a reconciliation between the rates and GFCs actually adopted vs. the amounts in FCS GROUP forecasts after being adjusted for taxes. Following is a summary of FCS GROUP recommendations.

SEWER RATE DESIGN

- Combine the 3/4" x 3/4" and 5/8" x 3/4" meter classifications.
- Change the "residential" customer class to "single family" and "commercial" to "non-single family." Instead of charging duplexes twice the single family rate, include duplexes in the non-single family class.
- Eliminate the tiers for the average winter water usage of single family customers. Instead, average winter water usage should serve as a cap for the next summer's billing to individual customers. Because the current tier structure overstates billed water usage, this change requires a one-time increase in 2020 of about 11% in usage rates for both single family and non-single customers.
- Decouple single family from non-single family rates. In keeping with the cost-of-service analysis, implement a gradual shift in the rate burden from single family to non-single family customers, with a five-year phase-in period from 2020 through 2024. Recommended sewer rates through 2024 are shown in **Exhibit 9**. The figures in this table already include all applicable taxes.

WATER AND SEWER GFCS

- Increase the water GFC to $7,215 for the lowest meter size, plus the impact of City and State taxes.
- Reduce the sewer GFC to $8,501 per ERU, plus the impact of City and State taxes.
- Scale up the Water GFC according to AWWA meter capacity-equivalents.

RECONCILIATION

- If the City's intent is for its water and sewer rates and GFCs to match the FCS GROUP recommended levels while incorporating the impact of all applicable City and State taxes, the City should adopt a correcting ordinance or resolution to substitute the figures in the yellow-highlighted columns of **Exhibits 25 and 26** in place of the rates and GFCs previously adopted. This is especially important for water rates, which are currently 3.7% less than the level needed to fund water system costs. This Council action is needed to ensure that published utility rates and GFCs are consistent with previous Council decisions.

APPENDIX A: ERU DEFINITIONS FOR SEWER GFCS

Anacortes Municipal Code 13.08.020 Sewer Charges and Fees,

Table 13.08.020 ERU Determination Alternative:

TYPE OF BUILDING AND SEWER USE	ERUs
1. Single-family residence	1 each per unit
2. Multiple-family residence	0.8 per dwelling unit
3. Manufactured home space in manufactured home park (common building additional at commercial rate and laundry areas at laundry rate)	0.65 per space
4. Recreational vehicle waste dumping station	0.65 per station
5. Schools	0.030 per student capacity
6. Churches (school uses additional at per student capacity rate)	0.64 per 100 seats
7. Hospitals—General	1 per bed
8. Convalescent hospitals	0.5 per bed
9. Residential care/boarding facilities	0.25 per bed
10. Hotels and motels (additional charges for restaurant or tavern at restaurant or tavern rate, laundry areas at laundry rates, and meeting room areas with fixtures at commercial rate)	0.25 per room or motel unit
11. Food preparation and/or serving areas	0.15 per 100 square feet
12. Vehicle wash	
Self-service vehicle wash	1.17 per bay
Full-service vehicle wash	15.66 per bay
All other vehicle washes	See Wet Industrial
13. Laundries and Laundromats	0.3 per 100 square feet
Industrial laundries	See Wet Industrial

TYPE OF BUILDING AND SEWER USE	ERUs
14. Commercial, office and dry industrial	Charge for each plumbing fixture to be installed:
Bath tub with or without shower	0.13
Dental unit or cuspidor	0.1
Dishwasher	0.1
Disposal	0.1
Drinking fountain	0.05
Floor drain	0.013
Fountain/backwash	0.1
Kitchen sink	0.08
Laundry tray	0.08
Lavatory	0.05
Service sink	0.08
Shower (each head)	0.13
Swimming pool/backwash	0.1
Urinal	0.17
Urinal trough (for each 2-foot section)	0.17
Wash sink (for each set of faucets)	0.08
Washing machine	0.07
Water closet	0.33
In case of a remodel in types 5-13 which results in no increase in the units on which the charge for a new building is calculated, the ERU for the remodel will be calculated on the basis of the fixtures added using the amounts in item 14.	

TYPE OF BUILDING AND SEWER USE	ERUs
15. Wet industrial	To be determined on an individual basis by the city
16. Undefined building	To be determined on an individual basis by the city and sewer use
17. Additional loading or change of use	Determined on basis of new use for entire facility less credit for former use; no refunds if new use is less than former use

Anacortes Municipal Code 13.08.020 Sewer Charges and Fees

E. A one-time general facility charge (GFC) shall be charged to all new customers for each equivalent residential unit (ERU). An ERU shall be defined as one hundred ninety-two gallons per day. The GFC shall represent a fair and equitable share of historic and future costs of the city's sanitary sewer collection and treatment structures and facilities.