



**CITY OF GIG HARBOR**  
PIERCE COUNTY, WASHINGTON

**2014 GENERAL FACILITY CHARGE  
&  
REVENUE REQUIREMENTS ANALYSIS**

**August 2015  
Final**



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# EXECUTIVE SUMMARY

## SUMMARY OF RECOMMENDATIONS

### INTRODUCTION

This study entails an updated analysis of general facility charges and monthly utility rates for the City’s water, wastewater, and stormwater utilities. The results of the analysis are summarized below and further documented in subsequent chapters.

### PROPOSED GENERAL FACILITY CHARGES

General facility charges are one time fees paid by new customers connecting to a utility or existing customers increasing the size or number of their connections. These fees are not associated with the actual cost of making the physical connection but rather “buying” into the existing system that had been funded by existing customers.

Table E-1 lists the total GFCs as calculated in the study with the latest data concerning the scheduling of capital projects. The study began in mid 2014 and during the process of completing the study some minor changes were made to the timing and costs of planned capital improvements that affected the magnitudes of the GFCs. Table E-1 presents the final GFCs as calculated with the most recent available data, as of March 2015. The City elected to consider for adoption an earlier version of the GFC calculation that determined slightly lower GFCs that are presented in Table E-2. The proposed GFCs that have been adopted by the City are consistent with the Revised Code of Washington, case law, and industry practice and only differ from the final GFCs due to minor changes in the timing and cost of several capital improvements. Total GFCs in both Table E-1 and E-2 have been rounded to the nearest \$10 dollars.

**TABLE E-1**  
**Final Water/Wastewater/Stormwater Utility GFCs**

<b>Utility</b>	<b>Existing Facility Component</b>	<b>Future Facility Component</b>	<b>Total Updated GFC (\$/ERU)</b>	<b>Current Total GFC (\$/ERU)</b>
Water	\$3,334	\$4,345	<b>\$7,680</b>	<b>\$6,290</b>
Wastewater	\$5,899	\$3,772	<b>\$9,670</b>	<b>\$8,540</b>
Stormwater	\$1,020	\$976	<b>\$2,000</b>	<b>\$1,160</b>

**TABLE E-2  
Adopted Water/Wastewater/Stormwater Utility GFCs**

<b>Utility</b>	<b>Existing Facility Component</b>	<b>Future Facility Component</b>	<b>Total Updated GFC (\$/ERU)</b>	<b>Current Total GFC (\$/ERU)</b>
Water	\$3,334	\$3,967	<b>\$7,300</b>	<b>\$6,290</b>
Wastewater	\$5,899	\$3,744	<b>\$9,640</b>	<b>\$8,540</b>
Stormwater	\$1,020	\$755	<b>\$1,770</b>	<b>\$1,160</b>

## RECOMMENDED MONTHLY UTILITY RATES

Table E-3 provides a summary of recommended rate increases for 2015 through 2020 for the water, sewer, and stormwater utilities. Note that the rate increases recommended for 2015 will be implemented in August 2015, and thereafter, each January 1 of each year.

The rate increases summarized in Table E-3 must be applied to all existing utility rates (except for wholesale or contract customers) including both base charges as well as volume charges in order for the increases to generate the projected revenues forecasted in this study.

**TABLE E-3  
Summary of Recommended Rate Increases**

<b>Utility</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
Water	6.0%	6.0%	5.0%	5.0%	4.0%	4.0%
Wastewater	4.5%	4.5%	3.5%	3.5%	3.5%	3.5%
Stormwater	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%

## CONCLUSION

The City has undergone significant wastewater capital improvements in the last ten years including a new deep water outfall and treatment plant improvements and upgrades. As a result, the wastewater utility has been operating with net revenue losses for several years. The goals of the previous 2007 rate study and this study have been to restore positive operating cash flows. The recommended wastewater rate increases will achieve this goal in approximately 3 years and due to the fact that major Phase 2A construction improvements will be shortly completed, utility rates should stabilize and only require occasional inflation adjustments for the utility to remain financially sound.

The water utility will need major improvements in the next ten years and even though the utility currently has positive net operating revenues funding the improvements will require additional operating revenues. The proposed water utility rate increases will

enable the City to construct the improvements with a combination of debts and cash reserves while maintaining net positive operating revenues and adequate reserves.

The stormwater utility is currently revenue positive and therefore the only planned increases are to offset general inflation and a modest level of capital improvements.

Forecasts require estimating future factors such as debt interest rates, customer growth, inflation, etc. It is therefore incumbent on staff to monitor the sufficiency of recommended rates to fund actual costs on an ongoing basis.

# CHAPTER 1

## GENERAL FACILITY CHARGES

### INTRODUCTION

Note that during the process of completing this study some minor changes were made to the cost and timing of the planned capital improvements. These changes resulted in minor increases to the magnitudes of the calculated GFCs from the GFCs that were actually adopted by the City. The City adopted GFCs based on a prior version of the calculations but since the final determination of GFCs are higher than those adopted there is no impropriety.

This chapter summarizes the calculation of the general facility charge, or GFC for the City's water, wastewater, and stormwater utilities. A GFC is also commonly referred to as a connection charge or system development charge.

A GFC is a one-time charge paid by a new customer connecting to a utility system. A GFC can include a pro-rata share of the cost of existing facilities (existing facility component) and a pro-rata share of planned facilities (future facility component). The existing facility component offsets the historical contributions from existing customers used to acquire existing assets of benefit to a new customer. The future facility component is a new customer's proportional share of the cost of capital improvements required to serve future growth and is intended to minimize the impact to existing customers to fund the construction of growth related facilities.

It should be recognized that GFCs are only one aspect of a utility's total source of revenues. The final determination of appropriate GFCs should also consider the impact of rates and contributions from developers in meeting a community's long-term goals for system development and financial viability. Other considerations include the condition of the existing facilities, ongoing repair and replacement costs, the timing and need for additional system capacity, and the benefits associated with system growth (e.g. economy of scale).

### OVERVIEW

GFCs for all three utilities are stated in terms of dollars per equivalent residential unit, or ERU. The term, ERU, is used to convert non-residential (i.e. commercial) customers into an equivalent number of residential units based on defined water use or wastewater flow from a single-family residence. Stormwater ERUs are based on the average square footage of impervious surface area of a single-family residence. This methodology is consistent with the City's existing schedule of GFCs.

The Revised Code of Washington (RCW) addresses some aspects of how a GFC should be determined. However, GFCs are determined primarily based on practices that have been upheld by State courts and are consistent with industry standards (e.g. American Water Works Association). RCW 35.92.025, which authorizes cities and towns to charge for connecting to a water, wastewater, or stormwater system, requires that the charge be an equitable share of the cost of the existing system and may include up to ten years of interest charges at a rate commensurate with the rate of interest applicable to the City at the time of construction. RCW 57.08.005, which address connection charges for special purpose districts, also specifically allows districts to charge a pro rata share of the cost of future facilities planned in the next ten years. An opinion provided by Foster, Pepper, and Shefelman, PLLC concluded that cities might also include costs of future facilities intended to serve growth. Therefore, this analysis includes a pro rate share of planned facilities in addition to existing facilities as part of the equitable share allowed by RCW 35.92.025.

Under RCW 57.08.005, special districts are not allowed to include costs associated with facilities that are funded from grants or donations. In 1999, the Washington State Supreme Court ruled in the case Landmark Development, Inc. versus the City of Roy that there was no implied statutory requirement that a city include an offset for grants or donations when calculating water connection charges. Therefore, this analysis includes the costs of all existing facilities that will benefit future customers, regardless of how these assets were funded.

## **GENERAL FACILITY CHARGE DETERMINATION**

The existing and planned facility components of the water, wastewater, and stormwater system GFCs are analyzed in this section.

### **EXISTING FACILITY COMPONENTS OF THE GFC(S)**

The pro-rata share of the original cost of existing facilities, or existing facility component, is determined by dividing the cost of existing utility assets that will benefit future customers by the number of existing customers, or ERUs. The costs of existing utility infrastructure assets that will benefit future customers and used in this analysis is the reported net property, plant, and equipment (PPE) for each utility at the end of 2013.

Table 1-1 lists existing water, wastewater, and stormwater utility facilities from the City's accounting records. Net PPE from the end of 2013 is used in this analysis because 2014 financial records had yet to be finalized. Additionally, since no construction in progress is included for the wastewater utility in the 2013 PPE numbers there can be no double counting of the ongoing WWTP improvement Phase 2 project costs totaling \$9.886M that are addressed in the future facility component of the wastewater GFC calculation.



**TABLE 1-1**  
**Existing Utility Assets as of 12/31/2013**

Existing Assets	Water	Wastewater	Stormwater
<b>Property, plant and equipment:</b>			
Land	72,024	470,209	-
Buildings and structures	-	26,107,320	-
Other improvements	10,581,345	16,284,654	3,668,190
Machinery and equipment	500,698	866,683	414,186
<b>Total property, plant and equipment</b>	<b>11,154,067</b>	<b>43,728,866</b>	<b>4,082,376</b>
<b>Construction in process</b>	<b>1,401,745</b>	<b>-</b>	<b>53,479</b>
<b>Total PPE</b>	<b>\$ 12,555,812</b>	<b>\$ 43,728,866</b>	<b>\$ 4,135,855</b>

This analysis utilizes two adjustments to the cost of existing assets as listed in Table 1-1 before they are utilized in the GFC calculation. The first adjustment made to the cost of existing assets that will benefit future customers is the inclusion of accumulated interest costs. As allowed in the RCW, a City may include up to ten years of accumulated interest costs in the calculation of a GFC. Per the RCW, an interest rate applicable to the time of major system construction is to be used in calculating the ten years of interest charges. In order to be conservative this analysis utilizes the average annual return on US Treasury Bills from 1970 to 2005 (6.2%) for assets installed in 2004 and earlier. Assets or total plant, property, and equipment (PPE) installed subsequently are assigned 4.0% based on the average yield on 20-year treasury bonds from 2005 through 2013. The RCW allows up to ten years of interest but assets installed in 2005 have been in service for only 9 years, assets installed in 2006 have only 8 years of use and each successive year has one year less until 2013, that has had only one year of service prior to 2014. Therefore the accumulated interest for each year of assets in Table 1-2 has a decreasing number of years of interest to accumulate. Table 1-2 shows total PPE in 2004 and the increase in the PPE for each year from 2005 through 2013 and the appropriate number of years in service and resulting accumulated interest costs as allowed by the RCW.

**TABLE 1-2**  
**Accumulated Interest Costs**

Accumulated Interest	Water	Wastewater	Stormwater	No. of Years of Accum.	Annual Interest	Accumulated Interest		
						Water	Wastewater	Stormwater
Total PPE in 2004	\$ 4,481,072	\$ 14,314,298	\$ 1,220,357	10	6.2%	\$ 2,778,265	\$ 8,874,865	\$ 756,621
2005 Increase in PPE	\$ 241,404	\$ (123,683)	\$ 175,758	9	4.0%	\$ 86,905	\$ (44,526)	\$ 63,273
2006 Increase in PPE	\$ 284,238	\$ 190,597	\$ 35,807	8	4.0%	\$ 90,956	\$ 60,991	\$ 11,458
2007 Increase in PPE	\$ (10,279)	\$ 1,712,009	\$ 7,102	7	4.0%	\$ (2,878)	\$ 479,363	\$ 1,989
2008 Increase in PPE	\$ 110,429	\$ 243,331	\$ 69,661	6	4.0%	\$ 26,503	\$ 58,399	\$ 16,719
2009 Increase in PPE	\$ -	\$ (61,231)	\$ -	5	4.0%	\$ -	\$ (12,246)	\$ -
2010 Increase in PPE	\$ -	\$ (90,954)	\$ -	4	4.0%	\$ -	\$ (14,553)	\$ -
2011 Increase in PPE	\$ 3,180,144	\$ 27,193,400	\$ -	3	4.0%	\$ 381,617	\$ 3,263,208	\$ -
2012 Increase in PPE	\$ 641,938	\$ 358,149	\$ 372,271	2	4.0%	\$ 51,355	\$ 28,652	\$ 29,782
2013 Increase in PPE	\$ 2,225,121	\$ (7,051)	\$ 2,201,421	1	4.0%	\$ 89,005	\$ (282)	\$ 88,057
<b>Total</b>	<b>\$ 11,154,067</b>	<b>\$ 43,728,866</b>	<b>\$ 4,082,376</b>			<b>\$ 3,501,728</b>	<b>\$ 12,693,871</b>	<b>\$ 967,898</b>

The second adjustment is to subtract the total outstanding debt principal from the cost of existing assets included in the GFC since these debt payments are funded from existing

rates that new customers will also pay. Table 1-3 lists the final adjusted total original costs for existing assets determined to benefit future customers that will be included in the GFC calculations after outstanding debt principals are removed.

**TABLE 1-3  
Total Original Costs Included in GFCs**

<b>Existing Asset Costs Included in GFCs</b>	<b>Water</b>	<b>Wastewater</b>	<b>Stormwater</b>
Total Existing Assets (PPE)	\$ 12,555,812	\$ 43,728,866	\$ 4,135,855
(+) Accumulated Interest Costs	\$ 3,501,728	\$ 12,693,871	\$ 967,898
(-) Outstanding PWTF Loan	\$ -	\$ (7,411,765)	\$ -
(-) Outstanding Water & Sewer Revenue Bond, 2010 (Taxable Build America Bond)	\$ (1,686,400)	\$ (3,581,100)	\$ -
(-) Outstanding Water & Sewer Revenue Bond, 2010B (Taxable Build America Bond)	\$ -	\$ (5,580,000)	\$ -
(-) Outstanding Water & Sewer Revenue Bond, 2010C (Tax-Exempt)	\$ -	\$ (1,920,000)	\$ -
<b>Total</b>	<b>\$ 14,371,140</b>	<b>\$ 37,929,873</b>	<b>\$ 5,103,753</b>

Note that as of this writing, the City has a new PWTF (Public Works Trust Fund) loan of \$4.85M at 0.25% annual interest procured by engineering that will be used to fund part of the ongoing WWTP Phase 2 improvements. In this analysis the loan amount is factored into the GFC in the future facility component of the GFC later in this chapter because the loan is not associated with existing PPE.

The existing facility components of the water, wastewater, and stormwater GFCs can now be calculated based on the total adjusted asset costs listed in Table 1-3 and the total number of existing equivalent residential units (ERUs). Table 1-4 lists the total number of current ERUs by Utility utilized in the calculation of the existing facility component of the GFCs.

The number of water ERUs is based on 2013 water use and customer data from the City’s billing system that reported 388,000 ccf of total water sold and 1,536 single-family residential (SFR) water customers that used 138,958 ccf of water. Therefore, the average monthly water use by a SFR in 2013 was 7.5 ccf/month (138,958ccf/1,536/12 months). Therefore if an average SFR customer uses 7.5 ccf/month and the entire system used 388,000 ccf of water then there are 4,311 water ERUs (388,000ccf/7.5ccf/month/12 months).

The current number of wastewater ERUs is based on the reported average daily flow as reported by the City to the Dept. of Ecology in the City’s annual NPDES permit for 2014. As reported in the permit, the average daily annual flow at the treatment plant in 2014 was 861,100 gallons per day and divided by the definition of an ERU (per the DOE approved Wastewater Treatment Phase II Improvements Engineering Report) of 134 gallons per day (gpd) results in a total of 6,430 wastewater ERUs. City planning documents also reference an ERU flow of 150 gpd; however, this analysis uses 134 gpd because it results in a lower GFC and better reflects the trend in both declining residential unit flows due to lower water use in new residences. The City is currently undergoing a reevaluation of the defined flow of an ERU and expects to the updated flow of an ERU to coincide with the 134 gpd value. The 2007 GFC study used different methods to determine the existing number of water and wastewater ERUs. In 2007 the City had just completed comprehensive plans for both the water and wastewater utilities and therefore

the ERU data in the plans was the most current and therefore appropriate to use in the GFC analysis at that time. Those planning documents are now several years old and outdated and are no longer applicable so a different approach that is more illustrative of the downward water usage trend was utilized in this analysis.

The Stormwater utility sets monthly service charges based on impervious surface units and the same units are also used to set stormwater GFCs, so the calculation is straightforward. In 2014 the stormwater utility generated \$776,300 in rate revenue and with a bi-monthly rate of \$25.85 results in 5,005 impervious surface units.

**TABLE 1-4  
Existing Utility Equivalent Residential Units (ERUs)**

Utility	Current No. of ERUs
Water	4,311
Wastewater	6,430
Stormwater	5,005

The existing facility component of the water, wastewater, and stormwater GFCs can now be determined using the total original costs and current number of ERUs listed in Tables 1-3 and 1-4.

**TABLE 1-5  
Existing Facility Component of the GFCs**

Existing Facility Component	Water	Wastewater	Stormwater
Total Assets Included in GFC	\$ 14,371,140	\$ 37,929,873	\$ 5,103,753
Divided by Total No. of Existing ERUs	4,311	6,430	5,005
<b>Existing Facility Component of the GFC (\$/ERU)</b>	<b>\$ 3,334</b>	<b>\$ 5,899</b>	<b>\$ 1,020</b>

**FUTURE FACILITY COMPONENTS OF THE GFC(S)**

A GFC may also include a pro-rata share of the cost of facilities. The future facility component is calculated by dividing the total cost of planned capital improvement costs by the number of benefiting customers (or ERUs). Special purpose districts are restricted to including capital improvements scheduled to occur within ten years. The RCW is silent with regard to future facilities for cities but it is accepted industry practice to include a 10-year forecast of improvements in GFCs for cities. It is also accepted practice to associate the number of ERUs benefiting from new facilities based on a 10-year forecast of growth. The purpose of using the ten-year forecast is to match the number of new ERUs with the practice of only including projects scheduled to occur within the same ten-year time span. Some future facilities may be identified as benefiting only future customers such as a pump station in a new service area while other improvements may benefit both existing as well as future customers such as a new water reservoir to enhance fire flow. The pro rata share of the cost of future facilities is

determined by dividing by the cost of each planned improvement by the number of benefiting customers.

In this analysis, projects that would not be built without additional growth are assigned as benefiting only the number of new customers. Improvements that correct existing service deficiencies or provide more universal benefit such as source redundancy, fire flow, or regulatory compliance are assigned as benefiting the total number of both existing as well as future customers.

The City’s most recent growth planning documents (Land Use and Housing Elements for the Gig Harbor Draft 2030 Comp Plan) shows the City with an increase in population of 3,437 between the years 2010 to 2030 with a total population of 10,563 in the year 2030. Therefore the population in 2010 is the difference, or 7,126 people. Using compound growth, the annual growth rate from 2010 to 2030 required to go from 7,126 people in 2010 to 10,563 in the year 2030 is 2.0%. This 2% growth is an average rate that is expected to approximate the impact of growth over a long period and therefore actual growth in any single year may vary. The forecasted number of ERUs in ten year (2024) is based on the number of existing ERUs in Table 1-4 increased for 2.0% average annual growth through 2024.

Table 1-6 lists the current number of ERUs, total growth in ERUs and resulting total ERUs in the year 2024.

**TABLE 1-6  
Projected ERUs**

<b>Utility</b>	<b>Est. No. of ERUs (2014)</b>	<b>10-Year Growth in ERUs</b>	<b>Total No. of Planned ERUs in 2024</b>
Water	4,311	944	5,255
Wastewater	6,430	1,408	7,838
Stormwater	5,005	1,096	6,101

Table 1-7 lists capital improvement projects planned to occur within the next ten years. Project costs are shown in estimated costs in the year they are planned (assumes 2.5% annual cost inflation). The projects listed and their costs will be formally adopted by the City as their utility capital improvement plan. The projects and their costs listed in Table 1-7 reflect the most up to date planning information. Table 1-7 summarizes each planned capital improvement and cost and identifies and subtracts any capital costs expected to be funded by private developers. This table also specifies the number of ERUs that benefit from its installation, and shows the resulting pro rata share stated in terms of dollars per ERU. Note that all planned capital improvement projects are allocated as benefitting all customers both existing and new except for the water utility capital project (Well No. 9) and the wastewater mechanical improvements project (T1 - WWTP Expansion Phase 2 B(mechanical)).

The current Phase 2 WWTP improvement construction project has been split into two sub projects referred to as “design & construction, Phase 2 A” and the second as “mechanical, Phase 2B”. The design and construction phase is mainly associated with non-capacity improvements and was recently completed in June of 2015. The remaining mechanical improvements, mainly associated with providing new capacity, are expected to be completed in the fall of 2016. Accordingly, the cost for the first element of the WWTP improvements is shared by all customers (both existing and future), while the second element of the improvement related to capacity is shared by the 10 year growth in ERUs. Also, both of these sub project costs included in the GFC have been reduced by \$4.845M (the new PWTF loan for WWTP improvements) applied to each sub project by the ratio of each sub project’s cost divided by the total cost of \$9,886,000. Table 1-7 lists the amount of the PWTF loan used to reduce each of the sub project costs included in the GFC calculation. Note that the current loan funding the plant improvements is an award from the State with an extremely low interest rate of one quarter of one percent that has resulted in a realized savings equivalent to a four percent rate increase.

During the process of completing the GFC and rate study the City updated their capital improvement plan for the water utility based on a recent engineering analysis of performance issues with existing Well No.4. This necessitated constructing Well No. 11 to replace Well No. 4 and to reschedule Well No. 9 to start back at its original timeline of 2023. Thus the process of constructing Well No. 9 will begin in 2023 with design and permitting (based on 15% of estimated construction costs) and will continue with the first year of construction to begin in 2024 with two remaining years of construction in 2025 and 2026. Since Well No. 9 is to provide new source capacity all of the costs that are within the 10 year GFC horizon are allocated to growth.

**TABLE 1-7  
Pro Rata Shares of Future Facility Costs**

Capital Improvement Project	Utility	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total	New loan	Developer		City Capital Costs	No. of ERUs Benefitting	Pro Rata Share of Future Capital Costs	
														Funds	Costs				
1 - AC Watermain Replacement	Water	750,000	461,300	315,200	323,100	331,100	339,400	347,900	356,600	365,500	374,700	3,964,800				3,964,800	5,255		754
2 - Water Rights Annual Advocate for Permitting (\$40,000)	Water	20,000	20,500	21,000	21,500	22,100	22,600	23,200	23,800	24,400	25,000	224,100				224,100	5,255		43
3 - Well No. 11 – Deep Aquifer Well	Water	-	2,562,500	-	-	-	-	-	-	-	-	2,562,500				2,562,500	5,255		488
4 - Harbor Hill Drive Water Main Extension	Water	-	-	-	484,800	-	-	-	-	-	-	484,800				484,800	5,255		92
7 - Grandview Street Water Main Replacement	Water	-	-	-	-	-	480,200	-	-	-	-	480,200				480,200	5,255		91
9 - Water System Plan Update	Water	-	-	-	121,300	-	-	-	-	-	-	121,300				121,300	5,255		23
Pump Maintenance	Water	70,000	-	-	-	-	-	-	-	-	-	70,000				70,000	5,255		13
11 - East Tank Structural Improvements	Water	350,000	-	-	-	-	-	-	-	-	-	350,000				350,000	5,255		67
12 - Gig Harbor North- Well No. 9	Water	-	-	-	-	-	-	-	-	843,000	1,593,000	2,436,000				2,436,000	944		2,580
Water Share of PW Operations Building	Water	125,000	372,100	210,100	215,400	-	-	-	-	-	-	922,600				922,600	5,255		176
Water Share for PW Decant Facility	Water	-	44,100	-	-	-	-	-	-	-	-	44,100				44,100	5,255		8
Water Reuse Study	Water	50,000	-	-	-	-	-	-	-	-	-	50,000				50,000	5,255		10
<b>Subtotal</b>	<b>Water</b>	<b>1,365,000</b>	<b>3,460,500</b>	<b>546,300</b>	<b>1,166,100</b>	<b>353,200</b>	<b>842,200</b>	<b>371,100</b>	<b>380,400</b>	<b>1,232,900</b>	<b>1,992,700</b>	<b>11,710,400</b>				<b>11,710,400</b>			<b>4,345</b>
T1 - WWTP Expansion Phase II (design/construction)	Sewer	4,256,000	-	-	-	-	-	-	-	-	-	4,256,000	2,083,350			2,172,650	7,838		277
T1 - WWTP Expansion Phase II (mechanical)	Sewer	5,630,000	-	-	-	-	-	-	-	-	-	5,630,000	2,761,650			2,868,350	1,408		2,037
T3 - Annual Replacement, Rehabilitation and Renewal	Sewer	100,000	-	-	-	-	-	-	-	-	-	100,000				100,000	7,838		13
T4 - Annual Water Quality Reporting (test bay)	Sewer	-	-	-	-	-	56,600	-	-	-	-	56,600				56,600	7,838		7
T5 - NPDES Capacity	Sewer	100,000	102,500	-	-	-	-	-	-	-	-	202,500				202,500	7,838		26
C1 - Lift Station 1 Improvements (Crescent Creek Park St.)	Sewer	-	-	-	-	143,500	-	-	-	-	-	143,500				143,500	7,838		18
Landing)	Sewer	1,000,000	1,025,000	2,626,600	-	-	-	-	-	-	-	4,651,600				4,651,600	7,838		593
C4 - Lift Station 6 Improvements (Ryan St./Cascade Ave)	Sewer	-	-	136,600	-	-	-	-	-	-	-	136,600				136,600	7,838		17
C5 - Lift Station 8 Improvements (Harbor Country Dr.)	Sewer	50,000	51,300	525,300	538,400	-	-	-	-	-	-	1,165,000				1,165,000	7,838		149
C6 - Lift Station 9 Improvements (50th St./Reid Dr.)	Sewer	-	-	-	-	-	-	385,000	-	-	-	385,000				385,000	7,838		49
C7 - Lift Station 11 Improvements (38th Ave./48th St. Dr.)	Sewer	127,000	-	-	-	-	-	-	-	-	-	127,000				127,000	7,838		16
C9 - Lift Station 13 Improvements (Purdy Dr/SR-302)	Sewer	-	-	-	541,100	1,131,400	-	-	-	-	-	1,672,500				1,672,500	7,838		213
C10 - Install Flow Meter at LS1	Sewer	-	-	-	-	32,000	-	-	-	-	-	32,000				32,000	7,838		4
C11 - Install Flow Meter at LS4	Sewer	31,000	-	-	-	-	-	-	-	-	-	31,000				31,000	7,838		4
C12 - Install Flow Meter at LS6	Sewer	-	29,700	-	-	-	-	-	-	-	-	29,700				29,700	7,838		4
C13 - Install Flow Meter at LS8	Sewer	-	-	-	-	-	-	41,700	-	-	-	41,700				41,700	7,838		5
C14 - Install Flow Meter at LS9	Sewer	36,000	-	-	-	-	-	-	-	-	-	36,000				36,000	7,838		5
C15 - Install Flow Meter at LS10	Sewer	-	-	32,600	-	-	-	-	-	-	-	32,600				32,600	7,838		4
C16 - Install Flow Meter at LS12	Sewer	-	-	-	31,200	-	-	-	-	-	-	31,200				31,200	7,838		4
C17 - Install Flow Meter at LS13	Sewer	-	-	-	-	-	-	-	-	-	47,500	47,500				47,500	7,838		6
C18 - Install Flow Meter at LS14	Sewer	-	36,900	-	-	-	-	-	-	-	-	36,900				36,900	7,838		5
money in 2018 is for city to install new gravity pipe and																			
Forcemain	Sewer	-	-	1,267,100	269,200	-	-	-	-	-	-	1,536,300			1,267,100	269,200	7,838		34
and Forcemain	Sewer	700,000	102,500	1,050,600	-	-	-	-	-	-	-	1,853,100			1,050,600	802,500	7,838		102
C22 - Wastewater Comprehensive Plan	Sewer	-	-	236,500	-	-	-	-	-	-	-	236,500				236,500	7,838		30
Pioneer Way Sewer Main Replacement	Sewer	400,000	-	-	-	-	-	-	-	-	-	400,000				400,000	7,838		51
<b>Subtotal</b>		<b>12,430,000</b>	<b>1,347,900</b>	<b>5,875,300</b>	<b>1,379,900</b>	<b>1,306,900</b>	<b>56,600</b>	<b>426,700</b>	<b>255,600</b>	<b>-</b>	<b>548,200</b>	<b>23,627,100</b>	<b>4,845,000</b>	<b>2,317,700</b>	<b>16,464,400</b>				<b>3,772</b>
1 - Harborview Drive Stormwater Separation	Storm	-	256,300	-	-	-	-	-	-	-	-	256,300				256,300	6,101		42
2 - Relocate Storm Culvert on Briewood	Storm	5,500	-	-	-	-	-	-	-	-	-	5,500				5,500	6,101		1
3 - Purchase Property Adjacent to Shop	Storm	50,000	45,100	-	-	-	-	-	-	-	-	95,100				95,100	6,101		16
4 - Stormwater Gap Analysis	Storm	60,000	41,000	-	-	-	-	-	-	-	-	101,000				101,000	6,101		17
5 - 38th/Quail Run Ave Storm Culverts	Storm	-	-	-	-	229,800	-	-	-	-	-	229,800				229,800	6,101		38
6 - 50th Street Box Culvert	Storm	375,000	-	-	-	-	-	-	-	-	-	375,000				375,000	6,101		61
7 - Quail Run Water Quality System Improvements	Storm	-	-	15,800	-	-	-	-	-	-	-	15,800				15,800	6,101		3
8 - Annual NPDES Implementation Expenses	Storm	15,000	15,400	15,800	16,200	16,600	17,000	17,400	-	-	-	113,400				113,400	6,101		19
9 - Stormwater Comprehensive Plan Update	Storm	-	-	-	-	-	-	87,000	-	-	-	87,000				87,000	6,101		14
12 - Stinson Avenue- Stormwater Extension	Storm	-	-	-	-	-	226,300	-	-	-	-	226,300				226,300	6,101		37
13 - Donkey Creek Culvert Removal at Harborview	Storm	-	-	-	-	883,000	905,100	1,623,600	-	-	-	3,411,700	852,925			2,558,775	6,101		419
14 - Crescent Creek Culvert Removal	Storm	-	-	-	-	-	-	-	951,000	974,700	1,748,400	3,674,100	2,755,575			918,525	6,101		151
Stormwater Share of PW Building	Storm	125,000	372,100	210,100	215,400	-	-	-	-	-	-	922,600				922,600	6,101		151
Stormwater Share of LS 17 Property	Storm	50,000	-	-	-	-	-	-	-	-	-	50,000				50,000	6,101		8
<b>Subtotal</b>	<b>Storm</b>	<b>680,500</b>	<b>729,900</b>	<b>241,700</b>	<b>231,600</b>	<b>1,129,400</b>	<b>1,148,400</b>	<b>1,728,000</b>	<b>951,000</b>	<b>974,700</b>	<b>1,748,400</b>	<b>9,563,600</b>	<b>-</b>	<b>3,608,500</b>	<b>5,955,100</b>				<b>976</b>

## GENERAL FACILITY CHARGES

Table 1-8 lists the total GFCs for consideration by the City. The GFCs recommended by this analysis are consistent with the Revised Code of Washington, case law, and industry practice. Total GFCs in Table 1-8 have been rounded to the nearest \$10 dollars.

**TABLE 1-8  
Maximum Recommended Water/Wastewater/Storm Utility GFCs**

Utility	Existing Facility Component	Future Facility Component	Total Proposed GFC (\$/ERU)	Current Total GFC (\$/ERU)
Water	\$3,334	\$4,345	\$7,680	\$6,290
Wastewater	\$5,899	\$3,772	\$9,670	\$8,540
Stormwater	\$1,020	\$976	\$2,000	\$1,160

Note that the GFCs in Table 1-8 are slightly higher than those adopted by the City.

## IMPLEMENTATION

As discussed, the City currently uses ERUs in determining GFCs for new customers. Therefore the GFCs in Table 1-8 are appropriate to replace the GFC amounts currently listed in City ordinances and should be applied uniformly to all new customers connecting to the City's utilities.

GFCs are required to be based on the original costs of facilities and the future facility component of the GFCs shown in Table 1-8 include projected inflation costs. For these reasons, the GFCs determined in this analysis should not be adjusted in the future for the effects of inflation. GFCs need only to be updated when new capital improvements are identified in the City's next comprehensive plan.

## **CHAPTER 2**

# **WATER UTILITY REVENUE REQUIREMENTS**

### **INTRODUCTION**

This chapter outlines the calculation of revenue requirements for the water utility and the corresponding recommendation for future water utility monthly service rates. Note that this study is not a cost of service rate study rather it determines percentage increases to all existing monthly water service rates necessary to fund projected operating expenses and capital improvements and debt service while maintaining adequate reserves.

The analysis includes presentation of historical operating expenses, a six-year projection of future operating and capital revenues and expenses, and a recommendation for future monthly water service rates.

### **HISTORICAL OPERATING CASH FLOWS**

Table 2-1 provides a list of historical operating cash flows from 2011 through 2014. Only revenues and expenses associated with month-to-month operations are included. Historical cash flows are presented since they indicate whether existing rates are able to fund existing operations and since future operating expenses and revenues are based in large part on historical levels. Revenues and expenses associated with capital are not presented since historical capital cash flows are unrelated to future capital cash flows that are addressed in a subsequent section.



**TABLE 2-1  
Historical Operating Cash Flows**

<b>OPERATING CASH FLOWS</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>OPERATING REVENUES</b>				
Water - State utility taxes	55,295	61,618	65,931	66,591
Water sales - city residential	565,529	655,628	676,215	716,835
Water sales - city commercial	338,101	363,003	352,043	349,095
Water sales - city government	36,165	42,554	47,824	29,916
Water sales - county residential	168,791	126,828	127,903	120,119
Water sales - county commercial	5,642	6,445	4,519	8,460
Water sales - county government	114,561	113,565	128,371	169,365
Late penalties	8,046	6,883	8,291	11,194
Engineering plan review fees	11,744	360	0	0
Engineering fees - Other	0	2,685	1,330	0
Eng plan review fees Traffic Rpt Prep	450		450	90
Sale of Scrap	1,945	135	1,534	2,102
Other govt. revenues	<u>6,993</u>	<u>2,105</u>	<u>1,940</u>	<u>2,790</u>
<b>TOTAL REVENUES</b>	<b>1,313,262</b>	<b>1,381,809</b>	<b>1,416,351</b>	<b>1,476,557</b>
<b>OPERATING EXPENDITURES</b>				
<b>ADMIN - PUBLIC WORKS</b>				
Regular salaries	85,728	82,356	107,547	102,642
Overtime	231	54	642	332
Personnel benefits	31,873	34,488	42,108	42,158
New Personnel				
Uniforms	0	11	20	126
Office & operating supplies	3,438	4,743	7,348	5,134
Small tools & equipment	3,026	2,367	5,430	6,148
Professional services	1,589	1,457	21,246	1,736
Professional services Developer	2,834	0	0	6,000
Comp. Plan Update (DFAM)	10,134	978	0	2,500
Communications - GIS/LESA	0	0	0	0
Travel	1,051	1,075	5,045	1,300
Advertising	592	1,046	1,875	1,000
Operating rentals & leases	453	192	209	210
Repairs & maintenance	255	0	0	0
Miscellaneous	1,930	1,644	3,011	8,528
Training	<u>0</u>	<u>2,618</u>	<u>501</u>	<u>3,454</u>
<b>SUBTOTAL ADMIN - PUBLIC WORKS</b>	<b>143,134</b>	<b>133,029</b>	<b>194,982</b>	<b>181,268</b>
<b>ADMIN &amp; GENERAL OPERATION</b>				
Regular salaries	113,439	121,887	153,621	150,562
Overtime	0	1,132	2,068	1,066
Personnel benefits	38,372	41,573	52,027	53,970
Uniforms	1,258	1,042	1,199	1,000
Office & operating supplies	1,995	2,372	2,900	10,800
Small tools & equipment	4,297	3,359	2,128	5,736
Professional services	4,582	5,376	16,970	20,568
Legal Fees	1,901	6,712	1,102	1,654
Communications	7,809	7,857	9,456	13,154
Travel	22	621	81	2,804
Advertising	0	56	393	40
Operating rentals & leases	1,050	1,100	2,018	1,034
Insurance	24,568	27,103	27,087	29,040
Repairs & maintenance	827	279	330	464
Miscellaneous	8,955	6,893	7,680	8,068
Training	<u>5,173</u>	<u>2,314</u>	<u>3,266</u>	<u>664</u>
<b>SUBTOTAL ADMIN &amp; GEN OPERATIO</b>	<b>214,248</b>	<b>229,676</b>	<b>282,164</b>	<b>300,624</b>
<b>MAINTENANCE - WELLS</b>				
Regular salaries	40,180	28,137	31,765	19,654
Overtime	1,542	801	1,986	676
Personnel benefits	18,828	14,379	14,540	7,910
Office & operating supplies	26,762	25,246	28,363	30,000
Professional services	34,336	1,086	23,008	474
Advertising	80	130	91	0
Public utility services	71,062	74,930	80,176	80,434
Repairs & maintenance	124,723	14,884	306,376	100,000
Miscellaneous	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>SUBTOTAL MAINTENANCE - WELLS</b>	<b>317,513</b>	<b>159,593</b>	<b>486,305</b>	<b>239,148</b>

**TABLE 2-1 (Continued)**  
**Historical Operating Cash Flows**

<b>OPERATING CASH FLOWS</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>MAINTENANCE - LINES</b>				
Regular salaries	127,174	111,328	125,763	148,152
Overtime	1,676	1,495	2,865	4,582
Personnel benefits	53,309	52,693	57,061	68,006
Uniforms	0	0	0	0
Office & operating supplies	16,111	9,564	19,497	15,000
Fuel	0	0	0	0
Small tools & equipment	1,945	8,457	0	2,170
Communications	737	737	737	844
Advertising	0	0	0	0
Operating rentals & leases	89	0	380	0
Public utility services	1,497	2,333	1,951	2,330
Repairs & maintenance	0	150	151	3,000
Water line breaks	0	0	0	10,000
Miscellaneous	0	0	0	0
<b>SUBTOTAL MAINTENANCE - LINES</b>	<b>202,538</b>	<b>186,757</b>	<b>208,405</b>	<b>254,084</b>
<b>MAINTENANCE - METERS</b>				
Regular salaries	7,662	6,715	5,580	7,896
Overtime	479	372	1,003	0
Personnel benefits	4,513	2,771	3,136	2,836
Supplies - meters	15,558	9,228	8,453	17,702
Repairs & maintenance	0	0	0	5,000
<b>SUBTOTAL MAINTENANCE - METERS</b>	<b>28,212</b>	<b>19,086</b>	<b>18,172</b>	<b>33,434</b>
<b>MAINTENANCE - HYDRANTS</b>				
Regular salaries	0	0	0	5,118
Overtime	0	0	0	0
Personnel benefits	0	0	0	2,535
Supplies - hydrants	2,774	186	2,500	2,500
Professional Services	0	0	0	0
Repairs & maintenance	0	0	0	0
<b>SUBTOTAL MAINTENANCE - HYDRAN</b>	<b>2,774</b>	<b>186</b>	<b>2,500</b>	<b>10,153</b>
<b>CUST. SVC - METER READING</b>				
Regular salaries	4,923	5,778	6,730	6,956
Overtime	0	0	0	0
Personnel benefits	583	795	1,401	1,548
<b>SUBTOTAL CUST. SVC - METER REA</b>	<b>5,506</b>	<b>6,573</b>	<b>8,131</b>	<b>8,504</b>
<b>CUST SERVICE - BILLING/ACCOUNTS</b>				
Regular salaries	17,000	17,346	18,477	16,936
Overtime	0	0	0	0
Personnel benefits	8,204	8,943	9,316	9,426
Office & operating supplies	0	0	0	0
Small tools & equipment	0	384	160	0
Communications	3,877	3,720	5,236	5,310
Miscellaneous	17	12	0	0
<b>SUBTOTAL CUST SERVICE - BILLINC</b>	<b>29,098</b>	<b>30,405</b>	<b>33,189</b>	<b>31,672</b>
<b>OPERATIONS</b>				
Advertising	0	5,110	0	0
Repairs & maintenance	0	0	0	34,250
External taxes & assessments	54,971	59,784	62,365	63,000
<b>SUBTOTAL OPERATIONS</b>	<b>54,971</b>	<b>64,894</b>	<b>62,365</b>	<b>97,250</b>
<b>INSPECTION SERVICES</b>				
Regular salaries	4,632	4,942	5,966	6,532
Overtime	0	17	29	46
Personnel benefits	1,947	2,167	2,526	2,732
<b>SUBTOTAL INSPECTION SERVICES</b>	<b>6,579</b>	<b>7,126</b>	<b>8,521</b>	<b>9,310</b>
<b>CAPITAL PROJECTS</b>				
Machinery & equipment	0	52,085	8,287	19,000
<b>SUBTOTAL CAPITAL PROJECTS</b>	<b>0</b>	<b>52,085</b>	<b>8,287</b>	<b>19,000</b>
<b>TOTAL O&amp;M EXPENSES</b>	<b>1,005,579</b>	<b>890,416</b>	<b>1,314,028</b>	<b>1,185,454</b>

The ability of existing revenues (rates) to pay for operating costs can now be assessed based on the operating cash flows listed in Table 2-1. Table 2-2 lists the resulting annual cash flow from operations.

**TABLE 2-2  
Net Revenue from Operations**

<b>OPERATING CASH FLOWS</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Total Operating Revenues	1,313,262	1,381,809	1,416,351	1,476,557
Total Operating Expenses	<b>1,005,579</b>	<b>890,416</b>	<b>1,314,028</b>	<b>1,185,454</b>
Net Revenue from Operations	307,683	491,393	102,323	291,103

The last element needed to assess the adequacy of current rates is the ability of rates to fund not only operating expenses but also annual debt service. Not all utilities fund annual debt service costs through monthly rates but for agencies with little or no growth it is a necessity and for fiscally conservative agencies it is prudent since debt payments must always be made whether growth and GFC revenue occurs or not.

The water utility does have one outstanding debt (2010 Water and Sewer Revenue Bonds) of which its share after taking into account the Build America Bonds credit is about \$135,000 a year. Therefore as shown in Table 2-2 the existing water utility monthly rates are generating sufficient cash flow to fund total operating costs and generate a surplus large enough to pay for annual water debt costs.

**PROJECTED OPERATING CASH FLOWS**

A projection of future operating revenues and expenses is required in order to analyze whether additional rate increases will be required to fund future operations. Table 2-5 presents a forecast of future revenues and expenses based on historical cash flows from Table 2-1, discussions with staff, and annual inflationary/forecast factors. Inflationary factors include such items as general inflation, annual cost of living adjustments (COLAs), and annual increases in benefit costs (Benefits). Forecast factors are variables such as the State’s excise tax rate on water revenues and the interest-earning rate on deposited cash. The inflationary/forecast factors listed in Table 2-3 are annual and are applied to appropriate revenues and expenses in order to forecast future cash flows from operations.

**TABLE 2-3  
Annual Inflationary/Forecast Factors**

<b>Forecast Factors</b>	<b>Percentage</b>
Interest Earnings Rate	1.00%
COLA	3.00%
Benefits	4.00%
Inflation	2.50%
Electricity	5.00%
Insurance Increase	5.00%
State Water Excise Tax	5.03%
State B&O Tax on GFCs	1.50%

The last variable needed to project future operating revenues and cash flows is growth. Growth impacts both operating cash flows as well as capital cash flows (GFCs). The impact of growth on capital revenues is addressed in a subsequent section. Growth impacts operating revenues and expenses, since more customers are available to pay monthly rates and that in turn increases operating revenues and results in higher water excise taxes. Also, other expenses such as pumping costs will increase due to growth.

This analysis utilizes the following annual growth rates in water customers in order to project future GFC revenue (addressed subsequently) and operating revenues and expenses. Note that only residential and commercial water revenues are adjusted for the impact of annual growth. Also note that Table 2-4 presents growth in terms of an annual percentage increase and estimated increase in equivalent residential units (ERUs) that is used in a subsequent section to estimate annual revenues from general facility charges (GFCs).

The rise in growth in 2016 of 100 new ERUs over other years is the result of additional connections in the Heron Key development. The City expects more connections in this development when ancillary commercial development occurs but the forecast is limited to only 100 new ERUs in order to be conservative.

**TABLE 2-4  
Water Utility Growth**

<b>Growth Factors</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
Annual Water Utility Growth (%)	1.3%	3.4%	1.3%	1.3%	1.3%	0.5%
Annual Water Utility Growth (ERUs)	60	160	60	60	60	20

Table 2-5 lists forecasted operating revenues and expenses for the years 2015 through 2020. Forecasted expenses in 2015 and 2016 are from the City’s latest biannual budget and amounts in later years were developed for this study. Note that future operating expenses also include the impact of hiring one additional public works employee in 2016 whose cost will be shared equally among the water, stormwater, and streets departments (1/3 of the cost funded by each utility).

**TABLE 2-5**  
**Projected Operating Revenues and Expenses**

<b>OPERATING CASH FLOWS</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>OPERATING REVENUES</b>						
Water - State utility taxes	70,800	72,900	73,700	74,500	75,400	75,700
Water sales - city residential	726,100	750,800	760,600	770,500	780,500	784,400
Water sales - city commercial	353,600	365,700	370,400	375,200	380,100	382,000
Water sales - city government	29,900	29,900	29,900	29,900	29,900	29,900
Water sales - county residential	121,700	125,800	127,400	129,100	130,800	131,400
Water sales - county commercial	8,600	8,900	9,000	9,100	9,300	9,300
Water sales - county government	169,400	169,400	169,400	169,400	169,400	169,400
Late penalties	8,600	8,600	8,600	8,600	8,600	8,600
Engineering plan review fees	3,000	3,000	3,000	3,000	3,000	3,000
Engineering fees - Other	1,000	1,000	1,000	1,000	1,000	1,000
Eng plan review fees Traffic Rpt Prep	300	300	300	300	300	300
Sale of Scrap	0	0	0	0	0	0
Other gov't. revenues	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>
<b>TOTAL REVENUES</b>	<b>1,494,000</b>	<b>1,537,300</b>	<b>1,554,300</b>	<b>1,571,600</b>	<b>1,589,300</b>	<b>1,596,000</b>
<b>OPERATING EXPENDITURES</b>						
<b>ADMIN - PUBLIC WORKS</b>						
Regular salaries	130,000	130,000	133,900	137,900	142,100	146,300
Overtime	100	100	300	300	300	300
Personnel benefits	55,200	55,900	56,700	58,300	60,100	61,900
New Personnel	0	24,800	25,500	26,300	27,000	27,900
Uniforms	100	100	200	200	200	200
Office & operating supplies	10,000	10,000	10,300	10,500	10,800	11,000
Small tools & equipment	4,000	5,000	5,100	5,300	5,400	5,500
Professional services	10,000	10,000	10,300	10,500	10,800	11,000
Professional services Developer	5,000	5,000	5,100	5,300	5,400	5,500
Comp. Plan Update (DFAM)	15,000	0	0	0	0	0
Communications - GIS/LESA	0	0	0	0	0	0
Travel	1,500	1,500	1,500	1,600	1,600	1,700
Advertising	1,000	1,000	1,000	1,100	1,100	1,100
Operating rentals & leases	100	100	100	100	100	100
Repairs & maintenance	0	0	0	0	0	0
Miscellaneous	5,000	5,000	5,100	5,300	5,400	5,500
Training	<u>3,000</u>	<u>3,500</u>	<u>3,600</u>	<u>3,700</u>	<u>3,800</u>	<u>3,900</u>
<b>SUBTOTAL ADMIN - PUBLIC WORKS</b>	<b>240,000</b>	<b>252,000</b>	<b>258,700</b>	<b>266,400</b>	<b>274,100</b>	<b>281,900</b>
<b>ADMIN &amp; GENERAL OPERATION</b>						
Regular salaries	143,100	153,000	157,600	162,300	167,200	172,200
Overtime	1,000	1,000	1,000	1,100	1,100	1,100
Personnel benefits	60,400	64,400	66,300	68,300	70,400	72,500
Uniforms	1,000	1,000	1,000	1,100	1,100	1,100
Office & operating supplies	5,000	5,000	5,100	5,300	5,400	5,500
Small tools & equipment	4,000	4,000	4,100	4,200	4,300	4,400
Professional services	10,000	10,000	10,300	10,500	10,800	11,000
Legal Fees	5,000	5,000	5,100	5,300	5,400	5,500
Communications	14,000	15,000	15,400	15,800	16,200	16,600
Travel	1,000	1,000	1,000	1,100	1,100	1,100
Advertising	500	500	500	500	500	600
Operating rentals & leases	2,000	2,000	2,100	2,100	2,200	2,200
Insurance	31,944	35,138	36,000	36,900	37,800	38,700
Repairs & maintenance	1,000	1,000	1,000	1,100	1,100	1,100
Miscellaneous	10,000	10,000	10,300	10,500	10,800	11,000
Training	<u>5,000</u>	<u>5,000</u>	<u>5,100</u>	<u>5,300</u>	<u>5,400</u>	<u>5,500</u>
<b>SUBTOTAL ADMIN &amp; GEN OPERATION</b>	<b>294,944</b>	<b>313,038</b>	<b>321,900</b>	<b>331,400</b>	<b>340,800</b>	<b>350,100</b>
<b>MAINTENANCE - WELLS</b>						
Regular salaries	73,800	76,600	77,300	79,600	82,000	84,400
Overtime	1,000	1,000	1,000	1,100	1,100	1,100
Personnel benefits	34,200	36,100	37,100	38,200	39,300	40,500
Office & operating supplies	40,000	40,000	27,700	28,400	29,100	29,800
Professional services	5,000	5,000	5,100	5,300	5,400	5,500
Advertising	0	0	0	0	0	0
Public utility services	82,847	85,332	89,600	94,000	98,700	103,700
Repairs & maintenance	130,000	0	123,000	126,100	129,200	132,500
Miscellaneous	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>SUBTOTAL MAINTENANCE - WELLS</b>	<b>366,847</b>	<b>244,032</b>	<b>360,800</b>	<b>372,700</b>	<b>384,800</b>	<b>397,500</b>

**TABLE 2-5 (Continued)**  
**Projected Operating Revenues and Expenses**

<b>OPERATING CASH FLOWS</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>MAINTENANCE - LINES</b>						
Regular salaries	92,300	95,800	97,900	100,800	103,800	106,900
Overtime	5,000	5,000	5,200	5,300	5,500	5,600
Personnel benefits	43,000	45,200	46,400	47,700	49,200	50,600
Uniforms			0	0	0	0
Office & operating supplies	25,000	35,000	20,500	21,000	21,500	22,100
Fuel			0	0	0	0
Small tools & equipment	4,000	4,000	4,100	4,200	4,300	4,400
Communications	1,000	1,000	1,000	1,100	1,100	1,100
Advertising			0	0	0	0
Operating rentals & leases			0	0	0	0
Public utility services	2,400	2,500	2,600	2,800	2,900	3,000
Repairs & maintenance	3,000	3,000	3,100	3,200	3,200	3,300
Water line breaks	10,000	10,000	10,300	10,500	10,800	11,000
Miscellaneous	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>SUBTOTAL MAINTENANCE - LINES</b>	<b>185,700</b>	<b>201,500</b>	<b>191,100</b>	<b>196,600</b>	<b>202,300</b>	<b>208,000</b>
<b>MAINTENANCE - METERS</b>						
Regular salaries	13,000	13,400	13,800	14,200	14,600	15,100
Overtime	1,000	1,000	0	0	0	0
Personnel benefits	6,000	6,400	6,600	6,800	7,000	7,200
Supplies - meters	25,000	20,000	18,100	18,600	19,100	19,500
Repairs & maintenance	<u>1,000</u>	<u>4,000</u>	<u>5,100</u>	<u>5,300</u>	<u>5,400</u>	<u>5,500</u>
<b>SUBTOTAL MAINTENANCE - METERS</b>	<b>46,000</b>	<b>44,800</b>	<b>43,600</b>	<b>44,900</b>	<b>46,100</b>	<b>47,300</b>
<b>MAINTENANCE - HYDRANTS</b>						
Regular salaries	5,600	5,800	6,000	6,200	6,300	6,500
Overtime	1,000	1,000	1,000	1,100	1,100	1,100
Personnel benefits	2,600	2,800	2,900	3,000	3,100	3,200
Supplies - hydrants	3,000	5,000	2,600	2,600	2,700	2,800
Professional Services	0	0	0	0	0	0
Repairs & maintenance	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>SUBTOTAL MAINTENANCE - HYDRANTS</b>	<b>12,200</b>	<b>14,600</b>	<b>12,500</b>	<b>12,900</b>	<b>13,200</b>	<b>13,600</b>
<b>CUST. SVC - METER READING</b>						
Regular salaries	8,100	8,700	9,000	9,200	9,500	9,800
Overtime			0	0	0	0
Personnel benefits	<u>2,600</u>	<u>2,700</u>	<u>2,800</u>	<u>2,900</u>	<u>3,000</u>	<u>3,000</u>
<b>SUBTOTAL CUST. SVC - METER READING</b>	<b>10,700</b>	<b>11,400</b>	<b>11,800</b>	<b>12,100</b>	<b>12,500</b>	<b>12,800</b>
<b>CUST SERVICE - BILLING/ACCOUNTS</b>						
Regular salaries	18,400	18,900	19,500	20,100	20,700	21,300
Overtime	0	0	0	0	0	0
Personnel benefits	8,800	9,300	9,600	9,900	10,200	10,500
Office & operating supplies	0	0	0	0	0	0
Small tools & equipment	0	0	0	0	0	0
Communications	6,000	6,000	6,200	6,300	6,500	6,600
Miscellaneous	<u>1,500</u>	<u>2,000</u>	<u>2,100</u>	<u>2,100</u>	<u>2,200</u>	<u>2,200</u>
<b>SUBTOTAL CUST SERVICE - BILLING</b>	<b>34,700</b>	<b>36,200</b>	<b>37,400</b>	<b>38,400</b>	<b>39,600</b>	<b>40,600</b>
<b>OPERATIONS</b>						
Advertising	0	0	0	0	0	0
Repairs & maintenance	0	0	5,100	5,300	5,400	5,500
External taxes & assessments	<u>77,500</u>	<u>90,500</u>	<u>80,300</u>	<u>81,200</u>	<u>82,000</u>	<u>78,000</u>
<b>SUBTOTAL OPERATIONS</b>	<b>77,500</b>	<b>90,500</b>	<b>85,400</b>	<b>86,500</b>	<b>87,400</b>	<b>83,500</b>
<b>INSPECTION SERVICES</b>						
Regular salaries	8,300	8,600	8,900	9,100	9,400	9,700
Overtime	0	0	0	0	0	0
Personnel benefits	<u>4,200</u>	<u>4,400</u>	<u>4,500</u>	<u>4,700</u>	<u>4,800</u>	<u>5,000</u>
<b>SUBTOTAL INSPECTION SERVICES</b>	<b>12,500</b>	<b>13,000</b>	<b>13,400</b>	<b>13,800</b>	<b>14,200</b>	<b>14,700</b>
<b>CAPITAL PROJECTS</b>						
Machinery & equipment	<u>26,150</u>	<u>5,600</u>	<u>20,000</u>	<u>20,000</u>	<u>20,000</u>	<u>20,000</u>
<b>SUBTOTAL CAPITAL PROJECTS</b>	<b>26,150</b>	<b>5,600</b>	<b>20,000</b>	<b>20,000</b>	<b>20,000</b>	<b>20,000</b>
<b>TOTAL O&amp;M EXPENSES</b>	<b>1,307,200</b>	<b>1,226,700</b>	<b>1,356,600</b>	<b>1,395,700</b>	<b>1,435,000</b>	<b>1,470,000</b>

## CAPITAL REVENUES & EXPENSES

Capital cash flows are associated with the cost of constructing major improvements as well as revenues from new financing (loans), earned interest on cash reserves, and general facility charges (GFCs) paid by new customers connecting to the system.

An additional factor in analyzing capital cash flows is cash reserves. An agency must maintain a minimum level of cash reserves in order to safely operate a utility. This minimum level of cash reserves is somewhat subjective but is based in part on annual expenses, debt service, and the ability of an agency to undertake emergency repairs. Cash reserves in excess of the minimum balance are also critical in an agency's ability to fund the long term capital needs of a utility either for improvements or repair and replacement of existing facilities (depreciation).

Table 2-6 lists annual debt service and projected capital revenues and expenses for the water utility from 2015 through 2020. Note that the annual debt service listed for the Well No. 11 project is based on a 20 year amortization with a 4.5% interest rate.

**TABLE 2-6**  
**Projected Capital Cash Flows**

<b>CAPITAL CASH FLOWS</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>DEBT PAYMENTS</b>						
2010 W/S Revenue Bonds	164,500	163,100	161,300	160,700	159,800	157,000
2010 BAB Credits	29,900	28,900	27,700	26,400	25,000	23,500
New Debt - 3 - Well No. 11 – Deep Aquifer Well	0	0	197,000	197,000	197,000	197,000
<b>TOTAL DEBT PAYMENTS</b>	<b>134,600</b>	<b>134,200</b>	<b>330,600</b>	<b>331,300</b>	<b>331,800</b>	<b>330,500</b>
<b>CAPITAL REVENUES</b>						
Connection Charges	438,000	1,168,000	438,000	438,000	438,000	146,000
New Loan - 3 - Well No. 11 – Deep Aquifer Well	0	2,562,500	0	0	0	0
Interest Earnings from Cash	7,900	7,200	10,500	8,000	7,200	7,000
<b>CAPITAL REVENUES TOTAL</b>	<b>445,900</b>	<b>3,737,700</b>	<b>448,500</b>	<b>446,000</b>	<b>445,200</b>	<b>153,000</b>
<b>CAPITAL EXPENSES</b>						
1 - AC Watermain Replacement	750,000	461,300	315,200	323,100	331,100	339,400
2 - Water Rights Annual Advocate for Permitting	20,000	20,500	21,000	21,500	22,100	22,600
3 - Well No. 11 – Deep Aquifer Well	0	2,562,500	0	0	0	0
4 - Harbor Hill Drive Water Main Extension	0	0	0	484,800	0	0
7 - Grandview Street Water Main Replacement	0	0	0	0	0	480,200
9 - Water System Plan Update	0	0	0	121,300	0	0
10 - Well No. 3- Clean and Video Tape Well Casir	70,000	0	0	0	0	0
11 - East Tank Structural Improvements	350,000	0	0	0	0	0
12 - Gig Harbor North- Well No. 9	0	0	0	0	0	0
Water Share of PW Operations Building	125,000	372,100	210,100	215,400	0	0
Water Share for PW Decant Facility	0	44,100	0	0	0	0
Water Reuse Study	50,000	0	0	0	0	0
<b>CAPITAL EXPENSES TOTAL</b>	<b>1,365,000</b>	<b>3,460,500</b>	<b>546,300</b>	<b>1,166,100</b>	<b>353,200</b>	<b>842,200</b>

Capital revenues listed as connection charges are from GFCs paid by new customers connecting to the system as listed in Table 2-4. Connection charge revenue is based on the number of ERUs from Table 2-4 multiplied by the GFC recommended in Chapter 1 of \$7,300.

The new line item New Loan for Well No. 11 listed under capital revenues reflects the need of the water utility to issue debt in order to fund the construction of the well. Without the issuance of the debt the cash reserves of the water utility would drop to an unacceptably low level beginning in 2017.

The last line item under capital revenue, Interest Earnings from Cash represents interest earnings from the water utility’s cash reserves.

The capital expenses listed in Table 2-6 are from the City’s latest 6 year capital facility schedule and from input from staff.

## PROJECTED UTILITY CASH FLOWS

There is now sufficient information to analyze the ability of existing rates to fund future operations. Table 2-7 provides a summary of both operational and capital cash flows and shows projected levels of the water utility’s cash reserves. The information summarized in Table 2-7 is based on the forecasts provided in Tables 2-5 and 2-6 and reflects no changes to existing monthly rates.

The cash flows in Table 2-7 are based on existing rates being in effect throughout the entire 6 year forecast.

**TABLE 2-7**  
**Utility Cash Flow Summary with No Rate Increases**

Accounts	2015	2016	2017	2018	2019	2020
<b>OPERATIONAL SUMMARY</b>						
(+) Total Operating Revenues	1,494,000	1,537,300	1,554,300	1,571,600	1,589,300	1,596,000
(-) Total Operation & Maintenance	1,307,200	1,226,700	1,356,600	1,395,700	1,435,000	1,470,000
(-) Total Debt	134,600	134,200	330,600	331,300	331,800	330,500
<b>NET REVENUE</b>	<b>52,200</b>	<b>176,400</b>	<b>132,900</b>	<b>155,400</b>	<b>177,500</b>	<b>204,500</b>
<b>CAPITAL SUMMARY</b>						
<b>Start of Year Cash</b>	<b>1,181,100</b>	<b>313,800</b>	<b>765,600</b>	<b>530,900</b>	<b>351,700</b>	<b>444,400</b>
(+) Connection Charges & Interest Inc.	445,500	1,173,400	444,500	438,900	438,000	146,000
(+) Transfer from Operations	52,200	176,400	0	0	0	0
(+) Total Loan Funds	0	2,562,500	0	0	0	0
(+) Total CIAC Funds	0	0	0	0	0	0
(-) Total Capital Expenses	1,365,000	3,460,500	546,300	1,166,100	353,200	842,200
(-) Transfer to Operations	0	0	132,900	155,400	177,500	204,500
<b>NET CAPITAL REVENUE</b>	<b>867,300</b>	<b>451,800</b>	<b>234,700</b>	<b>882,600</b>	<b>92,700</b>	<b>900,700</b>
<b>End of Year Cash</b>	<b>313,800</b>	<b>765,600</b>	<b>530,900</b>	<b>351,700</b>	<b>444,400</b>	<b>1,345,100</b>

As shown in Table 2-7, without the issuance of new debt in 2016 to pay for the construction of Well No. 11, the water utility would not be able to maintain adequate cash reserves (assumed to be approximately \$1M) and in fact the water utility would have a negative cash balance after capital costs are incurred in 2016. Also shown by Table 2-



7, in 2017 with the additional debt service, there are insufficient operating revenues to pay for the new debt.

## RECOMMENDED MONTHLY RATE INCREASES

Table 2-8 presents a revised summary of cash flows assuming rate increases of 6% in 2015 and 2016, 5% in 2017 and 2018, and 4% in 2019 and 2020.

Note that the rate increases impact the magnitude of monthly rate revenues, the amount of excise tax paid, interest earned on cash reserves, cash reserve levels, and transfers to and from operations and therefore the total numbers shown differ from data previously presented.

**TABLE 2-8**  
**Utility Cash Flow Summary with Recommended Rate Increases**

% Rate Increase	6.0%	6.0%	5.0%	5.0%	4.0%	4.0%
Accounts	2015	2016	2017	2018	2019	2020
<b>OPERATIONAL SUMMARY</b>						
(+) Total Operating Revenues	1,583,000	1,725,500	1,831,300	1,943,400	2,043,300	2,133,700
(-) Total Operation & Maintenance	1,311,400	1,235,700	1,369,900	1,413,500	1,456,800	1,495,700
(-) Total Debt	134,600	134,200	330,600	331,300	331,800	330,500
<b>NET REVENUE</b>	<b>137,000</b>	<b>355,600</b>	<b>130,800</b>	<b>198,600</b>	<b>254,700</b>	<b>307,500</b>
<b>CAPITAL SUMMARY</b>						
<b>Start of Year Cash</b>	<b>1,181,100</b>	<b>399,000</b>	<b>1,031,800</b>	<b>1,064,800</b>	<b>543,300</b>	<b>890,000</b>
(+) Connection Charges & Interest Inc.	445,900	1,175,200	448,500	446,000	445,200	153,000
(+) Transfer from Operations	137,000	355,600	130,800	198,600	254,700	307,500
(+) Total Loan Funds	0	2,562,500	0	0	0	0
(+) Total CIAC Funds	0	0	0	0	0	0
(-) Total Capital Expenses	1,365,000	3,460,500	546,300	1,166,100	353,200	842,200
(-) Transfer to Operations	0	0	0	0	0	0
<b>NET CAPITAL REVENUE</b>	<b>782,100</b>	<b>632,800</b>	<b>33,000</b>	<b>521,500</b>	<b>346,700</b>	<b>381,700</b>
<b>End of Year Cash</b>	<b>399,000</b>	<b>1,031,800</b>	<b>1,064,800</b>	<b>543,300</b>	<b>890,000</b>	<b>508,300</b>

As shown in Table 2-8, the recommended rate increases will allow the water utility to construct needed capital improvements while maintaining net positive income from operations and continue to maintain adequate water capital reserves. Note that cash reserves in 2020 are less than the goal of \$1M but the forecast model shows that this is the lowest level in the next ten years and reserves start building again in 2021.

## CHAPTER 3

# SEWER UTILITY REVENUE REQUIREMENTS

### INTRODUCTION

This chapter outlines the calculation of revenue requirements for the sewer utility and the corresponding recommendation for future sewer utility monthly service rates. Note that this study is not a cost of service rate study rather it determines percentage increases to all existing monthly sewer service rates necessary to fund projected operating expenses and capital improvements and debt service while maintaining adequate reserves.

The analysis includes presentation of historical operating expenses, a five-year projection of future operating and capital revenues and expenses, and a recommendation for future monthly sewer service rates.

### HISTORICAL OPERATING CASH FLOWS

Table 3-1 provides a list of historical operating cash flows from 2011 through 2014. Only revenues and expenses associated with month-to-month operations are included. Historical cash flows are presented since they indicate whether existing rates are able to fund existing operations and since future operating expenses and revenues are based in large part on historical levels. Revenues and expenses associated with capital are not presented since historical capital cash flows are unrelated to future capital cash flows that are addressed in a subsequent section.

**TABLE 2-1  
Historical Operating Cash Flows**

<b>OPERATING CASH FLOWS</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>OPERATING REVENUES</b>				
Sewer State utilities tax	113,004	125,544	128,743	136,008
Inspection fees - House Stub	1,325	2,730	2,350	1,875
Inspection fees - Step Sys	1,040	780	805	650
Sewer service charges	12,183	7,140	936	
Sewer svc. - city residential	1,272,603	1,445,603	1,503,235	1,635,957
Sewer svc. - city commercial	991,526	1,111,388	1,134,785	1,145,680
Sewer svc. - city governmental	27,369	30,582	32,121	32,553
Sewer svc. - county residential	343,933	392,275	381,753	362,759
Sewer svc. - county commercial	23,947	27,229	21,939	24,155
Sewer svc. - county governmental	503,189	529,320	542,055	575,888
Late penalties	629	820	1,077	1,118
Inspection			770	200
Engineering plan review fees	634	270	630	90
Engr plan review fees	1,889			
Other govt revenues	3,019	2,612	592	536
<b>TOTAL REVENUES</b>	<b>3,296,290</b>	<b>3,676,293</b>	<b>3,749,919</b>	<b>3,917,469</b>
<b>OPERATING EXPENDITURES</b>				
<b>ADMIN - PUBLIC WORKS</b>				
Regular salaries	110,920	111,895	141,992	140,860
Overtime	229	1,065	1,096	1,136
Personnel benefits	42,532	45,222	57,028	57,984
New Personnel for operations				
Small tools & equipment	0	0	703	
Professional services	0	0	0	
Water quality study	0	0	0	
Comprehensive sewer plan	0	0	0	15,000
Engineering study - wwtp capacity study	0	0	0	
Travel	0	0	0	0
<b>SUBTOTAL ADMIN - PUBLIC WORKS</b>	<b>153,681</b>	<b>158,182</b>	<b>200,819</b>	<b>214,980</b>
<b>ADMINISTRATION - GENERAL</b>				
Regular salaries	114,364	126,876	154,636	155,338
Overtime	0	1,132	2,068	1,066
Personnel benefits	39,618	42,621	52,392	54,938
Office & operating supplies	2,191	1,867	1,881	2,246
Small tools & equipment	6,460	5,294	10,891	14,144
Professional services	21,360	6,570	17,041	17,290
Engineering	0	0	0	0
Legal fees	5,530	3,297	5,565	2,840
Communications	7,841	8,764	19,881	21,150
Travel	435	1,806	635	5,032
Advertising	441	365	486	300
Operating rentals & leases	1,050	1,100	1,774	1,506
Insurance	85,121	88,224	88,170	94,529
Public utility services	7,440	7,634	1,826	1,156
Repairs & maintenance	164	0	0	0
Miscellaneous	1,560	2,855	2,656	3,636
Training	2,031	4,044	1,013	5,000
<b>SUBTOTAL ADMINISTRATION - GENERAL</b>	<b>295,606</b>	<b>302,449</b>	<b>360,915</b>	<b>380,171</b>
<b>MAINT. &amp; OPNS. - COLLECTION</b>				
Regular salaries	227,229	257,405	260,779	249,542
Overtime	8,673	10,572	8,721	15,166
Personnel benefits	107,870	119,276	119,280	114,246
Office & operating supplies	46,705	68,093	85,295	91,143
Fuel	5,279	5,820	6,508	7,378
Small tools & equipment	12,659	57,807	54,291	26,800
Professional services	6,843	45,476	61,378	16,000
Video inspection	11,945	12,418	1,047	1,650
Communications	8,074	8,194	8,497	9,000
Advertising	0	0	259	0
Operating rentals & leases	1,721	2,251	23,445	15,758
Public utility services	0	0	7,765	9,556
Electric - pump stations	26,025	29,709	30,187	33,181
Repairs & maintenance	137,560	36,417	248,029	220,300
Sewer line breaks	7,706	93,553	6,245	5,000
Miscellaneous	215	0	192	3,500
<b>SUBTOTAL MAINT. &amp; OPNS. - COLLECTION</b>	<b>608,504</b>	<b>746,991</b>	<b>921,918</b>	<b>818,220</b>

**TABLE 2-1 (Continued)**  
**Historical Operating Cash Flows**

<b>OPERATING CASH FLOWS</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>MAINTENANCE - TREATMENT PLANT</b>				
Regular salaries	5,111	4,557	2,503	908
Overtime	1,348	417	815	0
Personnel benefits	<u>2,881</u>	<u>1,932</u>	<u>1,246</u>	<u>374</u>
<b>SUBTOTAL MAINT. - TREATMENT PLANT</b>	<b>9,340</b>	<b>6,906</b>	<b>4,564</b>	<b>1,282</b>
<b>CUST SERVICE-METER READING</b>				
Regular salaries	4,788	5,780	6,565	6,956
Overtime	0	0	0	0
Personnel benefits	<u>583</u>	<u>795</u>	<u>1,401</u>	<u>1,548</u>
<b>SUBTOTAL CUST SERVICE-METER READING</b>	<b>5,371</b>	<b>6,575</b>	<b>7,966</b>	<b>8,504</b>
<b>CUST SVC - BILLING/ACCOUNTING</b>				
Regular salaries	16,530	17,352	17,982	16,936
Overtime	0	0	0	0
Personnel benefits	8,204	8,943	9,317	9,424
Office & operating supplies	0	0	0	0
Small tools & equipment	0	479	160	0
Communications	5,113	4,815	6,670	6,528
Operating rentals & leases	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>SUBTOTAL CUST SVC - BILLING/ACCOUNTING</b>	<b>29,847</b>	<b>31,589</b>	<b>34,129</b>	<b>32,888</b>
<b>OPERATIONS - COLLECTION SYSTEMS</b>				
Regular salaries	588	7,427	9,215	6,284
Overtime	385	0	0	0
Personnel benefits	226	2,691	2,778	4,994
Office & operating supplies	0	0	0	0
Professional Services	375	0	0	0
External taxes & assessments	0	0	0	0
Repairs & maintenance	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>SUBTOTAL OPERATIONS - COLLECTION SYST</b>	<b>1,574</b>	<b>10,118</b>	<b>11,993</b>	<b>11,278</b>
<b>OPERATIONS - TREATMENT PLANT</b>				
Regular salaries	229,215	246,513	245,963	252,888
Overtime	5,776	5,520	6,553	11,644
Personnel benefits	96,201	104,714	95,975	104,714
Uniforms	972	1,218	2,659	1,012
Office & operating supplies	147,726	118,248	149,656	147,800
Fuel	5,598	5,682	6,516	6,874
Small tools & equipment	10,748	9,812	5,079	14,500
Professional services	34,328	27,199	49,640	64,000
Communications	3,505	2,910	3,345	2,956
Travel	1,290	1,295	1,290	1,500
Operating rentals & leases	902	413	283	500
Public utility services	7,261	5,497	4,083	4,152
Utilities - sludge disposal	77,428	76,575	89,034	112,946
Utilities - electrical	106,440	124,282	125,862	133,667
Utilities - garbage	6,076	7,027	6,410	6,406
Repairs & maintenance	7,295	9,762	15,559	41,736
Miscellaneous	10,683	11,387	10,834	14,550
Conference/training	890	10	920	1,000
External taxes & assessments	<u>54,480</u>	<u>67,958</u>	<u>59,499</u>	<u>57,234</u>
<b>SUBTOTAL OPERATIONS - TREATMENT PLANT</b>	<b>806,814</b>	<b>826,022</b>	<b>879,160</b>	<b>980,079</b>
<b>INSPECTION</b>				
Regular salaries	7,511	9,859	10,340	12,504
Overtime	0	1,062	680	248
Personnel benefits	<u>3,371</u>	<u>4,740</u>	<u>4,684</u>	<u>5,712</u>
<b>SUBTOTAL INSPECTION</b>	<b>10,882</b>	<b>15,661</b>	<b>15,704</b>	<b>18,464</b>
<b>CAPITAL PROJECTS</b>				
Machinery & equipment	<u>74,143</u>	<u>48,496</u>	<u>0</u>	<u>76,000</u>
<b>SUBTOTAL CAPITAL PROJECTS</b>	<b>74,143</b>	<b>48,496</b>	<b>0</b>	<b>76,000</b>
<b>TOTAL O&amp;M EXPENSES</b>	<b>1,995,800</b>	<b>2,153,000</b>	<b>2,437,200</b>	<b>2,541,900</b>

The ability of existing revenues (rates) to pay for operating costs can now be assessed based on the operating cash flows listed in Table 3-1. Table 3-2 lists the resulting annual cash flow from operations. As can be seen from Table 3-2, the sewer utility and therefore existing sewer utility monthly rates are generating sufficient cash flow to fund operating costs and generate a surplus.

**TABLE 3-2  
Net Revenue from Operations**

<b>OPERATING CASH FLOWS</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Total Operating Revenues	3,296,290	3,676,293	3,749,919	3,917,469
Total Operating Expenses	1,995,800	2,153,000	2,437,200	2,541,900
Net Revenue from Operations	1,300,490	1,523,293	1,312,719	1,375,569

The last element needed to assess the adequacy of current rates is the ability of rates to fund not only operating expenses but also annual debt service. Not all utilities fund annual debt service costs through monthly rates, but for agencies with little or no growth it is a necessity and for fiscally conservative agencies it is prudent since debt payments must always be made and revenue from growth is unpredictable.

The sewer utility currently has four outstanding debts, a 2008 PWTF loan, the 2010 water/sewer revenue bonds, 2010 water/sewer revenue bonds type B, and 2010 water /sewer revenue bonds type C. Some of the 2010 revenue bonds are Build America (BAB) bonds for which the Government provides a credit to offset some of the interest costs. These BAB credits are included in the forecast. The City also has a new PWTF loan for \$4.85M that will be used in 2015 and for which repayment is expected to begin in 2016. The estimated annual debt payment for this loan is based on a remaining term of 17 years and 0.25% annual interest. Total debt service in 2015 is expected to be about \$1.4M that will increase to about \$1.8M when the PWTF loan starts repayment in 2016.

Therefore if annual debt service is taken into account along with total revenues and expenses as shown in Table 3-2, the sewer utility is not generating positive net revenue in any year and without any rate increases these annual losses will continue to deplete cash reserves.

## **PROJECTED OPERATING CASH FLOWS**

A projection of future operating revenues and expenses is required in order to analyze whether additional rate increases will be required to fund future operations. Table 3-3 presents a forecast of future revenues and expenses based on historical cash flows from Table 3-1, discussions with staff, and annual inflationary/forecast factors. Inflationary factors include such items as general inflation, annual cost of living adjustments (COLAs), and annual increases in benefit costs (Benefits). Forecast factors are variables such as the State’s excise tax rate on sewer revenues and the interest-earning rate on deposited cash. The inflationary/forecast factors listed in Table 3-3 are annual and are applied to appropriate revenues and expenses in order to forecast future cash flows from operations.

Note that the sewer excise tax rate listed in Table 3-3 of 1.73% reflects the combined rate paid by the City taking into account the percentage of revenue taxed at the collections rate of 3.852% and the amount of revenues taxed at the treatment and transmission rate of 1.5% as allowed by RCW.

**TABLE 3-3  
Annual Inflationary/Forecast Factors**

<b>Forecast Factors</b>	<b>Percentage</b>
Interest Earnings Rate	1.00%
COLA	3.00%
Benefits	4.00%
Inflation	2.50%
Electricity	5.00%
Insurance Increase	5.00%
State Water Excise Tax	1.73%
State B&O Tax on GFCs	1.50%

The last variable needed to project future operating revenues and cash flows is growth. Growth impacts both operating cash flows as well as capital cash flows (GFCs). The impact of growth on capital revenues is addressed in a subsequent section. Growth impacts operating revenues and expenses since more customers are available to pay monthly rates and that in turn increases operating revenues and results in higher water excise taxes. Also, other expenses such as pumping and treatment costs will increase due to growth.

This analysis utilizes the following growth in sewer customers in order to project future GFC revenue (addressed subsequently) and operating revenues and expenses. Note that only residential and commercial sewer revenues are adjusted for the impact of annual growth. Also note that Table 3-4 presents growth in terms of an annual percentage increase and estimated increase in equivalent residential units (ERUs) that is used in a subsequent section to estimate annual revenues from general facility charges (GFCs).

The rise in growth in 2016 of 100 new ERUs over other years is the result of additional connections in the Heron Key development. The City expects more connections in this development when ancillary commercial development occurs but the forecast is limited to only 100 new ERUs in order to be conservative.

**TABLE 3-4  
Sewer Utility Growth**

<b>Growth Factors</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
Annual Water Utility Growth (%)	1.3%	2.8%	1.3%	1.3%	1.3%	0.5%
Annual Water Utility Growth (ERUs)	90	190	90	90	90	40

Table 3-5 lists forecasted operating revenues and expenses for the years 2015 through 2020. Forecasted expenses in 2015 and 2016 are from the City’s latest biannual budget and amounts in later years were developed for this study. Note that future operating expenses also include the impact hiring an additional sewer maintenance employee in the year 2015.

**TABLE 3-5  
Projected Operating Revenues and Expenses**

<b>OPERATING CASH FLOWS</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>OPERATING REVENUES</b>						
Sewer State utilities tax	147,100	150,500	152,200	153,900	155,600	156,200
Inspection fees - House Stub	1,900	1,900	1,900	1,900	1,900	1,900
Inspection fees - Step Sys	700	700	700	700	700	700
Sewer service charges	0	0	0	0	0	0
Sewer svc. - city residential	1,657,300	1,703,700	1,725,800	1,748,300	1,771,000	1,779,800
Sewer svc. - city commercial	1,160,600	1,193,100	1,208,600	1,224,300	1,240,200	1,246,400
Sewer svc. - city governmental	32,600	32,600	32,600	32,600	32,600	32,600
Sewer svc. - county residential	367,500	377,800	382,700	387,700	392,700	394,700
Sewer svc. - county commercial	24,500	25,200	25,500	25,900	26,200	26,300
Sewer svc. - county governmental	575,900	575,900	575,900	575,900	575,900	575,900
Late penalties	1,100	1,100	1,100	1,100	1,100	1,100
Inspection	200	200	200	200	200	200
Engineering plan review fees	100	100	100	100	100	100
Engr plan review fees	0	0	0	0	0	0
Other gov't revenues	500	500	500	500	500	500
<b>TOTAL REVENUES</b>	<b>3,970,000</b>	<b>4,063,300</b>	<b>4,107,800</b>	<b>4,153,100</b>	<b>4,198,700</b>	<b>4,216,400</b>
<b>OPERATING EXPENDITURES</b>						
<b>ADMIN - PUBLIC WORKS</b>						
Regular salaries	166,600	171,900	177,100	182,400	187,800	193,500
Overtime	1,000	1,000	1,000	1,100	1,100	1,100
Personnel benefits	72,500	75,300	77,600	79,900	82,300	84,800
New Personnel for operations	93,800	93,800	96,600	99,500	102,400	105,500
Small tools & equipment	0	0	0	0	0	0
Professional services	0	0	0	0	0	0
Water quality study	0	0	0	0	0	0
Comprehensive sewer plan	15,000	15,000	15,400	15,800	16,200	16,600
Engineering study - wwtp capacity study	0	0	0	0	0	0
Travel	0	0	0	0	0	0
<b>SUBTOTAL ADMIN - PUBLIC WORKS</b>	<b>348,900</b>	<b>357,000</b>	<b>367,700</b>	<b>378,700</b>	<b>389,800</b>	<b>401,500</b>
<b>ADMINISTRATION - GENERAL</b>						
Regular salaries	147,000	157,200	161,900	166,800	171,800	176,900
Overtime	1,000	1,000	1,000	1,100	1,100	1,100
Personnel benefits	61,900	66,000	68,000	70,000	72,100	74,300
Office & operating supplies	2,000	2,000	2,100	2,100	2,200	2,200
Small tools & equipment	7,000	7,000	7,200	7,400	7,500	7,700
Professional services	5,000	5,000	5,100	5,300	5,400	5,500
Engineering	0	0	0	0	0	0
Legal fees	6,000	6,000	6,200	6,300	6,500	6,600
Communications	23,000	24,000	24,600	25,200	25,800	26,500
Travel	5,000	5,000	5,100	5,300	5,400	5,500
Advertising	500	0	0	0	0	0
Operating rentals & leases	2,000	0	0	0	0	0
Insurance	103,982	114,380	117,300	120,200	123,200	126,300
Public utility services	1,500	2,000	2,100	2,200	2,300	2,400
Repairs & maintenance	0	0	0	0	0	0
Miscellaneous	3,000	3,000	3,100	3,200	3,200	3,300
Training	2,000	2,000	2,100	2,100	2,200	2,200
<b>SUBTOTAL ADMINISTRATION - GENERAL</b>	<b>370,882</b>	<b>394,580</b>	<b>405,800</b>	<b>417,200</b>	<b>428,700</b>	<b>440,500</b>
<b>MAINT. &amp; OPNS. - COLLECTION</b>						
Regular salaries	89,600	92,000	94,800	97,600	100,500	103,500
Overtime	9,000	9,000	9,300	9,500	9,800	10,100
Personnel benefits	34,400	36,100	37,100	38,200	39,300	40,500
Office & operating supplies	92,500	91,500	93,400	95,700	98,100	100,600
Fuel	7,500	7,500	7,600	7,800	8,000	8,200
Small tools & equipment	13,000	4,000	27,500	28,200	28,900	29,600
Professional services	66,000	66,000	41,000	42,000	43,100	44,200
Video inspection	30,000	30,000	1,700	1,800	1,800	1,900
Communications	13,000	13,000	9,200	9,500	9,700	9,900
Advertising	0	0	0	0	0	0
Operating rentals & leases	15,000	5,000	16,200	16,600	17,000	17,400
Public utility services	10,000	11,000	10,600	11,300	12,000	12,700
Electric - pump stations	36,000	39,000	36,800	39,100	41,600	43,900
Repairs & maintenance	396,000	80,000	153,800	157,600	161,500	165,600
Sewer line breaks	25,000	25,000	25,600	26,300	26,900	27,600
Miscellaneous	2,000	2,000	3,600	3,700	3,800	3,900
<b>SUBTOTAL MAINT. &amp; OPNS. - COLLECTION</b>	<b>839,000</b>	<b>511,100</b>	<b>568,200</b>	<b>584,900</b>	<b>602,000</b>	<b>619,600</b>

**TABLE 3-5 (Continued)**  
**Projected Operating Revenues and Expenses**

<b>OPERATING CASH FLOWS</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>MAINTENANCE - TREATMENT PLANT</b>						
Regular salaries	0	0	900	1,000	1,000	1,000
Overtime	0	0	0	0	0	0
Personnel benefits	0	0	400	400	400	500
<b>SUBTOTAL MAINT. - TREATMENT PLANT</b>	<b>0</b>	<b>0</b>	<b>1,300</b>	<b>1,400</b>	<b>1,400</b>	<b>1,500</b>
<b>CUST SERVICE-METER READING</b>						
Regular salaries	8,100	8,700	9,000	9,200	9,500	9,800
Overtime	0	0	0	0	0	0
Personnel benefits	2,600	2,700	2,800	2,900	3,000	3,000
<b>SUBTOTAL CUST SERVICE-METER READING</b>	<b>10,700</b>	<b>11,400</b>	<b>11,800</b>	<b>12,100</b>	<b>12,500</b>	<b>12,800</b>
<b>CUST SVC - BILLING/ACCOUNTING</b>						
Regular salaries	18,400	18,900	19,500	20,100	20,700	21,300
Overtime	0	0	0	0	0	0
Personnel benefits	8,800	9,300	9,600	9,900	10,200	10,500
Office & operating supplies	0	0	0	0	0	0
Small tools & equipment	0	0	0	0	0	0
Communications	7,000	7,000	7,200	7,400	7,500	7,700
Operating rentals & leases	0	0	0	0	0	0
<b>SUBTOTAL CUST SVC - BILLING/ACCOUNTING</b>	<b>34,200</b>	<b>35,200</b>	<b>36,300</b>	<b>37,400</b>	<b>38,400</b>	<b>39,500</b>
<b>OPERATIONS - COLLECTION SYSTEMS</b>						
Regular salaries	0	0	6,500	6,700	6,900	7,100
Overtime	0	0	0	0	0	0
Personnel benefits	0	0	5,200	5,300	5,500	5,600
Office & operating supplies	0	0	0	0	0	0
Professional Services	0	0	0	0	0	0
External taxes & assessments	0	0	0	0	0	0
Repairs & maintenance	0	0	0	0	0	0
<b>SUBTOTAL OPERATIONS - COLLECTION SYST</b>	<b>0</b>	<b>0</b>	<b>11,700</b>	<b>12,000</b>	<b>12,400</b>	<b>12,700</b>
<b>OPERATIONS - TREATMENT PLANT</b>						
Regular salaries	411,700	425,600	437,800	450,900	464,400	478,300
Overtime	6,000	6,000	11,900	12,300	12,700	13,100
Personnel benefits	194,500	204,300	210,100	216,400	222,900	229,600
Uniforms	2,000	2,000	2,100	2,100	2,200	2,200
Office & operating supplies	305,300	185,300	189,900	194,700	199,500	204,500
Fuel	7,000	7,000	7,200	7,400	7,500	7,700
Small tools & equipment	13,150	8,650	8,900	9,100	9,400	9,600
Professional services	53,400	53,400	54,700	56,100	57,500	58,900
Communications	3,500	3,500	3,600	3,700	3,800	3,900
Travel	3,500	3,500	3,600	3,700	3,800	3,900
Operating rentals & leases	2,000	2,000	2,100	2,100	2,200	2,200
Public utility services	10,000	10,000	11,100	11,800	12,500	13,200
Utilities - sludge disposal	135,000	135,000	149,500	159,100	169,200	178,500
Utilities - electrical	160,000	160,000	177,200	188,500	200,500	211,600
Utilities - garbage	8,500	8,500	8,700	8,900	9,200	9,400
Repairs & maintenance	53,500	53,500	54,800	56,200	57,600	59,100
Miscellaneous	7,000	7,000	7,200	7,400	7,500	7,700
Conference/training	6,000	6,000	6,200	6,300	6,500	6,600
External taxes & assessments	70,000	70,000	68,400	69,100	69,900	70,200
<b>SUBTOTAL OPERATIONS - TREATMENT PLANT</b>	<b>1,452,050</b>	<b>1,351,250</b>	<b>1,415,000</b>	<b>1,465,800</b>	<b>1,518,800</b>	<b>1,570,200</b>
<b>INSPECTION</b>						
Regular salaries	13,000	13,300	13,700	14,100	14,500	15,000
Overtime	0	0	0	0	0	0
Personnel benefits	5,200	5,500	5,700	5,800	6,000	6,200
<b>SUBTOTAL INSPECTION</b>	<b>18,200</b>	<b>18,800</b>	<b>19,400</b>	<b>19,900</b>	<b>20,500</b>	<b>21,200</b>
<b>CAPITAL PROJECTS</b>						
Machinery & equipment	92,600	0	20,500	21,000	21,500	22,100
<b>SUBTOTAL CAPITAL PROJECTS</b>	<b>92,600</b>	<b>0</b>	<b>20,500</b>	<b>21,000</b>	<b>21,500</b>	<b>22,100</b>
<b>TOTAL O&amp;M EXPENSES</b>	<b>3,166,500</b>	<b>2,679,300</b>	<b>2,857,700</b>	<b>2,950,400</b>	<b>3,046,000</b>	<b>3,141,600</b>



## **CAPITAL REVENUES & EXPENSES**

Capital cash flows are associated with the cost of constructing major improvements as well as revenues from new financing (loans), earned interest on cash reserves, and general facility charges (GFCs) paid by new customers connecting to the system.

An additional factor in analyzing capital cash flows is cash reserves. An agency must retain a minimum level of cash reserves in order to safely operate a utility. This minimum level of cash reserves is somewhat subjective but is based in part on annual expenses, debt service, and the ability of an agency to undertake emergency repairs. Cash reserves in excess of the minimum balance are also critical in an agency's ability to fund the long term capital needs of a utility either for improvements or repair and replacement of existing facilities (depreciation).

Table 3-6 lists annual debt service and projected capital revenues and expenses for the wastewater utility from 2015 through 2020. Note that the annual debt service listed for the WWTP Expansion Phase 2 project is based on a 20 year amortization with a 4.5% interest rate.

**TABLE 3-6  
Projected Capital Cash Flows**

<b>CAPITAL CASH FLOWS</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>DEBT PAYMENTS</b>						
2008 PWTF Loan (Outfall)	566,500	563,800	561,200	558,500	555,900	553,200
2010 W/S Revenue Bonds	366,100	363,000	359,100	357,800	355,600	349,500
2010B W/S Revenue Bonds	324,200	324,200	324,200	324,200	324,200	744,200
2010C W/S Revenue Bonds	421,600	420,800	424,700	423,100	422,300	0
2010 BAB Credits	66,500	64,300	61,700	58,800	55,600	52,300
2010B BAB Credits	113,500	113,500	113,500	113,500	113,500	113,500
New Debt - T1 - WWTP Expansion Phase II	0	268,000	268,000	268,000	268,000	268,000
New Debt - C2 - Lift Station 4 Improvements (Harborview Dr./Rosedale St.)	0	0	0	121,200	121,200	121,200
<b>TOTAL DEBT PAYMENTS</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>CAPITAL REVENUES</b>						
Connection Charges	867,600	1,831,600	867,600	867,600	867,600	385,600
New Loan - T1 - WWTP Expansion Phase II	4,455,000	0	0	0	0	0
New Loan - C2 - Lift Station 4 Improvements (Harborview Dr./Rosedale St.)	0	0	1,576,000	0	0	0
New CIAC - C19 - Install Future Lift Station 10A (56th St./36th Ave.)	0	0	1,267,100	0	0	0
New CIAC - C20 - Install Future Lift Station 17A (Skansie Ave./90th St.)	0	0	1,050,600	0	0	0
Interest Earnings from Cash	60,800	33,200	14,400	400	0	0
<b>TOTAL CAPITAL REVENUES</b>	<b>5,383,400</b>	<b>1,864,800</b>	<b>4,775,700</b>	<b>868,000</b>	<b>867,600</b>	<b>385,600</b>
<b>CAPITAL EXPENSES</b>						
T1 - WWTP Expansion Phase II	5,500,000	2,300,000	0	0	0	0
T3 - Annual Replacement, Rehabilitation and Renewal	100,000	0	0	0	0	0
T4 - Annual Water Quality Reporting (test bay)	0	0	0	0	0	56,600
T5 - NPDES Capacity	100,000	102,500	0	0	0	0
C1 - Lift Station 1 Improvements (Crescent Creek Park)	0	0	0	0	143,500	0
C2 - Lift Station 4 Improvements (Harborview Dr./Rosedale St.)	1,000,000	1,025,000	2,626,600	0	0	0
C3 - Lift Station 5 Improvements (Harborview Ferry Landing)	0	0	136,600	0	0	0
C4 - Lift Station 6 Improvements (Ryan St./Cascade Ave)	50,000	51,300	525,300	538,400	0	0
C5 - Lift Station 8 Improvements (Harbor Country Dr.)	0	0	0	0	0	0
C6 - Lift Station 9 Improvements (50th St./Reid Dr.)	127,000	0	0	0	0	0
C7 - Lift Station 11 Improvements (38th Ave./48th St.)	0	0	0	0	0	0
C8 - Lift Station 12 Improvements (Woodhill Dr./Burnham Dr.)	0	0	0	541,100	1,131,400	0
C9 - Lift Station 13 Improvements (Purdy Dr/SR-302)	0	0	0	0	0	0
C10 - Install Flow Meter at LS1	0	0	0	0	32,000	0
C11 - Install Flow Meter at LS4	31,000	0	0	0	0	0
C12 - Install Flow Meter at LS6	0	29,700	0	0	0	0
C13 - Install Flow Meter at LS8	0	0	0	0	0	0
C14 - Install Flow Meter at LS9	36,000	0	0	0	0	0
C15 - Install Flow Meter at LS10	0	0	32,600	0	0	0
C16 - Install Flow Meter at LS12	0	0	0	31,200	0	0
C17 - Install Flow Meter at LS13	0	0	0	0	0	0
C18 - Install Flow Meter at LS14	0	36,900	0	0	0	0
C19 - Install Future Lift Station 10A (56th St./36th Ave.)	0	0	1,267,100	269,200	0	0
C20 - Install Future Lift Station 17A (Skansie Ave./90th St.)	700,000	102,500	1,050,600	0	0	0
C21 - Install Future Lift Station 21A (Hunt St/Skansie Ave.)	0	0	0	0	0	0
C22 - Wastewater Comprehensive Plan	0	0	236,500	0	0	0
Pioneer Way Sewer Main Replacement	400,000	0	0	0	0	0
<b>CAPITAL EXPENSES TOTAL</b>	<b>8,044,000</b>	<b>3,647,900</b>	<b>5,875,300</b>	<b>1,379,900</b>	<b>1,306,900</b>	<b>56,600</b>

Capital revenues listed as connection charges are from GFCs paid by new customers connecting to the system as listed in Table 3-4. Connection charge revenue is based on the number of ERUs from Table 3-4 multiplied by the GFC recommended in Chapter 1 of \$9,640.

Two projects are assumed to be debt funded as indicated on project names that start with the words “New Loan – “. The wastewater utility will need to issue some new debt in order to maintain adequate cash reserves. The annual debt payments for both of these new loans are assumed to be with an amortization term of 20 years and at 4.5% annual interest. There are also two projects listed as New CIAC (contributions in aid of construction) that are funds that will be provided by private developers to extend sewer service to new areas.

The last line item under capital revenue, Interest Earnings from Cash represents interest earnings from the sewer utility's cash reserves. The capital expenses listed in Table 2-6 are from the City's latest 6 year capital facility schedule and from input from staff.

## PROJECTED UTILITY CASH FLOWS

There is now sufficient information to analyze the ability of existing rates to fund future operations. Table 3-7 provides a summary of both operational and capital cash flows and shows projected levels of the sewer utility's cash reserves. The information summarized in Table 3-7 is based on the forecasts provided in Tables 3-5 and 3-6.

The cash flows in Table 3-7 are based on existing rates being in effect throughout the entire 6 year forecast.

**TABLE 3-7**  
**Utility Cash Flow Summary with No Rate Increases**

Accounts	2015	2016	2017	2018	2019	2020
<b>OPERATIONAL SUMMARY</b>						
(+) Total Operating Revenues	3,970,000	4,063,300	4,107,800	4,153,100	4,198,700	4,216,400
(-) Total Operation & Maintenance	<u>3,166,500</u>	<u>2,679,300</u>	<u>2,857,700</u>	<u>2,950,400</u>	<u>3,046,000</u>	<u>3,141,600</u>
(-) Total Debt	<u>1,498,400</u>	<u>1,762,000</u>	<u>1,762,000</u>	<u>1,880,500</u>	<u>1,878,100</u>	<u>1,870,300</u>
<b>NET REVENUE</b>	<b>694,900</b>	<b>378,000</b>	<b>511,900</b>	<b>677,800</b>	<b>725,400</b>	<b>795,500</b>
<b>CAPITAL SUMMARY</b>						
<b>Start of Year Cash</b>	<u>7,760,000</u>	<u>4,404,500</u>	<u>2,243,400</u>	<u>631,900</u>	<u>557,800</u>	<u>1,722,500</u>
(+) Connection Charges & Interest Inc.	928,400	1,864,800	882,000	868,000	867,600	385,600
(+) Transfer from Operations	0	0	0	0	0	0
(+) Total Loan Funds	4,455,000	0	1,576,000	0	0	0
(+) Total CIAC Funds	0	0	2,317,700	0	0	0
(-) Total Capital Expenses	<u>8,044,000</u>	<u>3,647,900</u>	<u>5,875,300</u>	<u>1,379,900</u>	<u>1,306,900</u>	<u>56,600</u>
(-) Transfer to Operations	<u>694,900</u>	<u>378,000</u>	<u>511,900</u>	<u>677,800</u>	<u>725,400</u>	<u>795,500</u>
<b>NET CAPITAL REVENUE</b>	<b>3,355,500</b>	<b>2,161,100</b>	<b>1,611,500</b>	<b>1,189,700</b>	<b>1,164,700</b>	<b>466,500</b>
<b>End of Year Cash</b>	<b>4,404,500</b>	<b>2,243,400</b>	<b>631,900</b>	<b>557,800</b>	<b>1,722,500</b>	<b>2,189,000</b>

As shown in Table 3-7, the City must take corrective action to reduce the level of operating revenue losses. If no action is taken the forecast predicts increasing losses and the complete depletion of cash reserves. In summary, wastewater rates need to be increased to start generating positive net revenue from operations and also to provide additional funds to construct needed improvements.

## RECOMMENDED MONTHLY RATE INCREASES

Table 3-8 presents a revised summary of cash flows assuming rate increases of 4.5% in 2015 and 2016, and 3.5% increases in subsequent years

Note that the rate increases impact the magnitude of monthly rate revenues, the amount of excise tax paid, interest earned on cash reserves, cash reserve levels, and transfers to and from operations and therefore the total numbers shown differ from data previously presented.

**TABLE 3-8**  
**Utility Cash Flow Summary with Recommended Rate Increases**

% Rate Increase	4.5%	4.5%	3.5%	3.5%	3.5%	3.5%
Accounts	2015	2016	2017	2018	2019	2020
<b>OPERATIONAL SUMMARY</b>						
(+) Total Operating Revenues	4,148,400	4,436,900	4,642,300	4,857,400	5,082,700	5,282,700
(-) Total Operation & Maintenance	3,166,500	2,679,300	2,866,600	2,962,100	3,060,700	3,159,300
(-) Total Debt	<u>1,498,400</u>	<u>1,762,000</u>	<u>1,762,000</u>	<u>1,880,500</u>	<u>1,878,100</u>	<u>1,870,300</u>
<b>NET REVENUE</b>	<b>516,500</b>	<b>4,400</b>	<b>13,700</b>	<b>14,800</b>	<b>143,900</b>	<b>253,100</b>
<b>CAPITAL SUMMARY</b>						
<b>Start of Year Cash</b>	<u>7,760,000</u>	<u>4,583,800</u>	<u>2,800,000</u>	<u>1,722,300</u>	<u>1,239,600</u>	<u>955,200</u>
(+) Connection Charges & Interest Inc.	929,300	1,868,500	890,200	882,400	878,600	398,100
(+) Transfer from Operations	0	0	13,700	14,800	143,900	253,100
(+) Total Loan Funds	4,455,000	0	1,576,000	0	0	0
(+) Total CIAC Funds	0	0	2,317,700	0	0	0
(-) Total Capital Expenses	8,044,000	3,647,900	5,875,300	1,379,900	1,306,900	56,600
(-) Transfer to Operations	<u>516,500</u>	<u>4,400</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>NET CAPITAL REVENUE</b>	<b>3,176,200</b>	<b>1,783,800</b>	<b>1,077,700</b>	<b>482,700</b>	<b>284,400</b>	<b>594,600</b>
<b>End of Year Cash</b>	<b>4,583,800</b>	<b>2,800,000</b>	<b>1,722,300</b>	<b>1,239,600</b>	<b>955,200</b>	<b>1,549,800</b>

As shown in Table 3-8, with the planned rate increases the wastewater utility should be generating positive net revenue from operations by 2017 and maintain adequate reserves even while funding planned capital improvements.

# CHAPTER 4

## STORMWATER UTILITY REVENUE REQUIREMENTS

### INTRODUCTION

This chapter outlines the calculation of revenue requirements for the stormwater utility and the corresponding recommendation for future stormwater utility monthly service rates. Note that this study is not a cost of service rate study rather it determines percentage increases to all existing monthly stormwater service rates necessary to fund projected operating expenses and capital improvements and debt service while maintaining adequate reserves.

The analysis includes presentation of historical operating expenses, a five-year projection of future operating and capital revenues and expenses, and a recommendation for future monthly stormwater service rates.

### HISTORICAL OPERATING CASH FLOWS

Table 4-1 provides a list of historical operating cash flows from 2011 through 2014. Only revenues and expenses associated with month-to-month operations are included. Historical cash flows are presented since they indicate whether existing rates are able to fund existing operations and since future operating expenses and revenues are based in large part on historical levels. Revenues and expenses associated with capital are not presented since historical capital cash flows are unrelated to future capital cash flows that are addressed in a subsequent section.

**TABLE 4-1**  
**Historical Operating Cash Flows**

<b>OPERATING CASH FLOWS</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>OPERATING REVENUES</b>				
Storm - State utility taxes	10,887	13,142	13,667	15,000
DOE grant	76,889	35,864	88,704	
Inspection fees		54	16	545
Storm drainage fees	730,972	748,159	745,932	776,288
Late penalties	404	664	554	500
Engineering plan review fees	13,429		0	0
Developers Contributions			0	0
Other gov. revenues	23,250	1,160	0	0
Gain/(Loss) from sale of fixed assets			0	0
Transfer - general govt	0	0	0	17,625
<b>TOTAL REVENUES</b>	<b>855,831</b>	<b>796,723</b>	<b>848,873</b>	<b>809,958</b>
<b>OPERATING EXPENDITURES</b>				
<b>ADMIN - PUBLIC WORKS</b>				
Regular salaries	161,198	171,484	126,919	125,574
Overtime	0	60	466	332
Personnel benefits	62,911	70,192	56,211	55,988
New Personnel				
Office & operating supplies	6,258	632	8,020	10,000
Small tools & minor equipment	10,664	1,231	1,584	3,780
Professional Services	15,941	2,703	5,560	50,000
Communications	2,134	1,644	701	1,388
Miscellaneous	0	6	46	796
<b>SUBTOTAL ADMIN - PUBLIC WORKS</b>	<b>259,106</b>	<b>247,952</b>	<b>199,507</b>	<b>247,858</b>
<b>ADMIN - GENERAL</b>				
Regular salaries	47,963	51,164	63,201	58,058
Overtime	0	465	715	430
Personnel benefits	16,750	18,395	23,786	21,680
Professional Services		574	3,515	3,516
Legal fees	10,771	11,145	3,411	7,462
Insurance	17,111	18,877	18,865	20,226
<b>SUBTOTAL ADMIN - GENERAL</b>	<b>92,595</b>	<b>100,620</b>	<b>113,493</b>	<b>111,372</b>
<b>CUST SERVICE BILLING</b>				
Salaries	5,742	5,831	5,818	5,646
Overtime	0		0	0
Personnel Benefits	2,735	2,981	3,105	3,142
<b>SUBTOTAL CUST SERVICE BILLING</b>	<b>8,477</b>	<b>8,812</b>	<b>8,923</b>	<b>8,788</b>
<b>STREET MAINTENANCE</b>				
Regular salaries	134,387	72,532	71,529	60,348
Overtime	2,296	711	1,698	3,698
Personnel benefits	64,018	31,272	32,788	28,242
Uniforms	1,157	1,060	1,050	1,000
Office & operating supplies	23,697	8,538	40,892	28,000
Small tools & minor equipment	41,030	2,559	28,122	3,500
Professional services	16,496	14,219	31,051	20,000
Video inspection	0		0	0
Communications	9,733	10,234	14,388	15,000
Travel	102	178	294	544
Advertising	416	248	548	210
Operating rentals & leases	3,530	1,100	1,774	1,034
Street debris disposal	7,517	3,336	5,127	8,000
Repairs & maintenance	49,717	1,998	774	25,000
Miscellaneous	3,035	5,015	2,798	2,000
Conference Training	2,133	1,006	2,334	5,000
Intgovt professional services	0		0	
External taxes & assessments	17,248	21,437	17,044	8,260
Interfund taxes	0	0	0	0
<b>SUBTOTAL STREET MAINTENANCE</b>	<b>376,512</b>	<b>175,443</b>	<b>252,211</b>	<b>209,836</b>

**TABLE 4-1 (Continued)**  
**Historical Operating Cash Flows**

<b>OPERATING CASH FLOWS</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>INSPECTION</b>				
Regular salaries	8,383	16,651	16,011	20,336
Overtime	0	309	1,628	524
Personnel benefits	3,879	8,356	7,849	10,044
Professional Services	0	0	0	
Prior year corrections	<u>0</u>	<u>0</u>	<u>0</u>	
<b>SUBTOTAL INSPECTION</b>	<b>12,262</b>	<b>25,316</b>	<b>25,488</b>	<b>30,904</b>
<b>CUSTOMER SVC/BILLING</b>				
Regular salaries				0
Personnel benefits				<u>0</u>
<b>SUBTOTAL CUSTOMER SVC/BILLING</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>CAPITAL EXPENDITURES</b>				
Buildings				0
Machinery & equipment	<u>0</u>	<u>25,822</u>	<u>8,287</u>	<u>19,989</u>
<b>SUBTOTAL CAPITAL EXPENDITURES</b>	<b>0</b>	<b>25,822</b>	<b>8,287</b>	<b>19,989</b>
<b>ROAD &amp; STREET CONSTRUCTION</b>				
Construction projects				
Regular salaries	45,235	51,279	16,180	
Overtime		15	0	
Personnel benefits	17,491	20,176	6,364	
Office & operating supplies	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>SUBTOTAL ROAD &amp; STREET CONST.</b>	<b>62,726</b>	<b>71,470</b>	<b>22,544</b>	<b>0</b>
<b>TOTAL O&amp;M EXPENSES</b>	<b>812,700</b>	<b>656,400</b>	<b>631,500</b>	<b>629,800</b>

The ability of existing revenues (rates) to pay for operating costs can now be assessed based on the operating cash flows listed in Table 4-1. Table 4-2 lists the resulting annual cash flow from operations. As can be seen from Table 4-2, the stormwater utility and therefore existing stormwater utility monthly rates have generated positive net revenue from operations in each of the last four years.

**TABLE 4-2  
Net Revenue from Operations**

<b>OPERATING CASH FLOWS</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Total Operating Revenues	855,831	796,723	848,873	809,958
Total Operating Expenses	812,700	656,400	631,500	629,800
Net Revenue from Operations	43,131	140,323	217,373	180,158

The last element needed to assess the adequacy of current rates is the ability of rates to fund not only operating expenses but also annual debt service. However the stormwater utility currently has no outstanding debt and therefore existing rates are not needed to fund debt service.

## **PROJECTED OPERATING CASH FLOWS**

A projection of future operating revenues and expenses is required in order to analyze whether additional rate increases will be required to fund future operations. Table 4-3 presents a forecast of future revenues and expenses based on historical cash flows from Table 4-1, discussions with staff, and annual inflationary/forecast factors. Inflationary factors include such items as general inflation, annual cost of living adjustments (COLAs), and annual increases in benefit costs (Benefits). Forecast factors are variables such as the State’s excise tax rate on stormwater revenues and the interest-earning rate on deposited cash. The inflationary/forecast factors listed in Table 4-3 are annual and are applied to appropriate revenues and expenses in order to forecast future cash flows from operations.

**TABLE 4-3  
Annual Inflationary/Forecast Factors**

<b>Forecast Factors</b>	<b>Percentage</b>
Interest Earnings Rate	1.00%
COLA	3.00%
Benefits	4.00%
Inflation	2.50%
Electricity	5.00%
Insurance Increase	5.00%
State Water Excise Tax	1.86%
State B&O Tax on GFCs	1.50%

The last variable needed to project future operating revenues and cash flows is growth. Growth impacts both operating cash flows as well as capital cash flows (GFCs). The impact of growth on capital revenues is addressed in a subsequent section. Growth



impacts operating revenues and expenses since more customers are available to pay monthly rates and that in turn increases operating revenues and results in stormwater water excise taxes.

This analysis utilizes the following growth in stormwater customers in order to project future GFC revenue (addressed subsequently) and operating revenues and expenses. Note that only residential and commercial stormwater revenues are adjusted for the impact of annual growth. Also note that Table 4-4 presents growth in terms of an annual percentage increase and estimated increase in equivalent residential units (ERUs) that is used in a subsequent section to estimate annual revenues from general facility charges (GFCs).

**TABLE 4-4  
Stormwater Utility Growth**

<b>Growth Factors</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
Annual Water Utility Growth (%)	1.3%	3.5%	1.3%	1.3%	1.3%	0.5%
Annual Water Utility Growth (ERUs)	60	170	60	70	70	30

Table 4-5 lists forecasted operating revenues and expenses for the years 2015 through 2020. Forecasted expenses in 2015 and 2016 are from the City’s latest biannual budget and amounts in later years were developed for this study. Note that future operating expenses also include the impact of hiring one additional public works employee in 2016 whose cost will be shared equally among the water, stormwater, and streets department (1/3 of the cost funded by each utility).

**TABLE 4-5**  
**Projected Operating Revenues and Expenses**

<b>OPERATING CASH FLOWS</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>OPERATING REVENUES</b>						
Storm - State utility taxes	14,600	15,100	15,300	15,500	15,700	15,800
DOE grant	0	0	0	0	0	0
Inspection fees	500	500	500	500	500	500
Storm drainage fees	786,400	813,900	824,500	835,200	846,100	850,300
Late penalties	500	500	500	500	500	500
Engineering plan review fees	0	0	0	0	0	0
Developers Contributions	0	0	0	0	0	0
Other gov. revenues	0	0	0	0	0	0
Gain/(Loss) from sale of fixed assets	0	0	0	0	0	0
Transfer - general govt	0	0	0	0	0	0
<b>TOTAL REVENUES</b>	<b>802,000</b>	<b>830,000</b>	<b>840,800</b>	<b>851,700</b>	<b>862,800</b>	<b>867,100</b>
<b>OPERATING EXPENDITURES</b>						
<b>ADMIN - PUBLIC WORKS</b>						
Regular salaries	140,700	140,400	144,600	149,000	153,400	158,000
Overtime	200	200	200	200	200	200
Personnel benefits	64,200	65,300	67,300	69,300	71,400	73,500
New Personnel	0	24,800	25,500	26,300	27,000	27,900
Office & operating supplies	4,000	3,000	3,100	3,200	3,200	3,300
Small tools & minor equipment	3,000	3,000	3,100	3,200	3,200	3,300
Professional Services	100,000	55,000	56,400	57,800	59,200	60,700
Communications	1,000	1,000	1,000	1,100	1,100	1,100
Miscellaneous	1,000	1,000	1,000	1,100	1,100	1,100
<b>SUBTOTAL ADMIN - PUBLIC WORKS</b>	<b>314,100</b>	<b>293,700</b>	<b>302,200</b>	<b>311,200</b>	<b>319,800</b>	<b>329,100</b>
<b>ADMIN - GENERAL</b>						
Regular salaries	58,300	62,000	63,900	65,800	67,700	69,800
Overtime	500	500	500	500	500	600
Personnel benefits	25,000	26,600	27,400	28,200	29,100	29,900
Professional Services	1,000	1,000	1,000	1,100	1,100	1,200
Legal fees	10,000	10,000	10,300	10,500	10,800	11,000
Insurance	22,250	24,470	25,100	25,700	26,400	27,000
<b>SUBTOTAL ADMIN - GENERAL</b>	<b>117,050</b>	<b>124,570</b>	<b>128,200</b>	<b>131,800</b>	<b>135,600</b>	<b>139,500</b>
<b>CUST SERVICE BILLING</b>						
Salaries	6,200	6,300	6,500	6,700	6,900	7,100
Overtime			0	0	0	0
Personnel Benefits	3,000	3,100	3,200	3,300	3,400	3,500
<b>SUBTOTAL CUST SERVICE BILLING</b>	<b>9,200</b>	<b>9,400</b>	<b>9,700</b>	<b>10,000</b>	<b>10,300</b>	<b>10,600</b>
<b>STREET MAINTENANCE</b>						
Regular salaries	121,900	126,800	130,600	134,500	138,600	142,700
Overtime	1,000	1,000	1,000	1,100	1,100	1,100
Personnel benefits	48,500	51,300	52,800	54,400	56,100	57,700
Uniforms	1,000	1,000	1,000	1,100	1,100	1,100
Office & operating supplies	20,000	20,000	20,500	21,000	21,500	22,100
Small tools & minor equipment	4,000	4,000	4,100	4,200	4,300	4,400
Professional services	25,000	25,000	25,600	26,300	26,900	27,600
Video inspection	0	0	0	0	0	0
Communications	16,000	16,000	16,400	16,800	17,200	17,700
Travel	500	500	500	500	500	600
Advertising	500	500	500	500	500	600
Operating rentals & leases	2,000	2,000	2,100	2,100	2,200	2,200
Street debris disposal	15,000	15,000	15,400	15,800	16,200	16,600
Repairs & maintenance	15,000	15,000	15,400	15,800	16,200	16,600
Miscellaneous	2,000	2,000	2,100	2,100	2,200	2,200
Conference Training	3,000	3,000	3,100	3,200	3,200	3,300
Intgovt professional services			0	0	0	0
External taxes & assessments	16,200	19,700	16,900	17,400	17,600	16,600
Interfund taxes	0	0	0	0	0	0
<b>SUBTOTAL STREET MAINTENANCE</b>	<b>291,600</b>	<b>302,800</b>	<b>308,000</b>	<b>316,800</b>	<b>325,400</b>	<b>333,100</b>

**TABLE 4-5 (Continued)**  
**Projected Operating Revenues and Expenses**

<b>OPERATING CASH FLOWS</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>INSPECTION</b>						
Regular salaries	20,700	21,300	21,900	22,600	23,300	24,000
Overtime	0	0	0	0	0	0
Personnel benefits	10,900	11,400	11,700	12,100	12,500	12,800
Professional Services	0	0	0	0	0	0
Prior year corrections	0	0	0	0	0	0
<b>SUBTOTAL INSPECTION</b>	<b>31,600</b>	<b>32,700</b>	<b>33,600</b>	<b>34,700</b>	<b>35,800</b>	<b>36,800</b>
<b>CUSTOMER SVC/BILLING</b>						
Regular salaries	0	0	0	0	0	0
Personnel benefits	0	0	0	0	0	0
<b>SUBTOTAL CUSTOMER SVC/BILLING</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>CAPITAL EXPENDITURES</b>						
Buildings	0	0	0	0	0	0
Machinery & equipment	43,200	5,600	20,500	21,000	21,500	22,100
<b>SUBTOTAL CAPITAL EXPENDITURES</b>	<b>43,200</b>	<b>5,600</b>	<b>20,500</b>	<b>21,000</b>	<b>21,500</b>	<b>22,100</b>
<b>ROAD &amp; STREET CONSTRUCTION</b>						
Construction projects	0	0	0	0	0	0
Regular salaries	0	0	0	0	0	0
Overtime	0	0	0	0	0	0
Personnel benefits	0	0	0	0	0	0
Office & operating supplies	0	0	0	0	0	0
<b>SUBTOTAL ROAD &amp; STREET CONST.</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL O&amp;M EXPENSES</b>	<b>807,800</b>	<b>769,800</b>	<b>803,200</b>	<b>826,500</b>	<b>849,400</b>	<b>872,200</b>

## CAPITAL REVENUES & EXPENSES

Capital cash flows are associated with the cost of constructing major improvements as well as revenues from new financing (loans), earned interest on cash reserves, and general facility charges (GFCs) paid by new customers connecting to the system.

An additional factor in analyzing capital cash flows is cash reserves. An agency must retain a minimum level of cash reserves in order to safely operating a utility. This minimum levels of cash reserves is somewhat subjective but is based in part of annual expenses, debt service, and the ability of an agency to undertake emergency repairs. Cash reserves in excess of the minimum balance are also critical in an agency’s ability to fund the long term capital needs of a utility either for improvements or repair and replacement of existing facilities (depreciation).

Table 4-6 lists projected capital revenues and expenses for the stormwater utility from 2015 through 2020.

**TABLE 4-6**  
**Projected Capital Cash Flows**

<b>CAPITAL CASH FLOWS</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>DEBT PAYMENTS</b>						
New Debt - 13 - Donkey Creek Culvert Removal at Harborview	0	0	0	0	0	57,700
<b>TOTAL DEBT PAYMENTS</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>57,700</b>
<b>CAPITAL REVENUES</b>						
Transfer from Operations	0	61,200	38,600	26,200	14,400	0
Connection Charges	106,200	300,900	106,200	123,900	123,900	53,100
New Loan - 13 - Donkey Creek Culvert Removal at Harborview	0	0	0	0	662,300	678,800
New CIAC - 13 - Donkey Creek Culvert Removal at Harborview	0	0	0	0	220,800	226,300
New CIAC - 14 - Crescent Creek Culvert Removal	0	0	0	0	0	0
Interest Earnings from Cash	8,000	3,300	1,000	200	0	0
<b>CAPITAL REVENUES TOTAL</b>	<b>114,200</b>	<b>365,400</b>	<b>145,800</b>	<b>150,300</b>	<b>1,021,400</b>	<b>958,200</b>
<b>CAPITAL EXPENSES</b>						
1 - Harborview Drive Stormwater Separation	0	256,300	0	0	0	0
2 - Relocate Storm Culvert on Brierwood	5,500	0	0	0	0	0
3 - Purchase Property Adjacent to Shop	50,000	45,100	0	0	0	0
4 - Stormwater Gap Analysis	60,000	41,000	0	0	0	0
5 - 38th /Quail Run Ave Storm Culverts	0	0	0	0	229,800	0
6 - 50th Street Box Culvert	375,000	0	0	0	0	0
7 - Quail Run Water Quality System Improvements	0	0	15,800	0	0	0
8 - Annual NPDES Implementation Expenses	15,000	15,400	15,800	16,200	16,600	17,000
9 - Stormwater Comprehensive Plan Update	0	0	0	0	0	0
12 - Stinson Avenue- Stormwater Extension	0	0	0	0	0	226,300
13 - Donkey Creek Culvert Removal at Harborview	0	0	0	0	883,000	905,100
14 - Crescent Creek Culvert Removal	0	0	0	0	0	0
Stormwater Share of PW Building	125,000	372,100	210,100	215,400	0	0
Stormwater Share of LS 17 Property	50,000	0	0	0	0	0
<b>CAPITAL EXPENSES TOTAL</b>	<b>685,300</b>	<b>729,900</b>	<b>241,700</b>	<b>231,600</b>	<b>1,129,400</b>	<b>1,210,200</b>

Capital revenues listed as connection charges are from GFCs paid by new customers connecting to the system as listed in Table 4-4. Connection charge revenue is based on the number of ERUs from Table 4-4 multiplied by the GFC recommended in Chapter 1 of \$1,770.

Under Capital revenues the line that starts with “New Loan” is a new loan to fund the Donkey Creek Culvert Removal at Harborview project. There are also two lines that start with New CIAC (contributions in aid of construction) for the Donkey Creek Culvert Removal and Crescent Creek Culvert Removal projects that will be partially funded by private developers and therefore are listed as being funded by CIAC funds.

The last line item under capital revenue, Interest Earnings from Cash represents interest earnings from the stormwater utility’s cash reserves.

The capital expenses listed in Table 2-6 are from the City’s latest 6 year capital facility schedule and from input from staff.

## PROJECTED UTILITY CASH FLOWS

There is now sufficient information to analyze the ability of existing rates to fund future operations. Table 4-7 provides a summary of both operational and capital cash flows and shows projected levels of the stormwater utility's cash reserves. The information summarized in Table 4-7 is based on the forecasts provided in Tables 4-5 and 4-6.

Note that the amounts shown under total debt in the operational summary are based on the annual debt service associated with issuance of \$1.34M in new debt to help fund the Donkey Creek Culvert Removal project. Estimated annual debt service costs are based on a 20 year amortization at 4.5% annual interest.

The cash flows in Table 2-7 are based on existing rates being in effect throughout the entire 6 year forecast.

**TABLE 4-7**  
**Utility Cash Flow Summary with No Rate Increases**

Accounts	2015	2016	2017	2018	2019	2020
<b>OPERATIONAL SUMMARY</b>						
(+) Total Operating Revenues	802,000	830,000	840,800	851,700	862,800	867,100
(-) Total Operation & Maintenance	806,800	768,800	802,200	825,500	848,400	871,200
(-) Total Debt	0	0	0	0	0	57,700
<b>NET REVENUE</b>	<b>4,800</b>	<b>61,200</b>	<b>38,600</b>	<b>26,200</b>	<b>14,400</b>	<b>61,800</b>
<b>CAPITAL SUMMARY</b>						
<b>Start of Year Cash</b>	<b>1,088,000</b>	<b>516,900</b>	<b>152,400</b>	<b>56,500</b>	<b>24,800</b>	<b>132,800</b>
(+) Connection Charges & Interest Inc.	114,200	304,200	107,200	124,100	123,900	53,100
(+) Transfer from Operations	0	61,200	38,600	26,200	14,400	0
(+) Total Loan Funds	0	0	0	0	662,300	678,800
(+) Total CIAC Funds	0	0	0	0	220,800	226,300
(-) Total Capital Expenses	680,500	729,900	241,700	231,600	1,129,400	1,148,400
(-) Transfer to Operations	4,800	0	0	0	0	61,800
<b>NET CAPITAL REVENUE</b>	<b>571,100</b>	<b>364,500</b>	<b>95,900</b>	<b>81,300</b>	<b>108,000</b>	<b>252,000</b>
<b>End of Year Cash</b>	<b>516,900</b>	<b>152,400</b>	<b>56,500</b>	<b>24,800</b>	<b>132,800</b>	<b>384,800</b>

As shown in Table 4-7, the stormwater utility is projected, on average, to generate positive net cash flow from operations over the next six years. However, as shown total revenues are not sufficient to also fund the cost of capital improvements. Existing rate revenues are also insufficient to fund the issuance of any new debt as shown by the cash flows in year 2020. Therefore additional funds must be generated to fund operations over the next six years.

## RECOMMENDED MONTHLY RATE INCREASES

Table 4-8 presents a revised summary of cash flows assuming rate increases of 3.5% in each year.

Note that the rate increases impact the magnitude of monthly rate revenues, the amount of excise tax paid, interest earned on cash reserves, cash reserve levels, and transfers to and from operations.

**TABLE 4-8**  
**Utility Cash Flow Summary with Recommended Rate Increases**

% Rate Increase	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Accounts	2015	2016	2017	2018	2019	2020
<b>OPERATIONAL SUMMARY</b>						
(+) Total Operating Revenues	830,000	889,100	932,100	977,200	1,024,600	1,065,600
(-) Total Operation & Maintenance	807,300	769,800	803,900	827,800	851,300	874,800
(-) Total Debt	0	0	0	0	0	57,700
<b>NET REVENUE</b>	<b>22,700</b>	<b>119,300</b>	<b>128,200</b>	<b>149,400</b>	<b>173,300</b>	<b>133,100</b>
<b>CAPITAL SUMMARY</b>						
<b>Start of Year Cash</b>	<b>1,088,000</b>	<b>544,600</b>	<b>238,800</b>	<b>233,900</b>	<b>278,200</b>	<b>332,200</b>
(+) Connection Charges & Interest Inc.	114,400	304,800	108,600	126,500	127,000	56,200
(+) Transfer from Operations	22,700	119,300	128,200	149,400	173,300	133,100
(+) Total Loan Funds	0	0	0	0	662,300	678,800
(+) Total CIAC Funds	0	0	0	0	220,800	226,300
(-) Total Capital Expenses	680,500	729,900	241,700	231,600	1,129,400	1,148,400
(-) Transfer to Operations	0	0	0	0	0	0
<b>NET CAPITAL REVENUE</b>	<b>543,400</b>	<b>305,800</b>	<b>4,900</b>	<b>44,300</b>	<b>54,000</b>	<b>54,000</b>
<b>End of Year Cash</b>	<b>544,600</b>	<b>238,800</b>	<b>233,900</b>	<b>278,200</b>	<b>332,200</b>	<b>278,200</b>

As shown in Table 4-8, with the recommended increases rate revenues will be generating adequate revenues to pay for increasing operating costs, new capital improvements, and maintain adequate cash reserves.