Presented by:

DONOVAN
enterprises, inc.

July

2017

Municipal Utilities Rate & SDC Study

Final Report

Prepared for:

The City of St. Helens

Donovan Enterprises, Inc.
9600 SW Oak Street, Suite 335
Tigard, Oregon 97223-6596
☎ 503.517.0671
www.donovan-enterprises.com

Municipal Utilities Rate & SDC Study

Table of Contents

The City of St. Helens

Executive Summary

The City of St. Helens is the sole provider of municipal utilities services to customers within the urban services boundary of the City. Revenues required to fund the delivery of these urban services are obtained from monthly user fees which are set by the City Council via its City charter authority. This study addresses two things; first, the revenue required from rates needed to support future operations and maintenance costs for the water, wastewater, and stormwater utilities along with a funding plan for capital needs identified in the City's capital improvement plans. Second, this study reviewed and updated the water, wastewater, stormwater, and parks System Development Charge (SDC) methodologies.

Monthly User Fees

With the active involvement of City staff, twenty year planning models were developed for this project; however, the focus for the rate and SDC study is the five year near-term forecast of fiscal 2017-18 through fiscal 2022-23. These financial models have been reviewed with the City as they were developed and will be provided to St. Helens as a project deliverable enabling the City to make future updates.

The purpose of this study is to develop a cost of service-based methodology that will accurately determine the cost the city incurs to deliver municipal utilities services. The models developed for this project have been populated with adopted fiscal 2017-18 budgeted revenues and costs, estimated results for fiscal 2017, along with actuals for fiscal 2015 through 2016. During this study, the project team presented multiple rate scenarios to the City Staff for their consideration. These model runs simulated the current service levels (CSL) of the utilities, and sensitivity cases for a number of funding issues facing the City's utilities. The results of each model run were expressed in terms of the rate impacts on the average single family residential customer's monthly bill for each utility service. Over the near-tem five year forecast horizon, water and wastewater system revenue requirements can be satisfied with revenues from current rates. With contributions in aid of construction from the wastewater fund, the stormwater utility will not be facing any rate increases until fiscal 2020-21, and they will be modest at that time. If the City eliminated its current policy of exempting customers whose properties drain directly to creeks, receiving streams, and the Columbia River, stormwater rate increases can be eliminated entirely over the five year forecast.

System Development Charges

The City of St. Helens conducts periodic updates to its Comprehensive Plan and its various Public Facility Plans to provide orderly and sustainable growth of municipal infrastructure. A key component to funding these public facilities is the system development charge (SDC) program. SDCs are one-time charges for new development—designed to recover the costs of infrastructure capacity needed to serve new development. This section describes the policy context and project scope upon which the body of this report is based. It concludes with a numeric overview of the calculations presented in subsequent sections of this report for water, wastewater, stormwater, and parks SDCs. The reader should note that a review of transportation SDCs was not included in this analysis because the City was comfortable with the current methodology and levels of SDCs for this service.

The city's current schedule of SDCs were last reviewed in April, 2008. In June, 2013 an update was completed for water and transportation in conjunction with updates to the water master plan and the transportation system plans. With this review and update, the City has stated a number of objectives:

- Review the basis for charges to ensure a consistent methodology;
- Address specific policy, administrative, and technical issues which had arisen from application of the existing SDCs;

- Determine the most appropriate and defensible fees, ensuring that development is paying its way;
- Consider possible revisions to the structure or basis of the charges which might improve equity or proportionality to demand;
- Provide clear, orderly documentation of the assumptions, methodology, and results, so that City staff could, by reference, respond to questions or concerns from the public.

This report provides the documentation of that effort, and was done in close coordination with City staff and available facilities planning documents. The SDC updates comply with St. Helens Municipal Code chapter 13.24.

Table 1 gives a component breakdown for the current and proposed residential equivalent SDCs for water, wastewater, stormwater, and parks.

Table 1 - Component Breakdown of the Proposed Residential Equivalent SDCs

Line Item Description	Service Unit	Proposed	Current	Difference
Water:	per 3/4" water meter			
Reimbursement fee		$ 1,666	$ 1,196	$470
Improvement fee		1,534	1,281	253
Administration fee @ 5%		160	33	127
Total		$ 3,361	$ 2,511	$ 850
Wastewater:	per 3/4" water meter			
Reimbursement fee		$ 1,023	$ 999	$ 24
Improvement fee		2,898	2,690	208
Administration fee @ 5%		196	49	147
Total		$ 4,117	$ 3,738	$ 379
Stormwater:	per Equivalent Service Unit			
Reimbursement fee		$ 155	$ 1	$ 154
Improvement fee		627	641	(13)
Administration fee @ 5%		39	9	30
Total		$ 821	$ 650	$ 171
Parks:	per PM peak hour trip			
Reimbursement fee		$ 85	$ 285	$ (200)
Improvement fee		2,720	1,059	1,661
Administration fee @ 5%		140	18	122
Total		$ 2,944	$ 1,362	$ 1,583

The schedules of utility rates and proposed SDCs shown above were developed through consultation with City staff and the members of the rate study project team. The study process included an evaluation of revenue requirements, cost of service, and rate design for the five year forecast (fiscal 2019 through fiscal 2023). The revenue requirements analysis determined the amount of annual revenue needed to be generated by rates. This analysis addressed the level, rather than the structure of rates.

A number of specific conclusions and policy recommendations were developed through this collaboration, and are briefly discussed in this executive summary. Itemized below is a listing of these conclusions and recommendations.

Conclusions

- On balance, the City's utilities are in excellent financial condition. Fund balances exceed minimum operating reserve requirements, and revenue bond debt service coverage on water and wastewater debt exceeds covenants.
- Over the next five years, the water utility has planned capital improvements that total $4.3 million (adjusted for inflation). Our modeling indicates the City can reasonably expect to cash finance these future capital investments with a mix of $964k in SDC contributions, and $3.4 million in contributions from utility rates. By the end of this five year forecast period, we estimate the water SDC fund will have an ending fund balance of $116k and the water operating fund will have and ending fund balance of $4.8 million. This can be accomplished without any rate increases, as existing and planned resources will be sufficient to meet system financial needs.
- On July 1, 2017, the wastewater and stormwater utilities will have separate budgets and financial plans. In prior years, the finances of the two utilities were comingled in the wastewater fund. We commend the City for creating this enhanced level of financial transparency. Our modeling indicates the wastewater fund will need to support the capital spending requirements of the stormwater utility over the entire five year forecast horizon to mitigate what would have been substantial stormwater rate increases. There will be no material adverse impact on the revenue requirements of the wastewater utility because of this proposal. Over the next five years, the wastewater utility is planning on spending $964k (adjusted for inflation) on capital improvements. By industry standards, this is a very low capital requirement. However, in consultation with City engineering staff, these forecasted expenditures were verified. Out of this total requirement, none of the costs can be supported with SDCs because all of the projects are repair and replacement in nature. That means 100% of these costs are to be funded with rate revenues. In addition to funding its own capital costs, we are proposing to have the wastewater fund transfer a total of $1.9 million to the stormwater fund over the five year forecast period. This can be accomplished without wastewater rate increases because the wastewater utility is in very good financial health. Our modeling indicates that all of these system requirements can be funded from existing and projected resources. By the end of the five year forecast horizon, we project the wastewater SDC fund will have and ending fund balance of $2.6 million, and the wastewater operating fund will have a corresponding cash balance of $4.6 million.
- The stormwater utility has a revenue recovery problem. Under current City policy, any property that drains directly to a creek or the Columbia River is exempt for paying monthly storm and surface water management fees. A query of the City's utility billing system found that 316 customers are "exempt" from the monthly stormwater fee. At the current monthly rate of $10.98 per Equivalent Dwelling Unit (EDU), this translates to a revenue loss of $41,636 per year assuming each of the currently exempt accounts are single family residential customers.

- The SDC analysis indicates all of the utilities that were reviewed are justified in increasing their respective SDCs. Parks is showing the largest justified increase at $1,583 per single family residential unit. This increase is directly related to the recommendations found in the 2015 Parks Master Plan.

Recommendations

The recommendations of this municipal utilities rates and SDC study are pragmatic and reasonable. The good news is the City does not need to raise rates in the foreseeable future. Our recommendations are focused on securing the financial future of the utilities and to make sure that all customers who receive the benefits of utilities services pay their proportionate share of the costs of delivering those utility services. Itemized in Table 2 are the key recommendations for each utility over the next five years:

Table 2 – Summary of the 2016 Water and Wastewater Rate Study Recommendations

Concerning Rates	Concerning SDCs
• Over the five year forecast horizon, fund all stormwater capital improvement costs with cash in the wastewater fund. This total is estimated to be $1.9 million. Make annual budget appropriations via cash transfers from the wastewater fund to the stormwater fund	• Implement the SDC increases that have been proposed in this 2017 utilities rates and SDC study
• Eliminate the current stormwater fee exemption policy. The primary purpose of the stormwater utility is to keep City streets clear of standing stormwater and to eliminate localized flooding throughout the City. Exemptions only hamper the City from completing this mission.	• Establish by resolution a City policy of formally reviewing all SDCs charged by the City every five (5) years
• Even though we are not recommending any rate increases for water, wastewater, and storm, we recommend the City enact by resolution a policy of adjusting all utility rates for inflation on January 1st of each year. We recommend the City use the Engineering News Record's "Construction Cost Index" for inflation adjustments.	• Between formal SDC review periods, annual adjusts all SDCs for inflation. We recommend the City use the Engineering New Record's "Construction Cost Index" for inflation adjustments
• Engage with Columbia City to update the 1982 water sales agreement. Columbia City has not purchased any finished culinary water from the City since 2014. Perhaps it is time to close out this contract and replace it with some other mutually agreeable arrangement.	• Commission a new wastewater master plan. The City does not have a comprehensive wastewater facilities plan at this time. We estimate a new plan will cost $250k, and can be fully funded from SDCs.
	• Commission a new stormwater master plan. The City's current plan is almost twenty (20) years old and is in desperate need of updating. We estimate a new plan will cost $150k, and can be fully funded from SDCs.

Analysis Section

Background and Study Methodology

St. Helens is a residential community located along the Columbia River on State Highways 30 in Columbia County. The City owns and operates a culinary water system that serves 5,158 customers and provided about 450 million gallons of water to customers in fiscal 2015-16. St. Helens has a wholesale water sales agreement with the City of Columbia City, but has not sold any finished water to them since the summer of 2014. Out of the 5,158 active accounts, 89% are residential/small commercial customers. The balance of the accounts are larger multifamily, institutional, and industrial customers. The majority of industrial water use is on the Port of St. Helens property. The largest users in the St. Helens service area include Boise Cascade and Armstrong World Industries.

The City also owns and operates a wastewater collection and treatment system. The wastewater treatment plant is located at 451 Plymouth Street. It consists of two lagoons, an operations building, a chlorine building and a shop. The plant treats all of the domestic waste from both St. Helens and Columbia City. It also treats waste from a number of local industries. There are four employees at the plant, a Superintendent, two Operators, and a Pretreatment Program Coordinator. Along with the treatment plant, the operators also maintain nine sewer lift stations and one stormwater lift station throughout the City.

The treatment process consists of two lagoons. When waste enters the plant, it is screened and enters the smaller 3 acre lagoon for primary treatment. After that, it is disinfected and flows into the larger 40 acre lagoon. Here, it mixes with the waste from the Boise Paper Mill. After the secondary treatment, it is discharged into the Columbia River. The typical flows to the river are between 6 and 10 million gallons per day.

Finally, the City owns and operates a storm drainage system that consists of 43.4 miles of storm drainage lines ranging in size from 6-inch diameter to 66-inch diameter, 2,466 storm structures (catch basins, manholes, cleanouts, storm inlets and outfalls), and one stormwater pump station. The storm drainage system is essential in protecting the public health, water quality, and the environment. Effectively, all of the stormwater that is detained and conveyed within the City eventually flows to the Columbia River.

To pay for the operation, maintenance, replacement, and improvement of these water, wastewater, and stormwater systems, the City charges its customers fees on a monthly basis. The purpose of this study is to evaluate the City's methodology for calculating these fees and to perform an industry standard, cost of service analysis (COSA). The process used to prepare the COSA for the City's utilities follows standard ratemaking principles, as outlined by the American Water Works Association (AWWA), the Water Environment Federation (WEF), and the U.S. Environmental Protection Agency (EPA). This process consists of three steps:

1. Determine revenue requirements…(how much does it cost to provide service system-wide)
2. Allocate costs to customer classes…(who is causing the need for the service, and in what proportion)
3. Determine rate structure and develop rates…(align rates to recover costs from those causing the need)

Step 1: Determination of Revenue Requirements

Revenue requirements are the total costs of providing services to utility customers over a specific period of time (usually one year). These costs include operation and maintenance (O&M) and capital costs. O&M

costs are the routine costs of operating and maintaining a utility system in order to provide service. For the purpose of rate setting, revenue requirements are projected from budgeted expenses, and adjusted based on historical cost trends and the expertise of utility staff. Examples of O&M costs are chemicals and electricity used at plants, skilled plant operator labor, and administrative expenses.

Capital costs, as defined for the City's rates structures, are the resources used to acquire or construct capital assets. These include current revenue funded (pay-as-you-go) improvements, planned annual contributions to funds for such purposes, and ongoing debt service requirements (principal and interest payments on outstanding loans and other obligations). Capital assets are defined as major assets that benefit more than a single fiscal period. Typical examples are land, improvements to land, easements, buildings, improvements, vehicles, machinery, equipment and other infrastructure. Capital costs are projected for the rate-setting period based on the capital improvement plan, the City's bond covenants and utility staff expertise.

To determine the amount of revenue that rates must generate annually, the total revenue requirements are reduced by nonrate or other system revenues. Examples of other system revenues are unrestricted interest earnings, revenues from wholesale contract customers, and revenue from miscellaneous charges. Total requirements less other system revenues equal requirements from rates.

Step 2: Allocate Revenue Requirements to Customer Classes

Determination of the costs-of-service by customer class is a four-step process. These steps are referred to as functionalization, joint and specific groupings, classification, and allocation. Functionalization involves categorizing revenue requirements according to utility functions. For example, wastewater functions typically include treatment (often broken up by unit process), collection, pumping, and customer service. Utilities incur varying levels of costs to perform the different system functions needed to meet customer demands. Therefore, the first step in the cost allocation process is to determine what it costs the utility to perform different service functions. Next, functional costs are grouped by joint and specific categories. This process allows for certain types of costs (e.g., industrial pretreatment costs) to be allocated directly to benefiting customers. The majority of costs are generally joint or common to all customers.

Following functionalization and joint and specific groupings, a classification process is undertaken. A fundamental objective in developing a rate system is to price utility services so that each customer pays for the service they receive in proportion to their use. Some costs incurred by the utilities are a function of quantity. In the case of water, is means metered water sales. In the case of wastewater, it means the amount of wastewater discharged to the collection system. Other costs are associated with serving customers regardless of the quantity that flows through the system.

Ideally, each customer would be charged according to the actual cost of providing service to his or her connection. However, it is impractical to estimate the cost of serving each individual customer. Therefore, it is accepted practice in the utility industry to classify customers into relatively few, reasonably homogeneous groups, and then to develop rates for each group. In the final step of the cost allocation process, the characteristics of the utilities' customers are analyzed and costs are allocated to each class. For water systems, user characteristics include number of meters, base daily demand, and extra capacity demand measured in maximum day and maximum month demand. For wastewater systems, user characteristics include sewage flows, strengths and the number of customer accounts.

The user characteristics serve as the basis for allocating costs by service characteristic to each customer class. The sum of each class's proportionate cost share of each service characteristic is that class's total cost-of-service.

Step 3: Determine Rate Structure and Develop Rates

The last step in the rate development process is the design of the rate structure and the development of rates. There are a variety of rate structure options available to meet a wide range of policy objectives. In the City's case, by the fall of 2017, it is anticipated that all utility customers will be on a monthly billing cycle. Currently, some customers are billed monthly, and some are on a bi-monthly schedule.

St. Helens water and wastewater rates are comprised of a fixed charge per customer per billing period (monthly) and a volume charge that varies based on water usage or estimated sewage flow. Stormwater fees are flat rated for residential customers at an assumed amount of impervious surface equal to 2,500 square feet. Commercial, institutional, and industrial customers are billed based on actual measured impervious surface.

Once a rate structure is selected, rates are calculated based on the costs-of-service by class determined in Step 2. The end result of this rate development process is an equitable distribution of system revenue requirements to system users.

Analysis of Water System Revenue Requirements

This analytical task determines the amount of revenue needed from water rates. This is driven by utility cash flow or income requirements, constraints of bond covenants, and specific fiscal policies related to the water utility. Based on two years of actual financial records (i.e., fiscal 2015 through 2016), estimated results for fiscal 2017, and for the upcoming budget year 2018, a base case analysis was developed. This case is predicated on a number of planning assumptions. These planning assumptions are discussed in detail below.

For the upcoming budget year (fiscal 2018), it is forecasted that the water utility will generate sufficient revenues from rates, charges and fees to meet its obligations and produce an unappropriated ending balance in the water operating fund of $3,492,605. The beginning balance for the water operating fund in this same fiscal year is estimated to be $2,817,070. In order to establish and maintain cash balances in the water operating fund while continuing to support the funding of future operations and maintenance work, no general water rate increases will be required for each of the ensuing five fiscal years starting on July 1, 2018 (i.e., the start of fiscal 2018-19).

For the forecast of revenue requirements, the following assumptions were made based on discussions with City staff:

Inflation in costs and growth in the customer base – In order to accurately reflect likely future conditions, the revenue requirements model was programmed to allow for inflation and cost escalation factors by budget line item. Per guidance from City staff, the following factors were applied for estimating future cost escalation:

- All direct labor line items – 5.0% per year
- Pension plan contributions (City cost) – 5.0% per year
- Health insurance premiums (City cost) – 5.0% per year
- Professional services (OMI contract) – 3.0% per year
- All other operating expense line items – 3.0% per year
- The growth forecast expressed in the annual increase in 3/4" meters is estimated to be 1.50% per year over the five (5) year forecast horizon.

Capital Improvement Plan Funding - In the upcoming budget year 2018, total water system capital improvement costs are estimated to be $305,000, and consist of the following projects:

Project ID	Project Description	Cost
WTR.003	water meter replacements	$25,000
WTR.004	water mains replacements	200,000
WTR.006	waterproof reservoir exterior	50,000
WTR.008	water well cleanup	30,000
		$305,000

With the assistance of City Staff, a 20 year water system capital improvement plan was developed for this rate study effort. Over this 20 year horizon, the City's water system capital improvement plan calls for the investment of $12,865,000 (future dollars). For the purposes of this rate study, the project team focused on the funding strategy for the first five (5) years of the Plan. The first five years of investments is also shown in Table 3. The water system financial plan calls for all of these costs to be funded from internally generated cash flow.

Table 3 - 5 Year Water Capital Improvement Plan

Cost in FY 2018	Year	CIP ID No.	Project	Growth Accommodation	FISCAL YEARS FUTURE COST OF PROJECTS 2019	2020	2021	2022	2023
			Source of Supply		-	-	-	-	-
240,000	2019	WTR.002	Purchase Land (High/Low)	100%	247,200	-	-	-	-
			Treatment		-	-	-	-	-
130,000	2019	WTR.005	Filtration membrane replacement	0%	133,900	-	-	-	-
130,000	2020	WTR.005	Filtration membrane replacement	0%	-	137,917	-	-	-
130,000	2021	WTR.005	Filtration membrane replacement	0%	-	-	142,055	-	-
130,000	2022	WTR.005	Filtration membrane replacement	0%	-	-	-	146,316	-
			Reservoirs and Storage		-	-	-	-	-
2,000,000	2022	WTR.001	Water reservoirs	100%	-	-	-	2,251,018	-
50,000	2019	WTR.006	Waterproof reservoir exterior	0%	51,500	-	-	-	-
			Mains and Distribution		-	-	-	-	-
200,000	2019	WTR.004	Water Main Replacements	50%	206,000	-	-	-	-
200,000	2020	WTR.004	Water Main Replacements	50%	-	212,180	-	-	-
200,000	2021	WTR.004	Water Main Replacements	50%	-	-	218,545	-	-
200,000	2022	WTR.004	Water Main Replacements	50%	-	-	-	225,102	-
250,000	2019	WTR.007	Pittsburg Road/Milton Creek bypass	0%	257,500	-	-	-	-
			Meters and Services		-	-	-	-	-
25,000	2019	WTR.003	Water Meter Replacement	0%	25,750	-	-	-	-
25,000	2020	WTR.003	Water Meter Replacement	0%	-	26,523	-	-	-
25,000	2021	WTR.003	Water Meter Replacement	0%	-	-	27,318	-	-
25,000	2022	WTR.003	Water Meter Replacement	0%	-	-	-	28,138	-
$ 3,960,000			Net Construction Cost		$ 921,850	$ 376,620	$ 387,918	$ 2,650,573	$ -

As discussed above, under this initial water system financial plan, it is assumed that all of the capital improvement costs are to be funded from a mix of water SDCs and free cash flow generated in the water operating fund. The water CIP funding plan is shown below in Table 4.

Table 4 - Forecast of Future Water System Capital Financing Plan

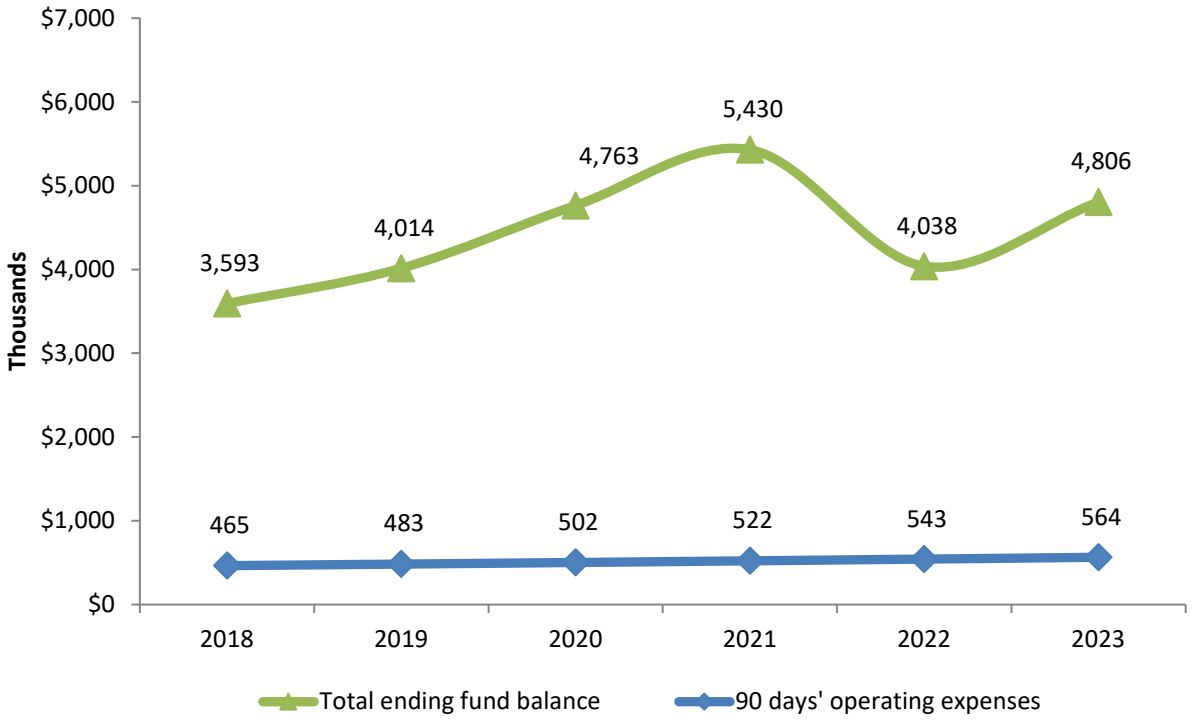
Capital Improvements Financing	2019	2020	2021	2022	2023
Capital Costs to be Funded	921,850	376,620	387,918	2,650,573	-
less: Contributions from SDCs	350,200	106,090	109,273	396,159	-
less: Contributions From Construction Fund bal	-				
less: Contributions From Utility Rates	571,650	270,530	278,645	2,254,414	
less: Developer Contributions					
Amount to be Financed	-	-	-	-	-
Interim Borrowing:					
BANs Issued:	-	-	-	-	-
less: Borrowing Cost	-	-	-	-	-
less: Interest Payments	-	-	-	-	-
plus: Interest Earnings	-	-	-	-	-
Net Available from BANS	-	-	-	-	-
Long-term Borrowing:					
Revenue Bonds:					
Amount Borrowed	-	-	-	-	-
less: Financing Cost	-	-	-	-	-
less: Reserve Funding	-	-	-	-	-
less: Refunding of BANs	-	-	-	-	-
Net Funds from Revenue Bonds	-	-	-	-	-
General Obligation Bonds:					
Amount Borrowed	-	-	-	-	-
less: Financing Cost	-	-	-	-	-
less: Reserve Funding	-	-	-	-	-
less: Refunding of BANs	-	-	-	-	-
Net Funds from G.O. Bonds	-	-	-	-	-
New Annual Debt Service:					
Debt Service	-	-	-	-	-
Coverage	-	-	-	-	-
Reserve Funding	-	-	-	-	-

It should be noted, the City is budgeting for total water rate revenues of $3,350,000 for fiscal 2017-18. This level of ongoing cash flow in combination with fund balances in the water SDC and operating funds is sufficient to make the water capital funding plan work.

Operating Costs in Excess of Inflation – In most rate studies, there are certain operating cost categories that tend to grow in excess of the general price index. We have not identified any categories in this analysis. Also, we have not planned or budgeted for any additional labor. If the water utility does add staff, these costs will impact the current revenue requirements forecast.

Modeling for Contingencies, Reserves, and Ending Fund Balances - The financial engine of the water utility is the water operating fund. Because the utility cash finances all of its operations, the ending fund balance in the water operating fund is in effect the contingency fund for the utility. Over the past three years, the ending fund balance in the Water Operating Fund has been growing, primarily due to steady growth in rate revenue receipts, and expense controls initiated by City management. For planning purposes, we are expecting the Water Operating Fund will end all forecast years with a target ending fund balance in excess of ninety days of operating expenses. This target balance gives the water utility enough contingency to fund unforeseen operating cost spikes. The five year forecast of targeted Water Operating Fund balances and operating reserve requirements is shown below in Figure 1.

Figure 1 - Forecast of Water Operating Fund Balances and Operating Reserve Requirements



Revenue Requirements Forecast & Results

All of the above cost elements are contained in the revenue requirements model which is the platform for the "base case" forecast. The base case assumes the utility will fund the pay as you go capital improvements strategy (discussed above). Also, the utility would fund the operating costs as adjusted for inflation. This base case resulted in the following forecast of water system revenue requirements (Table 5).

Table 5 – Base Case Forecast of Water System Revenue Requirements

	Budget	Forecast				
	2018	2019	2020	2021	2022	2023
Projection of Cash Flow:						
Revenues:						
Total Service Charges	3,430,000	3,430,000	3,430,000	3,430,000	3,430,000	3,430,000
Total other financing sources	-	-	-	-	-	-
Bond proceeds for projects	-	-	-	-	-	-
Total miscellaneous income	35,000	41,556	45,302	50,435	55,088	47,415
Subtotal gross operating revenues	3,465,000	3,471,556	3,475,302	3,480,435	3,485,088	3,477,415
Operations & Maintenance Expense:						
Total personal services	890,600	935,130	981,887	1,030,981	1,082,530	1,136,656
Total materials and services	994,117	1,023,941	1,054,659	1,086,298	1,118,887	1,152,454
Total capital outlay	305,000	571,650	270,530	278,645	2,254,414	-
Total debt service	499,748	499,430	498,901	498,160	500,716	500,716
Transfers to other funds (excluding transfers to SDC fund)	-	-	-	-	-	-
Total operations and maintenance expense	2,689,465	3,030,151	2,805,976	2,894,085	4,956,548	2,789,827
(Use)/replacement of fund balance					(1,471,460)	
Net Cash	775,535	441,405	669,326	586,350	0	687,588
Net Deficiency/(Surplus)	(775,535)	(441,405)	(669,326)	(586,350)	(0)	(687,588)
Test of Coverage Requirement:						
Gross Revenues:						
Operating revenues	3,465,000	3,471,556	3,475,302	3,480,435	3,485,088	3,477,415
System Development Charges	60,000	60,900	61,814	62,741	63,682	64,637
Total Gross Revenues	3,525,000	3,532,456	3,537,116	3,543,175	3,548,770	3,542,052
Operating Expenses:						
Total personal services	890,600	935,130	981,887	1,030,981	1,082,530	1,136,656
Total materials and services	994,117	1,023,941	1,054,659	1,086,298	1,118,887	1,152,454
Transfers to/(from) the rate stabilization account	-	-	-	-	-	-
Total Operating Expenses	1,884,717	1,959,071	2,036,545	2,117,279	2,201,417	2,289,110
Net Revenues	1,640,283	1,573,385	1,500,570	1,425,896	1,347,353	1,252,941
Debt Service	499,748	499,430	498,901	498,160	500,716	500,716
Coverage Recognized	3.28	3.15	3.01	2.86	2.69	2.50
Coverage Required	1.20	1.20	1.20	1.20	1.20	1.20
Net Deficiency/(Surplus)	(1,040,585)	(974,069)	(901,889)	(828,104)	(746,493)	(652,082)
Projection of Revenue Sufficiency and Forecasted Rates:						
Maximum Deficiency	-	-	-	-	-	-
Percent Increase Required Over Current Rate Revenues	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Five Year Average Increase in Revenue Requirements	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Revenues Recovered From Existing Rates and Charges:	3,430,000	3,430,000	3,430,000	3,430,000	3,430,000	3,430,000
add: Revenues Recovered From Rate Increase	-	-	-	-	-	-
Total Revenues Recovered From Rates & Charges after Increase	3,430,000	3,430,000	3,430,000	3,430,000	3,430,000	3,430,000

Table 5 shows, forecasted annual changes in water system revenue requirements are zero in each year of the forecast.

Analysis of Water Rates and Recommended Policy Changes

Wholesale Rates Charged to Columbia City

Columbia City has a contracted right to purchases culinary water from St. Helens under the terms of a 1982 long term water purchase agreement. An analysis of billing records indicates Columbia City has not purchased any water from the City since the summer of 2014. Section 5 of that agreement states:

> "5. AMOUNT OF WATER: Columbia City may purchase and use up to 1,000,000 cubic feet of water per month. In the event one or more additional water intake and treatment facilities yielding sufficient quantities are put in operation within the Columbia City limits, the monthly amount will increase by 500,000 cubic feet per month per well, provided Columbia City complies with the following paragraph.
>
> Columbia City shall pay a percentage representing its share of all water sold by St. Helens, of the cost of the additional water intake and treatment facilities and transmission lines to the point the water is delivered to Columbia City if Columbia City desires the additional 500,000 cubic feet from an additional well. No direct charge for capital costs of the additional water intake and treatment facilities will be made to Columbia City if they do not desire the additional water and remain at the 1,000,000 cubic feet level."

Historically, the rates charged to Columbia City have been developed under the "Utility" approach to rate making. Under this approach Columbia City's total unit rate per CCF of purchased water consists of the following components:

- Pro rata share of annual operations and maintenance expenses of the water system dedicated to produce, treat, and deliver water to Columbia City.
- Depreciation expense on water utility plant in service dedicated to produce, treat, and deliver water to Columbia City.
- Return on rate base – a rate of return on investments made by St. Helens customers in water utility plant and equipment that is used to serve Columbia City.

In the 2009 Water, Sewer, and Stormwater Rates Update, it was recommended the City adjust its wholesale water rate for Columbia City from $1.73 per ccf to $2.39 per ccf. Under the current rate schedule, the Columbia City wholesale water rate is $3.154 per ccf. Under this rate study, we were unable to verify these rates since no material amount of finished water has been sold to Columbia City for some time. In essence, Columbia City has its own dedicated ground water source to serve its needs, and no longer uses the St. Helens water system for its base demand or peaking needs. We suggest the City reengage with the leadership of Columbia City to clarify this situation.

Allocation of Revenue Requirements to Customer Classes (Cost of Service)

The ratemaking methodology that was used to allocate water system revenue requirements is called the "base-extra capacity method", and is consistent with industry standards in water rate making. The City has been using this method at least since 2007. Under this methodology, costs of service are separated into three primary cost components: (1) base costs, (2) extra capacity costs, and, (3) customer costs.

Base costs are those that tend to vary with the total quantity of water used plus those operations and maintenance (O&M) expenses and capital costs associated with service to customers under average load conditions, without the elements of cost incurred to meet water use variations and resulting peaks in demand. Base costs include O&M expenses of supply, treatment, pumping, and distribution facilities.

Base costs also include capital costs related to water plant investment associated with serving customers to the extent required for a constant, or average, annual rate of demand/usage.

Extra capacity costs are those associated with meeting rate of use requirements in excess of average and include O&M expenses and capital costs for system capacity beyond that required for average rate of use. These costs have been subdivided into costs necessary to meet maximum-day extra demand, and maximum-hour demand in excess of maximum day demand.

Customer costs comprise those costs associated with serving customers, irrespective of the amount or rate of water use. They include meter reading, billing, and customer accounting and collection expense, as well as maintenance and capital costs related to meters and services.

Existing Water Rates

The City's current water rate structure was last reviewed in 2009. A number of rate increases have been implemented by the Council since that time, but the basic water rate methodology has remained intact. Billings for customers include two components: a fixed rate (demand charge) and a volume rate (commodity charge). The two components are added together to compute an invoice for each customer. As discussed earlier, the City is in the process of completing the installation of a city-wide automatic meter reading system (AMR). Upon completion of this project, which is estimated to be in the fall of 2017, all water customers will be billed on a monthly basis. AMR, is the technology of automatically collecting consumption, diagnostic, and status data from water meters and transferring that data to a central database for billing, troubleshooting, and analyzing. This technology mainly saves utility providers the expense of periodic trips to each physical location to read a meter. Another advantage is that billing can be based on near real-time consumption rather than on estimates based on past or predicted consumption. This timely information coupled with analysis can help both utility providers and consumers to better control water consumption.

The fixed rates are based on costs associated with maintaining/reading meters and the costs associated with billing and are charged per connection to the water system. Volume rates are based on the customer class for each 100 cubic feet (ccf) of water. The last rate adjustments were made by the City Council via Resolution no. 1725 (dated November 18, 2015) with an implementation date of December 15, 2015. The current schedule of water rates and charges is shown below in Table 6.

Table 6 - Schedule of St. Helens Water Rates Effective December 15, 2015

Wastewater Rate Component Description	Inside City	Ouside City
Fixed Rate (Demand Charge $/account):		
Monthly billings	10.48	20.96
Bi-monthly billings	20.96	41.92
Volume Rate (Commodity Charge $/ 100 cf):		
Residential (single family)	5.219	10.438
Multifamily		
Duplex	5.038	10.075
Apartments	4.937	9.8735
Commercial/Industrial	4.232	8.463
Wholesale		
Columbia City		3.154

The volume rates contained in Table 6 are a product of the base-extra capacity allocation methodology. As the reader can see, the single family residential volume rate of $5.219 per ccf is higher than the corresponding volume rates for all other customer classes. This is a direct result of the peaking demand this customer class places on the system relative to the peaking demands associated with the other classes. We define the peaking factors as maximum month, and maximum day demands as a percentage of average month and average day demand, respectively. Intuitively, this makes sense since peaking demand for water occurs in the hot summer months when irrigation demand is at its highest. The largest users of irrigation water in the City are single family residential customers.

Rate Design Alternatives

The City's current water rate methodology is sound, conforms to industry practice, and promotes conservation. We see no reason to move off of this methodology.

Analysis of Wastewater System Revenue Requirements

For the budget year (fiscal 2018), it is forecast that the wastewater utility will generate sufficient revenues from rates, charges and fees to meet its obligations and produce an unappropriated ending balance in the Wastewater Operating Fund of $4,552,524. The beginning balance for this same fiscal year is estimated to be $4,320,237. The financial stability of the wastewater system is strong. This level of operating reserve is well above ninety (90) days of operating expenses. The strategy for the wastewater utility is to maintain these reserve levels, without any rate increases over the five year forecast horizon, and to use this money as the funding source of wastewater and stormwater capital improvement projects.

For the forecast of revenue requirements, the following assumptions were made based on discussions with City staff:

Inflation in costs and growth in the customer base – Per guidance from City staff, the following factors were applied for estimating future cost escalation:

- All direct labor line items – 5.0% per year
- Pension plan contributions (City cost) – 5.0% per year
- Health insurance premiums (City cost) – 5.0% per year
- Professional services (including contract services) – 3.0% per year
- All other operating expense line items – 3.0% per year
- The growth forecast expressed in the annual increase in Equivalent Dwelling Units (EDUs) is estimated to be 1.50% per year over the five (5) year forecast horizon.

Capital Improvement Plan Funding In the upcoming budget year 2018, total wastewater system capital improvement costs are estimated to be $305,000. All of the projects are related to the wastewater collection system, and consist of the following projects:

Project ID	Project Description	Cost
WTR.002	Sewer mains replacement	$200,000
WTR.003	Lift station #1 upgrade	40,000
WTR.004	South trunk upgrade	250,000
		$490,000

It is assumed all project costs will be funded with cash on hand or cash that is generated from wastewater rates, and is accounted for in the revenue requirements calculations. We have not budgeted for any costs in the other minor capital line items.

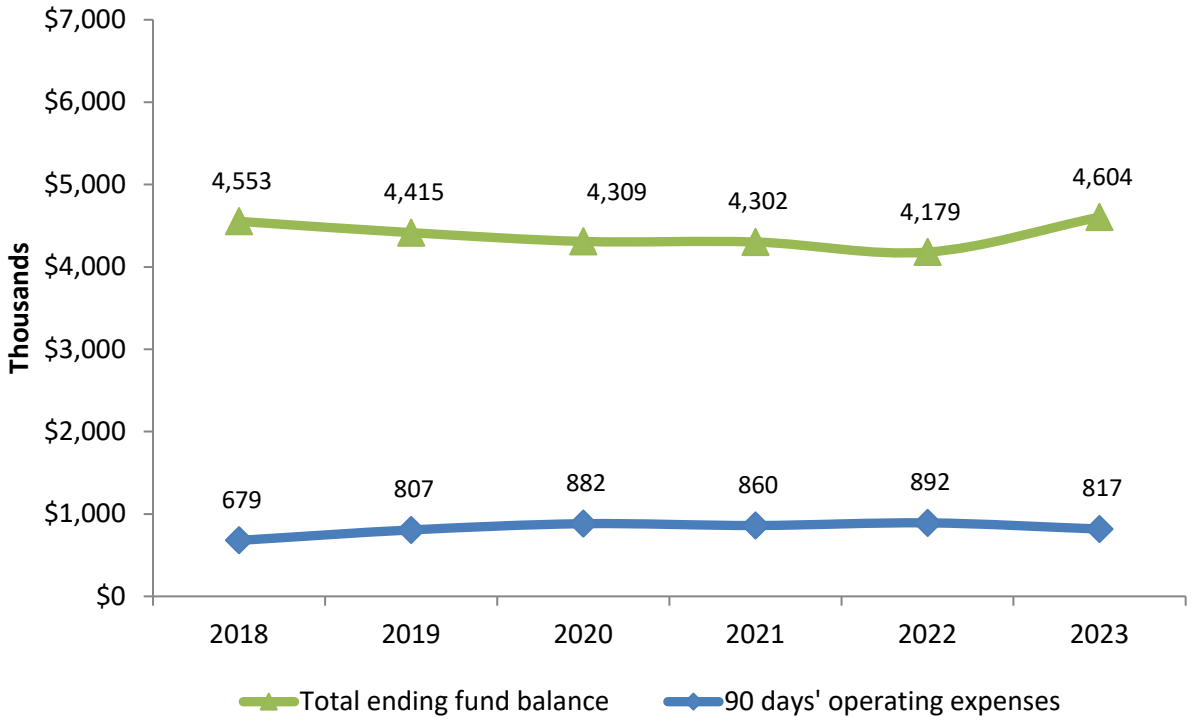
Over the next twenty years, the City plans on investing $19,355,891 in the wastewater system, the preponderance of which will be spent on collection system repair, replacement, and expansion. However, over the first five years of this timeframe, a fairly modest budget of $900,000 is currently planned. Adjusted for inflation, this total comes to $964,827. This budget consists of about $200k per year for sewer mains replacements, and a one-time cost of $150k in fiscal 2018-19 to dredge the primary treatment lagoon (approximately three acres). Our modeling indicates all of these future costs can be funded from internally generated wastewater system cash flow (without rate increases).

Special Transfers to the Stormwater Fund – Prior to the budget year 2018, all revenues and costs associated with stormwater services were domiciled in the wastewater fund. Going forward, stormwater services will be budgeted and accounted for in the dedicated stormwater operating and SDC funds. In order to mitigate substantial future stormwater rate increases, our modeling indicates all stormwater capital improvement project costs will have to be funded from the wastewater operating fund balance. The level of future transfers from the wastewater fund to the stormwater fund for these planned costs is estimated to be $1,859,018 between fiscal 2018-19 and fiscal 2022-23. A complete discussion of the stormwater projects that make up this total and why the wastewater operating fund support is necessary is discussed in the stormwater revenue requirements section of this report.

Operating Costs in Excess of Inflation – As in the case of water, we have not identified any categories in this analysis. Also, we have not planned or budgeted for any additional labor. If the wastewater utility does add staff, these costs will impact the current revenue requirements forecast.

Modeling for Contingencies, Reserves, and Ending Fund Balances – As discussed above, the Wastewater Operating Fund is expected to end fiscal 2017-18 with an unappropriated ending fund balance of $4,552,524; a strong operating reserve. For planning purposes, we are expecting the Wastewater Operating Fund will end all forecast years with an ending fund balance well in excess of ninety days of operating expenses. This target balance gives the wastewater utility enough contingency to fund unforeseen operating cost spikes and to build a reserve for future capital funding support. The forecast of targeted wastewater operating fund balances and operating reserve requirements is shown below in Figure 2.

Figure 2 - Forecast of Wastewater Operating Fund Balances and Operating Reserve Requirements



Revenue Requirements Forecast & Results

All of the above cost elements are contained in the revenue requirements model and from this, the "base case" forecast was developed. The base case assumes the utility would fund the operating costs as adjusted for inflation. This base case resulted in the following forecast of wastewater system revenue requirements (Table 7).

Table 7 – Base Case Forecast of Wastewater System Revenue Requirements

	Budget	Forecast				
	2018	2019	2020	2021	2022	2023
Projection of Cash Flow:						
Revenues:						
Charges for Services:						
Sewer Service Charges	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000
Secondary Boise	460,000	473,800	488,014	502,654	517,734	533,266
Sludge Disposal Charge	130,000	133,900	137,917	142,055	146,316	150,706
Connection Charge	1,000	1,030	1,061	1,093	1,126	1,159
Sewer LID Payments	1,000	1,000	1,000	1,000	1,000	1,000
Sewer Lateral Payments	2,000	2,000	2,000	2,000	2,000	2,000
Total other financing sources	-	-	-	-	-	-
Bond proceeds for projects	-	-	-	-	-	-
Total miscellaneous income	13,000	27,745	27,553	26,945	26,938	26,234
Subtotal gross operating revenues	4,207,000	4,239,475	4,257,545	4,275,747	4,295,113	4,314,365
Operations & Maintenance Expense:						
Total personal services	1,028,000	1,079,400	1,133,370	1,190,039	1,249,540	1,312,017
Total materials and services	1,727,713	1,779,544	1,832,931	1,887,919	1,944,556	2,002,893
Total capital outlay	490,000	309,000	212,180	218,545	225,102	-
Total debt service	729,000	696,681	574,461	574,461	574,461	574,461
Transfers to other funds (excluding transfers to SDC fund)	-	-	-	-	-	-
Total operations and maintenance expense	3,974,713	3,864,625	3,752,942	3,870,963	3,993,659	3,889,371
(Use)/replacement of fund balance	232,287					
Net Cash	-	374,850	504,604	404,783	301,454	424,994
Net Deficiency/(Surplus)	-	(374,850)	(504,604)	(404,783)	(301,454)	(424,994)
Test of Coverage Requirement:						
Gross Revenues:						
Operating revenues	4,207,000	4,239,475	4,257,545	4,275,747	4,295,113	4,314,365
System Development Charges	125,000	127,623	130,300	133,034	135,825	138,674
Total Gross Revenues	4,332,000	4,367,098	4,387,845	4,408,780	4,430,938	4,453,040
Operating Expenses:						
Total personal services	1,028,000	1,079,400	1,133,370	1,190,039	1,249,540	1,312,017
Total materials and services	1,727,713	1,779,544	1,832,931	1,887,919	1,944,556	2,002,893
Transfers to/(from) the rate stabilization account	-	-	-	-	-	-
Total Operating Expenses	2,755,713	2,858,944	2,966,301	3,077,957	3,194,097	3,314,910
Net Revenues	1,576,287	1,508,153	1,421,544	1,330,823	1,236,842	1,138,129
Debt Service	729,000	696,681	574,461	574,461	574,461	574,461
Coverage Recognized	2.16	2.16	2.47	2.32	2.15	1.98
Coverage Required	1.20	1.20	1.20	1.20	1.20	1.20
Net Deficiency/(Surplus)	(701,487)	(672,136)	(732,191)	(641,470)	(547,489)	(448,776)
Projection of Revenue Sufficiency and Forecasted Rates:						
Maximum Deficiency	-	-	-	-	-	-
Percent Increase Required Over Current Rate Revenues	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Five Year Average Increase in Revenue Requirements		**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Revenues Recovered From Existing Rates and Charges:	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000
add: Revenues Recovered From Rate Increase	-	-	-	-	-	-
Total Revenues Recovered From Rates & Charges after Increase	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000

Allocation of Revenue Requirements to Customer Classes (Cost of Service)

The cost of service analysis is intended to provide the analytical basis for equitably recovering the forecasted revenue requirement from customer classes according to the demand they place on the wastewater system. Consistent with industry practice, the analysis involves a two-step process; first, capital and O&M costs are allocated to the functional categories (service functions) of the wastewater system using operational and system design criteria. Then, based on customer class characteristics derived from historical billing system data (i.e., number of customers and monthly water usage), these functionally allocated costs are distributed to the customer classes.

Cost of service allocations are made for a test year considered representative of the period in which proposed rates are expected to be in effect. Fiscal 2018 has been used as the test year for the cost of service analysis.

Functional Cost Allocations

Capital and operating costs are allocated to the following functional components of the wastewater system. The wastewater functional components and their descriptions are shown in Table 8.

Table 8 - Wastewater System Functional Components

Wastewater Functional Component	Description
Customer Accounts	Costs associated with providing service to customers regardless of the level of wastewater contribution, such as billing and customer service. These costs are typically associated with the number of accounts or customers.
Wastewater Flow (Q)	Costs are associated with conveying and treating customer contributed wastewater flow (volume).
Infiltration & Inflow (I&I)	Costs are associated with conveying and treating I&I of groundwater and stormwater runoff into sanitary sewers.
Strength of Discharge	Costs are associated with treating effluent loadings of biochemical oxygen demand (BOD) and total suspended solids (TSS).

Capital related costs include debt service payments, system reinvestment funding, and a portion of additions/uses of cash reserves. The most common method of assigning the capital portion of the revenue requirement to functional components is to allocate such costs on the basis of existing plant-in-service. The allocation of historical plant assets utilizes documented engineering and planning criteria from both the City and industry standards.

Operating costs include O&M expenses and a portion of additions/uses of cash reserves. These costs are allocated to the functions based on a detailed review of line item categories, generally following the cost causation process used in the allocation of plant. For example, customer billing related costs are assigned to the customer component; system operating costs for collection and treatment are allocated in the same manner as collection and treatment plant costs; other operational costs are assigned in proportion to total plant; and general and administrative costs are allocated in proportion to all other costs.

The functional cost allocation process results in a pool of costs for each functional category. From these cost pools, unit costs are created that form the building blocks for designing rate structures that recognize the demands of each customer class. As a result, costs will be recovered from customer classes based on their demand by functional category. Through this process if one customer class places a higher or lower proportional average demand in one functional category, that customer class pays a higher or lower portion of that functional category's cost.

Allocations to Customer Classes

The next step in the cost of service analysis involves distribution of the functionally allocated system costs to the customer classes. A key component in the allocation of system costs to customer classes is testing the reliability and accuracy of customer statistics. This is accomplished through a review of historical billing system data and application of the rate schedule in effect for that year. City staff provided historical billing system records for fiscal 2015-16, including number of accounts, equivalent dwelling units (EDUs), and monthly water usage. The test of reliability is conducted by applying the detailed billing statistics to the rates in effect for that year. The total revenue generated from these customer statistics should approximate the actual revenue receipts shown in the financial statements (with minor differences due to accounts receivables, delinquencies, timing of connections and disconnections throughout the year, etc.). If the revenue estimates are within reasonable limits, statistics are determined "valid" and an adjustment factor is applied to the statistics if necessary to account for any minor discrepancies. The results of this analysis indicated that the customer statistics are valid and will serve as a reasonable basis for projecting revenues and allocating system costs to the customer classes.

Customer usage statistics are also evaluated to determine if current customer class designations represent an appropriate grouping of customers, or if revisions are warranted to better reflect groupings that exhibit similar usage patterns. The City currently categorizes customers into two major groups for rate design purposes: Residential includes single family residential (SFR), multi-family residential (MFR), and manufactured home parks. The same schedule of rates applies to all customers within this class.

Commercial includes all non-residential customers, such as commercial businesses, schools, churches, etc. The same base charge applies to all customers within this class. The volume charge varies by subclass depending on an assumed strength concentration.

The functionally allocated system-wide costs are allocated to the recommended customer classes to determine "cost shares" based on the relative demands placed on the system by each class. Test year fiscal 2016 customer statistics form the basis for this allocation.

Functional costs are allocated to the customer classes as follows: Customer costs are allocated based on proportional shares of total system number of accounts. Wastewater flow costs are allocated to the customer classes based on their proportional share of total billed volume (winter water usage for SFR and actual monthly water usage for MFR and commercial customers). I&I costs are allocated based on customer flow patterns. Finally, strength costs are allocated to the customer classed based on their proportional share of total billed volume.

Determine Rate Structure and Develop Rates

The principal consideration in establishing utility rates is to obtain rates for customers that generate sufficient revenues for the utility and that are reasonably commensurate with the cost of providing service. Other considerations in designing rates should include customer equity, incentives for conservation, ease of implementation, and impact on customer bills. These considerations are consistent with the City's identified rate structure goals noted in the previous section.

Existing Wastewater Rates

The City's current wastewater rate structure was last reviewed in 2009. Although the structure has not changed since that time, the rates have been increased on a regular basis. As in the case of water rates, billings for customers include two components: a fixed rate (demand charge) and a volume rate (commodity charge). The two components are added together to compute an invoice for each customer. The fixed rates are based on costs associated with maintaining/reading meters and the costs associated with billing and are charged per connection to the sewer system. Volume rates are based on the customer class for each 100 cubic feet (ccf) of water or a fixed amount if no measurable consumption is available. The last rate adjustments were made by the City Council via Resolution no. 1725 (dated November 18, 2015) with an implementation date of December 15, 2015. The current schedule of wastewater rates and charges is shown below in Table 9.

Table 9 - Schedule of St. Helens Wastewater Rates Effective December 15, 2015

Wastewater Rate Component Description	Inside City	Ouside City
Fixed Rate (Demand Charge $/account):		
Monthly billings	15.27	19.09
Bi-monthly billings	30.53	38.15
Residential witout measurable consumption		
Monthly billings	47.55	59.44
Bi-monthly billings	95.08	118.85
Volume Rate (Commodity Charge $/ 100 cf):		
Residential (single family)		
With measurable water consumption	5.8647	7.3283
Multifamily		
Two residential sewers	6.4862	8.1103
Duplex	4.6817	5.8446
Apartments	4.5013	5.6341
Commercial		
Low strength	5.2632	6.5764
Medium strength	6.6566	8.3208
High strength	9.2631	11.5689
Special strength	Lab analysis	
Wholesale		
Columbia City		1.7845

The City's current wastewater rate structure is consistent with industry standard, and promotes conservation and equity. Some of the key elements of this rate structure are:

Treatment of Customers without Measurable Water Consumption

Under the City's wastewater rate structure, accounts are considered to be "without measurable water consumption" when potable water is obtained from a well or where the customer has no personal water consumption history established during the winter averaging period within the service area. For single family and multifamily residential customers, new customer accounts without history are set based on 5.50 ccf (monthly) per dwelling unit until measurable consumption is recorded and used to establish a

new rate. Customers receiving only sewer service who obtain potable water from a well or another water provider are set based on 5.50 ccf (monthly). Adjustments may be made based on actual usage during the winter averaging months of January through April if the customer can provide sufficient documentation.

For commercial customers without measurable water consumption history, a two-step policy is used as follows:

1. Strengths will be defined by Standard Industrial Classification (SIC) code (i.e. restaurants defined as high) or the customer may elect to have a qualified laboratory regularly monitor and provide measurements of Biological Oxygen Demand (BOD), Total Suspended Solids (TSS) and other particulates (i.e. fats, oils, and grease) to the City.
2. Volumes will be from certification of meter readings provided at the source (well or 3rd party provider). It will be the customer's responsibility to obtain and forward meter readings to the City on a regular bases. In absence of actual meter readings, the City will utilize average usage patterns from similar commercial customers with measurable usage. This method is to be an interim step until such time as a system to measure water usage can be implemented and/or received.

Residential Customers Charged Based on Winter Average Water Consumption

At one time, the City charged all residential wastewater customers on a flat rate basis. Some time ago, the City moved off of this approach and implemented a consumption based rate (CBR) strategy for its residential class. Commercial/industrial and wholesale customers have always been billed based on metered water consumption. Under a CBR methodology, a portion of the wastewater bill is based on how much water a customer uses during the non-irrigation or winter average period, as winter water use is a reasonable estimate of a customer's wastewater discharge. A CBR structure enhances the equity of the wastewater rates by relating a portion of an individual's wastewater bill to the actual discharge into the collection and treatment system. When coupled with a service charge per account that continues to assess the majority of wastewater system costs on a fixed monthly basis, a CBR structure generally balances revenue stability and equity objectives. The policy workings of the City's winter average billing methodology for residential accounts is:

1. Volume will be based on 4-month winter averaging of water consumption. The winter average period will be defined as the 4-month period starting with the first full billing cycle starting on or after December 15th of each year.
2. Accounts with an average usage of less than 1 ccf of water consumption are automatically assessed at the 5.50 ccf average.
3. Customers may request in writing to have the sewer based on actual usage if the property is vacant (transition between tenants, foreclosure, etc.) or consistently averages below 1 ccf per billing cycle over a 12-month period.
4. The assigned average for water consumption may be appealed to the City Administrator, or his/her designee, and could be modified pending a review of the account and findings thereof.

Commercial Customers Charged Based on Assumed Strength of Discharge

The City bills commercial customers based on their assumed strength of discharge. Under this approach, commercial customers are grouped into low, medium, high, and industrial extra strength categories based upon their standard industrial classification. The City's strength of discharge class limits are as follows:

Strength Classification	BOD (mg/l)	TSS (mg/l)
Low	0-250	0-300
Medium	251-500	301-600
High	501-1,000	601-1,200
Special	1,001+	1,201+

Per City code, the responsible person for paying the sewer charge may appeal the strength classification made by the City. Such appeal shall be made in writing to the City Administrator. The person appealing must provide sufficient information as to the strength of the sewer discharge created by their use so that the City Administrator or designee may evaluate the evidence and determine the proper strength of the waste generated.

Rate Design Alternatives

There are a variety of wastewater rate structures in use across the state and the nation. This study seeks to establish the guiding principles to be considered during the wastewater rate setting. It is important to establish the principles in advance of undertaking the technical work of rate setting. Once the principles are established and fixed, then the rate setting process evolves from them. It must also be recognized that there needs to be a balance in how the principles are applied; e.g., a flat rate is simple, but it may not necessarily be fair and equitable if customers are not equally responsible for the cost of the system. The Review will seek to determine and evaluate alternatives by comparing the various types of rate structures against each principle to determine which structure most satisfies the principles. One must recognize that one or more principles may compete or be in direct contrast with another. Ultimately, the objective is to identify the structure that best meets as many of the principles as possible.

Any rate structure that is considered must respect current legislation and contractual commitments. The main objective is to ensure the wastewater system is sustainable over the long term, thereby ensuring the protection of the health of citizens and the environment. The concepts of user pay and full cost pricing are key elements of which the City should address in the future. The question of what each customer pays is, however, a complex issue with varying viewpoints and interests.

The following principles should be used to develop alternative rate structures for Council's consideration:

1. be fair and equitable
2. promote conservation
3. be affordable and financially sustainable
4. stabilize revenue
5. be justifiable
6. be simple to understand
7. support economic development;

The City's CBR rate structure has been in place for many years, and works well for the City and its customers. Based on the equity the rate structure provides to customers, there is no reason to think the current rate structure for wastewater services is unfair or unreasonable. We recommend the City stay with this rate structure at this time.

Analysis of Stormwater System Revenue Requirements

For the budget year (fiscal 2018), it is estimated the stormwater utility will generate sufficient revenues from rates, charges and fees to meet its obligations and produce an unappropriated ending balance in the Stormwater Operating Fund of only $228,158. The beginning balance for this same fiscal year is estimated to be $959,070. The principal reason for the fund balance draw down is the budgeted cash financing of stormwater capital improvements in the amount of $788,850. Clearly this level of rate support for capital investments cannot be sustained over the balance of the five year forecast horizon without either substantial rate increases, or funding support from other City resources.

The stormwater utility is also facing a revenue recovery shortfall. Under current City policy, any property that drains directly to a creek or the Columbia River is exempt for paying monthly storm and surface water management fees. A query of the City's utility billing system found that 316 customers are "exempt" from the monthly stormwater fee. At the current monthly rate of $10.98 per Equivalent Dwelling Unit (EDU), and assuming all of these customers are single family residential customers, this translates to a revenue loss of $41,636 per year. We believe the City Council should revisit its current stormwater exemption policy with an eye toward repealing it in its entirety. This policy is contrary to industry practice, and assumes that the exempt customers are not benefiting from the services that are provided by the stormwater utility. The primary purpose of the stormwater utility is to keep City streets clear of standing stormwater and to eliminate localized flooding throughout the City. Exemptions only hamper the City from completing this mission.

For modeling purposes, we have not assumed any change in the exemption policy, but we have, with input from City Staff, devised a plan to transfer cash from the wastewater operating fund to fully fund future stormwater capital improvement costs over the fiscal 2018-19 through 2022-23 timeframe. With this cash support, the stormwater fund can avoid any rate increases until fiscal 2020-21. The fund can also establish an operating reserve level above the minimum requirement of ninety (90) days of operating expenses.

For the forecast of revenue requirements, the following assumptions were made based on discussions with City staff:

Inflation in costs and growth in the customer base – Per guidance from City staff, the following factors were applied for estimating future cost escalation:

- All direct labor line items – 5.0% per year
- Pension plan contributions (City cost) – 5.0% per year
- Health insurance premiums (City cost) – 5.0% per year
- Professional services (including contract services) – 3.0% per year
- All other operating expense line items – 3.0% per year
- The growth forecast expressed in the annual increase in Equivalent Dwelling Units (EDUs) is estimated to be 1.50% per year over the five (5) year forecast horizon. For stormwater, and EDU is defined as 2,500 square feet of impervious surface.

Capital Improvement Plan Funding – As discussed above, in the upcoming budget year 2018, total stormwater system capital improvement costs are estimated to be $788,850. All of the projects are related to the stormwater collection/conveyance system, and consist of the following projects:

Project ID	Project Description	Cost
STM.001	Columbia Blvd. drainage improvements	$150,000
STM.002	Storm drain maintenance	200,000
STM.004	South 10th street drainage improvements	400,000
STM.005	Godfrey Park stormwater improvements	8,850
STM.006	Street sweeping cleanup	30,000
		$788,850

It is assumed all project costs will be funded with cash on hand or cash that is generated from stormwater rates, and is accounted for in the revenue requirements calculations. We have not budgeted for any costs in the other minor capital line items.

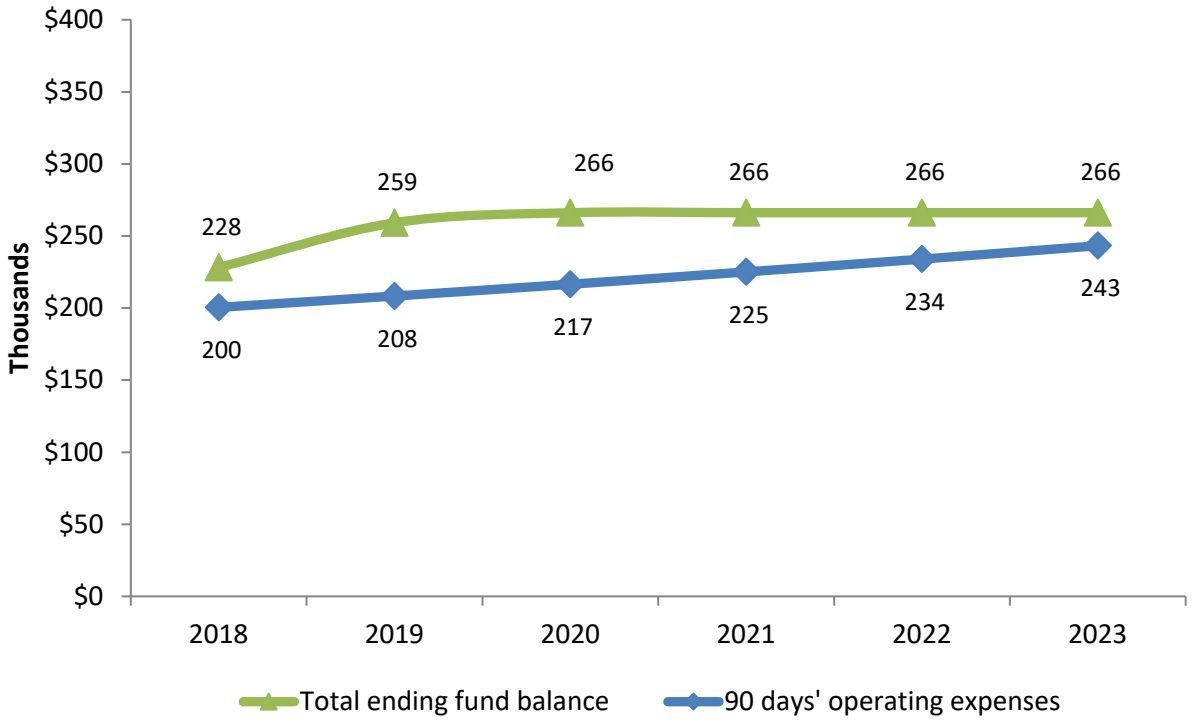
Over the next twenty years, the City plans on investing $24,656,877 in the stormwater system, the preponderance of which will be spent on collection/conveyance system repair, replacement, and expansion. However, over the first five years of this timeframe, $1,800,000 is currently planned. Adjusted for inflation, this total comes to $1,935,834. This budget consists of about $1.6 million in total storm line replacements and upgrades, and about $200k for the installation of grassy swales in the Columbia Boulevard drainage system. As discussed above, our plan is to have all of these project costs funded from the proceeds of cash transfers from the wastewater operating fund.

Special Transfers to the Stormwater Fund – In order to mitigate substantial future stormwater rate increases, our modeling indicates all stormwater capital improvement project costs will have to be funded from the wastewater operating fund balance. The level of future transfers from the wastewater fund to the stormwater fund for these planned costs is estimated to be $1,859,018 between fiscal 2018-19 and fiscal 2022-23. We expect to also get project funding support from stormwater SDCs in the amount of $76,816. The sum the SDC support and cash transfers from the wastewater fund equals the inflated five year project budget cost of $1,935,834.

Operating Costs in Excess of Inflation – As in the case of water and wastewater, we have not identified any categories in this analysis. Also, we have not planned or budgeted for any additional labor. If the wastewater utility does add staff, these costs will impact the current revenue requirements forecast.

Modeling for Contingencies, Reserves, and Ending Fund Balances – As discussed above, we expect to end fiscal 2017-18 with an unappropriated ending fund balance of $228,158 in the Stormwater Operating Fund. Assuming construction funding support from the Wastewater Operating Fund, our modeling indicates the Stormwater Operating Fund will end all forecast years with an ending fund balance slightly excess of ninety days of operating expenses. The forecast of targeted Stormwater Operating Fund balances and operating reserve requirements is shown below in Figure 3.

Figure 3 - Forecast of Stormwater Operating Fund Balances and Operating Reserve Requirements



Revenue Requirements Forecast & Results

All of the above cost elements are contained in the revenue requirements model and from this, the "base case" forecast was developed. The base case assumes the utility would fund the operating costs as adjusted for inflation. This base case resulted in the following forecast of stormwater system revenue requirements (Table 10).

Table 10 – Base Case Forecast of Stormwater System Revenue Requirements

	Budget	Forecast				
	2018	2019	2020	2021	2022	2023
Gross revenues required from rates:						
Operations and maintenance expense	813,062	844,954	878,177	912,792	948,857	986,440
Operating fund capital outlays	788,850	412,000	611,290	411,437	424,292	-
Transfers to other funds (including debt service)	-	-	-	-	-	-
(Use)/Replacement of Operating Fund balance	(730,912)	31,000	7,000	-	-	-
Subtotal gross revenues required from rates	871,000	1,287,953	1,496,467	1,324,228	1,373,150	986,440
Revenue offsets to cost of service:						
Total other financing sources	-	412,000	611,290	411,437	424,292	-
Bond proceeds for projects	-	-	-	-	-	-
Total miscellaneous income	6,000	2,399	2,616	2,690	2,722	2,756
Subtotal revenue offsets to cost of service	6,000	414,399	613,906	414,126	427,015	2,756
Net revenues required from rates	865,000	873,555	882,562	910,102	946,135	983,683
Forecasted billable retail EDUs	6,565	6,631	6,697	6,764	6,832	6,900
Monthly rate based on master plan CIP	$ 10.98	$ 10.98	$ 10.98	$ 11.21	$ 11.54	$ 11.88

Ratemaking for Stormwater Services

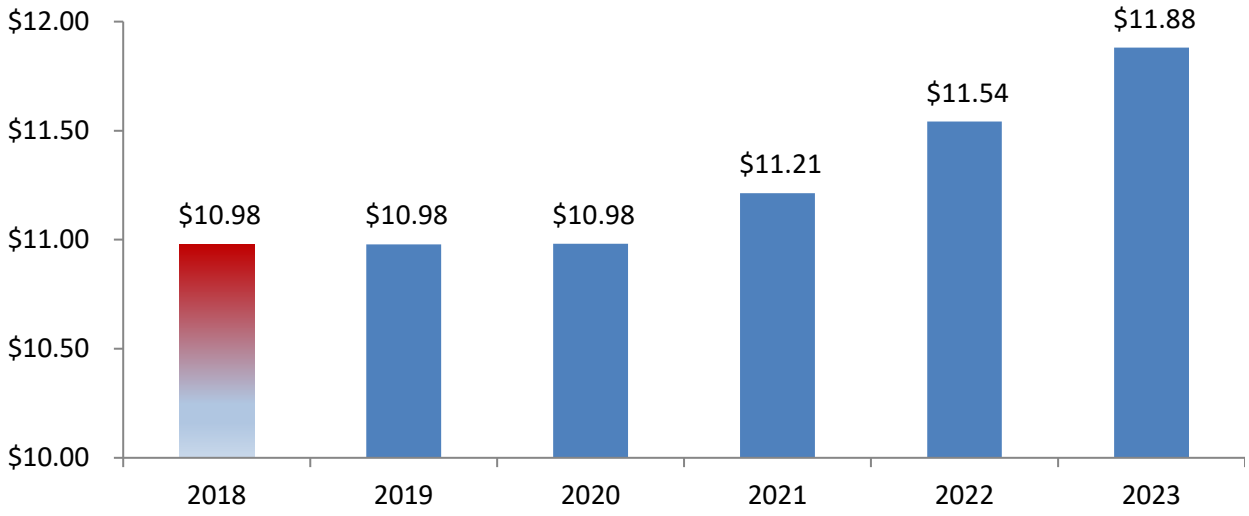
Stormwater management utilities are authorized by Oregon statute as enterprise funds within a City's budget structure. They are defined as being financially self-sufficient and can be designed to furnish a comprehensive set of services related to stormwater quantity and quality management. Services that stormwater management utilities provide include not only the construction and maintenance of facilities necessary to control flooding and improve the character of surface runoff, but also implementation of best management practices (BMPs) designed to address nonpoint source pollution. These BMPs may include water quality sampling, public education and plan review, stormwater system maintenance, site inspections and basin planning. All of these program elements are part of the National Pollutant Discharge Elimination System (NPDES) permit requirements.

St. Helens' current stormwater utility fee is applied to customers based on an "equivalent dwelling units" (EDU) approach. Under this structure, single-family homes are counted as one EDU and, on average, contain 2,500 square feet of impervious area. All non-single-family residential customers are charged based on their measured impervious surface area for each developed property which is then divided by the EDU value of 2,500 square feet of impervious surface. This determines the total number of EDUs billed to that non single-family residential customer. The City's current monthly stormwater rate is $11.98 per EDU.

Stormwater Rates Forecast – Base Case

The stormwater financial base case assumes the City continues its policy of exempting customer's whose stormwater runoff discharges directly to a creek, receiving stream, or the Columbia River. Under this base case assumption, the stormwater fund will be facing rate increases by the start of fiscal 2020-21 even with 100% of the stormwater capital improvement projects funded from the wastewater system reserves. The base case stormwater rate profile over the five year forecast horizon is shown below in Figure 4.

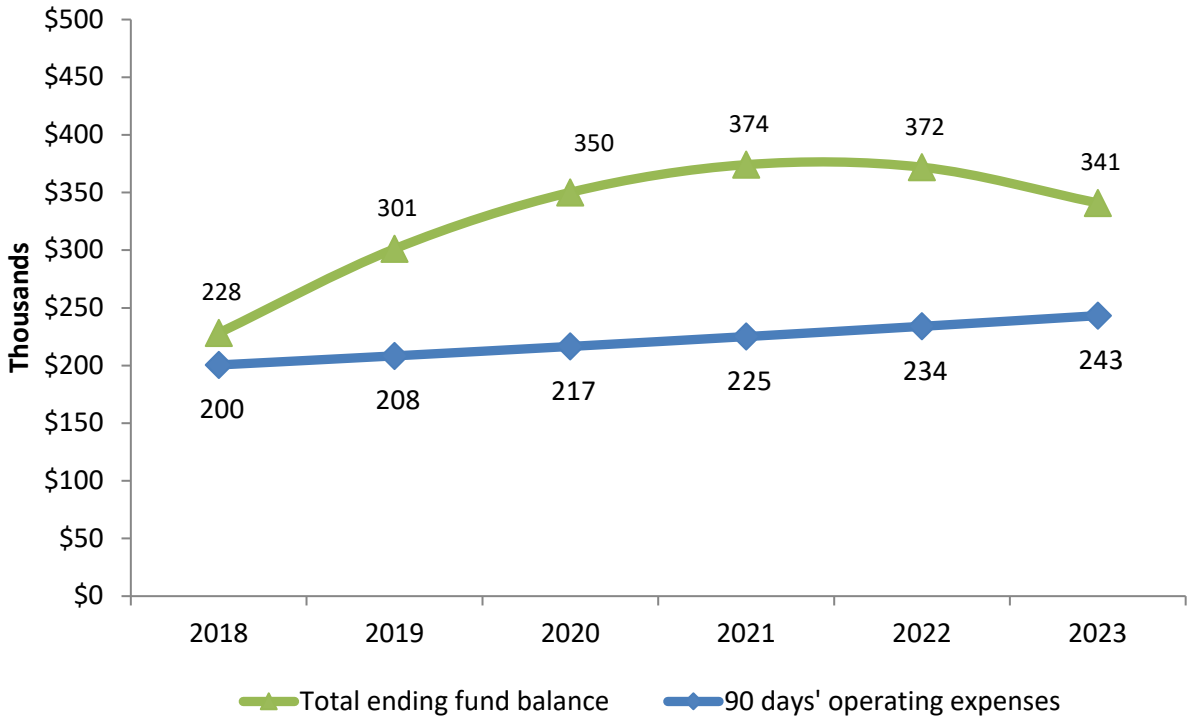
Figure 4 - Base Case Stormwater Rate Profile $/EDU/Month



Stormwater Rate Forecast – Eliminate Exemptions Case

An alternative to the status quo base case has been prepared. In this sensitivity case, we have assumed the City eliminates its drainage exemptions policy and moves the 316 currently exempt accounts to billable status. Under this case, our modeling indicates the City can avoid stormwater rate increases over the five year forecast horizon, and actually add to its current tenuous reserve base. However, in order to achieve these ends, the wastewater fund will still need to underwrite the stormwater system capital improvement costs as portrayed in the base case. The forecast of targeted Stormwater Operating Fund balances and operating reserve requirements for the "eliminate exemptions case" is shown below in Figure 5.

Figure 5 - Forecast of Stormwater Operating Fund Balances and Operating Reserve Requirements Eliminate Exemptions Case



Rate Study Conclusions and Recommendations

Conclusions

On balance, the City's utilities are in excellent financial condition. Fund balances exceed minimum operating reserve requirements, and revenue bond debt service coverage on water and wastewater debt exceeds covenants.

Over the next five years, the water utility has planned capital improvements that total $4.3 million (adjusted for inflation). Our modeling indicates the City can reasonably expect to cash finance these future capital investments with a mix of $964k in SDC contributions, and $3.4 million in contributions from utility rates. By the end of this five year forecast period, we estimate the water SDC fund will have an ending fund balance of $116k and the water operating fund will have and ending fund balance of $4.8 million. This can be accomplished without any rate increases, as existing and planned resources will be sufficient to meet system financial needs.

On July 1, 2017, the wastewater and stormwater utilities will have separate budgets and financial plans. In prior years, the finances of the two utilities were comingled in the wastewater fund. We commend the City for creating this enhanced level of financial transparency. Our modeling indicates the wastewater fund will need to support the capital spending requirements of the stormwater utility over the entire five year forecast horizon to mitigate what would have been substantial stormwater rate increases. There will be no material adverse impact on the revenue requirements of the wastewater utility because of this proposal. Over the next five years, the wastewater utility is planning on spending $964k (adjusted for inflation) on capital improvements. By industry standards, this is a very low capital requirement. However, in consultation with City engineering staff, these forecasted expenditures were verified. Out of this total requirement, none of the costs can be supported with SDCs because all of the projects are repair and replacement in nature. That means 100% of these costs are to be funded with rate revenues. In addition to funding its own capital costs, we are proposing to have the wastewater fund transfer a total of $1.9 million to the stormwater fund over the five year forecast period. This can be accomplished without wastewater rate increases because the wastewater utility is in very good financial health. Our modeling indicates that all of these system requirements can be funded from existing and projected resources. By the end of the five year forecast horizon, we project the wastewater SDC fund will have and ending fund balance of $2.6 million, and the wastewater operating fund will have a corresponding cash balance of $4.6 million.

The stormwater utility has a revenue recovery problem. Under current City policy, any property that drains directly to a creek or the Columbia River is exempt for paying monthly storm and surface water management fees. A query of the City's utility billing system found that 316 customers are "exempt" from the monthly stormwater fee. At the current monthly rate of $10.98 per Equivalent Dwelling Unit (EDU), this translates to a revenue loss of $41,636 per year.

Recommendations

The recommendations of this municipal utilities rates study are pragmatic and reasonable. The good news is the City does not need to raise rates in the foreseeable future. Our recommendations are focused on securing the financial future of the utilities and to make sure that all customers who receive the benefits of utilities services pay their proportionate share of the costs of delivering those utility services. Itemized below are the key recommendations for each utility over the next five years:

Concerning utilities rates and charges:

- Over the five year forecast horizon, fund all stormwater capital improvement costs with cash in the wastewater fund. This total is estimated to be $1.9 million. Make annual budget appropriations via cash transfers from the wastewater fund to the stormwater fund
- Eliminate the current stormwater fee exemption policy. The primary purpose of the stormwater utility is to keep City streets clear of standing stormwater and to eliminate localized flooding throughout the City. Exemptions only hamper the City from completing this mission.
- Even though we are not recommending any rate increases for water, wastewater, and storm, we recommend the City enact by resolution a policy of adjusting all utility rates for inflation on January 1st of each year. We recommend the City use the Engineering News Record's "Construction Cost Index" for inflation adjustments.
- Engage with Columbia City to update the 1982 water sales agreement. Columbia City has not purchased any finished culinary water from the City since 2014. Perhaps it is time to close out this contract and replace it with some other mutually agreeable arrangement.

SDCs Introduction/History of the Project

The City of St. Helens conducts periodic updates to its Comprehensive Plan and its various Public Facility Plans to provide orderly and sustainable growth of municipal infrastructure. A key component to funding these public facilities is the system development charge (SDC) program. SDCs are one-time charges for new development—designed to recover the costs of infrastructure capacity needed to serve new development. This section describes the policy context and project scope upon which the body of this report is based. It concludes with a numeric overview of the calculations presented in subsequent sections of this report for water, wastewater, stormwater, and parks SDCs. With this review and update, the City has stated a number of objectives:

- Review the basis for charges to ensure a consistent methodology;
- Address specific policy, administrative, and technical issues which had arisen from application of the existing SDCs;
- Determine the most appropriate and defensible fees, ensuring that development is paying its way;
- Consider possible revisions to the structure or basis of the charges which might improve equity or proportionality to demand;
- Provide clear, orderly documentation of the assumptions, methodology, and results, so that City staff could, by reference, respond to questions or concerns from the public.

This report provides the documentation of that effort, and was done in close coordination with City staff and available facilities planning documents. The SDC updates comply with St. Helens Municipal Code chapter 13.24.

Table 11 gives a component breakdown for the current and proposed residential equivalent SDCs for water, wastewater, stormwater, and parks.

Table 11 - Component Breakdown of the Proposed Residential Equivalent SDCs

Line Item Description	Service Unit	Proposed	Current	Difference
Water:	per 3/4" water meter			
Reimbursement fee		$ 1,666	$ 1,196	$470
Improvement fee		1,534	1,281	253
Administration fee @ 5%		160	33	127
Total		$ 3,361	$ 2,511	$ 850
Wastewater:	per 3/4" water meter			
Reimbursement fee		$ 1,023	$ 999	$ 24
Improvement fee		2,898	2,690	208
Administration fee @ 5%		196	49	147
Total		$ 4,117	$ 3,738	$ 379
Stormwater:	per Equivalent Service Unit			
Reimbursement fee		$ 155	$ 1	$ 154
Improvement fee		627	641	(13)
Administration fee @ 5%		39	9	30
Total		$ 821	$ 650	$ 171
Parks:	per PM peak hour trip			
Reimbursement fee		$ 85	$ 285	$ (200)
Improvement fee		2,720	1,059	1,661
Administration fee @ 5%		140	18	122
Total		$ 2,944	$ 1,362	$ 1,583

Analytical Process for the Methodology Updates

The essential ingredient in the development of an SDC methodology is valid sources of data. For this project, the consultant team has relied on a number of data sources. The primary sources have been the newly formulated and adopted capital improvement plans for water, wastewater, stormwater, and parks. We have supplemented these data sources with City utility billing records, certified census data, and other documents that we deemed helpful, accurate, and relevant to this study. Table 12 contains a bibliography of the key documents/sources that we relied upon to facilitate our analysis and hence the resulting SDCs.

Table 12 - Data Sources for the Calculation of SDCs

Service	Master Plan Document and/or Corroborating Source Documentation
Water	• City of St. Helens water system twenty year capital improvement plan, June, 2017; City of St. Helens Public Works Department • City of St. Helens Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2016 • City of St. Helens Water System Fixed Asset Schedule; June 30, 2016; City Records • City of St. Helens Water System Construction Work in Progress Balances Work Papers; June 30, 2016; City Records • City of St. Helens Utility Billing records for fiscal 2015-16 • Water meters in service per City Staff; effective June, 2017
Wastewater	• City of St. Helens wastewater system twenty year capital improvement plan, June, 2017; City of St. Helens Public Works Department • City of St. Helens Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2016 • 2016 Discharge Monitoring Reports; City of St. Helens • St. Helens wastewater system fixed asset schedule; June 30, 2016; City records • City of St. Helens Utility Billing System – wastewater system active accounts and Equivalent Dwelling Units in service report; June, 2017 • Portland State University, College of Urban Affairs, Population Research Center; Certified census for St. Helens, Oregon; June, 2015
Stormwater	• City of St. Helens stormwater system twenty year capital improvement plan, June, 2017; City of St. Helens Public Works Department • City of St. Helens Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2016 • City of St. Helens Comprehensive Plan; land inventory by land use designations; August 6, 2014 • St. Helens stormwater system fixed asset schedule; June 30, 2016; City records

Parks	• City of St. Helens Parks & Trails Master Plan, adopted July, 2015
	• City of St. Helens parks system fixed asset schedule; June 30, 2016; City records
	• U.S. Bureau of the Census; American Community Survey:
	  ○ City of St. Helens population; 2015 estimated
	  ○ City of St. Helens dwelling units; 2015 estimated
	  ○ City of St. Helens number of employees; 2015 estimated
	• Oregon Department of Parks and Recreation; A guide to Community Park and Recreation Planning for Oregon Communities; April, 2013
	• St. Helens parks system fixed asset schedule; June 30, 2016; City records

The data sources shown in Table 12 were used to formulate the two (2) components of the SDCs. These components are the reimbursement and improvement fees. The City has been constructing the SDCs with these two components for over twenty years, and our analysis does not propose to change that methodology. A brief definition of the two components are:

- *The reimbursement fee* considers the cost of existing facilities, prior contributions by existing users of those facilities, the value of the unused/available capacity, and generally accepted ratemaking principles. The objective is future system users contribute no more than an equitable share to the cost of existing facilities. The reimbursement fee can be spent on capital costs or debt service related to the systems for which the SDC is applied.
- *The improvement fee* portion of the SDC is based on the cost of planned future facilities that expand the system's capacity to accommodate growth or increase its level of performance. In

developing an analysis of the improvement portion of the fee, each project in the respective service's capital improvement plan is evaluated to exclude costs related to correcting existing system deficiencies or upgrading for historical lack of capacity. An example is a facility which improves system capacity to better serve current customers. The costs for this type of project must be eliminated from the improvement fee calculation. Only capacity increasing/level of performance costs provide the basis for the SDC calculation. The improvement SDC is calculated as a function of the estimated number of additional equivalent residential units to be served by the City's facilities over the planning period. Such a fee represents the greatest potential for future SDC changes. The improvement fee must also provide a credit for construction of a qualified public improvement.

SDC Legal Authorization and Background

SDCs are authorized by Oregon Revised Statute (ORS) 223.297-314. The statute is specific in its definition of system development charges, their application, and their accounting. In general, an SDC is a one-time fee imposed on new development or expansion of existing development, and assessed at the time of development approval or increased usage of the system. Overall, the statute is intended to promote equity between new and existing customers by recovering a proportionate share of the cost of existing and planned/future capital facilities that serve the developing property. Statute further provides the framework for the development and imposition of SDCs and establishes that SDC receipts may only be used for capital improvements and/or related debt service.

Finally, two cost basis adjustments are potentially applicable to both reimbursement and improvement fees: fund balance and compliance costs. In this study, the project team as paid attention to this detail to align future infrastructure costs to those responsible for paying those costs. The reasons for this attention is as follows:

- *Fund Balances* - To the extent that SDC revenue is currently available in fund balance, that revenue should be deducted from its corresponding cost basis. For example, if the city has wastewater improvement fees that it has collected but not spent, then those unspent improvement fees should be deducted from the wastewater system's improvement fee cost basis to prevent charging twice for the same capacity.
- *Compliance Costs* - ORS 223.307(5) authorizes the expenditure of SDCs on "the costs of complying with the provisions of ORS 223.297 to 223.314, including the costs of developing system development charge methodologies and providing an annual accounting of system development charge expenditures." To avoid spending monies for compliance that might otherwise have been spent on growth-related projects, this report includes an estimate of compliance costs in its SDCs.

Reimbursement Fee Methodology

The reimbursement fee represents a buy-in to the cost, or value, of infrastructure capacity within the existing system. Generally, if a system were adequately sized for future growth, the reimbursement fee might be the only charge imposed, since the new customer would be buying existing capacity. However, staged system expansion is needed, and an improvement fee is imposed to allocate those growth related costs. Even in those cases, the new customer also relies on capacity within the existing system, and a reimbursement component is warranted.

In order to determine an equitable reimbursement fee to be used in conjunction with an improvement fee, two points should be highlighted. First, the cost of the system to the City's customers may be far less than the total plant-in-service value. This is due to the fact that elements of the existing system may have been contributed, whether from developers, governmental grants, and other sources. Therefore, the net

investment by the customer/owners is less. Second, the value of the existing system to a new customer is less than the value to an existing customer, since the new customer must also pay, through an improvement fee, for expansion of some portions of the system.

The method used for determining the reimbursement fee accounts for both of these points. First, the charge is based on the net investment in the system, rather than the gross cost. Therefore, donated facilities, typically including local facilities, and grant-funded facilities, would be excluded from the cost basis. Also, the charge should be based on investments clearly made by the current users of the system, and not already supported by new customers. Tax supported activities fail this test since funding sources have historically been from general revenues, or from revenues which emanate, at least in part, from the properties now developing. Second, the cost basis is allocated between used and unused capacity, and, capacity available to serve growth. In the absence of a detailed asset by asset analysis, it is appropriate to allocate the cost of existing facilities between used and available capacity proportionally based on the forecasted population growth as converted to equivalent dwelling units over the planning period. This approach reflects the philosophy, consistent with the City's Updated Master Plans, that facilities have been sized to meet the demands of the customer base within the established planning period.

Improvement Fee Methodology

There are three basic approaches used to develop improvement fee SDCs: "standards driven", "improvements-driven", and "combination/hybrid" approaches. The "standards-driven" approach is based on the application of Level of Service (LOS) standards for facilities. Facility needs are determined by applying the LOS standards to projected future demand, as applicable. SDC-eligible amounts are calculated based on the costs of facilities needed to serve growth. This approach works best where level of service standards have been adopted but no specific list of projects is available. The "improvements-driven" approach is based on a specific list of planned capacity increasing capital improvements. The portion of each project that is attributable to growth is determined, and the SDC-eligible costs are calculated by dividing the total costs of growth-required projects by the projected increase in projected future demand, as applicable. This approach works best where a detailed master plan or project list is available and the benefits of projects can be readily apportioned between growth and current users. Finally, the combination/hybrid-approach includes elements of both the "improvements driven" and "standards-driven" approaches. Level of Service standards may be used to create a list of planned capacity-increasing projects, and the growth required portions of projects are then used as the basis for determining SDC eligible costs. This approach works best where levels of service have been identified and the benefits of individual projects are not easily apportioned between growth and current users.

In the past, the City has utilized the "improvements-driven" approach for the calculation of water, wastewater, and stormwater SDCs. The City has used the LOS standards approach for parks. This study continues to use this method, and has relied on the capital improvement plans that are incorporated in the master plans, and plan updates for the water, wastewater, stormwater, and parks systems.

For this SDC methodology update, the improvement fee represents a proportionate share of the cost to expand the systems to accommodate growth. This charge is based on the adopted capital improvement plans established by the City for the four (4) municipal services. The costs that can be applied to the improvement fees are those that can reasonably be allocable to growth. Statute requires that the capital improvements used as a basis for the charge be part of an adopted capital improvement schedule, whether as part of a system plan or independently developed, and that the improvements included for SDC eligibility be capacity or level of service expanding. The improvement fee is intended to protect existing customers from the cost burden and impact of expanding a system that is already adequate for their own needs in the absence of growth.

The key step in determining the improvement fee is identifying capital improvement projects that expand the system and the share of those projects attributable to growth. Some projects may be entirely attributable to growth, such as a wastewater collection line that exclusively serves a newly developing area. Other projects, however, are of mixed purpose, in that they may expand capacity, but they also improve service or correct a deficiency for existing customers. An example might be a water distribution reservoir that both expands water storage capacity and corrects a chronic capacity issue for existing users. In this case, a rational allocation basis must be defined.

The improvement portion of the SDC is based on the proportional approach toward capacity and cost allocation in that only those facilities (or portions of facilities) that either expand the respective system's capacity to accommodate growth or increase its respective level of performance have been included in the cost basis of the fee. As part of this SDC update, City Staff and their engineering consultants were asked to review the planned capital improvement lists in order to assess SDC eligibility. The criteria in Figure 6 were developed to guide the City's evaluation:

Figure 6 - SDC Eligibility Criteria

City of St. Helens

Steps Toward Evaluating

Capital Improvement Lists for SDC Eligibility

ORS 223

1. Capital improvements mean the facilities or assets used for :
    a. Water supply, transmission, storage and distribution
    b. Wastewater collection, transmission, treatment, and disposal
    c. Stormwater, conveyance, detention, treatment, and disposal
    d. Parks & Trails – Pocket parks, urban plaza parks, neighborhood parks, community parks, nature parks, regional parks, trails, and bike/ped expansion

    This definition DOES NOT ALLOW costs for operation or routine maintenance of the improvements;
2. The SDC improvement base shall consider the cost of projected capital improvements needed to increase the capacity of the systems to which the fee is related;
3. An increase in system capacity is established if a capital improvement increases the "level of performance or service" provided by existing facilities or provides new facilities.

Under the City' approach, the following rules will be followed

1. Repair costs are not to be included;
2. Replacement costs will not be included unless the replacement includes an upsizing of system capacity and/or the level of performance of the facility is increased;
3. New regulatory compliance facility requirements fall under the level of performance definition and should be proportionately included;
4. Costs will not be included which bring deficient systems up to established design levels.

In developing the improvement fee, the project team in consultation with City staff evaluated each of its CIP projects to exclude costs related to correcting existing system deficiencies or upgrading for historical lack of capacity. Only capacity increasing/level of performance costs were used as the basis for the SDC calculation, as reflected in the capital improvement schedules developed by the City. The improvement fee is calculated as a function of the estimated number of projected additional Equivalent Residential Units for water, wastewater, and stormwater over the planning horizon. We measure demand for parks and trails facilities in acres per 1,000 people. Once the future costs to serve growth have been segregated (i.e., the numerator), they can be divided into the total number of new EDUs (and acres/1,000 population) that will use the capacity derived from those investments (i.e., the denominator).

Methodology for the Granting of Credits, Discounts, and Exemptions

SDC Credits Policy

ORS 223.304 requires that credit be allowed for the construction of a "qualified public improvement" which is required as a condition of development approval, is identified in the Capital Improvement Plan, and either is not located on or contiguous to property that is the subject of development approval, or is located on or contiguous to such property and is required to be built larger or with greater capacity than is necessary for the particular development project. The credit for a qualified public improvement may only be applied against an SDC for the same type of improvement, and may be granted only for the cost of that portion of an improvement which exceeds the minimum standard facility size or capacity needed to serve the particular project. For multi-phase projects, any excess credit may be applied against SDCs that accrue in subsequent phases of the original development project. In addition to these required credits, the City may, if it so chooses, provide a greater credit, establish a system providing for the transferability of credits, provide a credit for a capital improvement not identified in the Capital Improvement Plan, or provide a share of the cost of an improvement by other means.

The City has adopted a policy for granting SDC credits, and has codified this policy in the St. Helens Municipal Code (SHMC) §13.24.130. The adopted SDC credit policy consists of five (7) items as follows:

SHMC §13.24.130

1. When development occurs that is subject to a system development charge, the system development charge for the existing use, if applicable, shall be calculated and if it is less than the system development charge for the use that will result from the development, the difference between the system development charge for the existing use and the system development charge for the proposed use shall be the system development charge. If the change in the use results in the system development charge for the proposed use being less than the system development charge for the existing use, no system development charge shall be required. No refund or credit shall be given unless provided for by another subsection of this section.
2. A credit shall be given to the permittee for the cost of a qualified public improvement upon acceptance by the city of the public improvement. The credit shall only be for the improvement fee charged for the type of improvement being constructed, and the applied credit shall not exceed the amount of the improvement fee. When the construction of a qualified public improvement gives rise to a credit amount greater than the improvement fee, the excess credit may be applied against improvement fees that accrue in subsequent phases of the project.
3. If a qualified public improvement is located in whole or in part on or contiguous to the property that is the subject of development approval and is required to be built larger or with greater capacity than is necessary for the particular development project, a credit shall be given for the cost of the portion of the improvement that exceeds the city's minimum standard facility size or capacity needed to serve the particular development project or property. The applicant shall have the burden of demonstrating that a particular improvement qualifies for credit under this section. The request for credit shall be filed in writing no later than 60 days after acceptance of the improvement by the city.
4. Notwithstanding subsection (3) of this section, when establishing a methodology for a system development charge, the city may provide for a credit against the improvement fee, the reimbursement fee, or both, for capital improvements constructed as part of the development which reduce the development's demand upon existing capital improvements and/or the need for future capital improvements, or a credit based upon any other rationale the council finds reasonable.

5. Credit shall not be transferable from one development to another except in compliance with standards adopted by the city council.
6. Credit shall not be transferable from one type of system development charge to another.
7. Credits shall be used within 10 years from the date the credit is given. (Ord. 3082 §7, 2008; Ord. 2836 § 13, 2001)

SDC Discount Policy

The City, at its sole discretion may discount the SDC rates by choosing not to charge a reimbursement fee for excess capacity, or by reducing the portion of growth-required improvements to be funded with SDCs. A discount in the SDC rates may also be applied on a pro-rata basis to any identified deficiencies, which must to be funded from sources other than improvement fee SDCs. The portion of growth-required costs to be funded with SDCs must be identified in the CIP. Because discounts reduce SDC revenues, they increase the amounts that must come from other sources, such as user fees or general fund contributions, in order to acquire the facilities identified in the Updated Master Plan(s).

Partial and Full SDC Exemption

The City may exempt certain types of development, from the requirement to pay SDCs. Exemptions reduce SDC revenues and, therefore, increase the amounts that must come from other sources, such as user fees and property taxes. As in the case of SDC credits, the City has articulated a policy relative to partial and full SDC exemption. This SDC exemption policy is codified in SHMC §13.24.120, and is as follows:

SHMC §13.24.120

1. Structures and uses established and existing on or before June 19, 1991, are exempt from a system development charge, except water and sewer charges, to the extent of the structure or use then existing and to the extent of the parcel of land as it is constituted on that date. Structures and uses affected by this subsection shall pay the water or sewer charges pursuant to the terms of this chapter upon the receipt of a permit to connect to the water or sewer system.
2. Additions to single-family dwellings that do not constitute the addition of a dwelling unit, as defined by the State Uniform Building Code, are exempt from all portions of the system development charge.
3. Alterations, additions, replacements, or changes in use that do not increase the parcel or structure's use of the public improvement facility are exempt from all portions of the system development charge.
4. A project financed by city revenues is exempt from all portions of the system development charge. (Ord. 2836 § 12, 2001)

Water SDCs

Water Capital Improvement Plan

The principal source document for the water capital improvement plan (CIP) was the 2017 twenty (20) year Water System Capital Improvement Plan. For this water SDC methodology update, the 2017 water CIP was reviewed for accuracy with City Staff and where appropriate amended. This amendment process consisted of two steps. The first step was to eliminate master plan projects that City Staff deemed unnecessary at the current time due to the very long lead times anticipated for their development. The second step in the CIP amendment process was to eliminate the cost of planned projects (or portions of projects) that have been funded and constructed since the adoption of the last water master plan in 2012. In this case, the planned future costs are deducted from the CIP. The actual costs spent on these projects were capitalized by the City, and now reside in the water system fixed asset inventory (i.e., balance sheet assets). These historical costs will be included in the reimbursement fee calculations.

The amended water system CIP now consists of future projects that remain a 20 year priority for the City, and only consists of projects yet to be completed. The resulting CIP that was used for this SDC methodology update is shown in summary form in Table 13.

Table 13 – Adopted 2017 Water System Capital Improvement Plan

Master Plan ID	Project Description	Estimated Cost of Improvement in 2016 Dollars
	Distribution:	
DS 1	Pipeline repair and replacement program	$6,564,000
DS 2	18th street main replacement (8-inch)	182,000
DS 3	19th - 21st street bottleneck replacement (8-inch)	81,000
DS 4	6th - Plymouth street main replacement (8-inch)	51,000
DS 5	2nd - 4th street main replacement (8-inch)	182,000
DS 6	SCADA/telemetry improvements	375,000
	Storage:	
ST 1	Land acquistion for main zone storage	300,000
ST 2	Land acquisition for high zone storage	200,000
ST 3	1.5 mg main zone reservoir 1	1,500,000
ST 4	1.5 mg main zone reservoir 2	1,500,000
ST 5	0.25 mg high reservoir 1/lemont pump station upgrade	500,000
ST 6	0.25 mg high reservoir 2	300,000
	Source of Supply:	
SR 1	Ranney well maintenance (nos 2 and 3) 5 yr intervals	450,000
	Meters and Services:	
MS 1	Water master plan update (eveny 6 years)	360,000
MS 2	Asset management program development analysis	60,000
MS 3	Water management and conservation plan update	40,000
MS 4	Leak detection program	90,000
MS 5	Meter calibration	90,000
MS 6	Long term supply options study	40,000
	Totals	$12,865,000

Water Customers Current and Future Demographics

Existing Water Demand and Population Growth

Current St. Helens water demands are based on historical customer billing records, and actual water meters in service as of June 8, 2017. Projected demands are estimated based on a maximum daily water demand (MDD) growth rate of 1.3 percent within the City's existing urban growth boundary. This annual MDD growth factor is from the 2012 Water System Master Plan Update.

Estimated Demand per Equivalent ¾" Water Meter

The City serves single-family residential customers and a significant number of multifamily housing developments and commercial customers. Single-family residential water services generally have a consistent daily pattern of water use whereas water demands for multifamily residences, commercial and industrial users may vary significantly from service to service depending on the number of multifamily units per service or the type of commercial enterprise. When projecting future water demands based on population change, the water needs of nonresidential and multi-family residential customers are represented by comparing the water use volume at these services to the average single-family residential water service. A method to estimate this relationship is to calculate "equivalent dwelling units (EDUs)". In the case of St. Helens, the standard residential unit of demand is the rated capacity (in gallons per minute) of the ¾" water meter. As of June 30, 2016, the City had 2,838 active water meters in service, 4,689 of which were ¾" meters serving single family residential customers. In other words, roughly 91% of all active water services were assigned to the single family residential customer class. The process for calculating equivalent ¾" meters is shown below in Table 14.

Table 14 – Estimated ¾" Equivalent Meters in Service as of June 8, 2017

Meter Size	Total Meters in Service	AWWA Rated Flow (GPM)*	Flow Factor Equivalence	3/4" Meter Equivalence
5/8 inch - displacement or multi-jet	8	30	1.00	8
3/4 inch - displacement or multi-jet	4,689	30	1.00	4,689
1.0 inch - displacement or multi-jet	56	50	1.67	93
1.5 inch - displacement or class I turbine	23	100	3.33	77
2.0 inch - displacement or class I & II turbine	27	160	5.33	144
3.0 inch - displacement	203	300	10.00	2,030
4.0 inch - displacement or compound	111	500	16.67	1,850
6.0 inch - displacement or compound	5	1,000	33.33	167
8.0 inch - compound	4	1,600	53.33	213
	5,126			9,271

Source - St. Helens utility billing records

* - AWWA Manual of Practice M3; Safety Practices for Water Utilities; Table 2-2 Total Quantities Registered per Month by Meters Operating at Varying Percentages of Maximum Capacity

Projected Demands

The planning horizon for the master plan is approximately 20 years, through the year 2036. That is the forecast horizon that is used for the water SDC methodology update. With the benefit of actual meters in service, and a MDD growth forecast that is predicated on existing growth trends for the City a forecast of future equivalent ¾" meters was developed. Based upon these decision rules, the forecast of equivalent meters in use for this water SDC methodology update are shown below in Table 15

Table 15 – Forecast of Equivalent ¾" Meters for the 2017 Water SDC Methodology Update Study

	Equivalent Dwelling Units		
Year	Annual Growth Rate in MDD	Additions	End of Year
2016			9,271
2017	1.3%	121	9,392
2018	1.3%	122	9,514
2019	1.3%	124	9,638
2020	1.3%	125	9,763
2021	1.3%	127	9,890
2022	1.3%	129	10,019
2023	1.3%	130	10,149
2024	1.3%	132	10,281
2025	1.3%	134	10,415
2026	1.3%	135	10,550
2027	1.3%	137	10,687
2028	1.3%	139	10,826
2029	1.3%	141	10,967
2030	1.3%	143	11,110
2031	1.3%	144	11,254
2032	1.3%	146	11,400
2033	1.3%	148	11,548
2034	1.3%	150	11,698
2035	1.3%	152	11,850
2036	1.3%	154	12,004
		2,733	

Reimbursement Fee Calculations

As discussed earlier in this report, the reimbursement fee represents a buy-in to the cost, or value, of infrastructure capacity within the existing system. In theory, this should be a simple calculation. Simply go to the Utility's balance sheet, find the book value of assets in service, and divide that cost by the number of forecasted new connections to the water system. That is a simple calculation, and it is wrong. In order to determine an equitable reimbursement we have to account for some key issues of rate equity;

- First, the cost of the system to the City's existing customers may be far less than the total plant-in-service value. This is due to the fact that elements of the existing system may have been contributed, whether from developers, governmental grants, and other sources.
- Second, the value of the existing system to a new customer is less than the value to an existing customer, since the new customer must also pay, through an improvement fee, for expansion of some portions of the system.
- Third, the accounting treatment of asset costs generally has no relationship to the capacity of an asset to serve growth. In the absence of a detailed asset by asset analysis detailed in the balance sheet (or fixed asset schedule), a method has to be used to allocate cost to existing and future users of the asset. Generally, it is industry practice to allocate the cost of existing facilities between used and available capacity proportionally based on the forecasted growth as converted to equivalent dwelling units (i.e., equivalent ¾" meters) over the planning period.
- Fourth, the Oregon SDC statute has strict limitations on what type of assets can be included in the basis of the reimbursement fee. ORS 223.299 specifically states that a "capital improvement" does not include costs of the operation or routine maintenance of capital improvements. This means the assets on the balance sheet such as certain vehicles and equipment used for heavy repair and maintenance of infrastructure cannot be included in the basis of the reimbursement fee.

For this water SDC methodology update, the following discrete calculation steps were followed to arrive at the recommended water reimbursement fee.

Step 1: Calculate the original cost of water fixed assets in service. From this starting point, eliminate any assets that do not conform to the ORS 223.299 definition of a capital improvement. This results in the **adjusted original cost of water fixed assets**.

Step 2: Subtract from the adjusted original cost of water fixed assets any grant funding or contributed capital. This arrives at the **modified original cost of water fixed assets in service net of grants and contributed capital**.

Step 3: Subtract from the modified original cost of water fixed assets in service net of grants and contributed capital any principal outstanding on long term debt used to finance those assets. This arrives a **gross water reimbursement fee basis**.

Step 4: Subtract from the gross water reimbursement fee basis the fund balance held in the Water Reimbursement SDC fund (if available). This arrives at the **net water reimbursement fee basis**.

Step 5: Divide the net water reimbursement fee basis by the sum of existing and future EDUs to arrive at the **unit net reimbursement fee**.

The actual data that was used to calculate the total water reimbursement fee is shown below in Table 16.

Table 16 - Calculation of the Water Reimbursement Fee

Utility Plant-in-Service (original cost):[1]	
Land, easements & right of way	$ 956,373
Buildings and improvements	11,131,467
Machinery and equipment	1,886,845
Distribution system infrastructure	12,234,447
Water storage systems	2,838,131
Construction Work-in-Progress	10,571
Total Utility Plant-in-Service	29,057,835
Eliminating entries:	
Principal outstanding on bonds, notes, and loans payable	
2013 Capital One water refunding note	5,163,000
Grants and contributions	3,892,379
	9,055,379
Net basis in utility plant-in-service available to serve future customers	$ 20,002,456
Estimated existing and future 3/4" Meter Equivalents (MEs)	12,004
Calculated reimbursement fee - $ per 3/4"ME	$ 1,666

[1] Source: St. Helens Accounting Summary Report - Capitalized Assets as of June 30, 2016

Improvement Fee Calculations

The calculation of the water improvement fee is more streamlined than the process used to calculate the water reimbursement fee. This study continues to use the improvements-driven method, and has relied on the 2017 water system capital improvement plan. Under this methodology, only three steps are required to arrive at the improvement fee. These steps are:

Step 1: Accumulate the future cost of planned improvements needed to serve growth. This arrives at **the gross improvement fee basis**.

Step 2: Subtract from the gross improvement fee basis the fund balance held in the Water Improvement SDC Fund. This arrives at **the net water improvement fee basis**.

Step 3: Divide the net water improvement fee basis by the forecasted number of growth equivalent ¾" meters over the planning period. This arrives at **the total water improvement fee**.

The actual data that was used to calculate the total water improvement fee is shown below in Table 17.

Table 17 - Calculation of the Water Improvement Fee

Master Plan ID	Project Description	Estimated Cost of Improvement in 2016 Dollars	Project Costs Cost Attributed to Existing Demands	Costs Attributed to Future Demands
	Distribution:			
DS 1	Pipeline repair and replacement program	$6,564,000	$6,564,000	$0
DS 2	18th street main replacement (8-inch)	182,000	182,000	-
DS 3	19th - 21st street bottleneck replacement (8-inch)	81,000	81,000	-
DS 4	6th - Plymouth street main replacement (8-inch)	51,000	51,000	-
DS 5	2nd - 4th street main replacement (8-inch)	182,000	182,000	-
DS 6	SCADA/telemetry improvements	375,000	375,000	-
	Storage:			
ST 1	Land acquisition for main zone storage	300,000	-	300,000
ST 2	Land acquisition for high zone storage	200,000	-	200,000
ST 3	1.5 mg main zone reservoir 1	1,500,000	-	1,500,000
ST 4	1.5 mg main zone reservoir 2	1,500,000	-	1,500,000
ST 5	0.25 mg high reservoir 1/lemont pump station upgrade	500,000	-	500,000
ST 6	0.25 mg high reservoir 2	300,000	-	300,000
	Source of Supply:			
SR 1	Ranney well maintenance (nos 2 and 3) 5 yr intervals	450,000	450,000	-
	Meters and Services:			
MS 1	Water master plan update (every 6 years)	360,000	253,641	106,359
MS 2	Asset management program development analysis	60,000	60,000	-
MS 3	Water management and conservation plan update	40,000	40,000	-
MS 4	Leak detection program	90,000	90,000	-
MS 5	Meter calibration	90,000	90,000	-
MS 6	Long term supply options study	40,000	-	40,000
	Totals	$12,865,000	$8,418,641	$4,446,359

Total Improvement Fee Eligible Costs for Future System Improvements	$4,446,359
less: Estimated water SDC fund balance as of June 30, 2017	253,099
Adjusted Improvement Fee Eligible Costs for Future System Improvements	$4,193,260
Total Growth in 3/4" Meter Equivalents (20 year forecast)	2,733
Calculated Water Improvement Fee SDC per Meter Equivalent	$1,534

Water SDC Model Summary

The 2017 water SDC methodology update was done in accordance with St. Helens Municipal Code Chapter 13.24, and with the benefit of adopted plan updates for water services. We recommend the City update the SDC charge and methodology to reflect the current capital improvement program. Our analysis indicates the City can charge a maximum of $3,361 for the standard ¾" residential water meter. A comparison of the proposed and current water SDCs for the average single family residential customer is shown below in Table 18.

Table 18 - Proposed and Current Water SDCs for a 3/4" Meter

Line Item Description		City-Wide
Proposed SDC components:		
Reimbursement fee	$	1,666
Improvement fee		1,534
Administration fee at 5%		160
Total proposed water SDC	$	3,361
Current SDC components:		
Reimbursement fee	$	1,196
Improvement fee		1,281
Administration fee at 1.34%		33
Total current water SDC	$	2,511

For water meters larger than ¾", the project team has developed a schedule of SDCs based on the general design criteria for meters that are installed in the St. Helens water service area. This criteria is from the standard approach of using American Water Works Association design criteria for displacement and compound water meters.

The resulting schedule of water SDCs for the array of potential meter sizes is shown below in Table 19.

Table 19 - Proposed Schedule of Water SDCs by Potential Water Meter Size

Meter Size	AWWA Rated Flow (GPM)*	Flow Factor Equivalence	Proposed Schedule of Water SDCs			
			Reimbursement	Improvement	Administration	Total
0.75"x 0.75" - Displacement Multi-jet	30	1.00	$ 1,666	$ 1,534	$ 160	$ 3,361
1.00 inch - Displacement Multi-jet	50	1.67	2,777	2,557	267	5,601
1.50 inch - Displacement Class I Turbine	100	3.33	5,554	5,114	533	11,202
2.00 inch - Displacement or Class I & II Turbine	160	5.33	8,887	8,183	853	17,923
3.00 inch - Displacement	300	10.00	16,663	15,343	1,600	33,607
4.00 inch - Displacement or Compound	500	16.67	27,772	25,572	2,667	56,011
6.00 inch - Displacement or Compound	1000	33.33	55,544	51,144	5,334	112,022
8.00 inch - Compound	1600	53.33	88,870	81,830	8,535	179,235

* - AWWA Manual of Practice M3; Safety Practices for Water Utilities; Table 2-2 Total Quantities Registered per Month by Meters Operating at Varying Percentages of Maximum Capacity

Wastewater SDCs

Wastewater Capital Improvement Plan

As in the case of the water SDCs, the principal sources of data for the wastewater system CIP are the 2017 capital improvement plans for wastewater treatment, pumping stations, and collection systems. City Staff have periodically updated these plans for current development conditions. With the assistance of City Staff, the project team has summarized the 2017 wastewater system CIPs for this SDC methodology update. The 2017 wastewater system CIP is shown in Table 20.

Table 20 - 2017 Wastewater System CIP

Project Description	Estimated Cost of Improvement in 2016 Dollars
Collection System Improvements:	
Railroad Avenue and pump station (PL and PS)	$426,382
Clark Street to pump station (local system gravity extension)	101,520
McNulty Creek industrial area and 9th street parallel to Old PDX rd.	401,473
Gray Cliff area to pump station (local system gravity extension)	197,963
Old Portland Rd. from Letica to Bayport to McNulty Creek PS	743,123
Bachelor Flat Rd., Ross to fairgrounds (trunk line & pump station)	177,659
Main replacement	1,370,515
Hwy 30 north to Pittsburg to Deer Island Rd.	254,903
Pittsburg Rd. from Reservoir to North Vernonia Rd.	242,158
Achilles (UGB west to Old Portland Rd.)	382,355
McNulty Creek trunk phase I	810,610
South Hwy 30 trunk, pressure line, and lift station	1,725,833
Bayview pump station and force main	653,555
Gable Rd. trunk	207,719
South trunk replacement	3,318,436
McNulty Creek trunk phase II	440,769
Firlock park trunk	506,631
Sykes Rd. trunk extension	238,117
Vernonia Rd. trunk phase II	405,305
McNulty Creek trunk phase III	265,981
Aubuchon trunk	400,239
Old Portland Rd. trunk	321,711
Firtex pump station and force main	476,287
Bayview trunk	443,302
Pump station #11 relocation/upgrade	406,078
Pump station #4 upgrade	1,928,872
Pump station #4 pressure line to Port avenue	1,421,274
Millard Rd. trunk line and lift station (Ross Rd. to Hwy 30)	482,218
Wastewater Treatment Plant Projects:	
Head works upgrade	254,903
WWTP aerator replacement	-
Primary lagoon dredge	100,000
Studies, Plans, and I&I Abatement:	
Wastewater system master plan	250,000
Totals	$19,355,891

Wastewater Customers Current and Future Demographics

Existing Wastewater Demand and Population Growth

Current St. Helens wastewater demands documented in the wastewater treatment system master plan documents we reviewed are based on Average Annual Dry Weather Flows (AADWF) to the headworks of the wastewater treatment plant. These flows are expressed in million gallons per day (MGD) figures. For the purpose of this wastewater SDC methodology update, the project team had to translate these MGD figures into standard billing units used for charging out SDCs. In this case, those standard billing figures are expressed in EDUs. In the wastewater industry, an EDU is typically defined as the amount of wastewater a single family residential customer contributes to the wastewater system during an average month in the winter, where winter is defined as November through April. Fortunately, the City's utility billing system tracks the winter average water consumption for the single family residential customer class. When a new single family residential customer connects to the wastewater system, that customer is assigned the "system average winter monthly water consumption" for the basis of the sewer usage charge. Once that customer established his/her own winter water usage history, that actual average number overwrites the system average. For the winter period November, 2016 through April, 2017, the average single family residential customer contributes 5.50 hundred cubic feet (CCF) of water to the wastewater system in the average winter month. This hundred cubic feet figure translates to 133 gallons per day.

Forecasted EDUs

With this historical consumption data in hand, the project team was able to calculate the number of EDUs relative to the AADWF data from the wastewater treatment plant monitoring data that gets reported to the Oregon Department of Environmental Quality on a monthly basis. The EDU calculation methodology is shown in Table 21.

Table 21 - Forecast of Current and Future Wastewater EDUs

	2016	2036	Growth	CAGR[1]
Average Dry Weather Flow (ADWF) MGD	1.0338	1.3923	0.3586	1.50%
Observed St. Helens EDU (November 2015 - April, 2016)				
Ccf per month - Single Family Residential	5.50	5.50		
Gallons per month - SFR	4,115	4,115		
Gallons per day - SFR	135	135		
Estimated EDUs based on ADWF and observed St. Helens SFR winter ave metered water consumption	7,642	10,293	2,651	1.50%

[1] CAGR - Compounded Annual Growth Rate

Reimbursement Fee Calculations

The wastewater reimbursement fee methodology mirrors that used for the water reimbursement fee. The methodological steps in its construction are restated here.

Step 1: Calculate the original cost of wastewater fixed assets in service. From this starting point, eliminate any assets that do not conform to the ORS 223.299 definition of a capital improvement. This results in the **adjusted original cost of wastewater fixed assets**.

Step 2: Subtract from the adjusted original cost of wastewater fixed assets any grant funding or contributed capital. This arrives at the **modified original cost of wastewater fixed assets in service net of grants and contributed capital**.

Step 3: Subtract from the modified original cost of wastewater fixed assets in service net of grants and contributed capital any principal outstanding on long term debt used to finance those assets. This arrives a **gross wastewater reimbursement fee basis**.

Step 4: Subtract from the gross wastewater reimbursement fee basis the fund balance held in the Wastewater Reimbursement SDC fund (if available). This arrives at the **net wastewater reimbursement fee basis**.

Step 5: Divide the net wastewater reimbursement fee basis by the sum of existing and future EDUs to arrive at the **unit net reimbursement fee**.

The actual data that was used to calculate the total wastewater reimbursement fee is shown below in Table 22.

Table 22 - Calculation of the Wastewater Reimbursement Fee

	Collection System	Primary Treatment	Secondary Treatment	Wastewater System
Utility Plant-in-Service (original cost):[1]				
Land, Easements & Right of Way	$ 30,990	$ -	$ 19,172	$ 50,162
Buildings and Improvements	15,126,432	1,026,400	1,764,066	17,916,898
Machinery and equipment	1,008,043	535,784	1,963,117	3,506,944
Construction Work-in-Progress	600	-	-	600
Total Utility Plant-in-Service	16,166,065	1,562,184	3,746,354	21,474,604
Eliminating entries:				
Principal outstanding on bonds, notes, and loans payable				
DEQ SRF Loan R06801				1,550,000
DEQ SRF Loan R80162				351,494
DEQ SRF Loan R80163				4,558,019
2013 Capital One Sewer Refunding Note				1,508,000
Developer Contributions				-
Grants, original cost				2,979,660
Total eliminating entries				10,947,173
Net basis in utility plant-in-service available to serve future customers				$ 10,527,431
Estimated existing and future wastewater treatment EDUs				10,293
Calculated reimbursement fee - $ per treatment EDU				$ 1,023

[1] Source: St. Helens Accounting Summary Report - Capitalized Assets as of June 30, 2016

Improvement Fee Calculations

The calculation of the wastewater improvement fee also follows the logic that was used to calculate the water improvement fee. As in the case of water, this study continues to use the improvements-driven method, and has relied on the capital improvement plans, and plan updates for the wastewater treatment, pump stations, and collection systems. Under this methodology, only three steps are required to arrive at the improvement fee. These steps are:

Step 1: Accumulate the future cost of planned improvements needed to serve growth. This arrives at **the gross improvement fee basis**.

Step 2: Subtract from the gross improvement fee basis the fund balance held in the Wastewater Improvement SDC Fund. This arrives at **the net wastewater improvement fee basis**.

Step 3: Divide the net wastewater improvement fee basis by the forecasted number of growth EDUs over the planning period. This arrives at **the total wastewater improvement fee**.

The actual data that was used to calculate the total wastewater improvement fee is shown below in Table 23.

Table 23 - Calculation of the Wastewater Improvement Fee

Project Description	Estimated Cost of Improvement in 2016 Dollars	Project Costs Cost Attributed to Existing	Costs Attributed to Future
Collection System Improvements:			
Railroad Avenue and pump station (PL and PS)	$426,382	$426,382	$0
Clark Street to pump station (local system gravity extension)	101,520	101,520	-
McNulty Creek industrial area and 9th street parallel to Old PDX rd.	401,473	401,473	-
Gray Cliff area to pump station (local system gravity extension)	197,963	197,963	-
Old Portland Rd. from Letica to Bayport to McNulty Creek PS	743,123	743,123	-
Bachelor Flat Rd., Ross to fairgrounds (trunk line & pump station)	177,659	177,659	-
Main replacement	1,370,515	1,370,515	-
Hwy 30 north to Pittsburg to Deer Island Rd.	254,903	254,903	-
Pittsburg Rd. from Reservoir to North Vernonia Rd.	242,158	242,158	-
Achilles (UGB west to Old Portland Rd.)	382,355	382,355	-
McNulty Creek trunk phase I	810,610	23,883	786,727
South Hwy 30 trunk, pressure line, and lift station	1,725,833	951,872	773,961
Bayview pump station and force main	653,555	357,740	295,815
Gable Rd. trunk	207,719	207,719	-
South trunk replacement	3,318,436	97,774	3,220,662
McNulty Creek trunk phase II	440,769	33,617	407,152
Firlock park trunk	506,631	279,429	227,202
Sykes Rd. trunk extension	238,117	238,117	-
Vernonia Rd. trunk phase II	405,305	405,305	-
McNulty Creek trunk phase III	265,981	30,600	235,381
Aubuchon trunk	400,239	400,239	-
Old Portland Rd. trunk	321,711	321,711	-
Firtex pump station and force main	476,287	-	476,287
Bayview trunk	443,302	244,500	198,802
Pump station #11 relocation/upgrade	406,078	263,466	142,612
Pump station #4 upgrade	1,928,872	1,251,466	677,406
Pump station #4 pressure line to Port avenue	1,421,274	922,133	499,141
Millard Rd. trunk line and lift station (Ross Rd. to Hwy 30)	482,218	312,867	169,351
Wastewater Treatment Plant Projects:			
Head works upgrade	254,903	127,452	127,452
WWTP aerator replacement	-	-	-
Primary lagoon dredge	100,000	100,000	-
Studies, Plans, and I&I Abatement:			
Wastewater system master plan	250,000	-	250,000
Totals	$19,355,891	$10,867,941	$8,487,951
Total Improvement Fee Eligible Costs for Future System Improvements			$8,487,951
less: Estimated wastewater SDC Fund balance as of June 30, 2017			804,102
Adjusted Improvement Fee Eligible Costs for Future System Improvements			$7,683,849
Total Growth in EDUs (20 year forecast)			2,651
Calculated Water Improvement Fee SDC per EDU			$2,898

Wastewater SDC Model Summary

The 2017 wastewater SDC methodology update was done in accordance with St. Helens Municipal Code Chapter 13.24, and with the benefit of adopted capital improvement plans and plan updates for wastewater services. We recommend the City update the SDC charge and methodology to reflect the current capital improvement program. Our analysis indicates the City can charge a maximum of $4,117 for the standard ¾" residential water meter. A comparison of the proposed and current wastewater SDCs for the average single family residential customer is shown below in Table 24.

Table 24 - Proposed and Current Wastewater SDCs for a 3/4" Meter

Line Item Description		City-Wide
Proposed SDC components:		
Reimbursement fee	$	1,023
Improvement fee		2,898
Administration fee at 5%		196
Total proposed wastewater SDC	$	4,117
Current SDC components:		
Reimbursement fee	$	999
Improvement fee		2,690
Administration fee at 1.34%		49
Total current wastewater SDC	$	3,738

For water meters larger than ¾", the schedule of wastewater SDC uses the same flow factors that were developed for the water SDCs (i.e., AWWA standards for displacement and compound meters). The complete proposed schedule of wastewater SDCs by potential meter size are shown in Table 25.

Table 25 - Proposed Schedule of Wastewater SDCs by Potential Water Meter Size

Meter Size	AWWA Rated Flow (GPM)*	Flow Factor Equivalence	Proposed Schedule of Wastewater SDCs			
			Reimbursement	Improvement	Administration	Total
0.75"x 0.75" - Displacement Multi-jet	30	1.00	$ 1,023	$ 2,898	$ 196	$ 4,117
1.00 inch - Displacement Multi-jet	50	1.67	1,705	4,831	327	6,862
1.50 inch - Displacement Class I Turbine	100	3.33	3,409	9,662	654	13,724
2.00 inch - Displacement or Class I & II Turbine	160	5.33	5,455	15,459	1,046	21,959
3.00 inch - Displacement	300	10.00	10,228	28,985	1,961	41,173
4.00 inch - Displacement or Compound	500	16.67	17,046	48,308	3,268	68,622
6.00 inch - Displacement or Compound	1000	33.33	34,093	96,616	6,535	137,244
8.00 inch - Compound	1600	53.33	54,548	154,585	10,457	219,590

* - AWWA Manual of Practice M3; Safety Practices for Water Utilities; Table 2-2 Total Quantities Registered per Month by Meters Operating at Varying Percentages of Maximum Capacity

Stormwater SDCs

Stormwater Capital Improvement Plan

As in the case of the water and wastewater SDCs, the principal sources of data for the stormwater system CIP are the 2017 capital improvement plans for stormwater collection, detention, treatment, and disposal systems. City Staff have periodically updated these plans for current development conditions. With the assistance of City Staff, the project team has summarized the 2017 stormwater system CIPs for this SDC methodology update. The 2017 stormwater system CIP is shown in Table 26.

Table 26 - 2017 Stormwater System CIP

Project Description	Estimated Cost of Improvement in 2016 Dollars
Collection System Projects:	
Middle Trunk bypass at 15th St. north of Plymouth St. and downstream culverts	$549,881
Upgrade existing Middle Trunk piping from 15th St. to 4th St.	$1,536,398
Upgrade existing undersized piping in Columbia Blvd. west of Milton Creek to Cherrywood Dr. including re-routing Vernonia Rd. flows down Michael Ave. to Milton Creek.	$1,942,679
Upgrade existing undersized culverts in the North Trunk Canyon at 12th St., 8th St., from 7th St. to 6th St. and from 5th St. to the east side of 4th St.	$378,262
Upgrade existing undersized culvert and piping system extending from U.S. 30 east to 8th St. along Lemont St.	$1,314,577
Upgrade existing undersized piping on 4th St. roughly between Cowlitz St. and St. Helens St. and the system outlet on Cowlitz St. near The Strand.	$277,859
Upgrade existing undersized culverts located at the intersection of Gable Road and Old Portland Road and on Gable Road approximately 1400 feet east of U.S. 30.	$249,840
Upgrade existing undersized piping on Little St. NW of U.S. 30 to Milton Creek discharge.	$172,060
Upgrade existing undersized piping on Sunset Blvd. from Crescent Dr. to Columbia Blvd.	$375,927
Upgrade existing undersized piping extending from Cowlitz St. to Tualatin St. along 20th-16th Streets.	$791,548
Upgrade existing undersized piping extending from Cowlitz St. to the Middle Trunk system on 13th St. & 14th St.	$469,325
Upgrade existing undersized system extending from 11th St. to 5th St. between West St. and Wyeth St.	$833,534
Upgrade existing system outlet at Sykes Road and U.S. 30	$429,512
Upgrade existing undersized piping along Tualatin St. from 19th St. to McNulty Creek and Dubois Ln. from 20th St. to Melvin Ave. Reroute Dubois Ln. flows to Tualatin St. outfall.	$393,439
Construct a new storm line from Wagner Ave. extending down Shore Dr. approximately 750 feet to existing outfall.	$396,375
Upgrade existing undersized culverts North of Columbia Blvd. at McMichael St. and at Allendale Dr.	$184,805
Upgrade existing undersized culvert and piping system extending from 3rd St. to 8th St. along Lemont St. and from 7th St. to Lemont St. along 8th St.	$544,218
Upgrade existing undersized piping extending from 14th St. N. of St. Helens to 16th St. S. of St. Helens Upgrade existing piping from 16th St. south of St. Helens to 12th St. north of St. Helens. Connect the existing culvert S. of St. Helens at 15th St. to the improved	$226,864
Upgrade existing undersized piping along 16th St. north of Old Portland Rd. and culverts at 17th St. and Old Portland Rd.	$138,922

Table 26 - 2017 Stormwater System CIP (continued)

Project Description	Estimated Cost of Improvement in 2016 Dollars
Collection System Projects:	
Upgrade existing undersized piping on Gable Rd. and U.S. 30.	$256,178
Construct a new storm line from McArthur St. to Milton Creek along Halsey St. Upgrade existing undersized piping on Nimitz St. from McArthur St. to Milton Creek and on Park St. from Vernonia Rd. to Milton Creek.	$391,277
Upgrade existing undersized culverts at the Hinterlands Subdivision	$174,609
Upgrade existing undersized piping SW of City sewage lagoons at Boise Cascade site.	$1,537,067
Upgrade existing undersized piping north of Columbia Blvd. at 21st St. and 20th St.	$307,158
Upgrade existing undersized piping along 1st St. and St. Helens St.	$128,726
Upgrade existing undersized piping on Columbia Blvd. from Bradley St. to Milton Creek.	$89,216
Install new conveyance facility from Pittsburg Rd. to the upstream end of the Lemont St. system.	$1,325,497
Install new conveyance facility along Vernonia Rd. south to Columbia Blvd.	$934,220
Install new conveyance facility along Sykes Rd. west of Columbia Blvd.	$729,023
Install new conveyance facility from U.S. 30 north of Kavanaugh St. to McNulty Cr. near Gable Rd.	$732,847
Install new conveyance facilities from Millard Rd. and Morse Rd. to Old Portland Rd. north of Millard Rd. Upgrade existing culverts and channels at the U.S. 30 crossing north of Millard Rd.	$1,297,458
Install new conveyance facilities along the southerly portion of Childs Rd. to McNulty Creek.	$308,433
Install new conveyance facilities from Bachelor Flat Rd. south down Ross Rd. to McNulty Creek.	$1,150,888
Install new conveyance facility from Morse Rd. to the Columbia River along Achilles Rd. Connect to existing 24-inch culvert across the Portland and Western Railroad.	$1,535,792
Install new conveyance system from Morse Rd. to Old Portland Rd. between Achilles Rd. and Millard Rd. Includes improving existing 18-inch culvert across the Portland and Western Railroad.	$1,865,892
Install new conveyance facility south of Millard Rd. extending from Fischer Rd. to the easterly side of the Portland and Western Railroad and continuing south. Includes improving existing 15-inch culvert across the Portland and Western Railroad and tie-in to existing 24-inch culvert.	$536,571
Stormwater Master Plan	$150,000
Totals	$24,656,877

Stormwater Customers Current and Future Demographics

Existing Stormwater Demand and Population Growth

St. Helens' stormwater utility service charge and SDC are based on estimated impervious surface area. The average amount of impervious area on a single family residential developed lot within the City is set at 2,500 square feet. This equates to one EDU. Both rates and SDCs are calculated as a function of EDUs meaning that each property's fee is calculated as follows:

$$Estimated\ Impervious\ Surface\ \div 2{,}500\ square\ feet\ = Number\ of\ ESUs$$

The number of EDUs is then multiplied by the unit rate to determine the service charge or SDC amount.

A previous study conducted by Murray Smith and Associates (MSA) found that, based on zoning by acreage and the amount of buildable acreage, the City is projected to have 2,146 acres of impervious surface area at build-out.

In order to estimate the amount of impervious surface area that will be added by development from existing conditions to build-out (the end of the stormwater planning period the following approach was again taken. In 2000, MSA found that the City had 1,055 acres of impervious surface area. This initial total was grown proportionately with population, from 10,019 in 2000 to the current population of 13,158 in 2015 (per U.S. Census estimates). This resulted in a current estimate of impervious surface area of 1,385 acres, or 24,136 EDUs.

Forecasted EDUs

The existing amount of impervious surface area was then subtracted from the build-out total of 2,146 impervious acres to arrive at the amount of impervious area expected to be added by future development: 760.77 acres, or 13,256 EDUs. The buildout EDU forecast methodology is shown in Table 27.

Table 27 - Forecast of Current and Future Stormwater EDUs

		Acres	Sq. Feet	EDUs
Estimated IA per 2007 SDC study		1,257	54,754,920	21,902
Population as a driver for IA:				
2007 population per PSU Population Research Center	11,940			
2015 population per American Fact Finder (U.S. Census)	13,158			
Percent increase in population	10.20%			
Estimated IA as of 2016		1,385.23	60,340,472	24,136
Estimated buildout IA per Murray Smith SWM MP		2,146.00	93,479,760	37,392
Growth acres of IA		760.77	33,139,288	13,256

Reimbursement Fee Calculations

The stormwater reimbursement fee methodology mirrors that used for the water and wastewater reimbursement fee. The methodological steps in its construction are restated here.

Step 1: Calculate the original cost of stormwater fixed assets in service. From this starting point, eliminate any assets that do not conform to the ORS 223.299 definition of a capital improvement. This results in the **adjusted original cost of stormwater fixed assets**.

Step 2: Subtract from the adjusted original cost of stormwater assets in service any grant funding or contributed capital. This arrives at the **modified original cost of stormwater fixed assets in service net of grants and contributed capital**.

Step 3: Subtract from the modified original cost of stormwater fixed assets in service net of grants and contributed capital any principal outstanding on long term debt used to finance those assets. This arrives a **gross stormwater reimbursement fee basis**.

Step 4: Subtract from the gross stormwater reimbursement fee basis the fund balance held in the stormwater Reimbursement SDC fund (if available). This arrives at the **net stormwater reimbursement fee basis**.

Step 6: Divide the net stormwater reimbursement fee basis by the sum of existing and future EDUs to arrive at the **unit net reimbursement fee**.

The actual data that was used to calculate the total stormwater reimbursement fee is shown below in Table 28.

Table 28 - Calculation of the Stormwater Reimbursement Fee

Utility Plant-in-Service (original cost):[1]		
Land, Easements & Right of Way	$	-
Buildings and improvements		-
Machinery and equipment		-
Infrastructure - storm drains		4,458,696
Construction Work-in-Progress		1,934,572
Total Utility Plant-in-Service		6,393,269
Eliminating entries:		
Principal outstanding on bonds, notes, and loans payable		-
Developer Contributions		-
Grants, net of amortization		613,301
		613,301
Net basis in utility plant-in-service available to serve future customers	$	5,779,968
Estimated existing and future stormwater EDUs		37,392
Calculated reimbursement fee - $ per EDU		$155
Calculate reimbursement fee - $/square foot of impervious surface		$0.0618

[1] Source: St. Helens Accounting Summary Report - Capitalized Assets as of June 30, 2016

Improvement Fee Calculations

The calculation of the stormwater improvement fee also follows the logic that was used to calculate the water and wastewater improvement fees. As in those cases, this study continues to use the improvements-driven method, and has relied on the capital improvement plans, and plan updates for the stormwater systems. Under this methodology, only three steps are required to arrive at the improvement fee. These steps are:

Step 1: Accumulate the future cost of planned improvements needed to serve growth. This arrives at **the gross improvement fee basis**.

Step 2: Subtract from the gross improvement fee basis the fund balance held in the Stormwater Improvement SDC Fund. This arrives at **the net stormwater improvement fee basis**.

Step 3: Divide the net stormwater improvement fee basis by the forecasted number of growth EDUs over the planning period. This arrives at **the total stormwater improvement fee**.

The actual data that was used to calculate the total stormwater improvement fee is shown below in Table 29.

Table 29 - Calculation of the Stormwater Improvement Fee

Project Description	Estimated Cost of Improvement in 2016 Dollars	Project Costs Cost Attributed to Existing Demands	Costs Attributed to Future Demands
Collection System Projects:			
Middle Trunk bypass at 15th St. north of Plymouth St. and downstream culverts	$549,881	$322,100	$227,781
Upgrade existing Middle Trunk piping from 15th St. to 4th St.	$1,536,398	$899,966	$636,432
Upgrade existing undersized piping in Columbia Blvd. west of Milton Creek to Cherrywood Dr. including re-routing Vernonia Rd. flows down Michael Ave. to Milton Creek.	$1,942,679	$1,137,950	$804,729
Upgrade existing undersized culverts in the North Trunk Canyon at 12th St., 8th St., from 7th St. to 6th St. and from 5th St. to the east side of 4th St.	$378,262	$221,572	$156,690
Upgrade existing undersized culvert and piping system extending from U.S. 30 east to 8th St. along Lemont St.	$1,314,577	$770,031	$544,546
Upgrade existing undersized piping on 4th St. roughly between Cowlitz St. and St. Helens St. and the system outlet on Cowlitz St. near The Strand.	$277,859	$162,760	$115,099
Upgrade existing undersized culverts located at the intersection of Gable Road and Old Portland Road and on Gable Road approximately 1400 feet east of U.S. 30.	$249,840	$146,347	$103,493
Upgrade existing undersized piping on Little St. NW of U.S. 30 to Milton Creek discharge.	$172,060	$100,787	$71,273
Upgrade existing undersized piping on Sunset Blvd. from Crescent Dr. to Columbia Blvd.	$375,927	$220,204	$155,723
Upgrade existing undersized piping extending from Cowlitz St. to Tualatin St. along 20th-16th Streets.	$791,548	$463,660	$327,888
Upgrade existing undersized piping extending from Cowlitz St. to the Middle Trunk system on 13th St. & 14th St.	$469,325	$274,913	$194,412
Upgrade existing undersized system extending from 11th St. to 5th St. between West St. and Wyeth St.	$833,534	$488,254	$345,280
Upgrade existing system outlet at Sykes Road and U.S. 30	$429,512	$251,592	$177,920

Table 29 - Calculation of the Stormwater Improvement Fee (continued)

Project Description	Estimated Cost of Improvement in 2016 Dollars	Project Costs Cost Attributed to Existing Demands	Costs Attributed to Future Demands
Collection System Projects:			
Upgrade existing undersized piping along Tualatin St. from 19th St. to McNulty Creek and Dubois Ln. from 20th St. to Melvin Ave. Reroute Dubois Ln. flows to Tualatin St. outfall.	$393,439	$230,462	$162,977
Construct a new storm line from Wagner Ave. extending down Shore Dr. approximately 750 feet to existing outfall.	$396,375	$232,182	$164,193
Upgrade existing undersized culverts North of Columbia Blvd. at McMichael St. and at Allendale Dr.	$184,805	$108,252	$76,553
Upgrade existing undersized culvert and piping system extending from 3rd St. to 8th St. along Lemont St. and from 7th St. to Lemont St. along 8th St.	$544,218	$318,783	$225,435
Upgrade existing undersized piping extending from 14th St. N. of St. Helens to 16th St. S. of St. Helens Upgrade existing piping from 16th St. south of St. Helens to 12th St. north of St. Helens. Connect the existing culvert S. of St. Helens at 15th St. to the improved	$226,864	$132,889	$93,975
Upgrade existing undersized piping along 16th St. north of Old Portland Rd. and culverts at 17th St. and Old Portland Rd.	$138,922	$81,375	$57,547
Upgrade existing undersized piping on Gable Rd. and U.S. 30.	$256,178	$150,060	$106,118
Construct a new storm line from McArthur St. to Milton Creek along Halsey St. Upgrade existing undersized piping on Nimitz St. from McArthur St. to Milton Creek and on Park St. from Vernonia Rd. to Milton Creek.	$391,277	$229,196	$162,081
Upgrade existing undersized culverts at the Hinterlands Subdivision	$174,609	$102,280	$72,329
Upgrade existing undersized piping SW of City sewage lagoons at Boise Cascade site.	$1,537,067	$900,358	$636,709
Upgrade existing undersized piping north of Columbia Blvd. at 21st St. and 20th St.	$307,158	$179,922	$127,236
Upgrade existing undersized piping along 1st St. and St. Helens St.	$128,726	$75,403	$53,323
Upgrade existing undersized piping on Columbia Blvd. from Bradley St. to Milton Creek.	$89,216	$52,259	$36,957

Table 29 - Calculation of the Stormwater Improvement Fee (continued)

Project Description	Estimated Cost of Improvement in 2016 Dollars	Project Costs Cost Attributed to Existing Demands	Costs Attributed to Future Demands
Collection System Projects:			
Install new conveyance facility from Pittsburg Rd. to the upstream end of the Lemont St. system.	$1,325,497	$776,428	$549,069
Install new conveyance facility along Vernonia Rd. south to Columbia Blvd.	$934,220	$547,232	$386,988
Install new conveyance facility along Sykes Rd. west of Columbia Blvd.	$729,023	$427,035	$301,988
Install new conveyance facility from U.S. 30 north of Kavanaugh St. to McNulty Cr. near Gable Rd.	$732,847	$429,275	$303,572
Install new conveyance facilities from Millard Rd. and Morse Rd. to Old Portland Rd. north of Millard Rd. Upgrade existing culverts and channels at the U.S. 30 crossing north of Millard Rd.	$1,297,458	$760,004	$537,454
Install new conveyance facilities along the southerly portion of Childs Rd. to McNulty Creek.	$308,433	$180,669	$127,764
Install new conveyance facilities from Bachelor Flat Rd. south down Ross Rd. to McNulty Creek.	$1,150,888	$674,148	$476,740
Install new conveyance facility from Morse Rd. to the Columbia River along Achilles Rd. Connect to existing 24-inch culvert across the Portland and Western Railroad.	$1,535,792	$899,611	$636,181
Install new conveyance system from Morse Rd. to Old Portland Rd. between Achilles Rd. and Millard Rd. Includes improving existing 18-inch culvert across the Portland and Western Railroad.	$1,865,892	$1,092,971	$772,921
Install new conveyance facility south of Millard Rd. extending from Fischer Rd. to the easterly side of the Portland and Western Railroad and continuing south. Includes improving existing 15-inch culvert across the Portland and Western Railroad and tie-in to existing 24-inch culvert.	$536,571	$314,304	$222,267
Stormwater Master Plan	$150,000	$0	$150,000
Totals	$24,656,877	$14,355,234	$10,301,643

Total Improvement Fee Eligible Costs for Future System Improvements	$10,301,643
less: Estimated stormwater SDC fund balance as of June 30, 2017	1,987,930
Adjusted Improvement Fee Eligible Costs for Future System Improvements	$8,313,713
Total growth EDUs	13,256
Calculated stormwater Improvement Fee SDC per EDU	$627
Calculated stormwater Improvement Fee SDC per square foot of Impervious surface	$0.2509

Stormwater SDC Model Summary

The 2017 stormwater SDC methodology update was done in accordance with St. Helens Municipal Code Chapter 13.24, and with the benefit of adopted capital improvement plans and plan updates for stormwater services. We recommend the City update the SDC charge and methodology to reflect the current capital improvement program. Our analysis indicates the City can charge a maximum of $821 per EDU. A comparison of the proposed and current stormwater SDCs for the average single family residential customer is shown below in Table 30.

Table 30 - Proposed and Current Stormwater SDCs for a 3/4" Meter

Line Item Description	Per EDU	Per Sq. Foot
Proposed SDC components:		
Reimbursement fee	$ 155	$ 0.0618
Improvement fee	627	0.2509
Administration fee at 5%	39	0.0156
Total proposed stormwater SDC	$ 821	$ 0.3283
Current SDC components:		
Reimbursement fee	$ 1	$ 0.0002
Improvement fee	641	0.2562
Administration fee at 1.34%	9	0.0034
Total current stormwater SDC	$ 650	$ 0.2598

Parks SDCs

The 2015 Parks and Trails Master Plan Levels of Service

In 2015, the City completed preparation of a new parks master plan (the plan) addressing parks needs through the year 2036. The plan relies on levels of service (LOS) to determine the adequacy/needs for current and future parks and trails infrastructure. To determine adequacy, park and recreation providers typically measure existing parklands and facilities and compare them against established standards, typically LOS Standards. LOS standards are measures of the amount of public recreation parklands and facilities being provided to meet that jurisdiction's basic needs and expectations. For example, the amount of parkland currently needed in a particular jurisdiction may be determined by comparing the ratio of existing developed park acres per 1,000 residents (by all providers within the jurisdiction) to the jurisdiction's desired level of parks relative to population. The gap between the two ratios is the currently needed park acreage. As the population grows, the objective is to provide enough additional acreage to maintain the jurisdiction's desired ratio of park acres to 1,000 residents. These ratios can provide insight and act as tools to determine the amount of parkland or trails needed to meet current and future recreation needs.

In Chapter 4, section 4.22 (Recommended Park LOS), the Plan established recommended parks and trails LOS (by parks classification) for the City based on the 2013-2017 Statewide Comprehensive Outdoor Recreation Plan (SCORP). The SCORP recommended Oregon LOS guidelines were developed after reviewing the National Recreation and Parks Association (NRPA) guidelines and the results from the 2014 statewide average guidelines survey. The recommended Plan parks LOS by parks category are shown below in Table 31.

Table 31 - 2015 Parks Master Plan LOS Standards for St. Helens

Parkland Type	Average Planning LOS Guidelines in Oregon (Acres /1,000 population)	NRPA Standard LOS Guidelines (Acres /1,000 population)	Recommended Oregon LOS Guidelines (Acres /1,000 population)
Pocket Parks	0.16	0.25 to 0.5	0.25 to 0.5
Urban Plaza Parks	0.18	None	0.1 to 0.2
Neighborhood Parks	1.27	1.0 to 2.0	1.0 to 2.0
Community Parks	2.76	5.0 to 8.0	2.0 to 6.0
Regional Parks	8.99	5.0 to 10.0	5.0 to 10.0
Nature Parks	2.74	None	2.0 to 6.0
Special Use Parks	0.38	None	None
Totals	-	6.25 to 10.5 developed	6.25 to 12.5

In Chapter 4, section 4.4, the Plan defines what a "trail" is, and establishes a LOS standard for the City. A a "trail" includes multi-use, pedestrian, and soft surface trails that accommodate a variety of activities such as walking, running, biking, dog walking, rollerblading, skateboarding, and horseback riding. Multi-use trails are designed for use by pedestrians, bicyclists, skateboarders, wheelchairs, and other non-motorized vehicle users. Such trails may be located within parks or along existing streets and roadways as part of the citywide transportation system. This has ramifications for a city like St. Helens, where almost half of its trail system is within parks. For trails, the statewide average planning LOS Guidelines are at 0.62 miles per 1,000 residents and the SCORP recommended LOS for Oregon is anywhere between 0.5 to 1.5

miles of trails per resident. The Plan established a minimum trails LOS of 0.5 miles per 1,000 residents with both the current population and a population projection for 2020.

Having stabled the LOS standards for park lands and trails, the next step is to compare the City's current parks and trails inventory to the standard, and analyzes the surpluses/deficiencies by parks category. That data is shown below in Table 32.

Table 32 - Existing Parks and Trails LOS Surplus/Deficiency

Classification and Park Name	Acreage	Linear Miles	Current Level of Service[1]	2015 Parks Master Plan Recommended LOS[1] Low	2015 Parks Master Plan Recommended LOS[1] High	LOS Surplus or (Deficiency)	Percent of Capacity Remaining	
Pocket Parks:								
Civic Pride Park	1.20							
Walnut Tree Park	0.15							
	1.35		0.106	0.250	0.500	(0.144)	**Zero**	✓
Urban Plaza Parks:								
Columbia View Park	1.00							
County Courthouse Plaza[2]	0.25							
	1.25		0.098	0.100	0.200	(0.002)	**Zero**	✓
Neighborhood Parks:								
6th Street Park	2.90							
Godfrey Park	3.60							
Grey Cliffs Park	1.60							
Heinie Heumann Park	2.90							
	11.00		0.866	1.000	2.000	(0.134)	**Zero**	✓
Community Parks:								
Campbell Park	9.10		0.716	2.000	6.000	(1.284)	**Zero**	✓
Nature Parks:								
Columbia Botanical Gardens	3.20							
Nob Hill Nature Park	6.60							
	9.80		0.772	2.000	6.000	(1.228)	**Zero**	✓
Regional Parks:								
Sand Island Marine Park	31.70							
McCormick Park	70.70							
	102.40		8.062	5.000	10.000	3.062	61.2%	
Subtotal Parks	134.90		10.620	10.350	24.700	0.270	2.6%	
Regional Trail Systems (linear miles):								
Park Trails		3.66						
Multi-use Trails and Paths		2.69						
		6.35	0.500	0.500	1.500	(0.000)	**Zero**	✓

Notes:

[1] U.S. Bureau of the Census assumed service population for 2015 12,702
Level of Service expressed in units per 1,000 residents

[2] Owned and maintained by Columbia County, but included in calculations because it is with the City

As the data in Table 32 shows, currently, the City is "park deficient" in all parks categories except Regional Parks. Because the regional parks acreage inventory is very large, on a citywide basis, the overall parks system has a net LOS surplus of 0.27 acres per 1,000 population. This will impact the calculation of the parks SDC reimbursement fee in that the current LOS implies 97.4% of the City's current parks and trails capacity is being absorbed by the City's current population. That mean only 2.6% of the system's built capacity is available to serve growth.

Existing and Projected Future Demand for Parks and Trails

Growth should be measured in units that most directly reflect the source of demand. In the case of parks, the most applicable units of growth are population and, where appropriate, employees (or new jobs). However, the units in which demand is expressed may not be the same as the units in which SDC rates are charged. Many SDCs, for example, are charged on the basis of new dwelling units. Therefore, conversion is often necessary from units of demand to units of payment. For example, using an average number of residents per household, the number of new residents can be converted to the number of new dwelling units.

Parks and recreation facilities benefit City residents, businesses, non-resident employees, and visitors. The methodology used to update the City's Parks and Recreation SDCs establishes the required connection between the demands of growth and the SDC by identifying specific types of park and recreation facilities and analyzing the proportionate need of residents and employees for each type of facility. The SDCs to be paid by a development meet statutory requirements because they are based on the nature of the development and the extent of the impact of that development on the types of park and recreation facilities for which they are charged.

The Parks and Recreation SDCs are calculated based on the specific impact a development is expected to have on the City's population and employment. For facilities that are not generally used by employees (e.g., neighborhood parks), only a residential SDC may be charged. For facilities that benefit both residents and employees (e.g., community parks), an SDC may be charged for both residential and non-residential development.

Table 33 contains existing and projected population, housing units, and employment for the City. The data in this table establishes the units of demand and the units of payment for the reimbursement and improvement parks SDCs.

Table 33 - Existing and Projected Population, Housing Units, and Employment

	2015 Current	2030 Projected	Analysis of Growth Units	Analysis of Growth CAGR*
1 Population	12,702	16,846	4,144	1.90%
Single family residential	10,588	14,042	3,454	
Multi-family residential	2,093	2,776	683	
2 Total Housing Units	5,019	6,656	1,637	
Single family residential	3,583	4,752	1,169	
Multi-family residential	1,436	1,904	468	
Number of persons per Housing Unit	2.53			
Single family residential	2.96			
Multi-family residential	1.46			
3 Employment	5,986	7,939	1,953	
Employment to population ratio	47.13%			

Data Sources and Notes:

1 Current population source: U.S. Census Bureau, 2015 American Community Survey 5-year summary, Table DP05; 2030 projection per St. Helens Parks Master Plan, July, 2015

2 Current Housing units source: U.S. Census Bureau, 2015 American Community Survey 5-year summary, Table DP04, Table B25024, B25033; 2030 projection based on 2015 number of persons per occupied housing unit

3 Current employment source: U.S. Census Bureau, 2015 American Community Survey 5-year summary, Table DP03; 2030 projection based on 2014 employment to population ratio

* CAGR - Compound Annual Growth Rate

Conversion of Employment Growth to Population Equivalents

The parks and trails facilities described in the 2015 Plan were designed with the needs of both residents and non-resident employees in mind. It is therefore appropriate to allocate the cost of these facilities to both residents and non-resident employees. The only exceptions are neighborhood parks. These facilities were designed for the needs of residents only and it is therefore appropriate to allocate the cost of these facilities to residents only.

While most parks and recreation facilities benefit residents and non-resident employees, these two groups do not utilize parks and recreation facilities with the same intensity. To apportion the demand for facilities between non-resident employees and residents in an equitable manner, a non-resident-employee-to-resident demand ratio must be calculated based on differential intensity of use.

The process that is used to develop this differential intensity of use is a two-step process. The first step is to estimate the potential demand for parks and recreation facilities by patrons. For this step, we rely on survey data from the Oregon Department of Parks and Recreation's 2013 "A Guide to Community Park and Recreation Planning for Oregon Communities". This guide identifies potential use by different population groups in a manner that averages day-of-week and seasonal effects. These averages are based on the maximum number of hours per day that each population group would consider the use of parks and recreation facilities to be a viable option.

The second step is to take the survey data and multiply the weighted average hours by an actual count for each population group based on data from the U. S. Census Bureau. We then apportion this potential demand among residents (four population groups) and non-residents (one population group). The data that was used to create the differential intensity of use is shown below in Table 34.

This approach is used to estimate the allocation of parks usage among residents and non-residents, which is summarized at the bottom of Table 34. The findings indicate that residents comprise 97 percent of the expected level of parks demand and non-residents that work within the city comprise 3 percent of the demand. These estimates are subsequently used in the next Section of this report to allocate the eligible SDC cost shares between these two user groups.

Table 34 - Calculation of Parks Usage by Resident and Non-Resident Workers

Parks Demand by Patron Classification	Resident: Non-Employed Adults	Resident: Children Ages 5 to 17	Resident: Adult Live In and Work In City	Resident: Adult Live In and Work Outside City	Non-Resident: Adult Live Outside and Work Inside City	Totals
Summer demand (June-September)						
Weekday hours:						
Before work	-	-	1.0	-	1.0	2.0
Meals/breaks	-	-	1.0	-	1.0	2.0
After work	-	-	2.0	-	2.0	4.0
Other leisure	12.0	12.0	2.0	2.0	-	28.0
Subtotal weekday hours	12.0	12.0	6.0	2.0	4.0	36.0
Number of summer, 2014 weekdays	87.0	87.0	87.0	87.0	87.0	87.0
Weekend hours:						
Leisure	12.0	12.0	12.0	12.0	-	48.0
Subtotal weekend hours	12.0	12.0	12.0	12.0	-	48.0
Number of summer, 2014 weekend days	35.0	35.0	35.0	35.0	35.0	35.0
Weighted average summer hours/day	*12.00*	*12.00*	*7.72*	*4.87*	*2.85*	*39.44*
Spring/Fall demand (April-May, October-November)						
Weekday hours:						
Before work	-	-	0.5	-	0.5	1.0
Meals/breaks	-	-	1.0	-	1.0	2.0
After work	-	-	1.0	-	1.0	2.0
Other leisure	10.0	4.0	2.0	2.0	-	18.0
Subtotal weekday hours	10.0	4.0	4.5	2.0	2.5	23.0
Number of spring/fall, 2014 weekdays	87.0	87.0	87.0	87.0	87.0	87.0
Weekend hours:						
Leisure	10.0	10.0	10.0	10.0	-	40.0
Subtotal weekend hours	10.0	10.0	10.0	10.0	-	40.0
Number of spring/fall, 2014 weekend days	35.0	35.0	35.0	35.0	35.0	35.0
Weighted average spring/fall hours/day	*10.00*	*5.72*	*6.08*	*4.30*	*1.78*	*27.88*
Winter demand (December-March)						
Weekday hours:						
Before work	-	-	0.5	-	0.5	1.0
Meals/breaks	-	-	1.0	-	1.0	2.0
After work	-	-	0.5	-	0.5	1.0
Other leisure	8.0	2.0	1.0	1.0	-	12.0
Subtotal weekday hours	8.0	2.0	3.0	1.0	2.0	16.0
Number of winter, 2014 weekdays	87.0	87.0	87.0	87.0	87.0	87.0
Weekend hours:						
Leisure	8.0	8.0	8.0	8.0	-	32.0
Subtotal weekend hours	8.0	8.0	8.0	8.0	-	32.0
Number of winter, 2014 weekend days	34.0	34.0	34.0	34.0	34.0	34.0
Weighted average winter hours/day	*8.00*	*3.69*	*4.40*	*2.97*	*1.44*	*20.50*
Forecast of demand by parks patron group:						
Annual weighted average hours/day	10.01	7.15	6.07	4.05	2.03	
Census data on parks patrons	703	2,517	1,663	3,468	855	
Potential daily demand hours/day	7,034	17,984	10,099	14,034	1,732	50,883
Percentage of demand by parks patron class	13.82%	35.34%	19.85%	27.58%	3.40%	100.00%
Resident/Non-resident percentages		96.60%			3.40%	100.00%
		Resident			Non-Resident	Total

Sources and Credits:

Hourly parks demand forecast - Donovan Enterprises, Inc.; A Guide to Community Park and Recreation Planning for Oregon Communities, April, 2013; Oregon Department of Parks and Recreation

Census data - U.S. Census Bureau, 2014 American Community Survey 5-year estimates, Tables DP03, DP05, and B08008,American FactFinder tool

Reimbursement Fee Calculations

The parks reimbursement fee methodology mirrors that used for the other municipal utility services with the exception that the total reimbursement fee basis goes through a secondary allocation between residents and non-residents that work in the City. The methodological steps in its construction are restated here.

Step 1: Calculate the original cost of parks fixed assets in service. From this starting point, eliminate any assets that do not conform to the ORS 223.299 definition of a capital improvement. This results in the **adjusted original cost of parks fixed assets**.

Step 2: Subtract from the adjusted original cost of parks fixed assets in service any grant funding or contributed capital. This arrives at the **modified adjusted original cost of parks fixed assets in service net of grants and contributed capital**.

Step 3: Subtract from the modified adjusted original cost of parks fixed assets in service net of grants and contributed capital any principal outstanding on long term debt used to finance those assets. This arrives a **gross parks reimbursement fee basis**.

Step 5: Subtract from the gross parks reimbursement fee basis the fund balance held in the Parks Reimbursement SDC fund (if available). This arrives at the **net parks reimbursement fee basis**.

Step 6: Divide the net parks reimbursement fee basis by the following growth demand units:

For the residential net parks reimbursement fee basis – growth in population and growth in housing units (single family, and multi-family)

For the non-resident net parks reimbursement fee basis – growth in employment (Full Time Equivalent workers)

The actual data that was used to calculate the total transportation reimbursement fee is shown below in Table 35.

Table 35 - Calculation of the Parks Reimbursement Fee

	Original Cost	Capacity Remaining to Serve Growth	Residential	Non-Residential
Utility Plant-in-Service:[1]				
Land, easements & right of way	$ 1,737,336	$ 45,385	$ 43,840	$ 1,545
Buildings and improvements	2,712,344	70,855	68,443	2,412
Machinery and equipment	248,726	6,498	6,276	221
Construction Work-in-Progress	-	-	-	-
Total Utility Plant-in-Service	4,698,406	122,737	118,559	4,178
Eliminating entries:				
Principal outstanding on bonds, notes, and loans payable		-	-	-
Grants and contributions		-	-	-
Total eliminating entries		-	-	-
Net basis in utility plant-in-service available to serve future customers		122,737	118,559	4,178
Future Demand Units:				
Growth in population (People)			4,144	
Growth in occupied housing units:				
Single family residential			1,169	
Multi-family residential			468	
Growth in employment (Employees)				1,953
Unit reimbursement fee Parks SDCs:				
Per person			$29	
Per occupied housing unit:				
Single family residential			$85	
Multi-family residential (per unit)			$42	
Per employee				$2

[1] Source: St. Helens Accounting Summary Report - Capitalized Assets as of June 30, 2016

Parks Master Plan CIP

The Plan lays out a very specific and prioritized capital improvement plan for the City through 2030. The CIP identifies future costs for new parks and trails, and the future costs for improvements to the City's existing parks inventory. The total CIP from the Plan is shown below in Table 36.

Table 36 - 2015 Parks Master Plan CIP

	New Parks		Existing Parks			
	Land	Development	Within 5 Yrs.	6 to 10 Yrs.	11 to 15 Yrs.	Total
Pocket Parks						
Civic Pride Park					$ 273,500	$ 273,500
Walnut Tree Park				150		150
Subtotal Pocket Parks	-	-	-	150	273,500	273,650
Urban Plaza Parks						
Columbia View Park				75,000	1,000,000	1,075,000
County Courthouse Plaza[2]						-
Subtotal Urban Plaza Parks	-	-	-	75,000	1,000,000	1,075,000
Neighborhood Parks						
6th Street Park			93,000		24,000	117,000
Godfrey Park			11,000		45,000	56,000
Grey Cliffs Park			1,800		125,000	126,800
Heinie Heumann Park					93,440	93,440
Subtotal Neighborhood Parks	-	-	105,800	-	287,440	393,240
Community Parks						
Campbell Park			130,000	50,000	11,000	191,000
Millard Road Property		200,000				200,000
Subtotal Community Parks	-	200,000	130,000	50,000	11,000	391,000
Nature Parks						
Columbia Botanical Gardens					6,500	6,500
Nob Hill Nature Park			1,750	1,500		3,250
Subtotal Nature Parks	-	-	1,750	1,500	6,500	9,750
Regional Parks						
Sand Island Marine Park			90,000	9,125		99,125
McCormick Park			38,500	198,000	20,600	257,100
Subtotal Regional Parks	-	-	128,500	207,125	20,600	356,225
Total Parks Improvements Costs	**$ -**	**$ 200,000**	**$ 366,050**	**$ 333,775**	**$ 1,599,040**	**$ 2,498,865**
Trails						
St. Helens Riverfront Trail			$ 1,145,942			$ 1,145,942
5th St. Hiking Trail			199,800			199,800
4th St. Gardens Trail		289,697				289,697
Dalton Lake Trail Improvements			198,180			198,180
West Columbia Blvd. Extension		118,125				118,125
Total Trails Improvement Costs	**$ -**	**$ 407,822**	**$ 1,543,922**	**$ -**	**$ -**	**$ 1,951,744**
Parks Master Plan Total	**$ -**	**$ 607,822**	**$ 1,909,972**	**$ 333,775**	**$ 1,599,040**	**$ 4,450,609**

[1] Source: Parks Master Plan 2015; Chapter 8

SDC Eligibility of Master Plan CIP

For purposes of this SDC methodology, each of the City's park facilities falls into one of the following seven categories:

- Pocket parks
- Urban plaza parks
- Neighborhood parks
- Community parks
- Nature parks
- Regional parks
- Tails

Table 37 compares the current inventory of facilities in each category with that category's adopted level of service. That comparison leads to a determination of surplus or deficiency for each category. Projects are eligible for improvement fee funding only to the extent that the projects will benefit future users. Therefore, only the categories with no deficiency (regional parks, and trails) are 100 percent eligible for improvement fee funding. The eligibility percentages of the remaining parks categories are reduced to reflect the level of deficiency.

Table 37 - Calculation of Master Plan CIP SDC Eligibility

Classification	LOS (units/1,000 population) [1, 2]	Inventory Units	Parks Inventory at Current [2]	Planned Additions [3]	Planned 2030	Level of Service Analysis Current need	Surplus / (Deficiency)	Parks SDC Eligibility Growth Need	Growth %
Pocket Parks	0.25	Acres	1.35	2.86	4.21	3.18	(1.83)	1.04	36.20%
Urban Plaza Parks	0.10	Acres	1.25	0.43	1.68	1.27	(0.02)	0.41	95.35%
Neighborhood Parks	1.00	Acres	11.00	5.85	16.85	12.70	(1.70)	4.14	70.88%
Community Parks	2.00	Acres	9.10	24.59	33.69	25.40	(16.30)	8.29	33.70%
Nature Parks	2.00	Acres	9.80	23.89	33.69	25.40	(15.60)	8.29	34.69%
Regional Parks	5.00	Acres	102.40	-	102.40	63.51	38.89	-	100.00%
	10.35		134.90	57.62	192.52				
Trails	0.50	Miles	6.35	2.07	8.42	6.35	-	2.07	100.00%

[1] U.S. Bureau of the Census assumed service population for 2015 12,702
Level of Service expressed in units per 1,000 residents 12.702
Estimated 2030 service population (2015 Parks Master Plan assumed growth of 1.9% per year) 16,846
Level of Service expressed in units per 1,000 residents 16.846

[2] 2015 Parks Master Plan Baseline Level of Service; page 45 for parks, page 50 for trails

[3] 2015 Parks Master Plan Section 4.2 Parks Level of Service Analysis

Improvement Fee Calculations

The improvement fee is the cost of capacity-increasing capital projects per unit of growth that those projects will serve. The unit of growth, whether number of new residents or number of new employees, is the basis of the fee. In reality, the capacity added by many projects serves a dual purpose of both meeting existing demand and serving future growth. To compute a compliant SDC rate, growth-related costs must be isolated and costs related to current demand must be excluded. We have used the "capacity approach" to allocate costs to the improvement fee basis. Under this approach, the cost of a given project is allocated to growth in proportion to the growth-related capacity that projects of a similar type will create. The capacity analysis of the Plan CIP is shown numerically in Table 38. Table 38 lays out the capacity approach to deriving the parks improvement fee.

Table 38 - Calculation of the Parks Improvement Fee

			<---------- Funding Sources for Parks Master Plan CIP ---------->			
Classification	Total MP CIP	SDC Eligible %	Existing Users	Total SDC	Residential	Non-Residential
Pocket Parks	$ 273,650	36%	$ 174,583	$ 99,067	$ 95,695	$ 3,373
Urban Plaza Parks	1,075,000	95%	49,971	1,025,029	990,133	34,896
Neighborhood Parks	393,240	71%	114,497	278,743	269,254	9,490
Community Parks	391,000	34%	259,235	131,765	127,279	4,486
Nature Parks	9,750	35%	6,368	3,382	3,267	115
Regional Parks	356,225	100%	-	356,225	344,098	12,127
Trails	1,951,744	100%	-	1,951,744	1,885,299	66,445
Total	$ 4,450,609		$ 604,653	$ 3,845,956	$ 3,715,024	$ 130,932

	Total SDC	Residential	Non-Residential
Future parks master plan capacity-expanding costs	$ 3,845,956	$ 3,715,024	$ 130,932
Adjustments to improvement fee basis:			
Parks SDC fund balance	101,799	98,333	3,466
Principal outstanding on Parks GO bond	-	-	-
Subtotal adjustments to improvement fee basis	101,799	98,333	3,466
Adjusted future parks master plan capacity-expanding costs	$ 3,947,755	$ 3,813,358	$ 134,397
Future Demand Units:			
Growth in population (People)		4,144	
Growth in occupied housing units:			
Single family residential		1,169	
Multi-family residential		468	
Growth in employment (Employees)			1,953
Unit improvement fee Parks SDCs:			
Per person		$ 920	
Per occupied housing unit:			
Single family residential		$ 2,720	
Multi-family residential (per unit)		$ 1,341	
Per employee			$ 69

Parks SDC Model Summary

The 2017 parks SDC methodology update was done in accordance with St. Helens Municipal Code Chapter 13.24, and with the benefit of adopted 2015 Parks Master Plan. We recommend the City update the SDC charge and methodology to reflect the current capital improvement program. Our analysis indicates the City can charge a maximum of $2,977 per detached single family residence. The complete proposed schedule of parks SDCs is shown below in Table 39. Table 40 give a comparison of the proposed and current parks SDC for a new single family detached residence.

Table 39 - Proposed Transportation SDCs by ITE Code

Customer Classification	Number of Dwelling Units	Proposed Schedule of Parks SDCs			
		Reimbursement	Improvement	Administration	Total
Detached single family	1	$ 85	$ 2,720	$ 140	$ 2,944
Mobil/manufactured home	1	85	2,720	140	2,944
Multifamily - $/dwelling unit		42	1,341	69	1,452
Duplex	2	83	2,683	138	2,904
Tri-plex	3	125	4,024	207	4,357
Four-plex	4	167	5,366	277	5,809
Apartment complex	*	*	*		*
Condominium complex	*	*	*		*
Retirement/Assisted Living complex	*	*	*		*
Business - $/FTE Employee		$ 2	$ 69	$ 4	$ 75

* - multiply the number of dwelling units by the corresponding detached multi-family per dwelling unit fee component

Table 40 - Proposed and Current Parks SDCs for a Detached Single Family Residence

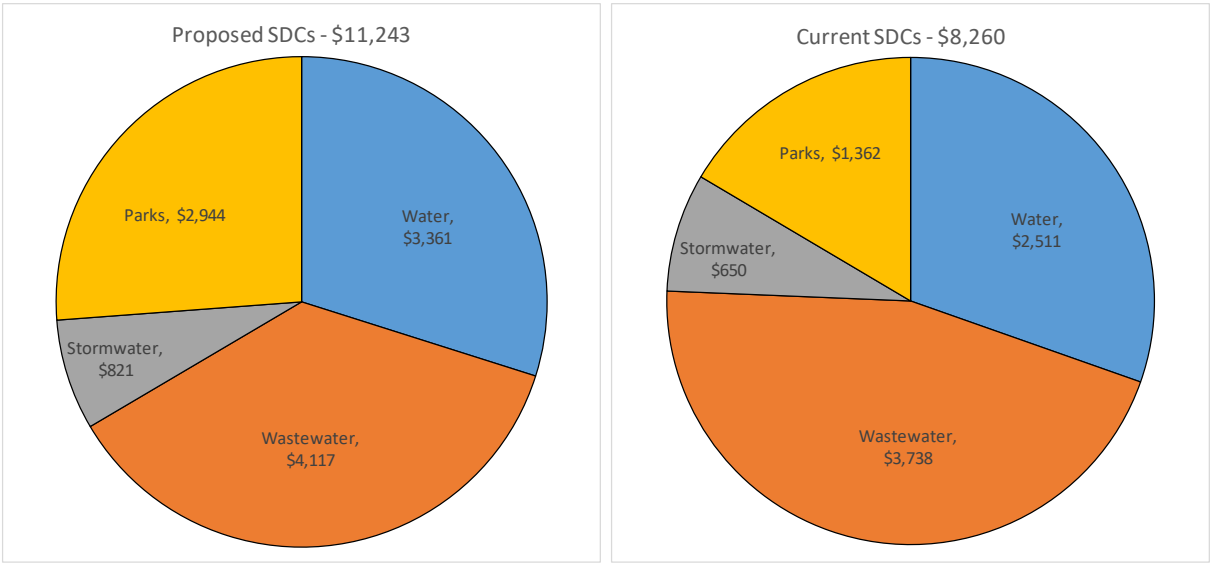
Parks SDC Components	Proposed	Current	Difference
Reimbursement fee	$ 85	$ 285	$ (200)
Improvement fee	2,720	1,059	1,661
Administration fee	140	18	122
Total wastewater SDC	$ 2,944	$ 1,362	$ 1,583

Conclusions and Recommendations

The 2017 SDC methodology update was done in accordance with SHMC Chapter 13.24, and with the benefit of adopted plans and plan updates for municipal services. Our analysis indicates the City can charge a maximum of $3,361 for water, $4,117 for wastewater, $821 for stormwater, and $2,944 for parks. These figures are on a per equivalent single family residential unit basis. The sum of these maximum fees amounts to $11,243 per unit; $2,983 more than the sum of the current SDCs of $8,260.

A graphic side by side comparison of the proposed and current schedule of SDCs is shown blow in figure 7.

Figure 7 - Proposed and Current Schedule of SDCs



Finally, we recommend the City adopt a policy of reviewing its suite of SDCs every five years. Between the review dates, the city should apply a cost adjustment index to the SDC rates annually to reflect changes in costs for land and construction. This policy should be codified in the St. Helens Municipal Code (SHMC §13.24). We suggest the City consider the following language for that section of the SHMC:

1. Notwithstanding any other provision, the dollar amounts of the SDC set forth in the SDC methodology report shall on January 1st of each year be adjusted to account for changes in the costs of acquiring and constructing facilities. The adjustment factor shall be based on:
    a. The change in construction costs according to the Engineering News Record (ENR) Northwest (Seattle, Washington) Construction Cost Index (CCI).
    b. The system development charges adjustment factor shall be used to adjust the system development charges, unless they are otherwise adjusted by the city based on a change in the costs of materials, labor, or real property; or adoption of an updated methodology.

Neighboring Communities' Utility Rates and SDCs

Shown below in Figures 8 through 12 are charts that compare the current utility rates and SDCs for a single family customer in St. Helens to the same charges in similar communities in Columbia County, Oregon.

Figure 8 - Comparison of Neighboring Communities' Water Rates

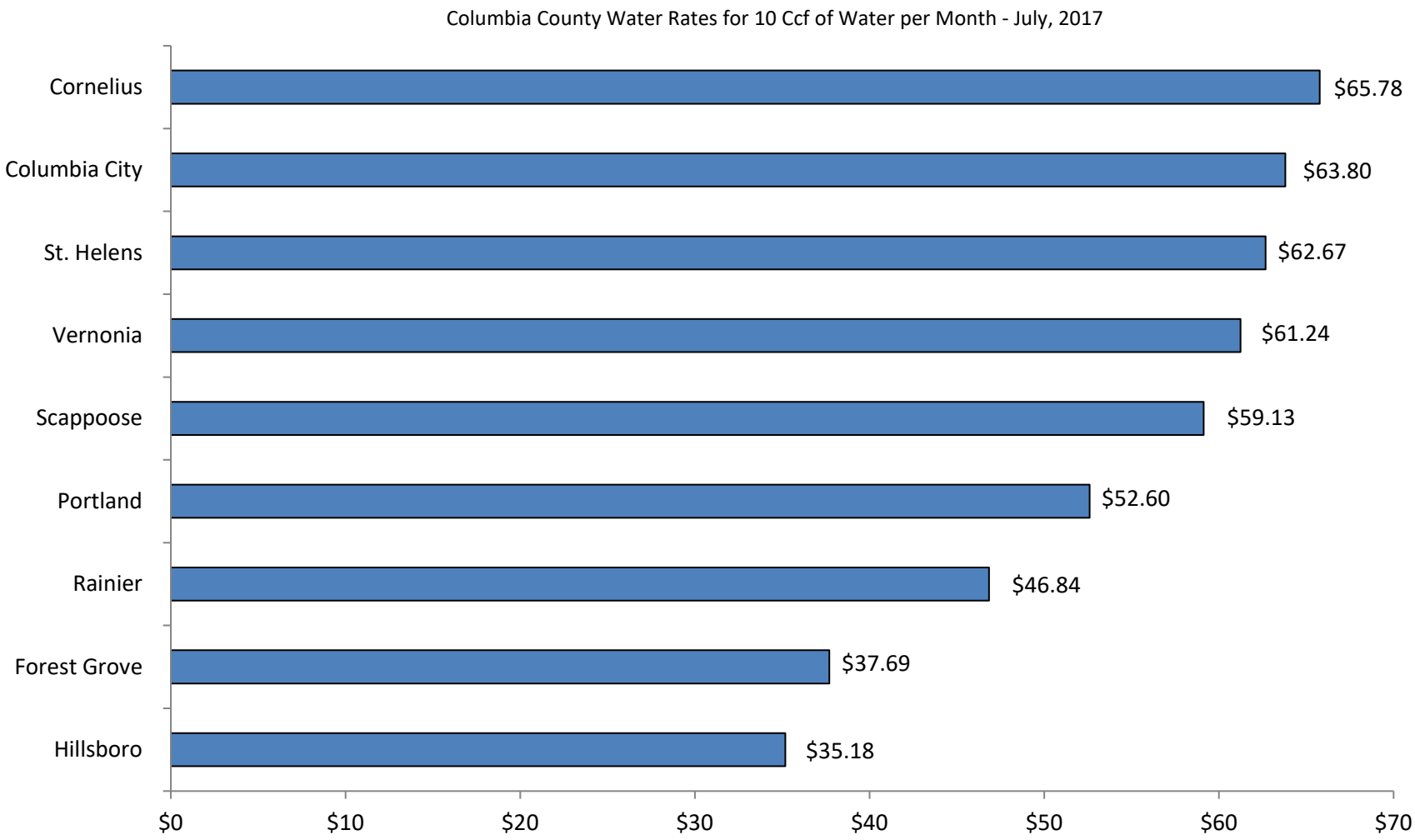


Figure 9 - Comparison of Neighboring Communities' Wastewater Rates

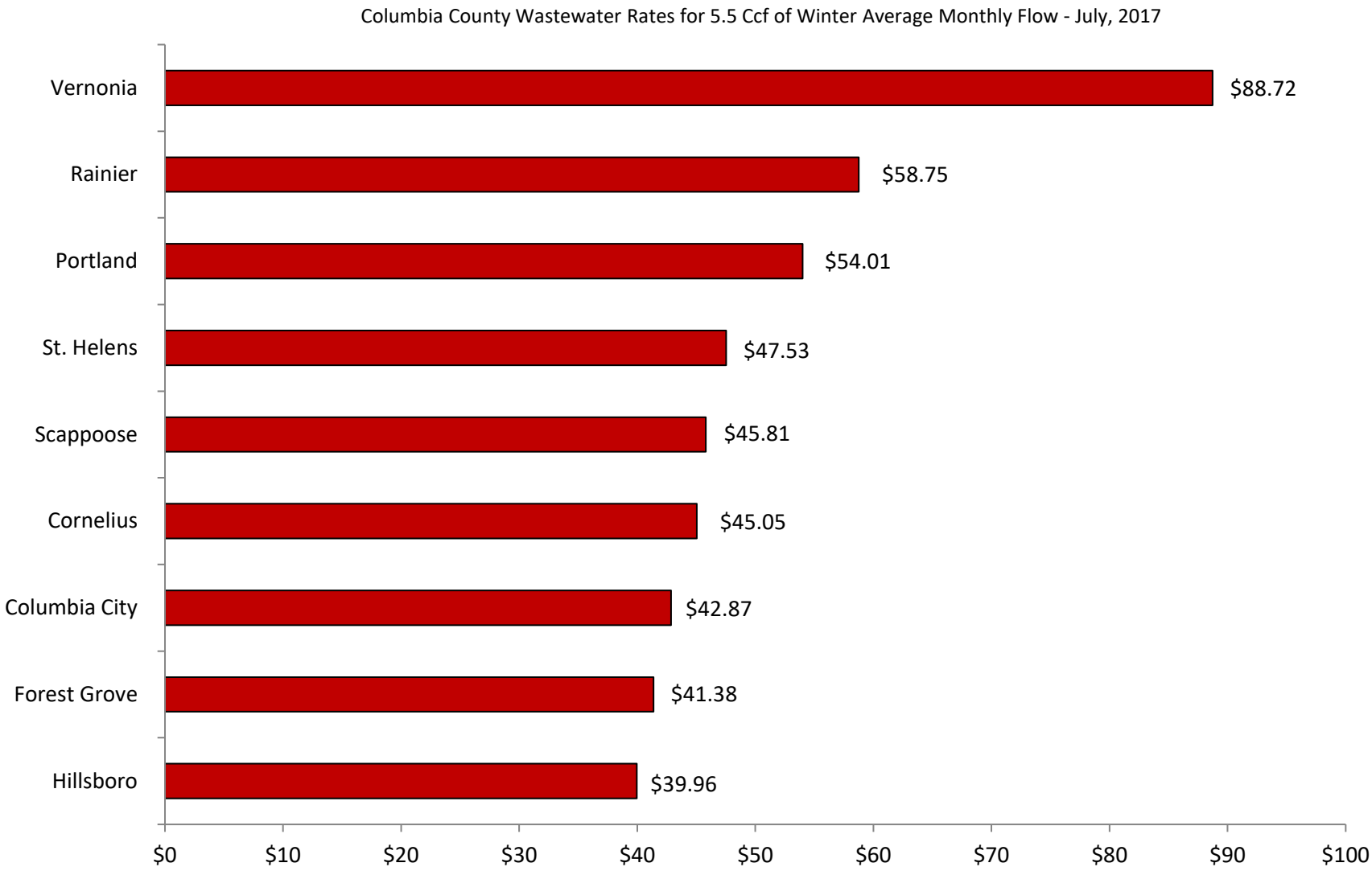


Figure 10 - Comparison of Neighboring Communities' Stormwater Rates

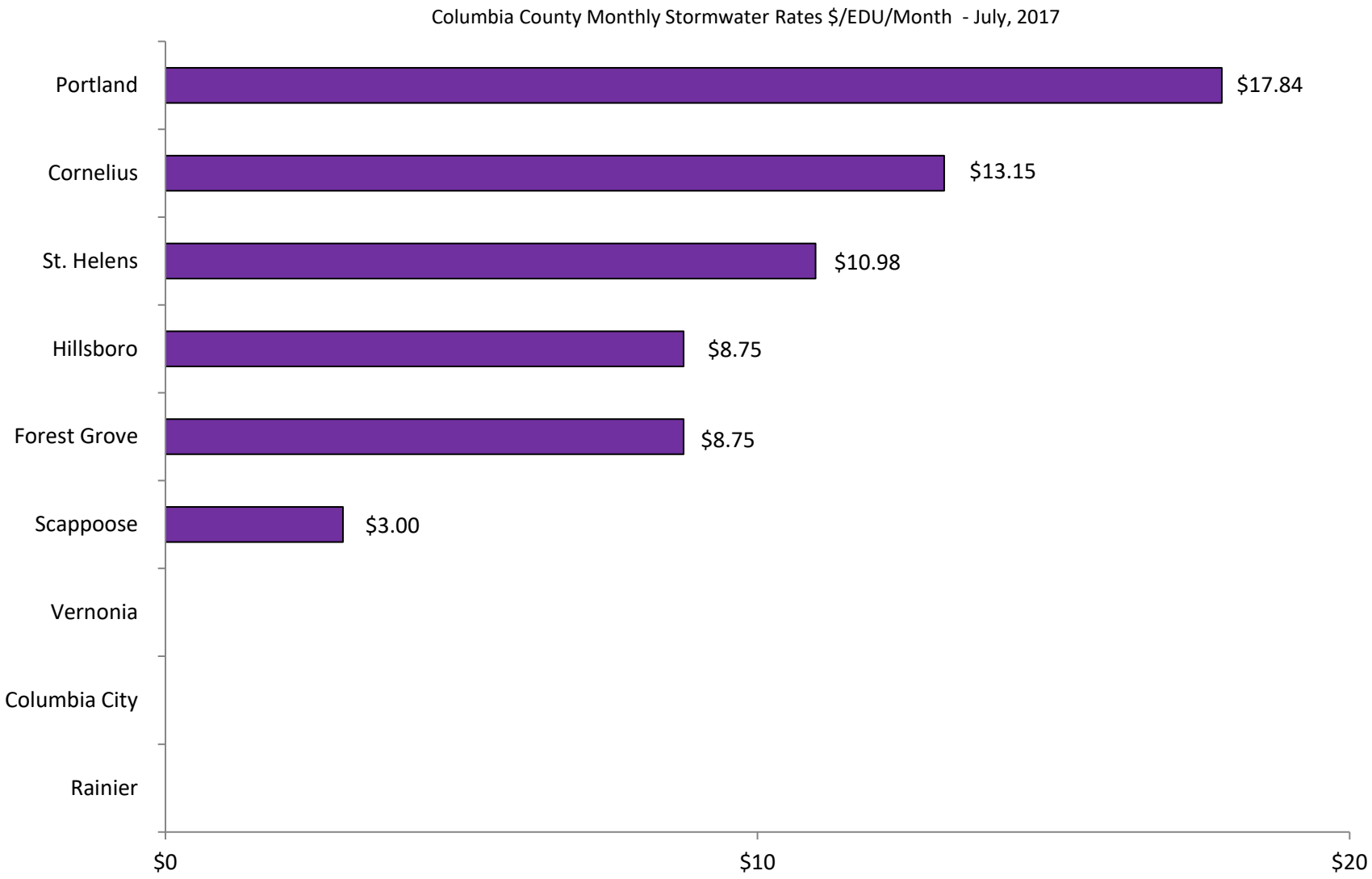
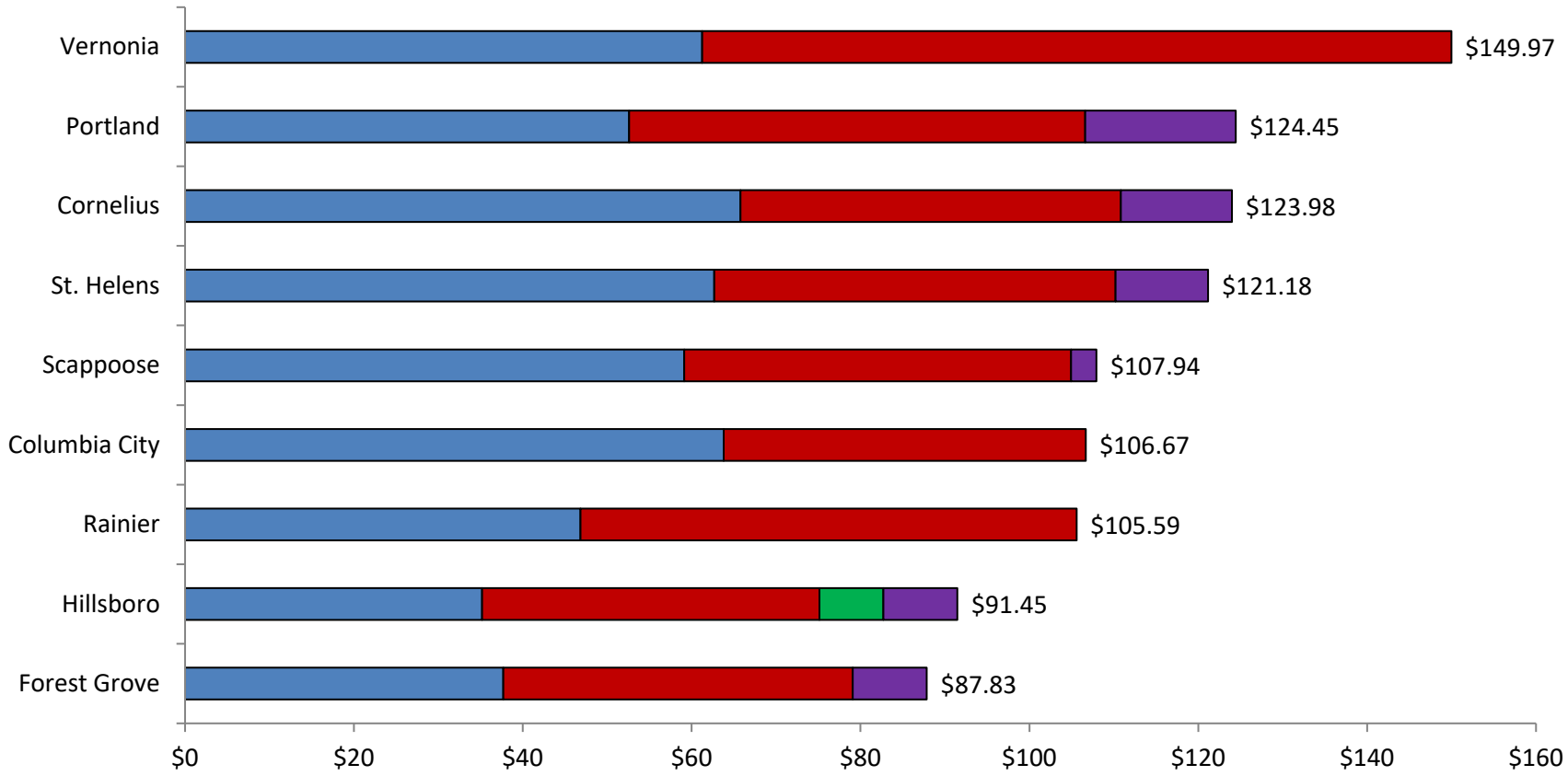
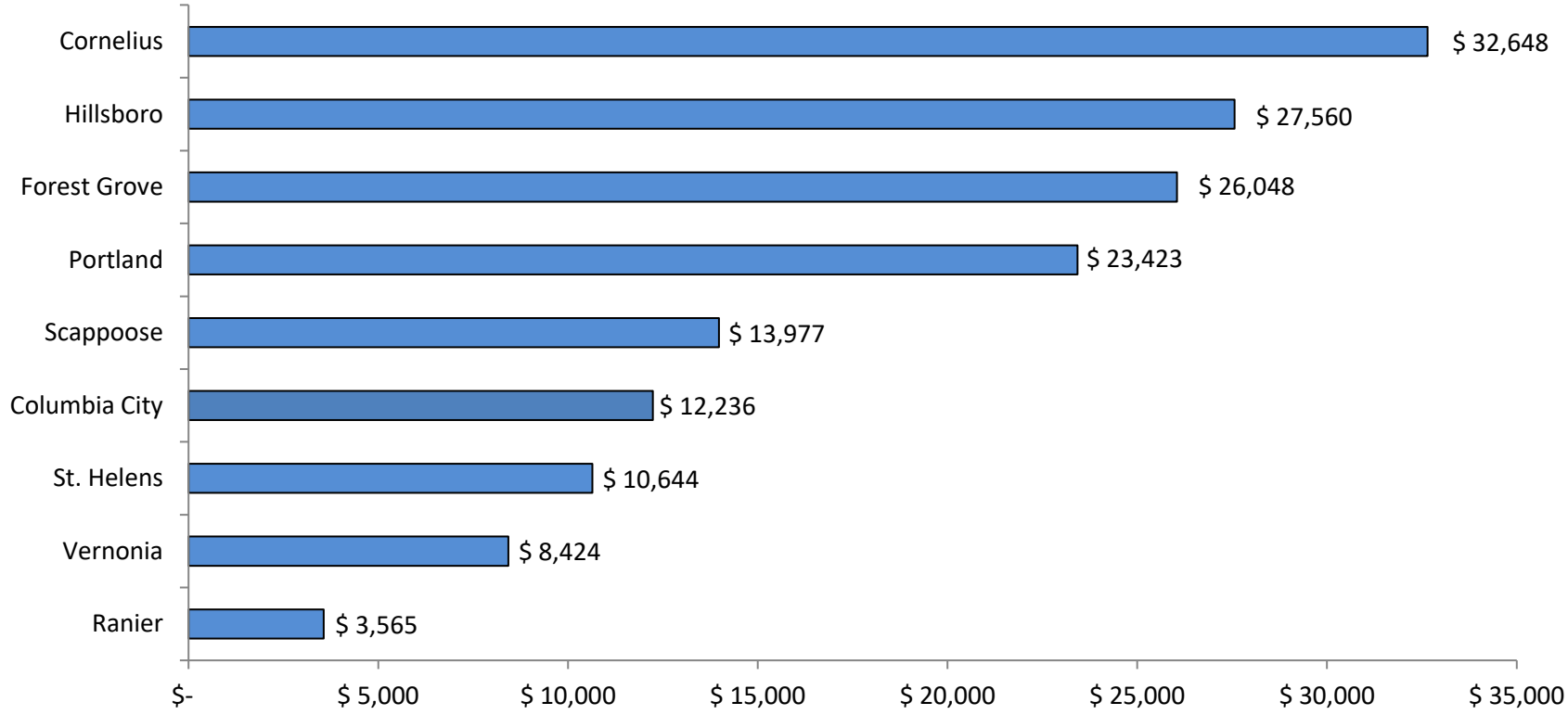


Figure 11 - Comparison of Neighboring Communities' Combined Water, Wastewater, Transportation, and Stormwater Rates



	Forest Grove	Hillsboro	Rainier	Columbia City	Scappoose	St. Helens	Cornelius	Portland	Vernonia
Water	37.69	35.18	46.84	63.80	59.13	62.67	65.78	52.60	61.24
Wastewater	41.38	39.96	58.75	42.87	45.81	47.53	45.05	54.01	88.72
Transportation	-	7.56	-	-	-	-	-	-	-
Stormwater	8.75	8.75	-	-	3.00	10.98	13.15	17.84	-
Total	$87.83	$91.45	$105.59	$106.67	$107.94	$121.18	$123.98	$124.45	$149.97

Figure 12 - Comparison of Neighboring Communities' SDCs (Single Family Residential)



	Contact Phone No.	Water	Wastewater	Streets	Parks	Storm Drainage	Total
Ranier	503.556.7301	920	2,645	-	-	-	$ 3,565
Vernonia	503.429.5291	2,269	2,957	858	1,000	1,340	$ 8,424
St. Helens	web site	2,511	3,738	2,383	1,362	650	$ 10,644
Columbia City	web site	4,292	1,623	4,575	1,496	250	$ 12,236
Scappoose	web site	4,831	4,276	2,355	1,933	583	$ 13,977
Portland	web site	3,599	5,712	2,814	10,381	917	$ 23,423
Forest Grove	web site	5,478	5,500	8,458	6,010	602	$ 26,048
Hillsboro	web site	8,445	5,500	8,458	4,647	510	$ 27,560
Cornelius	Community Dev.	12,329	5,500	8,458	4,471	1,890	$ 32,648