

Presented by:



February

2016

# Water & Wastewater Rate Study

Final Report

Prepared for:

**The City of Yamhill**  
*A small taste of Oregon*



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# Water & Wastewater Rate Study

## Table of Contents

# The City of Yamhill



Executive Summary.....	1
Conclusions .....	3
Recommendations .....	4
Analysis Section.....	5
Background and Study Methodology .....	5
Step 1: Determination of Revenue Requirements.....	5
Step 2: Allocate Revenue Requirements to Customer Classes .....	6
Step 3: Determine Rate Structure and Develop Rates.....	6
Analysis of Water System Revenue Requirements.....	7
Revenue Requirements Forecast & Results.....	10
Existing Water Rates and Recommended Policy Changes.....	12
Analysis of Wastewater System Revenue Requirements .....	14
Revenue Requirements Forecast & Results.....	16
Allocation of Revenue Requirements to Customer Classes (Cost of Service).....	17
Functional Cost Allocations.....	17
Allocations to Customer Classes .....	18
Determine Rate Structure and Develop Rates.....	19
Existing Wastewater Rates .....	19
Rate Design Alternatives.....	19
Rate Study Conclusions and Recommendations.....	21
Conclusions .....	21
Recommendations .....	21
Neighboring Communities’ Utility Rates and SDCs.....	22
Appendix A – Utility Rate Study Presentation to the Yamhill City Council on February 10, 2016.....	27

## Executive Summary

The City of Yamhill is the sole provider of water and wastewater services to customers within the urban services boundary of the City. Revenues required to fund the delivery of these services are obtained from monthly user fees which are set by the City Council via its City charter authority. This study addresses the revenue required from rates needed to support future operations and maintenance costs for the water and wastewater utilities along with a funding plan for capital needs identified in the City's capital improvement plans.

With the active involvement of City staff, twenty year planning models were developed for this project; however, the focus for the rate study is the five year near-term forecast of fiscal 2015-16 through fiscal 2020-21. These financial models have been reviewed with the City as they were developed and will be provided to Yamhill 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 water and wastewater services. The models developed for this project have been populated with estimated results data for fiscal 2016, along with actuals for fiscal 2012 through 2015. 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 two 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-term five year forecast horizon, water system revenue requirements are projected to increase by an average of 3.5% per year. The corresponding increase in the wastewater system revenue requirements is 8.0% per year.

This recommended rate of increases are the result of some principal assumptions which are:

1. The City has not adjusted water rates since July 1, 2003 (i.e., 13 years). It has not adjusted wastewater rates since July 1, 2007 (i.e., 9 years). Simply stated, the two utilities are running out of cash.
2. The fairly modest recommended rate increases for water are designed to simply stabilize the utility, not provide resources to improve and enhance the water supply and distribution systems. This strategy was deliberate on the part of the project team in that the needs of the wastewater system are more pressing at this time.
3. The financial stability of the wastewater system is tenuous. On July 1, 2016 the wastewater operating fund had a cash balance of \$56,082. This level of operating reserve is dangerously low. The strategy for the wastewater utility is to get this fund balance up to approximately \$200,000 by the end of the five year forecast horizon. To achieve this goal, general rate increases of 8% per year are required.

The base case recommended water and wastewater rate schedules are shown below in tables 1 and 2:

Table 1 - Five Year Forecast of Water Rates

City of Yamhill Schedule of Water Rates and Charges						
	Current	Effective July 1				
		2016	2017	2018	2019	2020
<b>Inside City:</b>						
Base charge (monthly)						
Residential (first 4,000 gallons included)						
Meter Size:						
5/8" x 3/4"	\$ 37.56	\$ 38.74	\$ 40.08	\$ 41.49	\$ 42.98	\$ 44.56
Non-residential						
Meter Size:						
5/8" x 3/4"	\$ 20.19	\$ 20.83	\$ 21.55	\$ 22.31	\$ 23.11	\$ 23.96
1 inch	25.63	26.44	27.35	28.31	29.33	30.41
1 & 1/2 inch	33.11	34.15	35.33	36.58	37.90	39.29
2 inch	53.30	54.98	56.88	58.89	61.01	63.25
3 inch	201.88	208.24	215.44	223.04	231.07	239.55
4 inch	257.00	265.09	274.25	283.92	294.14	304.94
6 inch	385.39	397.52	411.26	425.76	441.08	457.27
8 inch	532.15	548.90	567.87	587.89	609.04	631.40
Use Charge (\$/1,000 gallons)						
Residential						
Zero to 4,000 gallons	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4,001 gallons and over	2.90	2.99	3.09	3.20	3.32	3.44
Non-residential						
all metered flow	2.90	2.99	3.09	3.20	3.32	3.44
<b>Outside City:</b>						
Base charge (monthly)						
Residential (first 4,000 gallons included)						
Meter Size:						
5/8" x 3/4"	\$ 45.46	\$ 58.11	\$ 60.12	\$ 62.24	\$ 64.47	\$ 66.84
Non-residential						
Meter Size:						
5/8" x 3/4"	\$ 30.29	\$ 31.25	\$ 32.33	\$ 33.47	\$ 34.67	\$ 35.94
1 inch	38.46	39.66	41.03	42.47	44.00	45.62
1 & 1/2 inch	49.67	51.23	53.00	54.87	56.85	58.94
2 inch	79.95	82.47	85.32	88.34	91.52	94.88
3 inch	302.82	312.36	323.16	334.56	346.61	359.33
4 inch	385.50	397.64	411.38	425.88	441.21	457.41
6 inch	578.08	596.28	616.89	638.64	661.62	685.91
8 inch	798.23	823.35	851.81	881.84	913.56	947.10
Use Charge (\$/1,000 gallons)						
Residential						
Zero to 4,000 gallons	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4,001 gallons and over	3.51	4.49	4.64	4.80	4.98	5.16
Non-residential						
all metered flow	3.51	4.49	4.64	4.80	4.98	5.16
<b>Other Charges for Service:</b>						
Customer deposits		New services - twice the minimum charge; Existing services - twice the established average usage				
Per account charges:						
Late charges - \$/account	\$ 5.00	\$ 5.16	\$ 5.34	\$ 5.53	\$ 5.73	\$ 5.94
Delinquency charge	30.00	30.94	32.01	33.14	34.33	35.59
Restoration charge	30.00	30.94	32.01	33.14	34.33	35.59
Unauthorized turn-on (no less than)	100.00	103.15	106.71	110.47	114.45	118.65
Meter test deposit:						
meters less than 1 inch	100.00	103.15	106.71	110.47	114.45	118.65
meters greater than 1 inch	250.00	257.87	266.78	276.19	286.13	296.63
Backflow prevailing appeal (no more than)	50.00	51.57	53.35	55.23	57.22	59.32

Table 2 - Five Year Forecast of Wastewater Rates

City of Yamhill Schedule of Wastewater Rates and Charges						
	Current	Effective July 1				
		2016	2017	2018	2019	2020
<b>Inside City:</b>						
Base charge (monthly)						
Per Equivalent Dwelling Unit (EDU) <sup>2</sup>	\$ 51.68	\$ 55.81	\$ 60.27	\$ 65.09	\$ 70.30	\$ 75.92
<b>Outside City:</b>						
Base charge (monthly)						
Per Equivalent Dwelling Unit (EDU)	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>
<b>Other Charges for Service:</b>						
Customer deposits	New services - twice the minimum charge; Existing services - twice the established average usage					
Per EDU charges:						
Late charges - \$/account	\$ 5.00	\$ 5.40	\$ 5.83	\$ 6.30	\$ 6.80	\$ 7.34
Delinquency charge	30.00	32.40	34.99	37.79	40.81	44.07
Restoration charge	30.00	32.40	34.99	37.79	40.81	44.07
City standards compliance review	35.00	37.80	40.82	44.09	47.62	51.43
New construction inspection	150.00	161.99	174.94	188.94	204.05	220.37

<sup>1</sup> Sewer service is not provided outside of the City limits

<sup>2</sup> EDUs shall be calculated as prescribed in Yamhill Municipal Code Section 3.76.010

The schedules of utility rates 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 2017 through fiscal 2021). The revenue requirements analysis determined the amount of annual revenue needed to be generated by water and wastewater 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

- Cash reserves are not adequate to fund the City's planned water and wastewater system capital improvements. In fact, the cash balance in the wastewater operating fund has been depleted in recent years simply to fund on-going operations and maintenance expenses. Without corrective action (i.e., rate increases), the operating reserves in the wastewater operating fund will be entirely depleted in very short order.
- City staff in consultation with the City's consulting engineer attempted to develop a funding plan for water and wastewater master plan capital improvements. This proved to be financially infeasible at this time due to the precarious financial position of the two utilities. The fallback position is to defer all planned capital improvements at this time. Assuming the City adopts the recommended rate

increases for water and wastewater services, the City will be in a better position to reevaluate capital improvement plans at the end of the five year forecast.

- The current monthly base rate for water is \$37.56 for a customer with a 3/4” meter. This charge includes an allowance (without further charge) of 6,000 gallons of water. For the fiscal year ended June 30, 2015, 96% of total water rate revenues were recovered from monthly base charges; only 4% were recovered from the variable usage charges. Based on the cost of service analysis, it appears the current rate structure recovers a disproportionately high share of total utility costs from the base charge.
- The City’s current water master plan addendum was adopted by the City Council in 1998. It is out of date and needs to be replaced with a new comprehensive plan.
- The City completed and adopted a new wastewater facilities plan in 2015. Although there is no funding available at this time to implement the recommendations of the new plan, it none the less is a blueprint for future wastewater system priorities.

## Recommendations

The recommendations of this water and rate study are pragmatic and urgent. The City needs to raise rates immediately. In order to achieve a balance, the project team recommends inflation-based rate adjustments for water; not because water is in good financial shape; it is because wastewater is in very dire financial shape. The water rate recommendations are meant to stabilize water finances, not improve them. The recommendations for wastewater need to be implemented immediately. The goal of these rate increases is to gradually get the wastewater system finances out of the emergency room.

Itemized in Table 3 are the key recommendations for each utility over the next five years:

Table 3 – Summary of the 2016 Water and Wastewater Rate Study Recommendations

Water	Wastewater
<ul style="list-style-type: none"> <li>• Fund new water master plan; pay for it with water SDC fund cash</li> </ul>	<ul style="list-style-type: none"> <li>• Use the \$35,109 in the wastewater reserve fund for emergency capital replacements/repairs</li> </ul>
<ul style="list-style-type: none"> <li>• Reduce the allowance in the monthly water base fee from 6,000 gallons to 4,000 gallons</li> </ul>	<ul style="list-style-type: none"> <li>• Maintain the current flat rate structure for wastewater</li> </ul>
<ul style="list-style-type: none"> <li>• Use the \$134,831 in the water depreciation fund for emergency capital replacements/repairs</li> </ul>	<ul style="list-style-type: none"> <li>• If capacity expanding projects are needed, use the \$125,801 in the wastewater SDC fund to pay for them</li> </ul>
<ul style="list-style-type: none"> <li>• Implement general rate increases of 3.5% per year for each year of the five (5) year forecast</li> </ul>	<ul style="list-style-type: none"> <li>• Implement general rate increases of 8.0% per year for each year of the five (5) year forecast</li> </ul>
<ul style="list-style-type: none"> <li>• Cumulative cash generated from rate increases = \$71,811</li> </ul>	<ul style="list-style-type: none"> <li>• Cumulative cash generated from rate increases = \$131,389</li> </ul>

## Analysis Section

### Background and Study Methodology

The City of Yamhill is a residential community located at the intersection of State Highways 240 and 47 in Yamhill County. The City owns and operates a potable water system that serves 450 inside-city and 73 outside-city customers. The main components of the system include an earthen dam and impound on Turner Creek, a diversion structure and water intake on Turner Creek, a water treatment plant, a 0.5 million gallon reservoir, a 7.6 mile transmission system, and the distribution system which consists of pipe ranging in various diameters.

The City also owns and operates a wastewater collection and treatment system. This system serves 431 customers, 94% of which are single family residences. All of these connections are within the City limits. The existing wastewater system facilities include a standard gravity collection system, one pump station (at the Ellie's Garden subdivision), and a facultative lagoon wastewater treatment plant (WWTP). Currently, the WWTP effluent is disinfected in a chlorine contact chamber. From November 1st to April 30th, the disinfected effluent is de-chlorinated through natural degradation and discharged to the North Yamhill River under NPDES Permit No. 101473. From May 1st to October 31st, the wastewater is held in the lagoons.

To pay for the operation, maintenance, replacement, and improvement of these water and wastewater 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 water and wastewater 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 water and wastewater 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, building 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, it 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. In the case of Yamhill, 94% of all wastewater accounts and 96% of the water accounts are single family residential customers. In essence, the cost allocations will be monolithic. There are no industrial customers, and only a small number of commercial/community service customers. These few commercial accounts have consumption patterns that mirror those of the single family residential customers. 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, water rates generally 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. It should be pointed out the City give a consumption allowance of 6,000 gallons per month in the base charge. An analysis of water consumption patterns showed most customers do not exceed the 6,000 gallon threshold on a monthly basis. This means the City's current water rate structure is in effect a flat rate system.

Historically, the City Council's policy on water and wastewater rate development stresses rate equity, revenue stability and administrative efficiency.

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 three years of actual financial records (i.e., fiscal 2012 through 2015), and for the current budget year 2016, 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 current budget year (fiscal 2016), 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 \$148,140. The beginning balance for the water operating fund in this same fiscal year was \$147,106. 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, general water rate increases of 3.5% per year will be required for each of the ensuing five fiscal years starting on July 1, 2016 (i.e., the start of fiscal 2017).

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 – 3.0% per year
- Pension plan contributions (City cost) – 8.0% per year
- Health insurance premiums (City cost) – 8.0% 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 0.50% per year over the five (5) year forecast horizon.

*Capital Improvement Plan Funding* - In the current fiscal year, total water system capital improvement costs are estimated to be \$15,571, and consist of \$5,571 for portable home water filters, and \$10,000 to fund this water rate study. The current budget assumes these capital improvement costs will be funded from cash on hand.

With the assistance of City Staff and the City's consulting engineer, 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 \$14,480,521 (future dollars). The projects and total current dollar costs are shown below in Table 4. 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 4. The water system financial plan calls for all of these costs to be funded from the proceeds of future revenue bonds (one bond in each future fiscal year).

Table 4 - 20 Year Water Capital Improvement Plan

Cost in FY 2015	Year	CIP ID No.	Project	Growth Accommodation	FISCAL YEARS					
					2016	2017	2018	2019	2020	2021
150,000	2017	R	Update Water Master Plan	0%	-	156,060	-	-	-	-
4,431,000	2018	F	Reservoirs to Distribution - Transmission Main	20%	-	-	4,702,213	-	-	-
458,000	2019	A	Hemlock Street Water Improvements	40%	-	-	-	495,754	-	-
326,000	2020	E	E 3rd Street Water Improvements	20%	-	-	-	-	359,930	-
476,000	2021	D	Olive Street Water Improvements	30%	-	-	-	-	-	536,053
347,000	2022	H	Cedar Street Water Improvements	20%	-	-	-	-	-	-
210,000	2023	I	Elm Street Water Improvements	0%	-	-	-	-	-	-
66,000	2024	L	N Larch Place Water Improvements	0%	-	-	-	-	-	-
173,000	2025	K	Camellia Street Water Improvements	20%	-	-	-	-	-	-
148,000	2026	J	Erica Street Water Improvements	0%	-	-	-	-	-	-
80,000	2027	M	W Dahlia Street Water Improvements	0%	-	-	-	-	-	-
4,510,000	2028	S	Treatment Plant to Reservoirs Water Main	20%	-	-	-	-	-	-
250,000	2029	N	Alternative Water Source	40%	-	-	-	-	-	-
500,000	2030	O	2nd Reservoir Near Town	40%	-	-	-	-	-	-
50,000	2031	P	Water Plant Basin Covers	20%	-	-	-	-	-	-
75,000	2032	Q	Water Plant SCADA Upgrades	20%	-	-	-	-	-	-
\$12,250,000			Net Construction Cost		\$ -	\$ 156,060	\$ 4,702,213	\$ 495,754	\$ 359,930	\$ 536,053

The resulting debt service on these bonds would be paid from water rates. The key planning assumptions for the issuance of these future water system revenue bonds are:

- Life of each issuance – 20 years
- Interest rate – 4.50%
- Issuance costs – 1.0% of gross borrowings
- Coverage requirement – 1.25 times annual debt service
- Reserve requirement – one year’s annual debt service

Under this initial water system financial plan, by the end of fiscal 2021, the City will add an additional \$486,066 of annual revenue bond debt service to the water system revenue requirements. The debt sizing cash flows and resulting debt service calculations are shown below in Table 5.

Table 5 - Forecast of Future Water System Borrowings and Resulting Debt Service

Capital Improvements Financing	2016	2017	2018	2019	2020	2021
Capital Costs to be Funded	-	156,060	4,702,213	495,754	359,930	536,053
less: Contributions from SDCs	-	-	442,753	13,526	10,142	10,165
less: Contributions From Construction Fund bal	-	-	-	-	-	-
less: Contributions From Utility Rates	-	-	-	-	-	-
less: Developer Contributions	-	-	-	-	-	-
Amount to be Financed	-	156,060	4,259,460	482,228	349,788	525,888
Interim Borrowing:						
BANS Issued:	-	-	-	-	-	-
less: Borrowing Cost	-	-	-	-	-	-
less: Interest Payments	-	-	-	-	-	-
plus: Interest Earnings	-	-	-	-	-	-
Net Available from BANS	-	-	-	-	-	-
Long-term Borrowing:						
Revenue Bonds:						
Amount Borrowed	-	170,908	4,664,712	528,108	383,068	575,922
less: Financing Cost	-	1,709	46,647	5,281	3,831	5,759
less: Reserve Funding	-	13,139	358,605	40,599	29,449	44,275
less: Refunding of BANS	-	-	-	-	-	-
Net Funds from Revenue Bonds	-	156,060	4,259,460	482,228	349,788	525,888
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	-	13,139	371,744	412,343	441,791	486,066
Coverage	-	-	-	-	-	-
Reserve Funding	-	-	-	-	-	-

It should be noted, the City is budgeting for total water rate revenues of \$350,000 in this fiscal year. Undertaking the water capital improvement plan as currently designed would triple water rates within two (2) fiscal years. This level of rate increases is unrealistic. These results were presented to City Staff and the Council, and a pay as you go strategy was offered as an alternative to funding only eminent water capital improvements. The pay as you go approach is as follows:

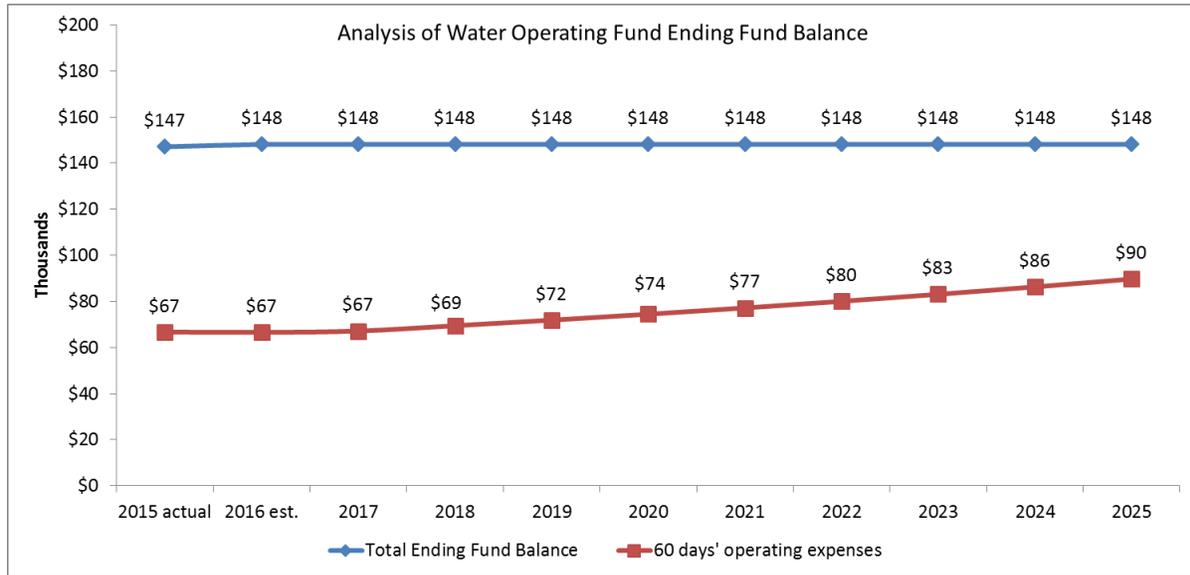
1. Use the cash in the Water SDC Fund (estimated to be \$429,383 as of June 30, 2016) to fund the cost of a new water master plan. The current master plan is almost twenty years old. When the City has an updated plan, they can start tackling highest priority projects
2. Use the \$134,831 in the Water Depreciation Fund for emergency capital replacements/repairs.

*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 declining, primarily due to 13 years without rate increases. For planning purposes, we are expecting that the Water Operating Fund will end all forecast years with a target ending fund balance in excess of sixty days of operating expenses. This target

balance gives the water utility enough contingency to fund unforeseen operating cost spikes. The ten 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 6).

Table 6 – Base Case Forecast of Water System Revenue Requirements

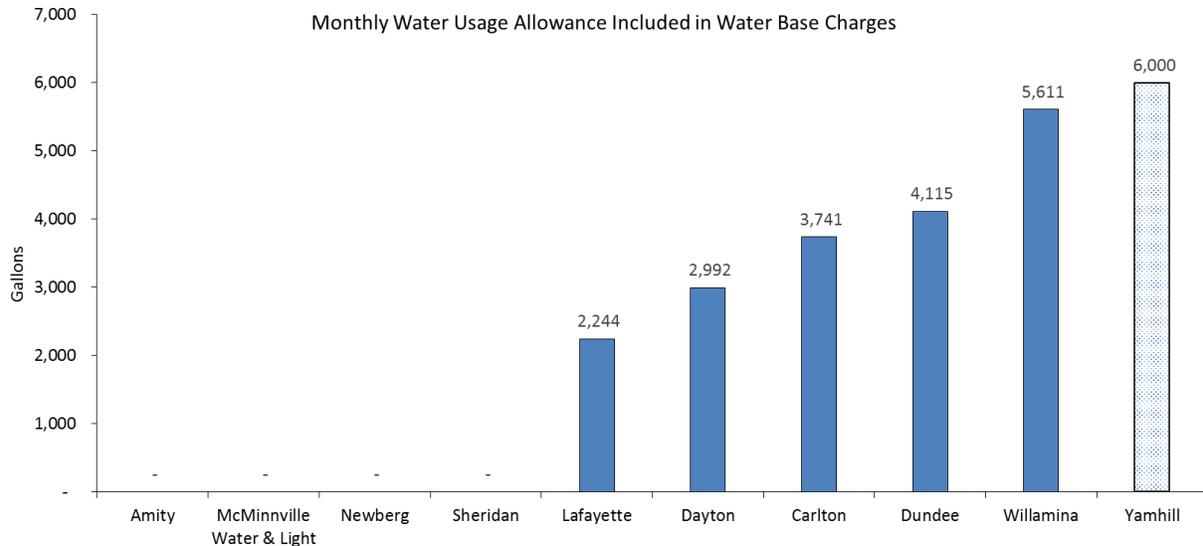
Yamhill Water Financial Forecast Model Projection of Water System Revenue Requirements						
	Budget	Forecast				
	2016	2017	2018	2019	2020	2021
<b>Projection of Cash Flow:</b>						
Revenues:						
Total licenses and permits	2,898	2,985	3,074	3,166	3,261	3,359
Total Service Charges	385,000	385,000	397,121	410,842	425,330	440,634
Total interest earned	1,083	1,185	1,185	1,185	1,185	1,185
Total other financing sources	10,000	-	-	-	-	-
Total miscellaneous income	7,164	7,379	7,600	7,828	8,063	8,305
Subtotal gross operating revenues	406,144	396,549	408,980	423,022	437,839	453,484
Operations & Maintenance Expense:						
Total personal services	198,313	208,362	219,041	230,394	242,471	255,323
Total materials and services	128,526	111,782	115,135	118,590	122,147	125,812
Total debt service	80,826	80,826	80,826	80,826	80,826	80,826
Total capital outlay	15,571	-	-	-	-	-
Transfers(excluding transfers to the construction and bond funds)	12,700	7,700	7,700	7,700	7,700	7,700
Total operations and maintenance expense	435,935	408,670	422,702	437,510	453,144	469,661
(Use)/replacement of fund balance	(29,791)					
Net Cash	0	(12,121)	(13,721)	(14,487)	(15,305)	(16,177)
<b>Net Deficiency/(Surplus)</b>	<b>(0)</b>	<b>12,121</b>	<b>13,721</b>	<b>14,487</b>	<b>15,305</b>	<b>16,177</b>
<b>Test of Coverage Requirement:</b>						
Gross Revenues:						
Operating revenues	406,144	396,549	408,980	423,022	437,839	453,484
System Development Charges	9,885	9,934	9,984	10,034	10,084	10,135
Total Gross Revenues	416,029	406,483	418,965	433,056	447,924	463,618
Operating Expenses:						
Total personal services	198,313	208,362	219,041	230,394	242,471	255,323
Total materials and services	128,526	111,782	115,135	118,590	122,147	125,812
Transfers(excluding transfers to the construction and bond funds)	12,700	7,700	7,700	7,700	7,700	7,700
Transfers to/from the rate stabilization account	(24,541)	-	-	-	-	-
Total Operating Expenses	314,998	327,844	341,876	356,684	372,318	388,835
Net Revenues	101,032	78,639	77,088	76,372	75,605	74,783
Debt Service:						
Debt Service on Existing Refunding Bonds	80,826	80,826	80,826	80,826	80,826	80,826
Debt Service on New Serial Revenue Bond Debt	-	-	-	-	-	-
Total debt service	80,826	80,826	80,826	80,826	80,826	80,826
Coverage Recognized	1.25	0.97	0.95	0.94	0.94	0.93
Coverage Required	1.00	1.00	1.00	1.00	1.00	1.00
<b>Net Deficiency/(Surplus)</b>	<b>(20,206)</b>	<b>2,186</b>	<b>3,737</b>	<b>4,453</b>	<b>5,220</b>	<b>6,042</b>
<b>Projection of Revenue Sufficiency and Forecasted Rates:</b>						
Maximum Deficiency	-	12,121	13,721	14,487	15,305	16,177
Percent Increase Required Over Current Rate Revenues	0.00%	3.15%	3.46%	3.53%	3.60%	3.67%
Five Year Average Increase in Revenue Requirements		3.48%	3.48%	3.48%	3.48%	3.48%
Revenues Recovered From Existing Rates and Charges:	385,000	385,000	397,121	410,842	425,330	440,634
add: Revenues Recovered From Rate Increase	-	12,121	13,721	14,487	15,305	16,177
Total Revenues Recovered From Rates & Charges after Increase	385,000	397,121	410,842	425,330	440,634	456,811

Table 6 shows, forecasted annual changes in water system revenue requirements are in line with general inflation assumptions and average approximately 3.48% per year from fiscal 2017 through fiscal 2021.

## Existing Water Rates and Recommended Policy Changes

The City's current water rate structure is heavily weighted to the monthly base charges. As discussed earlier in this report, nearly all rate revenue is recovered from this monthly base charge. An analysis of other Yamhill County communities' "consumption allowances" is shown below in Figure 2

Figure 2 - Water Consumption Allowances in Base Charges for Yamhill County Communities



After a thorough discussion of the pros and cons of the current water rate structure with City Staff and the Council, it is recommended the City "dial back" the amount of water allowance in the monthly base charge. We suggest the City move the allowance down to 4,000 gallons per month initially, with the goal of eliminating the allowance in its entirety over time.

The City has a policy of charging water customers that are outside the City limits fees that are 150% of comparable fees charged to customers that are inside the City limits. This is a common practice in the industry. We have corrected the existing schedule of water rates and charges to make this policy uniform across all rates and customer classes.

The resulting cost of service-based forecast of recommended water rates is shown below in Table 7.

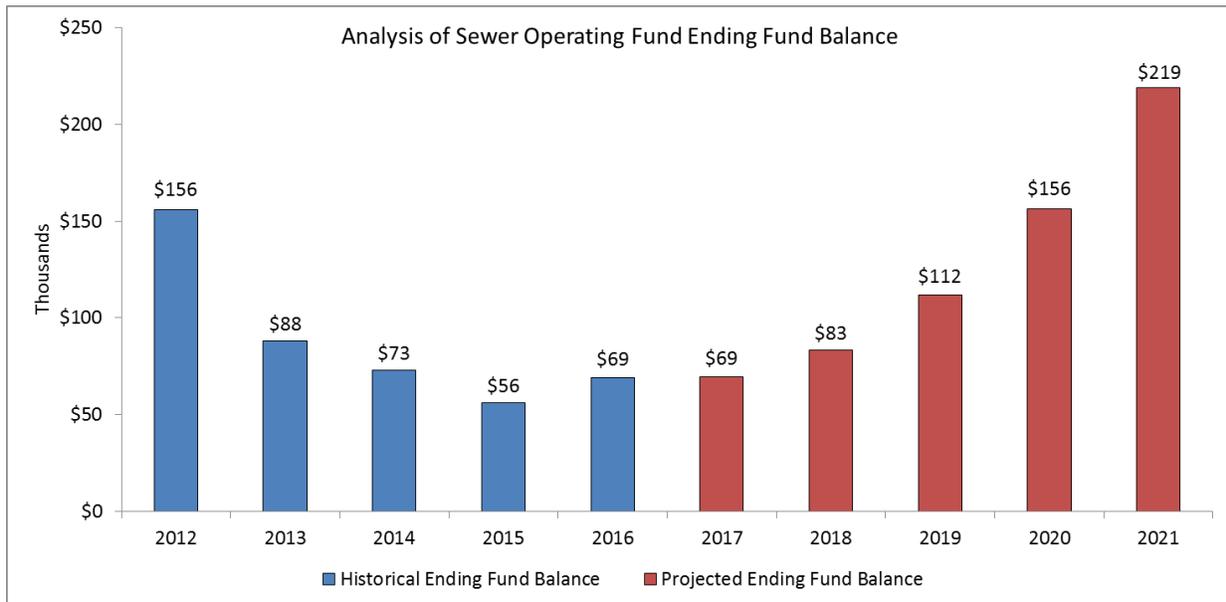
Table 7 - Five Year Forecast of URAC Recommended Water Rates

	Current	Effective July 1				
		2016	2017	2018	2019	2020
<b>Inside City:</b>						
Base charge (monthly)						
Residential (first 4,000 gallons included)						
Meter Size:						
5/8" x 3/4"	\$ 37.56	\$ 38.74	\$ 40.08	\$ 41.49	\$ 42.98	\$ 44.56
Non-residential						
Meter Size:						
5/8" x 3/4"	\$ 20.19	\$ 20.83	\$ 21.55	\$ 22.31	\$ 23.11	\$ 23.96
1 inch	25.63	26.44	27.35	28.31	29.33	30.41
1 & 1/2 inch	33.11	34.15	35.33	36.58	37.90	39.29
2 inch	53.30	54.98	56.88	58.89	61.01	63.25
3 inch	201.88	208.24	215.44	223.04	231.07	239.55
4 inch	257.00	265.09	274.25	283.92	294.14	304.94
6 inch	385.39	397.52	411.26	425.76	441.08	457.27
8 inch	532.15	548.90	567.87	587.89	609.04	631.40
Use Charge (\$/1,000 gallons)						
Residential						
Zero to 4,000 gallons	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4,001 gallons and over	2.90	2.99	3.09	3.20	3.32	3.44
Non-residential						
all metered flow	2.90	2.99	3.09	3.20	3.32	3.44
<b>Outside City:</b>						
Base charge (monthly)						
Residential (first 4,000 gallons included)						
Meter Size:						
5/8" x 3/4"	\$ 45.46	\$ 58.11	\$ 60.12	\$ 62.24	\$ 64.47	\$ 66.84
Non-residential						
Meter Size:						
5/8" x 3/4"	\$ 30.29	\$ 31.25	\$ 32.33	\$ 33.47	\$ 34.67	\$ 35.94
1 inch	38.46	39.66	41.03	42.47	44.00	45.62
1 & 1/2 inch	49.67	51.23	53.00	54.87	56.85	58.94
2 inch	79.95	82.47	85.32	88.34	91.52	94.88
3 inch	302.82	312.36	323.16	334.56	346.61	359.33
4 inch	385.50	397.64	411.38	425.88	441.21	457.41
6 inch	578.08	596.28	616.89	638.64	661.62	685.91
8 inch	798.23	823.35	851.81	881.84	913.56	947.10
Use Charge (\$/1,000 gallons)						
Residential						
Zero to 4,000 gallons	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4,001 gallons and over	3.51	4.49	4.64	4.80	4.98	5.16
Non-residential						
all metered flow	3.51	4.49	4.64	4.80	4.98	5.16
<b>Other Charges for Service:</b>						
Customer deposits		New services - twice the minimum charge; Existing services - twice the established average usage				
Per account charges:						
Late charges - \$/account	\$ 5.00	\$ 5.16	\$ 5.34	\$ 5.53	\$ 5.73	\$ 5.94
Delinquency charge	30.00	30.94	32.01	33.14	34.33	35.59
Restoration charge	30.00	30.94	32.01	33.14	34.33	35.59
Unauthorized turn-on (no less than)	100.00	103.15	106.71	110.47	114.45	118.65
Meter test deposit:						
meters less than 1 inch	100.00	103.15	106.71	110.47	114.45	118.65
meters greater than 1 inch	250.00	257.87	266.78	276.19	286.13	296.63
Backflow prevailing appeal (no more than)	50.00	51.57	53.35	55.23	57.22	59.32

## Analysis of Wastewater System Revenue Requirements

For the current budget year (fiscal 2016), 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 only \$69,158. The beginning balance for this same fiscal year was an even lower value of \$56,082. The financial stability of the wastewater system is tenuous. This level of operating reserve is dangerously low. The strategy for the wastewater utility is to get this fund balance up to approximately \$200,000 by the end of the five year forecast horizon. To achieve this goal, general rate increases of 8% per year are required. Figure 3 shows the historical and projected trends in the Waster Fund balances as a result of 8% per year general rate increases.

Figure 3 - Historical and Projected Ending Fund Balances in the Wastewater Operating Fund



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 – 3.0% per year
- Pension plan contributions (City cost) – 8.0% per year
- Health insurance premiums (City cost) – 8.0% 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 0.50% per year over the five (5) year forecast horizon.

*Capital Improvement Plan Funding* – Due to the very dire financial condition of the wastewater utility, modeling for a capital improvement plan that utilized new debt issuance was not undertaken. Instead, a pay as you go capital improvements funding strategy was developed. This strategy consists of the following elements:

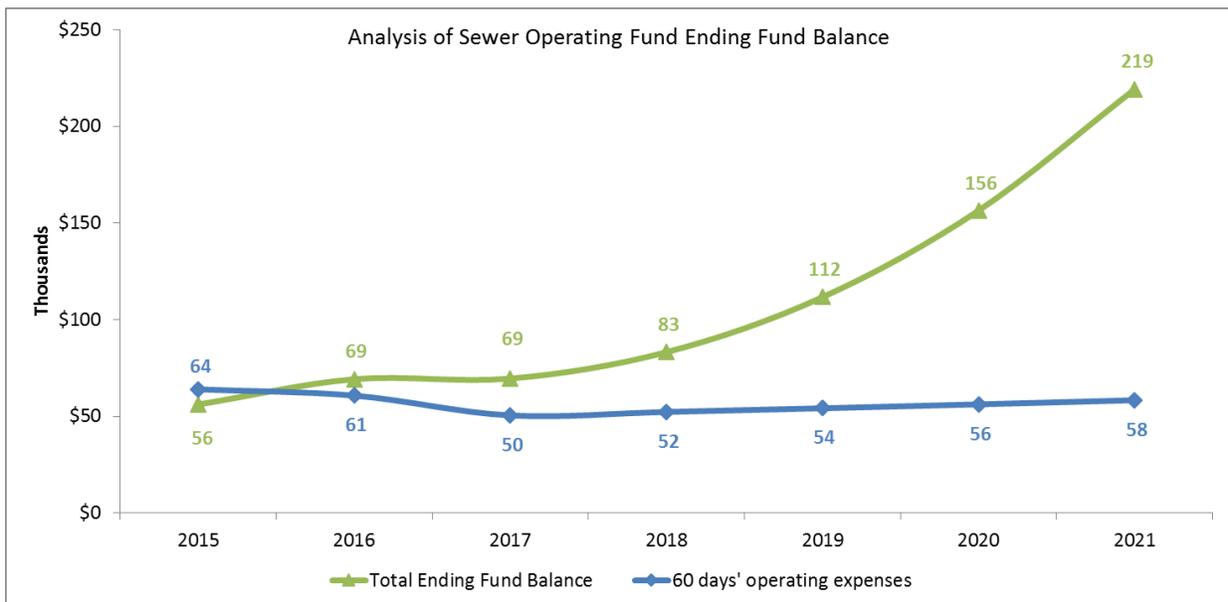
1. Use the cash in the Wastewater SDC Fund (estimated to be \$125,801 as of June 30, 2016) to fund the cost of capacity expanding projects as needed.
2. Use the \$35,109 in the Wastewater Reserve Fund for emergency capital replacements/repairs.

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. For the forecast, we have used this figure for our starting point and adjusted it for inflation (3.0% per year) over the forecast period. We have not budgeted for any costs in the other minor capital line items.

*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 this fiscal year with an unappropriated ending fund balance of \$69,158; a dangerously low 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 sixty 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 4.

Figure 4 - 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 8).

Table 8 – Base Case Forecast of Wastewater System Revenue Requirements

Yamhill Wastewater Financial Forecast Model Projection of Sewer System Revenue Requirements						
	Budget 2016	Forecast				
		2017	2018	2019	2020	2021
<b>Projection of Cash Flow:</b>						
Revenues:						
Total licenses and permits	3,979	4,099	4,222	4,348	4,479	4,613
Total Service Charges	280,000	280,000	302,389	326,570	352,709	380,924
Total interest earned	935	553	556	665	893	1,251
Total other financing sources	10,000	-	-	-	-	-
Total miscellaneous income	87,266	-	-	-	-	-
Subtotal gross operating revenues	382,181	284,652	307,167	331,584	358,081	386,789
Operations & Maintenance Expense:						
Total personal services	162,615	170,826	179,551	188,826	198,689	209,185
Total materials and services	72,897	75,084	77,337	79,657	82,047	84,508
Total debt service	57,290	57,290	57,290	57,290	57,290	57,290
Total capital outlay	90,093	-	-	-	-	-
Transfers(excluding transfers to the sewer bond fund)	3,500	3,500	3,500	3,500	3,500	3,500
Total operations and maintenance expense	386,395	306,701	317,678	329,273	341,526	354,483
(Use)/replacement of fund balance	(4,214)	340	13,670	28,450	44,770	62,770
Net Cash	0	(22,389)	(24,182)	(26,139)	(28,215)	(30,464)
Net Deficiency/(Surplus)	(0)	22,389	24,182	26,139	28,215	30,464
<b>Test of Coverage Requirement:</b>						
Gross Revenues:						
Operating revenues	382,181	284,652	307,167	331,584	358,081	386,789
System Development Charges	5,091	5,116	5,142	5,168	5,194	5,220
Total Gross Revenues	387,272	289,768	312,309	336,752	363,274	392,008
Operating Expenses:						
Total personal services	162,615	170,826	179,551	188,826	198,689	209,185
Total materials and services	72,897	75,084	77,337	79,657	82,047	84,508
Transfers(excluding transfers to the sewer bond fund)	3,500	3,500	3,500	3,500	3,500	3,500
Transfers to/from the rate stabilization account	-	-	-	-	-	-
Total Operating Expenses	239,012	249,411	260,388	271,983	284,236	297,193
Net Revenues	148,260	40,358	51,920	64,769	79,038	94,815
Debt Service:						
Debt Service on Existing Bonds and Loans	57,290	57,290	57,290	57,290	57,290	57,290
Debt Service on New Serial Revenue Bond Debt	-	-	-	-	-	-
Total debt service	57,290	57,290	57,290	57,290	57,290	57,290
Coverage Recognized	2.59	0.70	0.91	1.13	1.38	1.66
Coverage Required	1.05	1.05	1.05	1.05	1.05	1.05
Net Deficiency/(Surplus)	(88,105)	19,797	8,234	(4,615)	(18,884)	(34,661)
<b>Projection of Revenue Sufficiency and Forecasted Rates:</b>						
Maximum Deficiency	-	22,389	24,182	26,139	28,215	30,464
Percent Increase Required Over Current Rate Revenues	0.00%	8.00%	8.00%	8.00%	8.00%	8.00%
Five Year Average Increase in Revenue Requirements	-	8.00%	8.00%	8.00%	8.00%	8.00%
Revenues Recovered From Existing Rates and Charges:	280,000	280,000	302,389	326,570	352,709	380,924
add: Revenues Recovered From Rate Increase	-	22,389	24,182	26,139	28,215	30,464
Total Revenues Recovered From Rates & Charges after Increase	280,000	302,389	326,570	352,709	380,924	411,389

Table 3 shows forecasted annual changes in wastewater system revenue requirements are above general inflation assumptions and average 8.00% per year from fiscal 2017 through fiscal 2021.

### 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 2016 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 9.

Table 9 - Wastewater System Functional Components

Wastewater Functional Component	Description
<b>Customer Accounts</b>	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.
<b>Wastewater Flow (Q)</b>	Costs are associated with conveying and treating customer contributed wastewater flow (volume).
<b>Infiltration &amp; Inflow (I&amp;I)</b>	Costs are associated with conveying and treating I&I of groundwater and stormwater runoff into sanitary sewers.
<b>Strength of Discharge</b>	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 2014-15, 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 (\$/EDU) 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. The Yamhill billing data indicate that 94% of all accounts are single family residential; and almost 96% of flows originate from the single family residential customer class.

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 class 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 is effectively flat. As the name implies, this approach takes total system revenue requirements and divides it by the number of active customers to arrive at an average rate per customer. The monthly base rate (currently \$51.68 per EDU per month) is 100% of the average customer's monthly bill. This type of rate structure is very common for small communities that have a monolithic customer base (i.e. single family residences)

Based on the cost of service evaluation, it appears that the current rate structure recovers a proportionately share of total utility costs from the base charge, and is reasonable from a rate equity perspective.

### 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 flat monthly rate structure has been in place for many years, and works well for the City and its customers. In fiscal 2015, active residential accounts accounted for 94% of all EDUs and 96% of total wastewater billable flow. The residential class drives the demands on the City's wastewater system. In that same fiscal year, the commercial customer class accounted for 6% of active EDUs, and 4% of total wastewater system billable flow. The City currently does not serve any industrial high strength sewage customers.

Based on the uniform nature of the customer base, there is no reason to think the current flat rate structure for wastewater services is unfair or unreasonable. We recommend the City stay with this rate structure at this time. The recommended schedule of wastewater rates is shown below in Table 10.

Table 10 - Proposed Schedule of Wastewater Rates

		Effective July 1				
		Current	2016	2017	2018	2019
<b>City of Yamhill</b>						
<b>Schedule of Wastewater Rates and Charges</b>						
<b>Inside City:</b>						
Base charge (monthly)						
Per Equivalent Dwelling Unit (EDU) <sup>2</sup>	\$ 51.68	\$ 55.81	\$ 60.27	\$ 65.09	\$ 70.30	\$ 75.92
<b>Outside City:</b>						
Base charge (monthly)						
Per Equivalent Dwelling Unit (EDU)	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>
<b>Other Charges for Service:</b>						
Customer deposits	New services - twice the minimum charge; Existing services - twice the established average usage					
Per EDU charges:						
Late charges - \$/account	\$ 5.00	\$ 5.40	\$ 5.83	\$ 6.30	\$ 6.80	\$ 7.34
Delinquency charge	30.00	32.40	34.99	37.79	40.81	44.07
Restoration charge	30.00	32.40	34.99	37.79	40.81	44.07
City standards compliance review	35.00	37.80	40.82	44.09	47.62	51.43
New construction inspection	150.00	161.99	174.94	188.94	204.05	220.37

<sup>1</sup> Sewer service is not provided outside of the City limits

<sup>2</sup> EDUs shall be calculated as prescribed in Yamhill Municipal Code Section 3.76.010

## Rate Study Conclusions and Recommendations

The City has not adjusted water rates since July 1, 2003 (i.e., 13 years). It has not adjusted wastewater rates since July 1, 2007 (i.e., 9 years). Simply stated, the two utilities are running out of cash. The fairly modest recommended rate increases for water are designed to simply stabilize the utility, not provide resources to improve and enhance the water supply system. This strategy was deliberate on the part of the project team in that the needs of the wastewater system are more pressing at this time. The financial stability of the wastewater system is tenuous. On July 1, 2016 the wastewater operating fund had a cash balance of \$56,082. This level of operating reserve is dangerously low. The strategy for the wastewater utility is to get this fund balance up to approximately \$200,000 by the end of the five year forecast horizon. To achieve this goal, general rate increases of 8% per year are required. The most significant conclusions and recommended changes to the current schedule of water and wastewater rates are:

### Conclusions

- Cash reserves are not adequate to fund the City's planned water and wastewater system capital improvements. In fact, the cash balance in the wastewater operating fund has been depleted in recent years simply to fund on-going operations and maintenance expenses. Without corrective action (i.e., rate increases), the operating reserves in the wastewater operating fund will be entirely depleted in very short order.
- City staff in consultation with the City's consulting engineer attempted to develop a funding plan for water and wastewater master plan capital improvements. This proved to be financially infeasible at this time due to the precarious financial position of the two utilities. The fallback position is to defer all planned capital improvements at this time. Assuming the City adopts the recommended rate increases for water and wastewater services, the City will be in a better position to reevaluate capital improvement plans at the end of the five year forecast.
- The current monthly base rate for water is \$37.56 for a customer with a 3/4" meter. This charge includes an allowance (without further charge) of 6,000 gallons of water. For the fiscal year ended June 30, 2015, 96% of total water rate revenues were recovered from monthly base charges; only 4% were recovered from the variable usage charges. Based on the cost of service analysis, it appears the current rate structure recovers a disproportionately high share of total utility costs from the base charge.
- The City's current water master plan addendum was adopted by the City Council in 1998. It is out of date and needs to be replaced with a new comprehensive plan.
- The City completed and adopted a new wastewater facilities plan in 2015. Although there is no funding available at this time to implement the recommendations of the new plan, it none the less is a blueprint for future wastewater system priorities.

### Recommendations

The recommendations of this water and rate study are pragmatic and urgent. The City needs to raise rates immediately. In order to achieve a balance, the project team recommends inflation-based rate adjustments for water; not because water is in good financial shape; it is because wastewater is in very dire financial shape. The water rate recommendations are meant to stabilize water finances, not improve them. The recommendations for wastewater need to be implemented immediately. The goal of these rate increases is to gradually get the wastewater system finances out of the emergency room.

Itemized in Table 11 are the key recommendations for each utility over the next five years:

Table 11 – Summary of the 2016 Water and Wastewater Rate Study Recommendations

<b>Water</b>	<b>Wastewater</b>
<ul style="list-style-type: none"> <li>Fund new water master plan; pay for it with water SDC fund cash</li> </ul>	<ul style="list-style-type: none"> <li>Use the \$35,109 in the wastewater reserve fund for emergency capital replacements/repairs</li> </ul>
<ul style="list-style-type: none"> <li>Reduce the allowance in the monthly water base fee from 6,000 gallons to 4,000 gallons</li> </ul>	<ul style="list-style-type: none"> <li>Maintain the current flat rate structure for wastewater</li> </ul>
<ul style="list-style-type: none"> <li>Use the \$134,831 in the water depreciation fund for emergency capital replacements/repairs</li> </ul>	<ul style="list-style-type: none"> <li>If capacity expanding projects are needed, use the \$125,801 in the wastewater SDC fund to pay for them</li> </ul>
<ul style="list-style-type: none"> <li>Implement general rate increases of 3.5% per year for each year of the five (5) year forecast</li> </ul>	<ul style="list-style-type: none"> <li>Implement general rate increases of 8.0% per year for each year of the five (5) year forecast</li> </ul>
<ul style="list-style-type: none"> <li>Cumulative cash generated from rate increases = \$71,811</li> </ul>	<ul style="list-style-type: none"> <li>Cumulative cash generated from rate increases = \$131,389</li> </ul>

### Neighboring Communities' Utility Rates and SDCs

Shown below in Figures 5, 6, 7, and 8 are charts that compare the current utility rates and SDCs for a single family customer in Yamhill to the same charges in similar communities in Yamhill County, Oregon.

Figure 5 - Comparison of Neighboring Communities' Water Rates

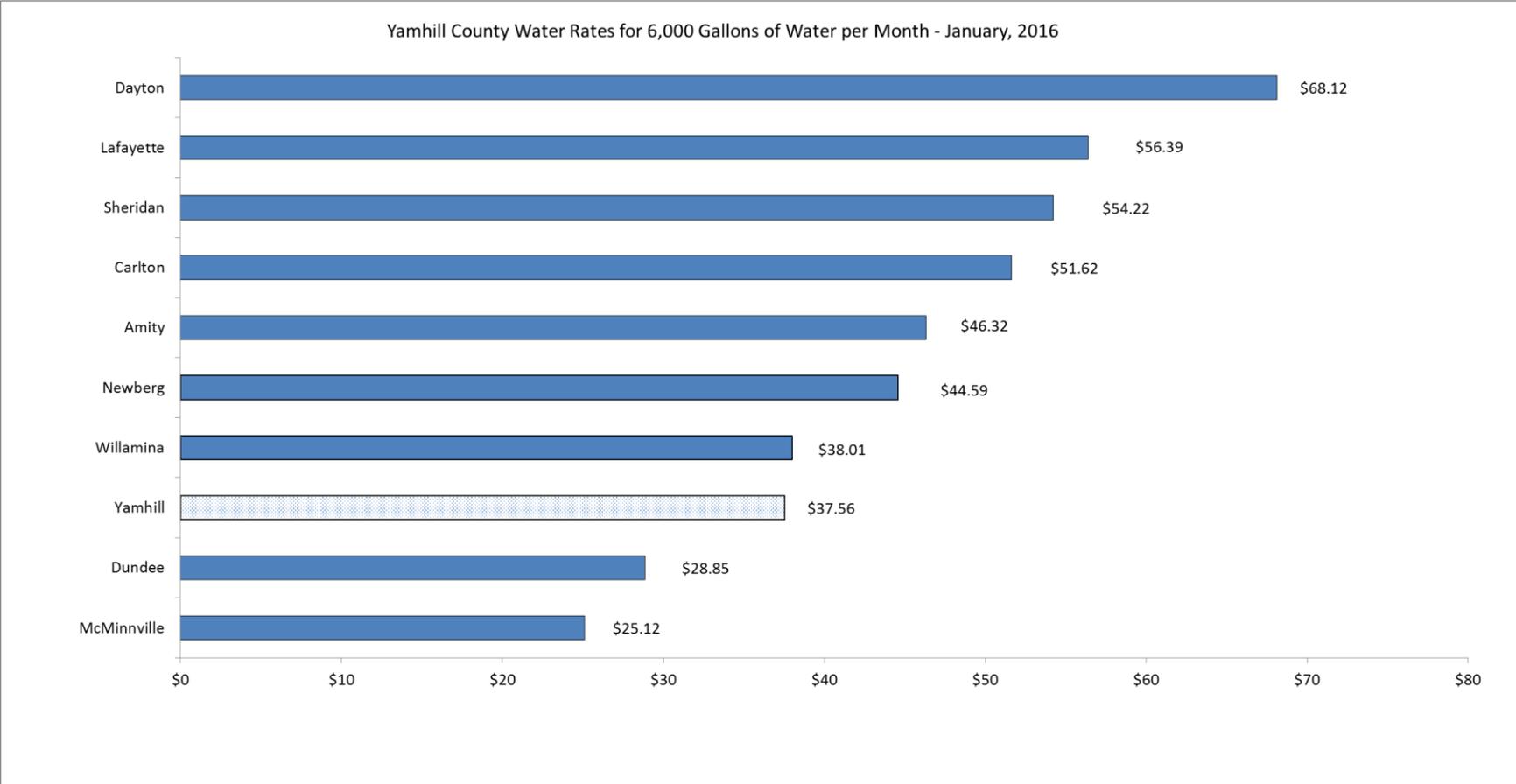


Figure 6 - Comparison of Neighboring Communities' Wastewater Rates

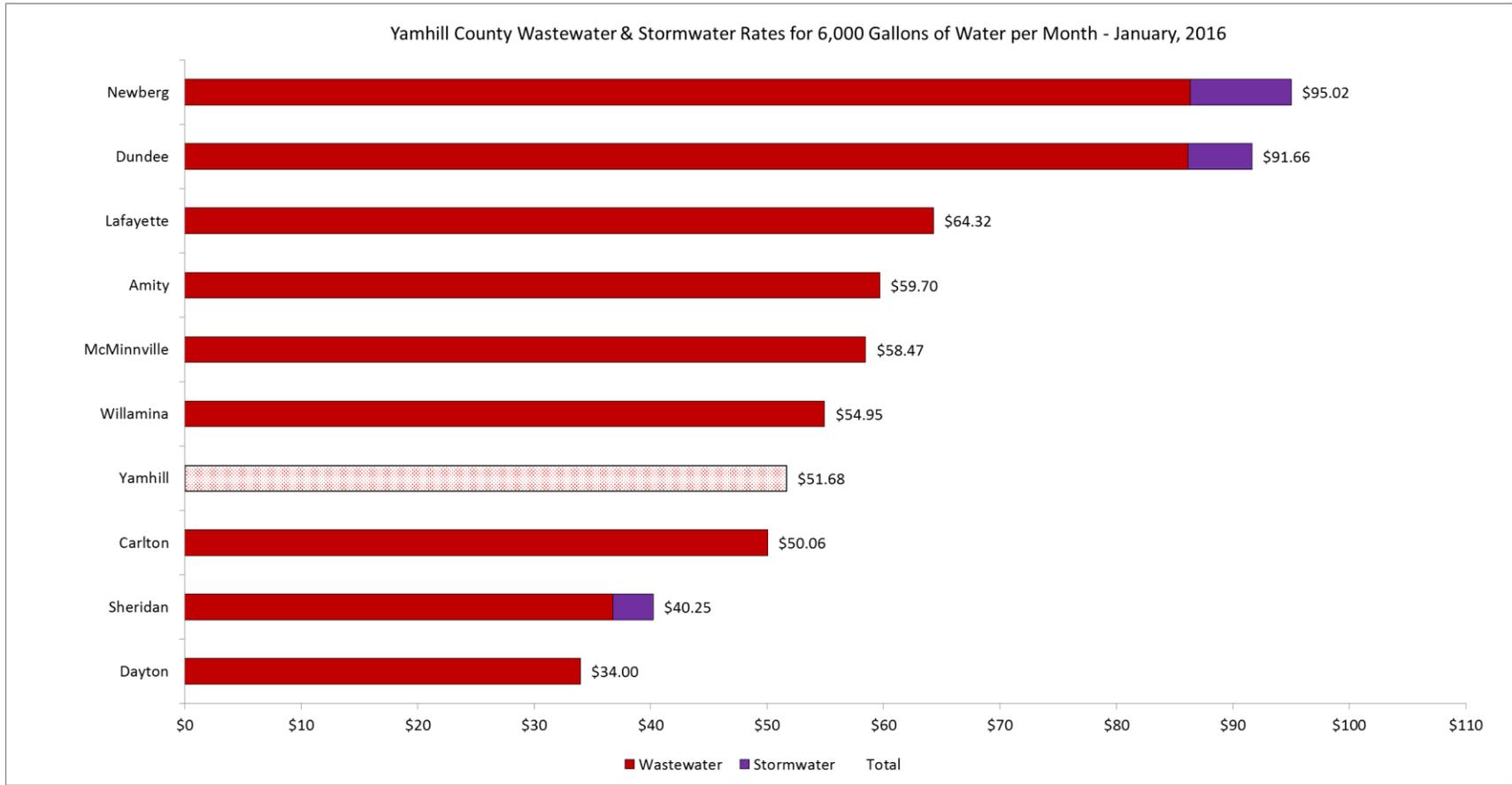


Figure 7 - Comparison of Neighboring Communities' Combined Water and Wastewater Rates

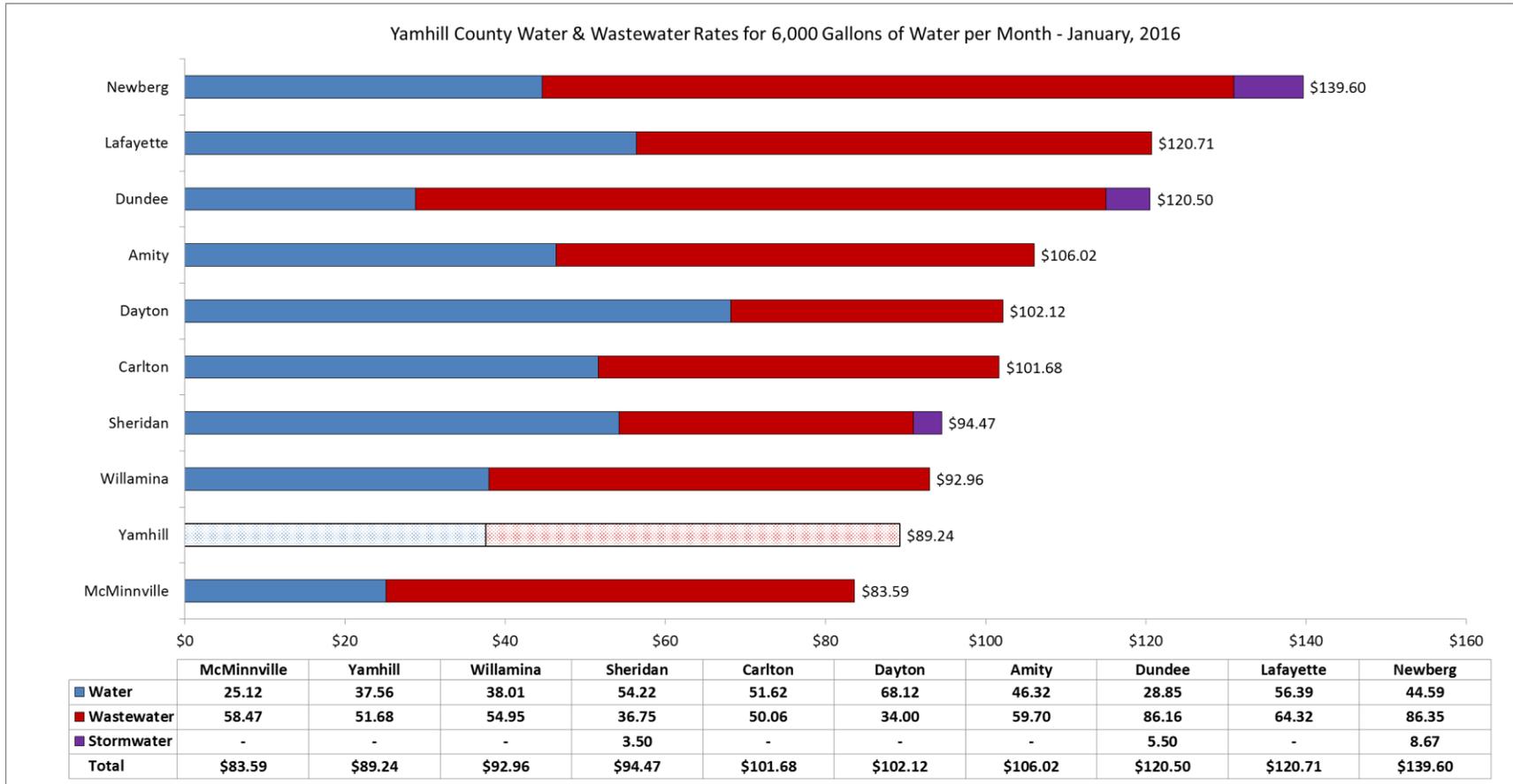
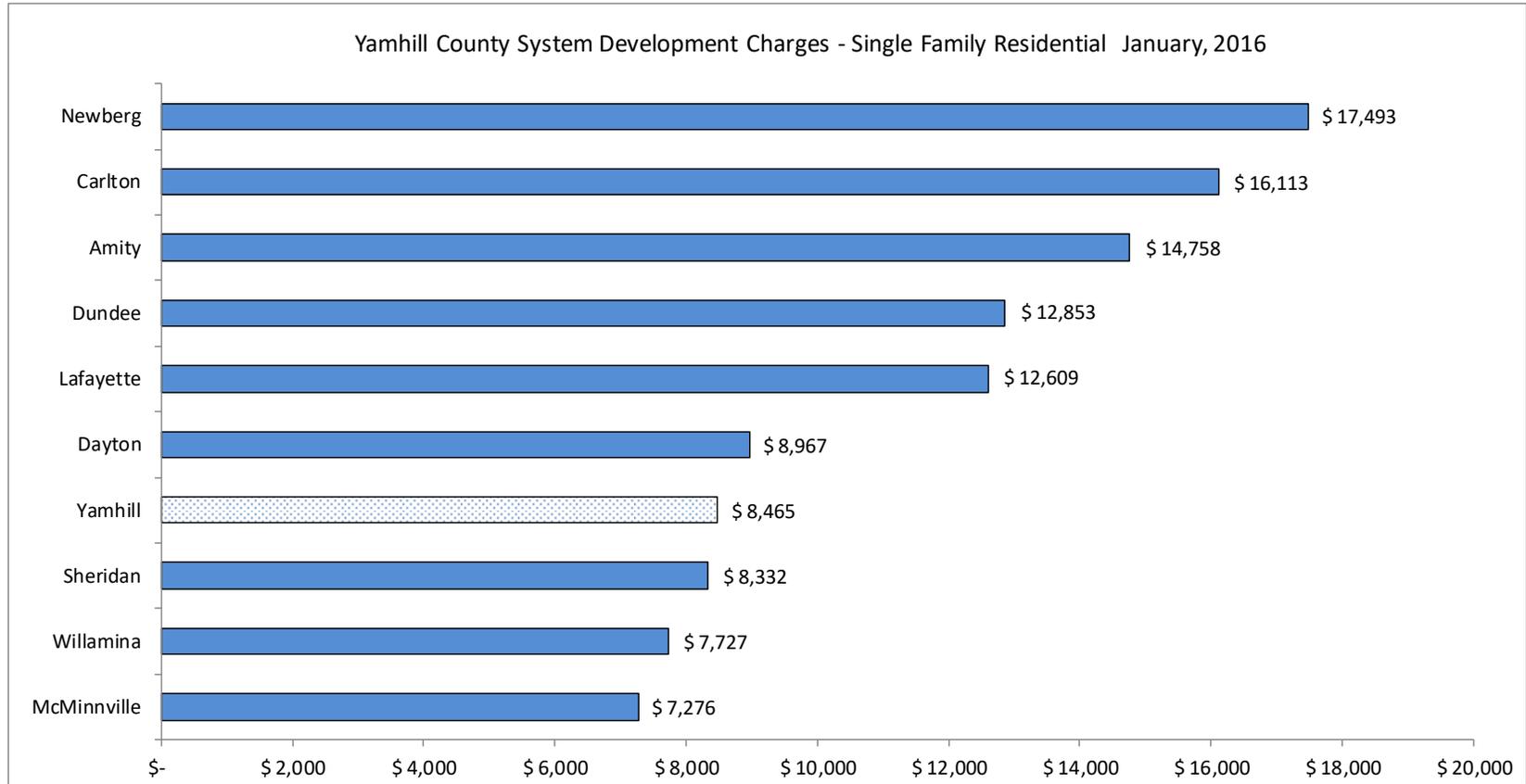
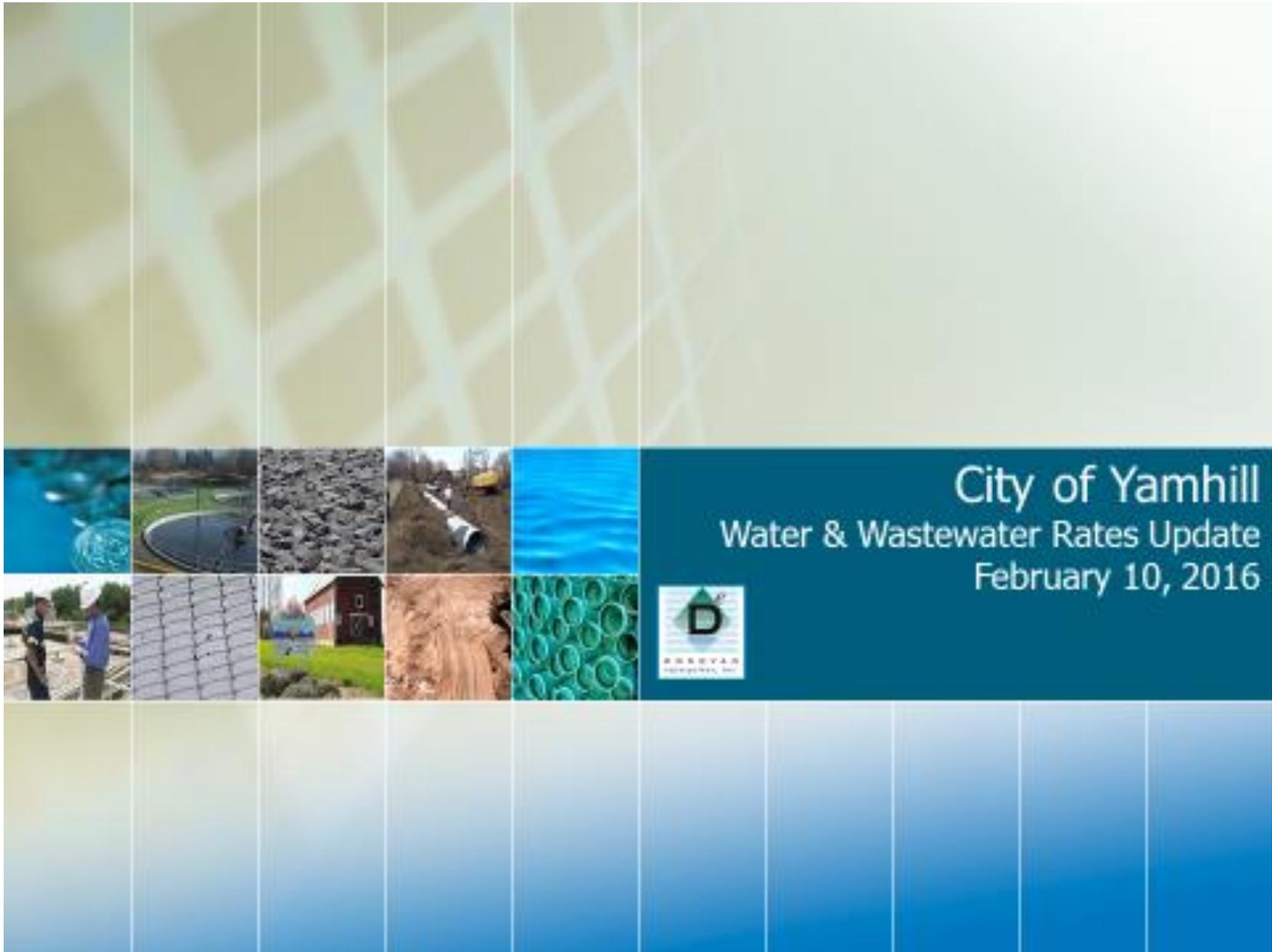


Figure 8 - Comparison of Neighboring Communities' SDCs (Single Family Residential)



Jurisdiction	Contact Phone No.	Water	Wastewater	Streets	Parks	Storm Drainage	Total
McMinnville	503.434.7312	-	2,870	2,288	2,118		\$ 7,276
Willamina	503.876.2242	2,077	2,650	3,000			\$ 7,727
Sheridan	503.843.2347	4,236	2,671	365	782	279	\$ 8,332
Yamhill	503.662.3511	3,295	1,847	300	3,023		\$ 8,465
Dayton	503.864.2221	4,242	3,500	1,125	100	-	\$ 8,967
Lafayette	503.864.2451	2,565	3,720	5,513	811		\$ 12,609
Dundee	503.538.2244	5,112	5,305			2,436	\$ 12,853
Amity	503.835.3711	3,333	5,778	3,286	1,343	1,018	\$ 14,758
Carlton	503.852.7575	7,151	5,586	2,033	508	835	\$ 16,113
Newberg	503.538.9421	6,138	5,959	3,052	2,017	327	\$ 17,493

## **Appendix A – Utility Rate Study Presentation to the Yamhill City Council on February 10, 2016**



City of Yamhill  
Water & Wastewater Rates Update  
February 10, 2016



## Today's Agenda



- Where we left you from the January 13<sup>th</sup> meeting
- Water updated forecast and recommendations
- Wastewater updated forecast and recommendations
- Conclusions/Recommendations
- Council questions & comments

## Where We Left You at the January 13<sup>th</sup> Meeting

### Water

- Last water rate increase on July 1, 2003 (13 years ago)
- Current base rate of \$37.56 per EDU includes 6 kgal (8.02 ccf) of usage; almost all water revenue is recovered from the base charge
- 78% of all accounts are residential; 14% of all accounts are outside city
- City serves 523 water accounts (450 inside city; 73 outside city)

### Wastewater

- Last wastewater rate increase on July 1, 2007 (9 years ago)
- Current fixed monthly charge is \$51.68 per EDU
- 94% of all accounts are residential; 100% of accounts are inside city
- City serves 431 wastewater accounts

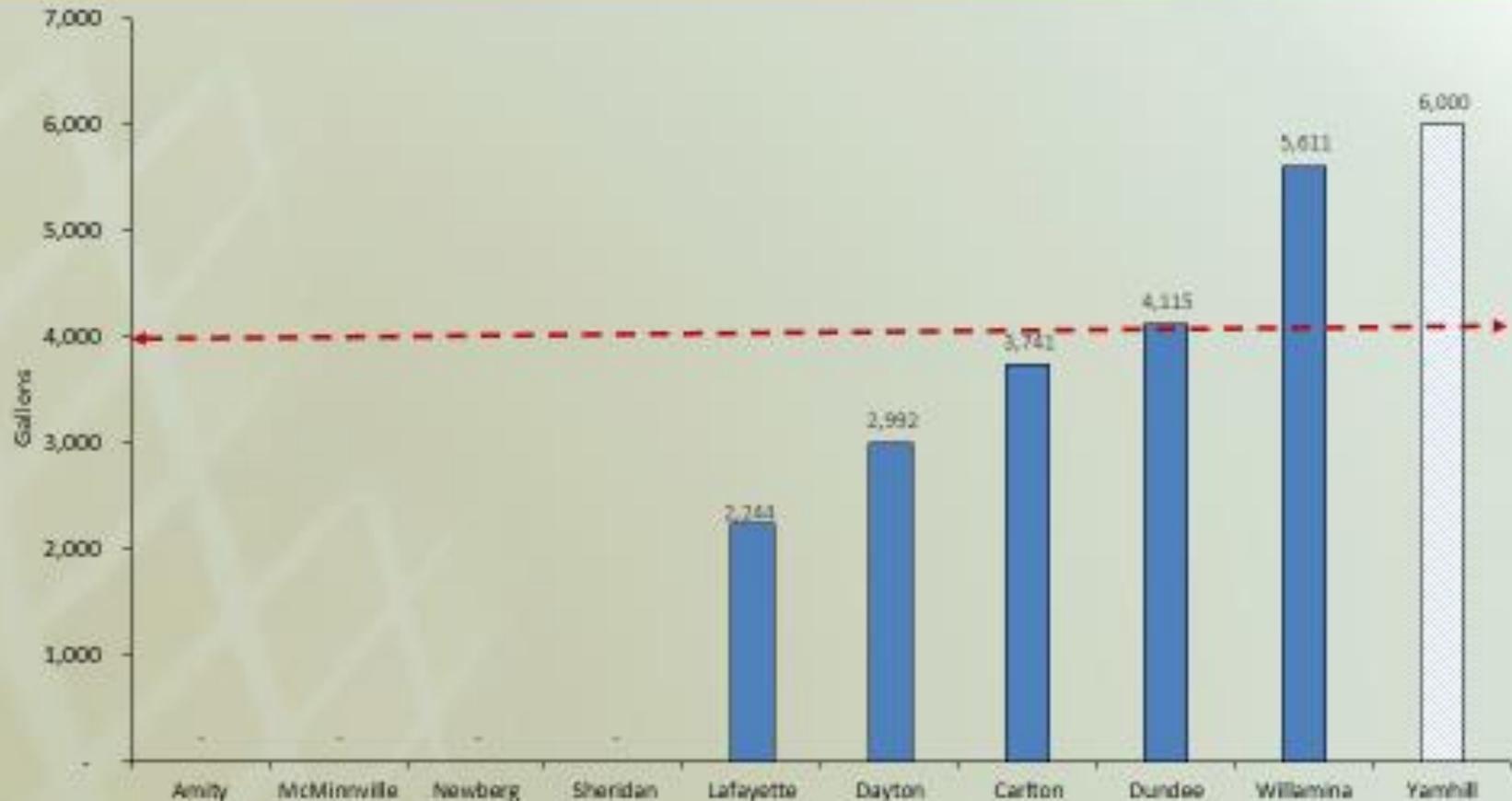
# Current Monthly Water Bills in Yamhill County Communities



Yamhill County Water Rates for 6,000 Gallons of Water per Month - January, 2016

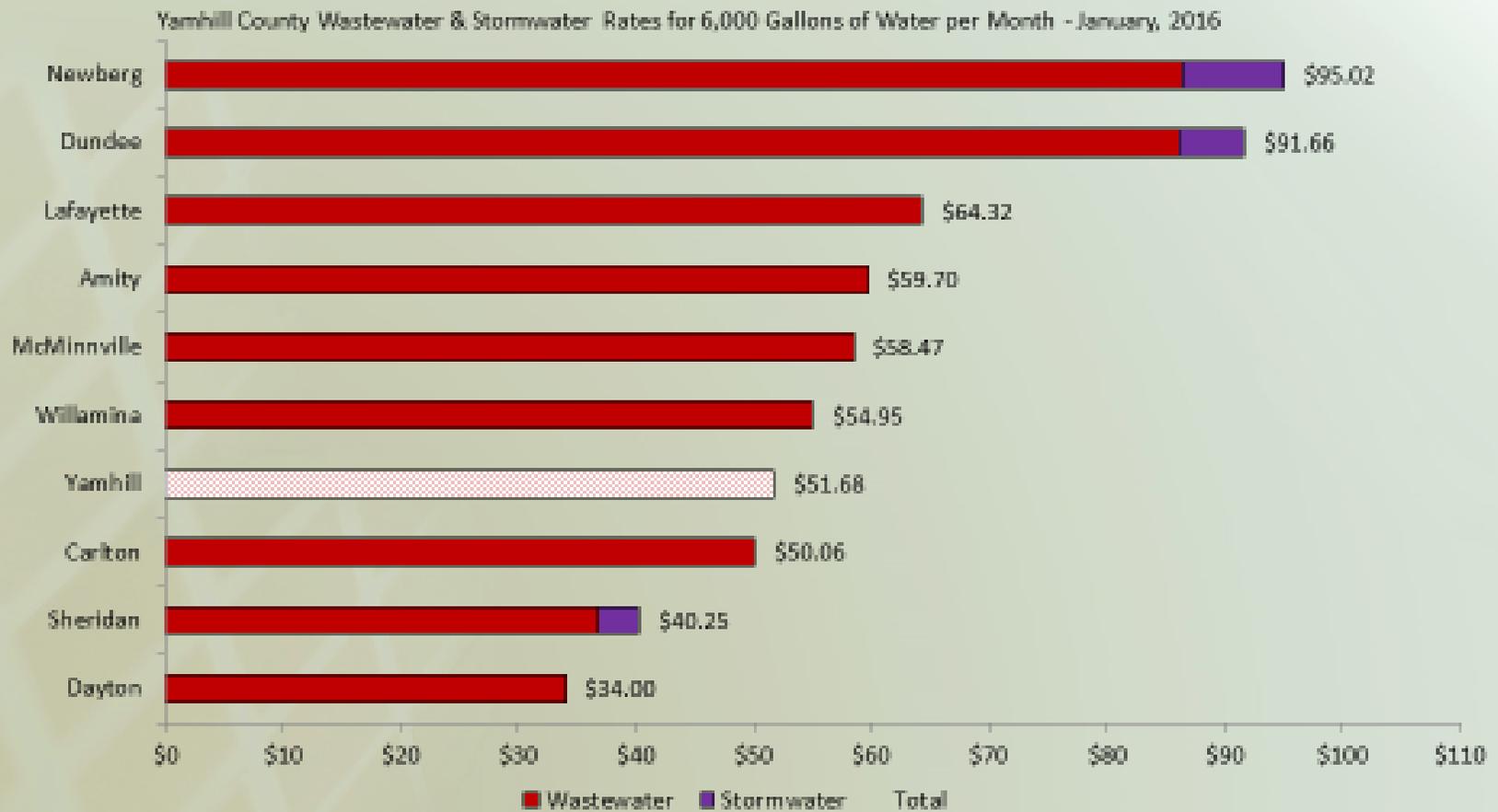


## Monthly Water Usage Allowances in Water Base Charges



5

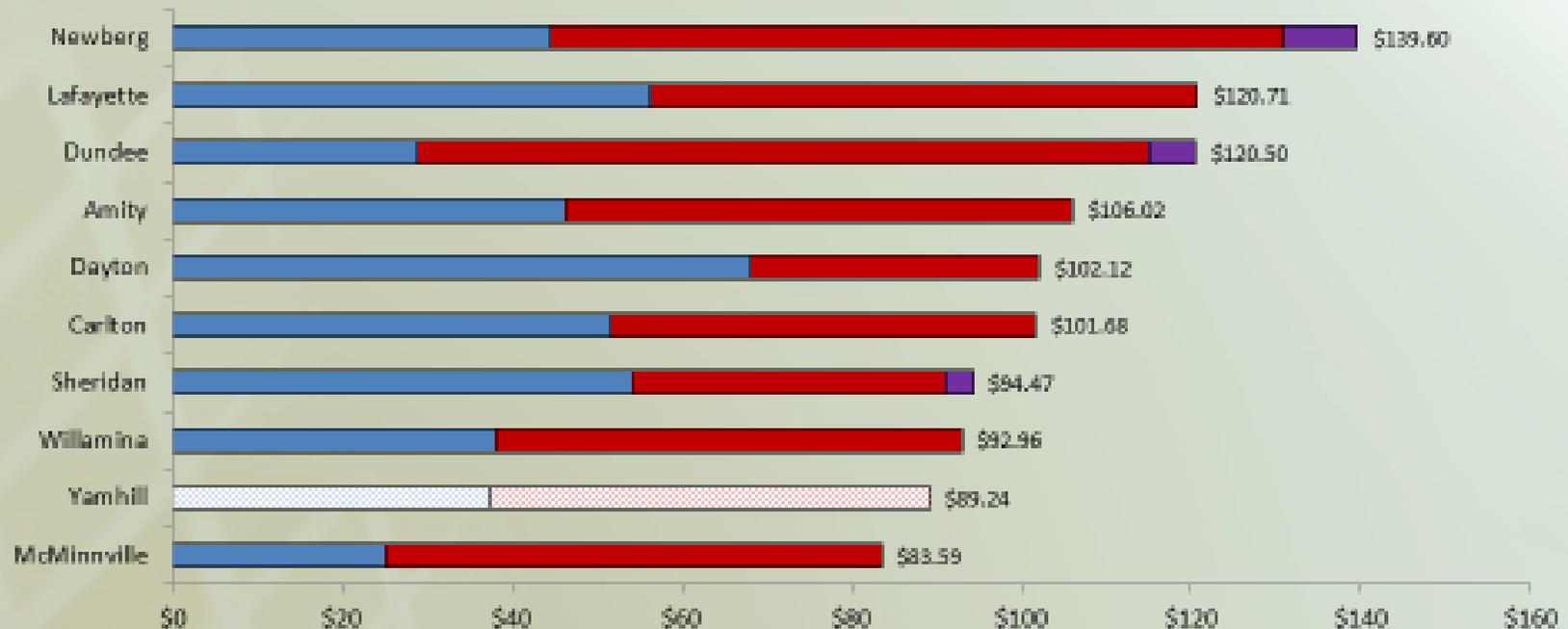
# Current Monthly Wastewater Bills in Yamhill County Community



# Conclusions/Recommendations

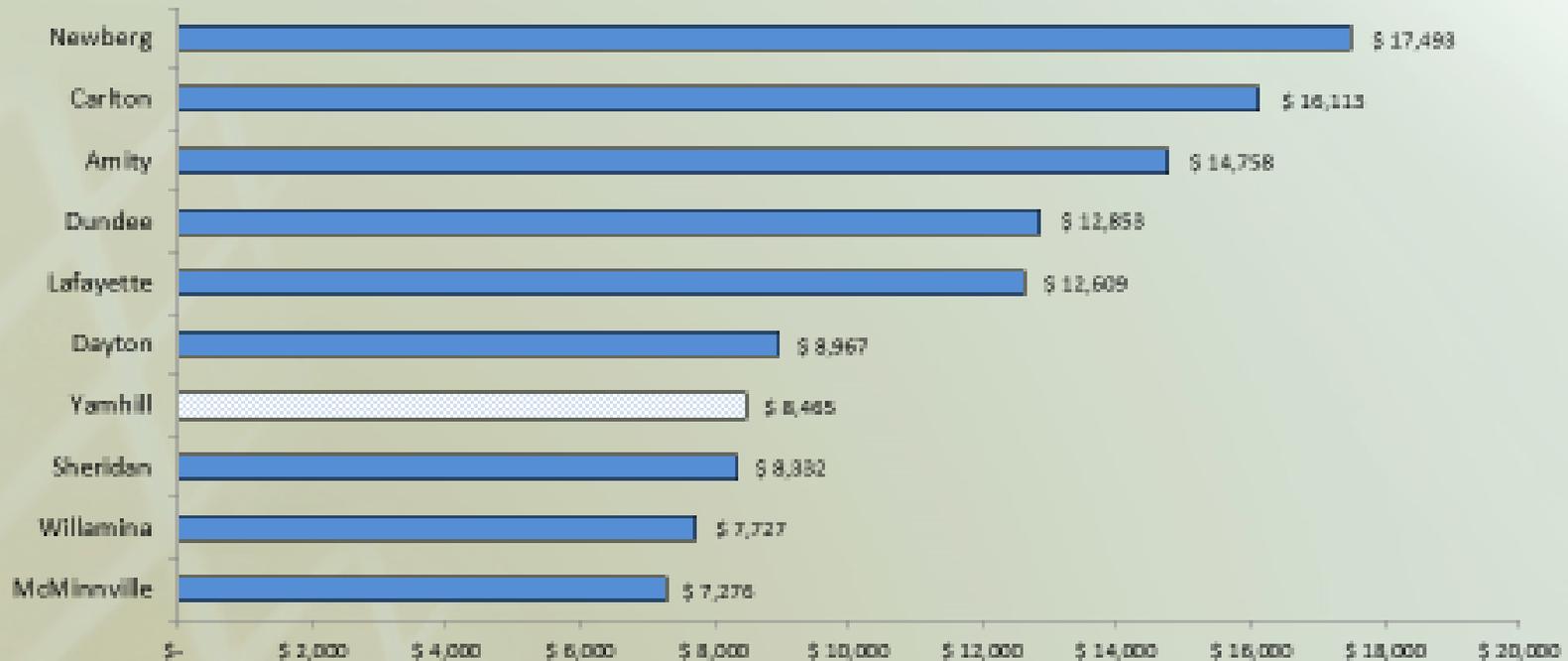


Yamhill County Water & Wastewater Rates for 6,000 Gallons of Water per Month - January, 2016



	McMinnville	Yamhill	Willamina	Sheridan	Carlton	Dayton	Amity	Dundee	Lafayette	Newberg
Water	25.12	37.56	38.01	54.32	51.62	68.12	46.32	28.85	56.39	44.59
Wastewater	58.47	51.68	54.95	36.75	50.06	34.00	59.70	86.16	64.32	86.35
Stormwater	-	-	-	3.50	-	-	-	5.50	-	8.67
Total	\$83.59	\$89.24	\$92.96	\$94.47	\$101.68	\$102.12	\$106.02	\$120.50	\$120.71	\$139.60

# Current SDCs Charged in Yamhill County Communities



Jurisdiction	Contact Phone No.	Water	Wastewater	Streets	Parks	Storm Drainage	Total
McMinnville	503.434.7312	-	2,670	2,288	2,118		\$ 7,276
Willamina	503.879.2342	2,077	2,650	3,000			\$ 7,727
Sheridan	503.843.2347	4,236	2,671	365	782	279	\$ 8,332
Yamhill	503.852.3511	3,295	1,847	300	3,023		\$ 8,485
Dayton	503.894.2321	4,242	3,500	1,125	100	-	\$ 8,967
Lafayette	503.854.2451	2,988	3,720	5,513	811		\$ 12,609
Dundee	503.538.2244	5,112	5,305			2,439	\$ 12,858
Amity	503.835.3711	3,333	5,775	3,288	1,343	1,019	\$ 14,758
Carlton	503.852.7575	7,151	5,588	2,033	508	835	\$ 16,113
Newberg	503.538.9421	6,138	5,959	3,052	2,017	327	\$ 17,493

## Other Conclusions from the January 13<sup>th</sup> Meeting

1. Shift fiscal 2015-16 from "Budget" to "Estimated"; talk to City Staff about current spending patterns and how the water fund will end up on June 30, 2016
2. Significantly scale back the CIPs for both utilities (focus on maintenance)
3. Consider reducing the water allowance in the base charge
4. Focus on the new water master plan study. Once we have an updated plan, we can start tackling the projects. In the mean time, ...
5. Raise rates in the next budget cycle (i.e., July 1, 2016)
6. Start building a cash reserve in the Water Depreciation Fund
7. Contact funding agencies to lay the groundwork for loans and grants:
  - a) DEQ clean water state revolving loan program
  - b) Oregon Business Dept. – Infrastructure Finance Authority
  - c) USDA Rural Utilities Service

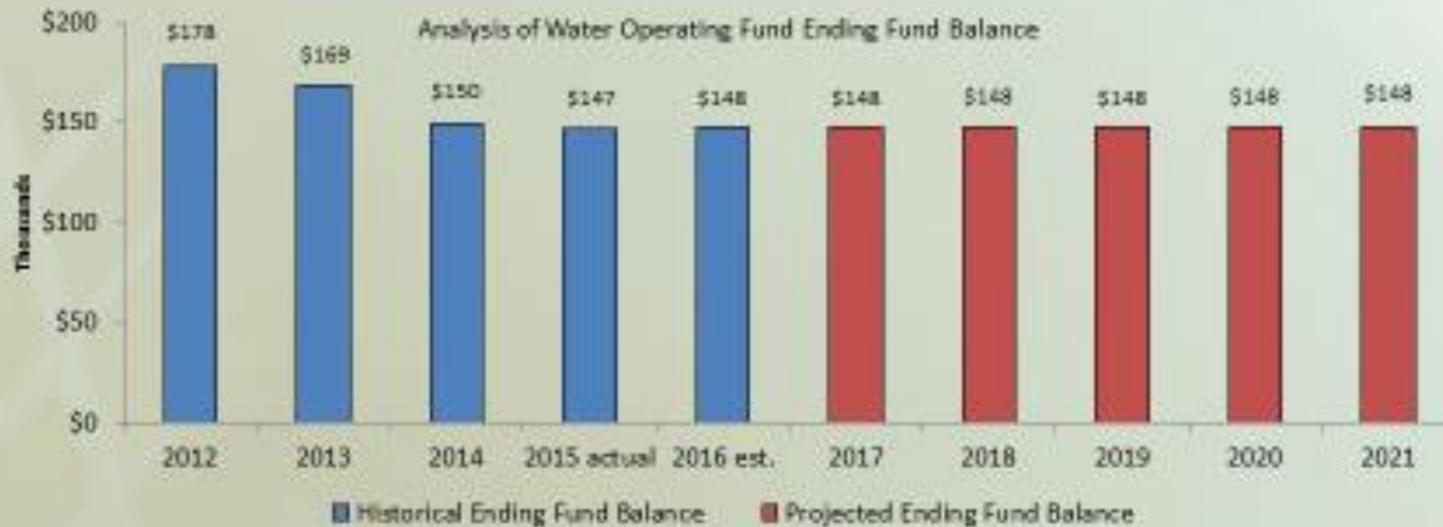
9

The slide features a dark blue horizontal bar at the top. Below it, the background is a light beige color with a faint, abstract pattern of thin, intersecting lines on the left side. The main title is centered in large, bold, white capital letters.

# WATER FORECAST ANALYSIS

10

# Updated Water Financial Forecast



- Estimated cash position of the water utility on June 30, 2016:
  - Water operating fund .....\$148,140
  - Water depreciation fund .....\$134,831
  - Water SDC fund ..... \$429,383 (restricted)
  - Water bond fund .....\$87,675 (restricted)

## Water Recommendations for July 1, 2016



- Fund the water master plan update at \$150k; fund the study with cash in the water SDC fund
- Reduce the allowance in the monthly water base fee from 6,000 gallons to 4,000 gallons
- Use the \$134,831 in the water depreciation fund for emergency capital replacements/repairs
- Implement general rate increases of 3.5% per year for each year of the five (5) year forecast

# Updated Base Case Water Rate Profile



Average monthly water bill



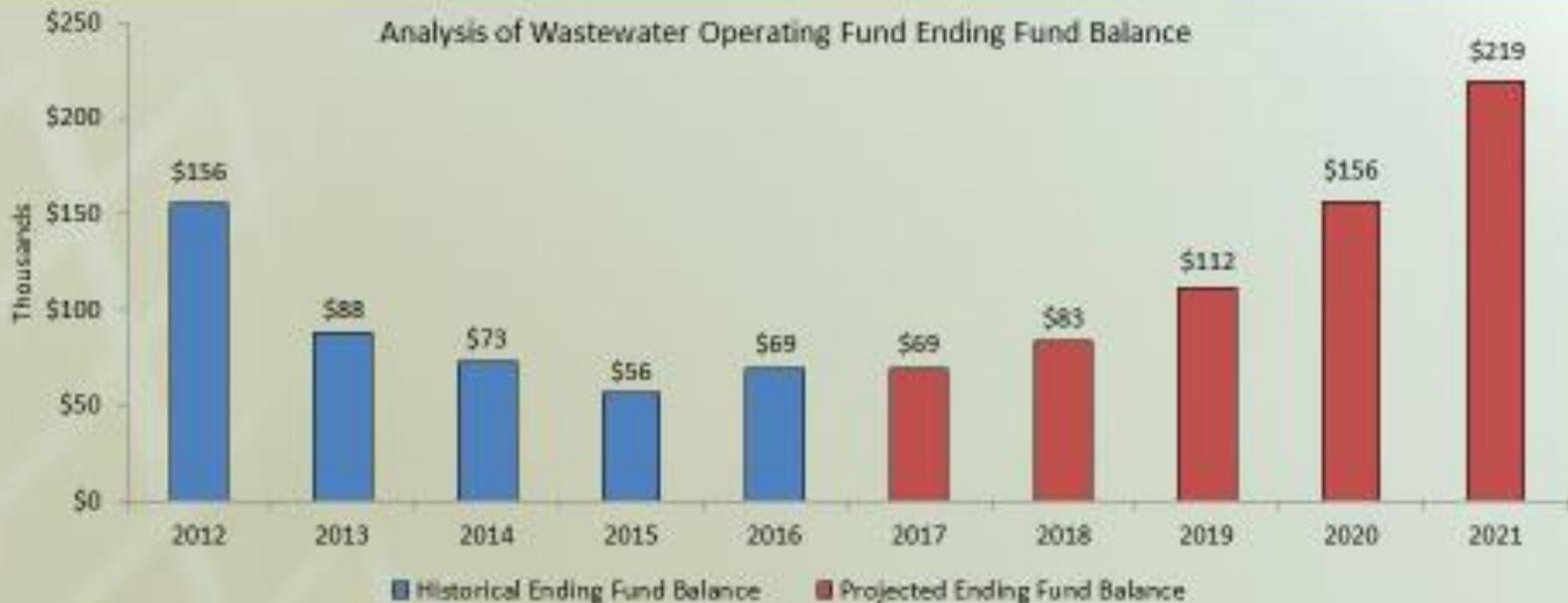
- Monthly water bills basically grow with inflation over the five (5) year forecast



# WASTEWATER FORECAST ANALYSIS

14

# Updated Wastewater Financial Forecast



- Estimated cash position of the wastewater utility on June 30, 2016:

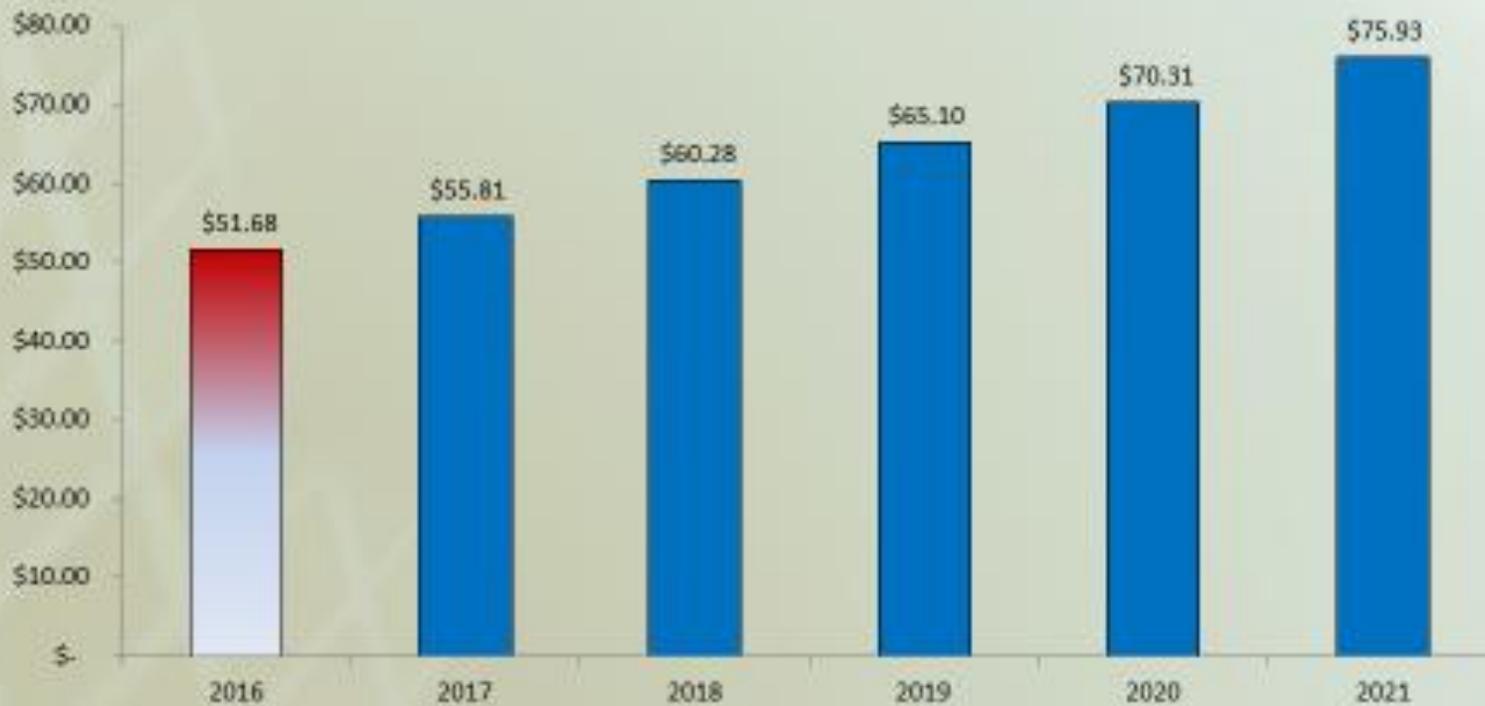
- Wastewater operating fund .....\$69,158
  - Wastewater depreciation fund .....\$35,109
  - Wastewater SDC fund .....\$125,801 (restricted)
  - Wastewater bond fund .....\$64,384 (restricted)
- 15

## Wastewater Recommendations for July 1, 2016



- Use the \$35,109 in the wastewater reserve fund for emergency capital replacements/repairs
- If capacity expanding projects are needed, use the \$125,801 in the wastewater SDC fund to pay for them
- Implement general rate increases of 8.0% per year for each year of the five (5) year forecast

## Updated Base Case wastewater Rate Profile



# Conclusions/Recommendations



## Water

- Fund new water master plan; pay for it with water SDC fund cash
- Reduce the allowance in the monthly water base fee from 6,000 gallons to 4,000 gallons
- Use the \$134,831 in the water depreciation fund for emergency capital replacements/repairs
- Implement general rate increases of 3.5% per year for each year of the five (5) year forecast
- Cumulative cash generated from rate increases = \$71,811

## Wastewater

- Use the \$35,109 in the wastewater reserve fund for emergency capital replacements/repairs
- Maintain the current flat rate structure for wastewater
- If capacity expanding projects are needed, use the \$125,801 in the wastewater SDC fund to pay for them
- Implement general rate increases of 8.0% per year for each year of the five (5) year forecast
- Cumulative cash generated from rate increases = \$131,389

