

City of La Pine



Draft Report for
WATER AND SEWER
UTILITY RATE STUDY

February 2015

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SECTION I: INTRODUCTION

In 2014 the City of La Pine (City) engaged FCS GROUP to complete a rate study for the water and sewer utilities. The results of the study establish a blueprint for achieving strong financial performance in the future and delivering efficient and effective services to the City's customers. The scope of the project included the following key elements:

- ◆ Review and establish fiscal policies.
- ◆ Assess revenue needs for a multi-year period that includes adequate funding for operations and maintenance, capital projects, debt service, and fiscal policy achievement.
- ◆ Project long-term capital needs and incorporate these needs into a long-term funding plan that includes rates, debt, and existing reserves.
- ◆ Develop and recommend rate structures that generate sufficient revenue to meet each utility's financial obligations on a standalone, self-supporting basis.
- ◆ Write a report documenting the rate study process, assumptions, findings and recommendations.
- ◆ Present and discuss findings with City staff and Council.

The key factors, conclusions and recommendations for each of the key task areas of the study are summarized in this report. The full technical exhibits can be found in the Technical Appendix.

SECTION II: RATE STUDY METHODOLOGY

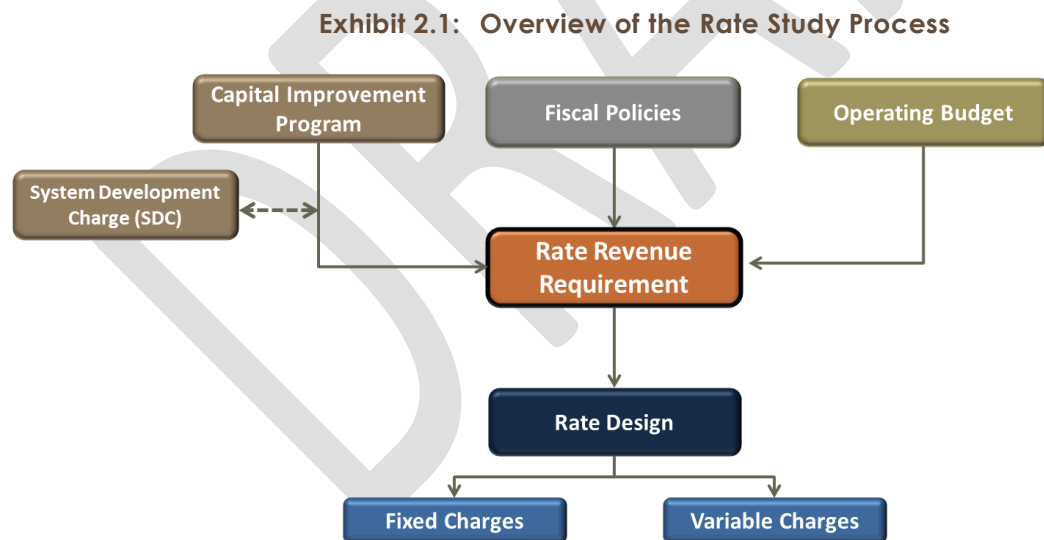
A. RATE SETTING PRINCIPLES AND METHODOLOGY

The methods used to establish user rates are based on principles that are generally accepted and widely followed throughout the industry. These principles are designed to produce utility rates that equitably recover the appropriate amount of revenue from ratepayers in order to fulfill the long-term financial obligations on the utility.

The primary tasks of the rate study are listed below:

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

Exhibit 2.1 illustrates the rate study process.



B. REVENUE REQUIREMENT

A revenue requirement analysis forms the basis for a long-range financial plan and multi-year rate management strategy for each utility. It also enables the City to set utility rate structures which fully recover the total cost of operating each utility: capital improvement and replacement, operations, maintenance, general administration, fiscal policy attainment, cash reserve management, and debt repayment. Linking rate levels to a financial plan helps to enable not only sound financial

performance for the City's utility enterprise funds, but also a clear and reasonable relationship between the costs imposed on utility customers and the costs incurred to provide service.

A revenue requirement analysis includes the following core elements to form a complete portrayal of each utility's financial obligations.

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

B.1 Fiscal Policies

Fiscal policies provide the basic framework for evaluating utility revenue needs. These policies, which can address a variety of topics including cash management, capital funding, and financial performance, intend to promote long-term financial viability for the City's utility.

Utility Reserves

Reserves are a key component of any utility financial strategy, as they provide the flexibility to manage variations in costs and revenues that could otherwise have an adverse impact on ratepayers. For the purpose of this analysis, each utility's resources are separated into two funds:

- ◆ **Operating Fund.** Operating reserves are designed to provide a liquidity cushion to ensure that adequate cash working capital will be maintained to address significant cash balance fluctuations, such as seasonal fluctuations in billings and receipts, unanticipated cash operating expenses, or lower than expected revenue collections. Target funding levels are generally expressed in number of days' cash operating expenses (debt service not included), with the minimum requirement varying with the expected risk of unanticipated needs. For purposes of this study, it is assumed that the water and sewer operating funds will each maintain a minimum fund balance of 60 days operating expenses, and a maximum balance of 90 days operating expenses. In the event the operating funds have a year-end balance above the 90 day maximum, the excess funds may be used to fund the capital improvement program.
- ◆ **System Development Charge (SDC) Fund.** The City's SDC Fund currently tracks a combined balance for the water and sewer utilities. The SDC Fund was analyzed separately for the water and sewer utilities in order to appropriately track the resources and requirements of each utility. In accordance with Oregon Revised Statute (ORS) 223.307, the reimbursement fee portion of the SDC is limited to funding capital improvement projects associated with the repair and replacement of existing assets, while the improvement fee portion of the SDC is limited to funding capital projects which increase system capacity. This analysis assumes a target minimum balance equal to 1% of plant in service assets, based on the constructed plant assets listed in the City's fixed asset schedules.

B.2 Capital Funding

The City can use a variety of funding sources to pay for capital costs:

- ◆ **Grants/Developer Contributions.** These funds are outside sources of funding that derive from third-party sources and contribute toward certain capital projects – the City would most rationally use this money to fund project costs before tapping its own resources. Per City staff, neither utility expects to receive grant funding in the near future.
- ◆ **Cash.** This is the pool of money that the City has set aside for capital purposes, and would include SDC revenues, interest earned on money in the SDC Fund, and any excess operating fund balances.
- ◆ **Loans.** To the extent that low-cost loans are available, they would be used to supplement cash funding for projects. These funds generally require the availability of a loan program, and may come with other requirements. Based on input from City staff, the analysis does not assume any low-cost loans.
- ◆ **Revenue Bonds.** Revenue bonds would be used to cover capital needs in excess of other available resources. They are considered less desirable than other forms of debt due to their relatively high interest rates and additional coverage requirements; they require the City to pledge its rate revenues for their repayment. These bonds are assumed to have an interest rate of 5.0%, a repayment term of 20 years, an issuance cost equal to 1.5% of the amount issued, and a reserve requirement equal to one year's debt service.

B.3 Financial Performance

The utility's financial performance policies define the minimum standards for annual financial performance. The City's budget process establishes a common utility standard for a balanced budget. Beyond that minimum, the utility budgeting process should also meet the minimum reserve requirements outlined above. In general, this standard results in an annual requirement for positive cash flow from operations. A possible short-term exception would be when the Operating Fund balance exceeds the relevant minimum balance requirements and the City makes an explicit decision to transfer the surplus for capital project funding, or to phase in rate increases over time.

The second criterion relates to utility debt service coverage. The City's utilities currently do not have any outstanding revenue bond debt with specified coverage covenants. When applicable, however, a debt service coverage calculation takes into consideration the coverage requirements, allowable revenues, and expenses that are considered to be "operational". All subordinate debt is excluded from the calculation on the premise that such debt would hold a junior position and would only be repaid after revenue bond payments are satisfied. Because the coverage test does not consider rate-funded capital funding (depreciation), other rate-funded capital outlays, or reserve funding needs, it is conceptually possible that a utility could meet its coverage requirements yet end up with negative cash flow after all debt service is paid.

A common requirement for utility bond coverage is a coverage ratio of 1.25, meaning that the utility must generate enough revenue to cover operating expenses plus 125% of annual revenue bond debt service. Besides being a legal requirement, the coverage ratio is an important statistic used to rate a utility's financial integrity and ability to meet its existing and future debt obligations. While the legal minimum coverage ratio is usually 1.25, many cities elect to maintain an internal coverage requirement of 1.50 as a conservative buffer should the utility look for additional bond funding in the future. For purposes of this analysis, the minimum coverage ratio is assumed to be 1.50. Revenue generated to comply with coverage requirements may be used for capital purposes, and may reduce the amount of revenue needed to meet cash needs in subsequent years – it can also be used to meet

capital requirements (and may thus reduce future borrowing), but generally cannot be held over to reduce coverage needs in subsequent years.

C. RATE DESIGN

The principal objective of the rate design stage is to develop water rate structures that collect sufficient revenue to meet the overall financial requirements of the utility. Most rate structures consist of a combination of fixed and variable charges. Fixed charges typically attempt to cover system costs that do not vary with usage, but in practice only recover a portion of those costs (as the majority of utility costs are fixed in nature). Variable charges typically serve two functions, equitably recovering variable costs such as chemicals and electricity and encouraging customers to use the system efficiently (e.g. conservation).

The rate design process takes several metrics into consideration, evaluating existing and potential rate structures and balancing each alternative against the follow policy objectives:

- ◆ **Equitable.** Utility rates should represent the true cost drivers of the utility. Costs are incurred for multiple reasons (average usage patterns, peak usage patterns, flow capacity, etc.), and a rate structure should reflect these underlying principles, as much as possible.
- ◆ **Affordable.** Although the revenue requirement analysis results will ultimately determine the total amount of rate revenue needed by the utility, there are affordability metrics that are important to keep in mind, especially during dramatic shifts between rate structures.
- ◆ **Promotes Efficient Use.** Depending on the priorities of the utility, rate structures can send a price signal to incentivize efficient usage patterns. It is important to pay attention to the underlying message that consumers may receive due to a particular rate structure.
- ◆ **Revenue Stability.** When determining the ratio between fixed and variable charges, a rate structure should maintain a healthy amount of fixed revenues, as variable revenues have the potential to fluctuate significantly depending on season, weather patterns, and customer sensitivity.
- ◆ **Administratively Feasible.** The utility's billing software must possess the flexibility required to implement the proposed rate structure intricacies. Most modern billing systems (including the City's) are more than capable of applying complex rate structures to the customer base.

SECTION III: WATER UTILITY

A. INTRODUCTION

In 2012, the City of La Pine assumed the role and responsibilities of the La Pine Water District. Water rates have not increased since the creation of the La Pine Water District (2003), and the rate structure definitions saw only minor revisions in 2010. With the City's recent transition into the role of a water service provider, a strong financial plan is of the utmost importance.

B. REVENUE REQUIREMENT

A revenue requirement analysis forms the basis for a long-range financial plan and multi-year rate management strategy. The analysis is developed by completing an operating forecast that identifies future annual operating costs and a capital funding plan that defines a strategy for funding the capital improvement needs of the City.

B.1 Operating Forecast

The purpose of the operating forecast is to determine whether the existing rates and charges are sufficient to recover the costs the City incurs to operate and maintain the water system. The fiscal year (FY) 2015 budget provided the primary basis for forecasting FY 2016 through FY 2033 expenses. The main focus of the report is on the first six (6) year projection period; FY 2015 through FY 2020. The complete forecast can be found in the technical appendix. The ensuing discussion highlights the key assumptions used to develop the water utility operating forecast.

Reserves

- ◆ **Operating Reserves.** A minimum of 60 days of operating and maintenance (O&M) expenses (\$65,000 to \$68,000, per discussion with City staff and industry standards).
- ◆ **Capital Contingency (SDC Fund) Reserves.** A target of 1% percent of plant in service (\$32,000 to \$48,000, per discussion with City staff and industry standards).

Operating Revenue

- ◆ **Retail Rate Revenue.** Retail rate revenue projections were calculated by applying the FY 2015 rate structure to detailed customer statistics (accounts by meter size and water usage) from the City's billing system, adjusting for expected growth.
- ◆ **Non-Rate Revenue.** Non-rate revenue consists primarily of backflow testing fees, water hook-up charges, and late fees (based on budget provided by City).
- ◆ **Customer Growth.** An annual growth rate of 0.70% (10 new connections per year) was assumed to stay constant throughout the study period.
- ◆ **Interest Earnings.** Interest earned on beginning fund balances was assumed to behave similarly to the Oregon local government investment pool (LGIP) 5-year average, earning 0.54% per year.

O&M Expenses

- ◆ **General Cost Inflation.** 1.59% per year (based on 5-year historical average Consumer Price Index (CPI) and discussion with City staff).
- ◆ **Construction Cost Inflation.** The provided capital improvement program was the 2009 Water System Capital Facilities Plan. Based on direction from the City, costs were escalated by the Engineering News Record Construction Cost Index (ENR-CCI) to bring them up to 2014 dollars. To project costs beyond FY 2014, an annual escalation rate of 2.81% per year was used (based on 5-year historical average ENR-CCI).
- ◆ **Labor Cost Inflation.** 3.50% per year (based on discussion with City staff).
- ◆ **Benefit Cost Inflation.** 7.00% per year (based on discussion with City staff).

Debt Service

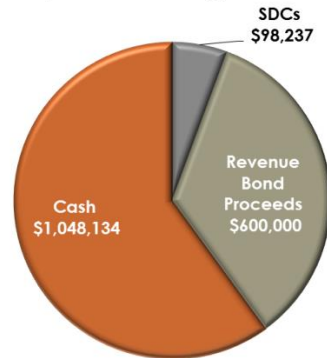
- ◆ **Existing Debt.** The water utility's existing debt obligations consist of two (2) revenue bonds that were transferred to the City from the La Pine Water District, purchased by the U.S. Department of Agriculture, Rural Development Department. The Series 2003 Revenue Bond matures November 2032, while the Series 2005 Revenue Bond matures February 2035. Over the study period, the total annual debt service stays constant at \$193,504 per year.
 - Based on the City's recent financial statements, there are two additional debt instruments that have been carried over from the previous Districts: (1) a non-interest bearing note payable to Deschutes County from the Water District for \$60,000 (no current repayment terms or obligations are noted); and (2) an Intergovernmental Agreement between the previous Sewer District and Deschutes County for \$1,130,350 (\$806,742 remaining as of June 2013). This agreement states that all SDCs collected from the Crescent Creek subdivision must be used for repayment of the loan, until the loan is paid in full. Other than the Crescent Creek SDCs, no other loan payments are required by the City in the future. City staff assumes that of the ten (10) anticipated new connections per year, an average of three (3) will connect to the Crescent Creek subdivision.
- ◆ **New Debt.** One new debt issue is anticipated to fund the \$1.75 million (inflated with ENR to the year of construction) capital program. Existing fund balances will cover the majority of the capital improvement program, but in order to fund the \$1.23 million reservoir in 2018 (inflated with ENR-CCI to the year of construction), we anticipate that the City may need to seek \$600,000 in additional financing to cover the remaining costs. The new \$600,000 revenue bond would result in an annual debt service payment of \$53,000 for the next 20 years.

B.2 Capital Funding Plan

The water utility's FY 2015 through FY 2024 capital plan includes \$1.75 million in anticipated capital expenditures, inflated to the year of construction using the ENR-CCI. The projects include a new 1.20 million gallon reservoir, Newberry line extensions, and Russell Road improvements. The capital funding strategy envisions funding these projects through a mix of available cash balances (including interest earnings), SDC revenues, and new revenue bond proceeds. **Table 3.1** provides a summary of the funding sources for the water utility capital plan. A detailed capital plan can be found in the Technical Appendix.

Table 3.1: Water Capital Funding Summary

Capital Funding Sources



B.3 Revenue Requirement Summary

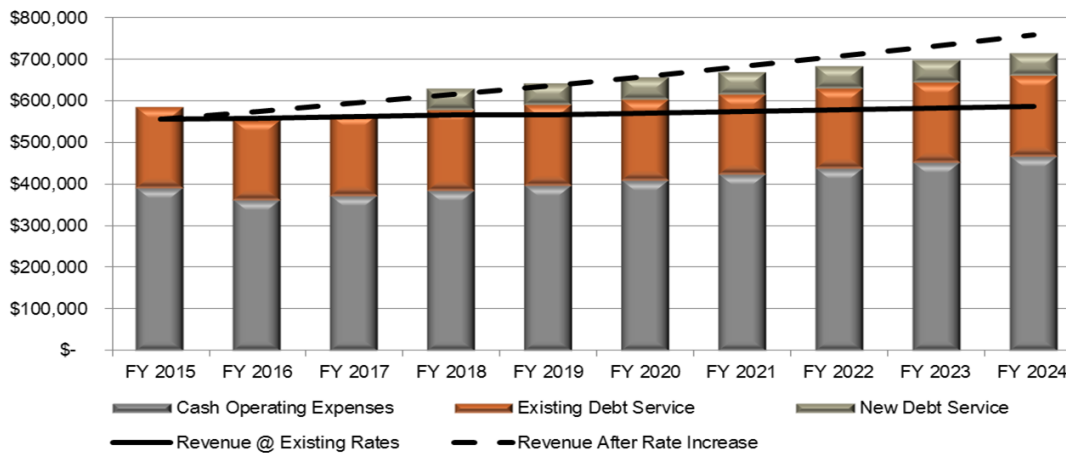
The operating forecast components come together to form the multi-year revenue requirement. The revenue requirement compares the overall revenue available to the water system to the expenses and evaluates the sufficiency of rates on an annual basis. **Table 3.2** provides the water utility’s short-term revenue requirement forecast for the study period (FY 2015 - FY 2020). The complete revenue requirement forecast (FY 2015 - FY 2024) is included in the technical appendix, but a graphical illustration is provided in **Table 3.3** in order to communicate long-term results.

Table 3.2: Short-Term Revenue Requirement Summary - Water Utility

Revenue Requirement	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Revenues @ Existing Rates						
Rate Revenues Under Existing Rates	\$ 533,725	\$ 537,461	\$ 541,223	\$ 545,012	\$ 548,827	\$ 552,669
Non-Rate Revenues	21,587	20,377	20,510	20,693	18,004	17,993
Total Revenues	\$ 555,312	\$ 557,838	\$ 561,733	\$ 565,705	\$ 566,831	\$ 570,661
Expenses						
Cash Operating Expenses	\$ 392,580	\$ 363,114	\$ 374,514	\$ 386,392	\$ 398,773	\$ 411,683
Existing Debt Service	193,504	193,503	193,504	193,504	193,504	193,504
New Debt Service	-	-	-	52,921	52,921	52,921
Rate Funded System Reinvestment	-	-	-	-	-	-
Total Expenses	\$ 586,084	\$ 556,617	\$ 568,018	\$ 632,817	\$ 645,198	\$ 658,108
Net Surplus (Deficiency)	\$ (30,772)	\$ 1,221	\$ (6,285)	\$ (67,113)	\$ (78,367)	\$ (87,447)
Additions to Meet Coverage	-	-	-	-	-	-
Total Surplus (Deficiency)	\$ (30,772)	\$ 1,221	\$ (6,285)	\$ (67,113)	\$ (78,367)	\$ (87,447)
Annual Rate Adjustment	0.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Cumulative Annual Rate Adjustment	0.00%	3.00%	6.09%	9.27%	12.55%	15.93%
Rate Revenues After Rate Increase	\$ 533,725	\$ 553,585	\$ 574,184	\$ 595,549	\$ 617,709	\$ 640,694
Net Cash Flow After Rate Increase	(30,772)	17,344	26,675	(16,575)	(9,484)	579
Coverage After Rate Increases	n/a	n/a	n/a	4.57	4.74	4.93

Table 3.3: Long-Term Revenue Requirement Summary - Water Utility

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Projected Rate Increases	0.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%



Key findings of the water revenue requirement analysis include:

- ◆ Current rate revenue levels are not sufficient to meet the water utility’s FY 2015 financial obligations, but with budgetary adjustments from City staff, the water utility will see a net cash flow result close to zero in years FY 2016 and FY 2017. At existing rates, the utility would run an annual deficiency of \$67,000 in FY 2018 to \$87,000 in FY 2020, due to the new debt service payment.
- ◆ Rate increases are in response to:
 - New debt issue in FY 2018: proceeds total \$600,000
 - Future cost inflation
- ◆ To meet the total projected financial obligations of the water utility, rate increases are proposed at inflationary levels of 3.00% per year, beginning in FY 2016. From a net cash flow perspective, the water utility does not require a rate increase until FY 2018, but incorporating a flat-line “rate-smoothing” strategy helps the utility avoid a ~12% rate spike in FY 2018.
- ◆ With the proposed rate adjustments, the water utility is expected to meet its minimum balance and bond coverage requirements throughout the study period.

C. RATE DESIGN

As mentioned previously, the principal objective of the rate design process is to create a rate structure that collects a sufficient amount of revenue, while balancing key policy objectives. Part of this study involved evaluating the existing rate structure across a number of key metrics. As a result, an alternative rate structure is recommended.

C.1 Existing Water Rates

The existing water rates are charged on an equivalent dwelling unit (EDU) basis, in which one residential customer is equal to 1.0 EDU, and commercial customers are assigned an EDU count according to their business type. To name a few, for example: laundromats are assigned 1.0 EDU per washing machine, schools are assigned 0.1 EDU per student, and restaurants are assigned 1.0 EDU plus 0.1 EDU per seat. Monthly fixed charges are currently \$27.34 per EDU, regardless of the customer's meter size or class (residential vs. commercial), and includes 3,600 gallons per EDU of water use. Variable charges are assessed to all usage above the 3,600 gallon/EDU allowance threshold, at a rate of \$2.00 per 1,000 gallons. Fixed revenues make up 86% of the water utility's annual rate revenue.

C.2 Proposed Water Rates

Upon examination of the current rate structure, the proposed water rates include several structural changes:

- ◆ **Fixed Charges - All Customers.** It is recommended that the City eliminate the EDU-based structure, and instead, charge monthly fixed rates according to meter size, based on industry standard meter capacity equivalents (MCEs). Recognizing that water infrastructure is built to meet the system's peak demands; customers should be charged according to the amount of water they have access to at any given time. The American Water Works Association (AWWA) lists industry standard flow factors, in which each meter's flow factor is a function of the maximum amount of water that can travel through the pipe. Using a 1" meter as an example, a 1" meter can draw up to 2.5 times the amount of water when compared with a 5/8" meter. This ratio equates to a 1" fixed charge that is 2.5 times the 5/8" fixed charge. Per discussion with City staff, 5/8" meters and 3/4" meters are treated equally (MCE factor of 1.0), to respond to the fact that 5/8" and 3/4" meters are installed interchangeably among the residential class. The fixed rate methodology is the same for residential and commercial customers, starting at \$28.90 per month (5/8" and 3/4" meters).
- ◆ **Variable Charges - Residential Customers.** Proposed variable rates are applicable to all water usage instead of only the usage above an allowance (3,600 gal/EDU). Residential customers are to be charged according to an inverted block structure, consisting of three tiered blocks. Under this structure, once a customer's water usage exceeds the threshold for each block, any additional usage is charged at the next tiered rate level. As mentioned above, the water system is built to meet peak demands; an inverted block structure recognizes the fact that residential customers typically use water inconsistently both on a daily basis (morning and evening patterns) and a seasonal basis (increased use during summer months for irrigation purposes). The inconsistent usage patterns of the residential class impacts the system's peaking factor (peak use to average use) more than a typical commercial customer would. An inverted block structure aims to promote efficient water use among the residential class, and adds an incentive for low-users. The inverted block structure and its corresponding rates are summarized below:
 - Tier 1 - 0 to 3,600 gal: \$1.20 per 1,000 gallons
 - Tier 2 - 3,601 gal to 7,200 gal: \$1.80 per 1,000 gallons
 - Tier 3 - 7,201 and above: \$3.00 per 1,000 gallons
- ◆ **Variable Charges - Commercial Customers.** Proposed variable rates are applicable to all water usage instead of only the usage above an allowance (3,600 gal/EDU). Unlike the residential class, commercial customers tend to use water fairly consistently. Because of these usage characteristics, we recommend that the commercial class be charged \$2.50 per 1,000 gallons of water use.

Table 3.4 provides a summary of the proposed FY 2016 water rates, which includes a 3% increase in total rate revenues.

Table 3.4: Proposed Monthly Water Rates

Meter Size	MCE Factor	Residential	Commercial
		\$ / Meter	
5/8"	1.00	\$ 28.90	\$ 28.90
3/4"	1.00	28.90	28.90
1"	2.50	72.24	72.24
1 1/2"	5.00	144.48	144.48
2"	8.00	231.16	231.16
3"	16.00	462.33	462.33
4"	25.00	722.39	722.39
6"	50.00	1,444.77	1,444.77
Volume Charges		\$ / 1,000 gal	
Tier 1: 0 - 3,600 gal		\$ 1.20	\$ 2.50
Tier 2: 3,601 - 7,200 gal		\$ 1.80	\$ 2.50
Tier 3: > 7,200 gal		\$ 3.00	\$ 2.50

***Includes 3% overall increase in revenue**

D. SUMMARY

Water rate revenues at current levels are not sufficient to fund ongoing water system obligations in the future. **Table 3.2** shows an operating deficit of about \$67,000 in FY 2018 – given anticipated increases in operating costs and the policy decision to take on new debt service associated with the capital improvement program, this deficit would increase to \$87,000 by FY 2020. To meet these upcoming needs, the water revenue strategy proposes an annual 3.0% rate increase beginning in FY 2016. The rate forecast shown above in **Table 3.4** assumes that these increases will be applied accordingly. The proposed rates incorporate several structural changes including:

- ◆ The EDU-based structure is eliminated. Customers are charged a monthly fixed charge according to their meter size;
- ◆ The 3,600 gallons per EDU allowance is eliminated;
- ◆ The residential and commercial classes have an independent variable charge that varies by class;
 - The residential variable charge is now based on an including block structure;
 - The commercial class is charged the same rate for all water usage.

We recommend that the City revisit the study findings on an annual basis to check that the assumptions used are still appropriate and no significant changes have occurred that would alter the results of the study. The City should continue to monitor the financial status of the water utility, adjusting the water rate strategy as needed.

The detailed technical exhibits developed as part of the water rate study can be found at the end of this report in the Technical Appendix.

SECTION IV: SEWER UTILITY

A. INTRODUCTION

In 2012, the City of La Pine assumed the role and responsibilities of the La Pine Special Sewer District. Before 2012, sewer rates were most recently increased in fiscal year 2011, and the rate structure has only seen minor revisions (2009) since. With the City's recent transition, a strong financial plan is of the utmost importance.

B. REVENUE REQUIREMENT

Similar to the water utility, a revenue requirement was completed for the sewer utility and forms the basis for the long-range financial plan and multi-year financial management strategy. The analysis is developed by completing an operating forecast that identifies future annual operating costs and a capital funding plan that defines a strategy for funding the capital improvement needs of the City.

B.1 Operating Forecast

The purpose of the operating forecast is to determine whether the existing rates and charges are sufficient to recover the costs the City incurs to operate and maintain the water system. The FY 2015 budget provided the primary basis for forecasting FY 2016 through FY 2033 expenses. The main focus of the report is on the first six (6) year projection period; FY 2015 through FY 2020. The complete forecast can be found in the technical appendix. The ensuing discussion highlights the key assumptions used to develop the water utility operating forecast.

Reserves

- ◆ **Operating Reserves.** A minimum of 60 days of O&M expenses (\$75,000 to \$83,000, per discussion with City staff and industry standards).
- ◆ **Capital Contingency (SDC Fund) Reserves.** A target of 1% percent of plant in service (\$26,000 to \$70,000, per discussion with City staff and industry standards).

Operating Revenue

- ◆ **Retail Rate Revenue.** Retail rate revenue projections were calculated by applying the FY 2015 rate structure to detailed customer statistics (accounts by meter size and water usage) from the City's billing system, adjusting for expected growth.
- ◆ **Non-Rate Revenue.** Non-rate revenue consists primarily of septic service fees, grease trap pumping, and late fees (based on budget provided by City).
- ◆ **Customer Growth.** An annual growth rate of 0.70% (10 new connections per year) was assumed to stay constant throughout the study period.
- ◆ **Interest Earnings.** Interest earned on beginning fund balances was assumed to behave similarly to the Oregon LGIP 5-year average, earning 0.54% per year.

O&M Expenses

- ◆ **General Cost Inflation.** 1.59% per year (based on 5-year historical average CPI) and discussion with City staff).
- ◆ **Construction Cost Inflation.** The provided capital improvement program was the 2006 Wastewater System Capital Facilities Plan. Based on direction from the City, costs were escalated by the Engineering News Record Construction Cost Index (ENR-CCI) to bring them up to 2014 dollars. To project costs beyond FY 2014, an annual escalation rate of 2.81% per year was used (based on 5-year historical average ENR-CCI).
- ◆ **Labor Cost Inflation.** 3.50% per year (based on discussion with City staff).
- ◆ **Benefit Cost Inflation.** 7.00% per year (based on discussion with City staff).

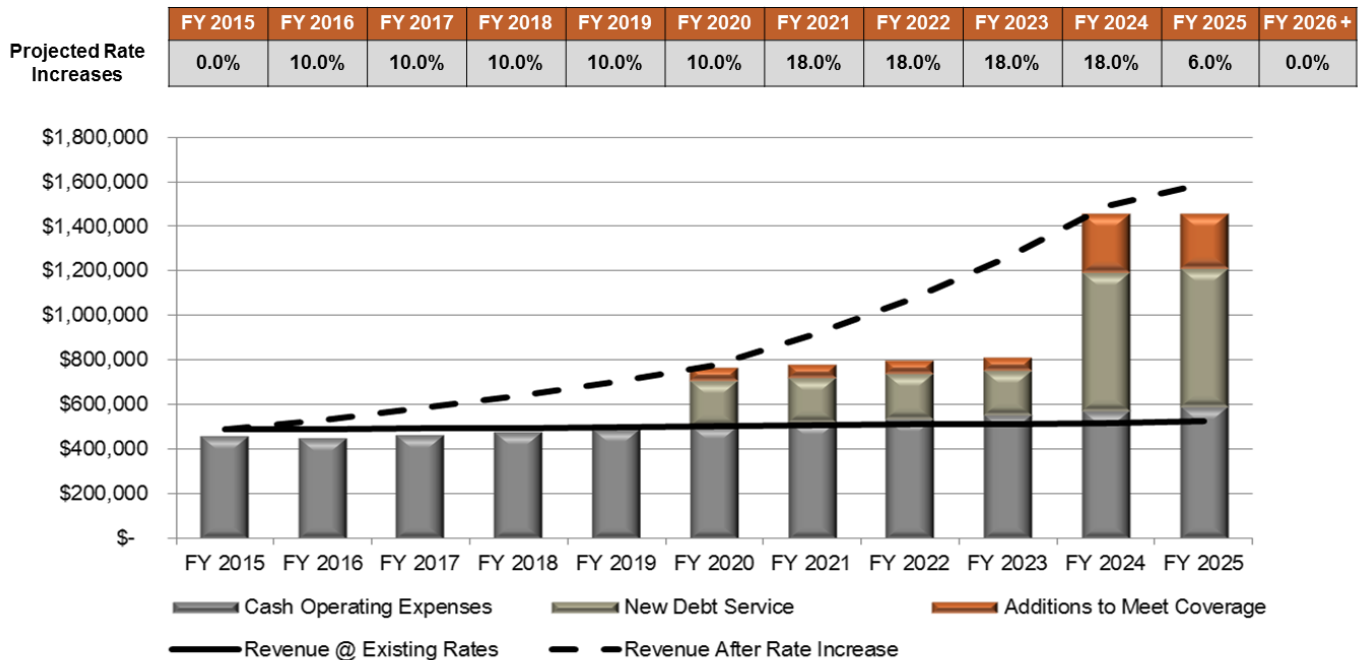
Debt Service

- ◆ **Existing Debt.** The sewer utility currently does not have any outstanding debt obligations.
 - Based on the City's recent financial statements, there is one additional debt instrument that has been carried over from the previous Sewer District; an Intergovernmental Agreement with Deschutes County for \$1,130,350 (\$806,742 remaining as of June 2013). The agreement states that all SDCs collected from the Crescent Creek subdivision must be used for repayment of the loan, until the loan is paid in full. Other than the Crescent Creek SDCs, no other loan payments are required by the City in the future. City staff assumes of the anticipated ten (10) new connections per year, an average of three (3) will connect to the Crescent Creek subdivision.
- ◆ **New Debt.** In order to fund the \$12.13 million (inflated with ENR to the year of construction) capital program, the City will likely need to explore additional financing options to complete the CIP. While fund balances above the minimum requirements and future SDCs will cover a portion, we anticipate that the City will need to obtain \$2.30 million in revenue bond proceeds in FY 2020, and an additional \$4.75 million in FY 2024 to complete the capital program. These assumptions could change in the event that the capital plan timing or magnitude is altered in any way. The new \$2.30 million revenue bond would result in an annual debt service payment of \$202,865 for 20 years, and the \$4.75 million revenue bond would result in an additional annual debt service payment of \$418,960 for 20 years.

B.2 Capital Funding Plan

The sewer utility's FY 2015 through FY 2026 capital plan includes \$12.13 million in anticipated capital expenditures, inflated to the year of construction using the ENR-CCI. The capital funding strategy envisions funding these projects through a mix of available cash balances (including interest earnings), SDC revenues, and new revenue bond proceeds. **Table 4.1** provides a summary of the capital projects and associated funding sources for the sewer utility capital plan. A detailed capital plan can be found in the Technical Appendix.

Table 4.3: Long-Term Revenue Requirement Summary - Sewer Utility



Key findings of the sewer revenue requirement analysis include:

- ◆ Current revenue levels are sufficient enough to meet the sewer utility’s financial obligations under existing operations. However, given the large capital program and related new debt assumptions in FY 2020 and FY 2024, the sewer utility could potentially see a net cash flow deficit of \$267,938 in FY 2020, should sewer rates stay at existing levels. In order to avoid a 61% rate spike in 2020, it is recommended that the sewer utility smooth out future rate increases over a number of years in anticipation of future debt service requirements.
- ◆ Rate increases are in response to:
 - New debt issue in FY 2020: proceeds total \$2,600,000
 - New debt issue in FY 2024: proceeds total \$4,750,000
 - Future cost inflation
- ◆ To meet the total projected financial obligations of the sewer utility, annual rate increases of 10% per year are proposed in fiscal years 2015-2020; 18% per year in fiscal years 2021-2024; and 6% in fiscal year 2025. Incorporating a “rate-smoothing” strategy helps the utility avoid substantial rate hikes in FY 2020 and FY 2024.
- ◆ With the proposed rate adjustments, the sewer utility is expected to meet its minimum balance and bond coverage requirements throughout the study period.

C. RATE DESIGN

As mentioned previously, the principal objective of the rate design process is to create a rate structure that collects a sufficient amount of revenue, while balancing key policy objectives. Part of

this study involved evaluating the existing rate structure across a number of key metrics. As a result, an alternative rate structure is recommended.

C.1 Existing Sewer Rates

Similar to water rates, the existing sewer rates are charged on an equivalent dwelling unit (EDU) basis, where one residential customer is equal to 1.0 EDU, and commercial customers are assigned an EDU count according to their business type. To name a few, for example: laundromats are assigned 0.25 EDU per washing machine, schools are assigned 0.01 EDU per student, and restaurants are assigned 1.0 EDU plus 0.1 EDU per seat. Currently, sewer customers are only charged a monthly fixed charge; \$24.00 per residential EDU and \$27.00 per commercial EDU. As such, fixed revenues make up 100% of the sewer utility's annual rate revenue.

C.2 Proposed Sewer Rates

Upon examination of the current rate structure, the proposed sewer rates include several structural changes:

- ◆ **Fixed Charges - All Customers.** It is recommended that the City eliminate the EDU-based structure, and instead, charge monthly fixed rates according to meter size, based on meter capacity equivalents (MCEs). It is important to recognize that sewer infrastructure is built to serve the system in a related, but different capacity than the water utility, as the sewer utility is built to serve base (average) water demand and the water utility for peak (capacity) demands. We recommend that a sewer customer's fixed charge be made up of two components: (1) a meter charge which is the same for all customers, regardless of customer class or meter size, and (2) a MCE charge incorporating the same industry standard flow factors from the water rate analysis. Illustrated in **Table 4.4**, a 5/8" meter would be charged the meter charge of \$10.27 plus the MCE charge of \$8.76, equating to a total monthly fixed charge of \$19.03. Customers with larger meters will see the same meter charge of \$10.27 per month, and a MCE charge that varies according to the MCE flow factors.
- ◆ **Variable Charges - Residential Customers.** It is recommended that the City begin charging customers according to the amount of water expelled into the sewer system. Residential and commercial customers impact the sewer system in different capacities, and a variable rate structure should reflect this. A typical residential customer will use more water during summer months for irrigation purposes, but this water seeps into the ground and does not affect the sewer system. As such, we recommend that residential customers be charged a variable sewer rate based on their average winter monthly water consumption, in which November through February are defined as winter months, per direction from City staff. Once a year, the City's billing system will calculate the average winter monthly water use for each customer and this value will be used as the basis for the customer's variable sewer charge until the next year of billing calculations. Residential customers will be charged \$3.00 for every 1,000 gallons of average winter monthly water usage.
- ◆ **Variable Charges - Commercial Customers.** As the majority of a commercial customer's water use will end up in the sewer system, the proposed variable sewer rate is applicable to all commercial water usage. Based on these usage patterns, we recommended that the commercial class be charged \$5.55 for every 1,000 gallons of water use.

Table 4.4 provides a summary of the proposed FY 2016 sewer rates, which includes a 10% increase in total rate revenues.

Table 4.4: Proposed Monthly Sewer Rates

Meter	MCE Factor	\$ / Meter	\$ / MCE	Total Fixed
5/8"	1.00	\$ 10.27	\$ 8.76	\$ 19.03
3/4"	1.00	10.27	8.76	19.03
1"	2.50	10.27	21.90	32.17
1 1/2"	5.00	10.27	43.81	54.08
2"	8.00	10.27	70.09	80.36
3"	16.00	10.27	140.18	150.45
4"	25.00	10.27	219.04	229.31
6"	50.00	10.27	438.07	448.34
Volume Charge				
Residential	\$ 3.00	per 1,000 gal of avg. winter water usage		
Commercial	\$ 5.55	per 1,000 gal of all water usage		

**Includes 10% increase in total revenue*

D. SUMMARY

Sewer rate revenues at current levels are not sufficient to fund the new debt service associated with future capital improvement projects. **Table 4.2** shows an operating deficit of \$267,938 in FY 2020 (growing to \$943,283 after the additional debt issue in FY 2024) – given anticipated increases in operating costs and the policy decision to take on new debt service associated with the capital improvement program. To meet these upcoming needs, the sewer rate strategy proposes annual rate increases of 10% per year in fiscal years 2015-2020; 18% per year in fiscal years 2021-2024; and 6% in fiscal year 2025. Incorporating a “rate-smoothing” strategy helps the utility avoid substantial rate hikes in FY 2020 and FY 2024. The rate forecast shown in **Table 4.4** assumes that these increases will be applied accordingly. The proposed rates incorporate several structural changes including:

- ◆ The EDU-based structure is eliminated. In the proposed rate structure, customers are charged a monthly fixed charge which includes a consistent meter charge for all customers, as well as a MCE charge which varies by meter size;
- ◆ Sewer customers are charged for variable water consumption, where rate parameters are dependent on customer class.
 - The residential class variable rate is applied to each customer’s average winter monthly water usage;
 - The commercial class variable rate is applied to each customer’s monthly water usage.

We recommend that the City revisit the study findings on an annual basis to check that the assumptions used are still appropriate and no significant changes have occurred that would alter the results of the study. The City should continue to monitor the financial status of the sewer utility, adjusting the rate strategy as needed.

The detailed technical exhibits developed as part of the sewer rate study can be found at the end of this report in the Technical Appendix.

TECHNICAL APPENDIX: WATER UTILITY

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TECHNICAL APPENDIX: SEWER UTILITY

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