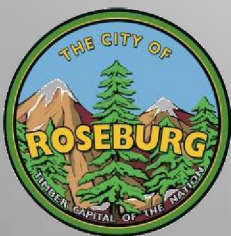


City of Roseburg Water Utility Water Rate Study

Prepared by:
C. Lance Colley, City Manager
Ron Harker, Finance Director
Nikki Messenger, Public Works Director

September 30, 2015



City of Roseburg Water Rate Study

September 2015

Introduction

In February 2015, the Roseburg City Council re-adopted a goal to “Identify and implement long-term infrastructure funding mechanisms to ensure the City can meet long-term infrastructure stability and sustainability”. In 2013, Council adopted Resolution 2013-1 which implemented a new five-year fee schedule for the City’s Storm Drainage Utility to carry out the long-term master plan priority activities and to maintain the City’s drainage system. The purpose of this study is to provide the City Council, through its Public Works Commission, with recommendations for updated Water Utility rates that will provide equitable, stable and affordable rates and will provide adequate resources to meet our citizens’ long-term demands for high quality domestic water service.

To determine how best to meet the system demands and citizen needs, staff relied on multiple documents that have been prepared by independent consultants in recent years to develop the capital cost components that will affect future rates. The “City of Roseburg Water Treatment Facilities Preliminary Design Report” dated July 2009 and the “Water System Master Plan” dated July 2010 were both prepared by Murray, Smith and Associates, Inc. and were relied upon extensively as the most recent and reliable data available for the City’s water system. The 2010 Master Plan included a relatively detailed 20 year Capital Improvement Plan recommendation and a 50 year water demand forecast.

The City currently provides potable water to approximately 30,000 people in the City’s Urban Growth Boundary Area and limited areas outside the UGB (a limited portion of Charter Oaks and Dixonville). In accordance with our Comprehensive Plan, no new services are allowed outside the UGB, and recent population growth projections completed by Portland State University indicate that expected population increases for the UGB will be very moderate at a rate of 1.2% annually. Based on recent trend information, new technology and consumer conservation we anticipate the water consumption will likely only grow by about the same percentage as population unless a significant user locates within the utility boundaries. This lower population and water demand growth will allow the City to spread portions of the cost of expansion out over a longer period of time.

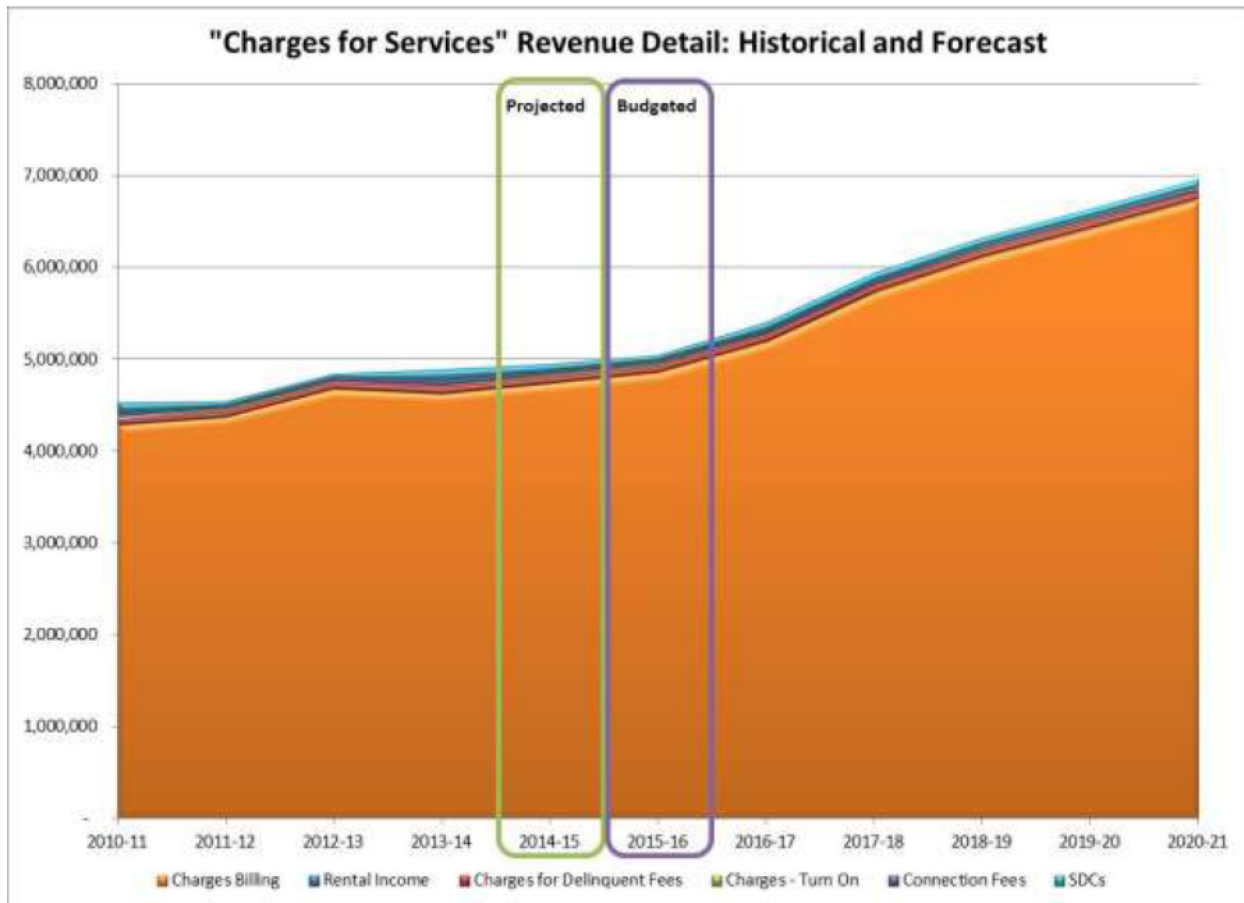
The water plant treatment capacity is currently rated at 12 million gallons per day (MGD), limited primarily by the amount of water that can be treated through the plant’s four existing filters. The plant was designed to be expanded to 18 MGD, which would require the addition of two filters and other treatment plant modifications. In the Design study of 2009, the conclusion was that the expansion to 18 MGD should have been completed in 2012. Based on capacity utilization and current usage trends, it appears that the existing treatment plant capacity will meet the community’s needs for the immediate future and likely for the next twenty-five to thirty years. More accurate capacity utilization measurements indicate that overall water production and consumption are not increasing at the 2009

estimated rates, and consumer utilization through conservation has reduced overall consumption during the ensuing five years.

Plant expansion cost estimates from the 2009 Study indicated an estimated cost of \$7.6 million. Adding inflationary factors would likely lead to a current cost of between \$8 and \$8.5 million. Because the expansion will need to be done as one large project rather than being phased, it will likely require a combination of debt financing and utilization of a portion of the Water Utility Fund reserves. In the current interest rate environment, an \$8 million debt issuance repaid over ten-years could be issued at par with interest rates in an average range of around 2.5% with annual payments of just in excess of \$900,000 for a total cost of approximately \$9.1 million. That same \$8 million debt could likely be issued today bearing interest at an average coupon of 3-3.5% for twenty years with an estimated annual cost of about \$545,000 and a total cost of about \$10.9 million. The longer time frame more closely matches the estimated time frame for utilization of the additional capacity and will generally allow for all users to pay a portion of the expansion cost. The longer time frame in low interest rate environment also allows potential rate adjustments to be more moderate.

This rate study, which is intended to estimate necessary rate adjustment during the next five years, **does not include a plant expansion or related debt**. This information is provided to allow the reader to understand the scope and magnitude of the longer term system needs and the potential for future rate implications when the plant expansion becomes necessary. The City should continue to monitor plant capacity, plant production and consumer utilization annually to determine when it will be appropriate to begin plant expansion design to meet future needs.

The expansion cost for the plant and capacity increasing system improvements are eligible for SDC inclusion as an "improvement fee" component however the utility is not currently charging the maximum amount under the current methodology, so including this cost will likely not increase available funding. The current methodology and the amount being charged should be reviewed in conjunction with this rate evaluation to determine if the SDC methodology should be updated or if the fee should be increased within the existing methodology. Currently, SDC revenues only provide about 2% of the gross system revenues (see "Charges for Services" Revenue Detail: Historical and Forecast chart). Reliance on SDC fees to provide a significant component of future capital requirements is not reasonable given historical resource generation. General water rates have generated between 93% and 96% of total water utility revenues over the last ten years and are the focus of this study (see "Charges for Services" Revenue Detail: Historical and Forecast chart).



Other needed non-plant related capital improvements outlined in the 2010 Master Plan Document contained in Section 5 of the plan include storage, pumping facilities, distribution system piping and telemetry which average about \$1.5 million over a twenty year period, but average closer to \$1.9 million in the initial ten year period. Well over 80% of the non-plant related improvement recommendations relate to the distribution system. An independent and more in-depth telemetry study performed by RH2 Engineering, Inc. undertaken in March 2014 indicated that the telemetry system had reached the end of its useful life and needs replaced as soon as practical at a cost of approximately \$1.8-\$2 million. The current rate structure and available capital resources would require this schedule be implemented over at least an 8 year period. The initial utility budget for 2015-16 includes \$200,000 for the first phase of the implementation. It is essential that this project be implemented sooner and staff is recommending the remaining \$1.6-\$1.8 million for inclusion in the capital planning over the next four years.

Based on the updated telemetry study and 2010 Water System Master Plan, the estimated annual capital needs exclusive of the water treatment plant are approximately \$2 million based on current cost estimates. To properly plan for the impacts of inflation on the capital cost, an average inflationary factor of 3% will be included in the rate evaluation.

Analysis

The City of Roseburg's water utility (Utility) currently provides domestic potable water to approximately 30,000 people and almost 1,500 businesses (generally within the City's Urban Growth Boundary area) through approximately 11,050 water meters ranging in size from our standard ¾ inch residential meter to an 8 inch meter that serves the Veterans Administration Facility. Eighty six percent of the water meters serve residential customers and ninety two percent of the meters are ¾ inch meters. Consumption in the system is made up of about 53% residential use, 37% commercial use and 10% public agency use. The largest user in the system is Veterans Administration Facility which is considered a public agency user.

The Utility serves customers in four different pressure zones, or service levels, and charges a differential for each additional level that requires pumping capacity and additional reservoir storage to provide service. The Utility's base rates start at \$9.55 for a ¾ inch service and graduates upwards based on volumetric ratios to \$305.30 per month for an 8 inch meter. Consumption is billed at a uniform rate \$1.52 per unit, which is 100 cubic feet, or approximately 748 gallons per unit. The base rate, which includes no water consumption, currently generates approximately 35% of the Utility's gross rate revenue (\$1.93 million) and consumption charges provide the other 65% (\$3.53 million).

Over time, customer utilization trends and conservation activities have actually reduced overall system consumption which in turn reduces the system's primary revenue. The elasticity of the consumption charges also tends to make revenue projections more volatile and less accurate. Our forecast model relies heavily on the usage trends for the most recent five year period and includes projections for the next five fiscal periods.

The expenditure component of the forecast model also relies heavily on the most recent five year expenditure information and includes additional periodic adjustments for retirement system increases and internal franchise fee impacts. Other trend adjustments are included and are based on trend data from the last five years. As outlined in the Introduction to this report, capital needs are forecast at \$2 million in year 1 of the model and are projected to increase at 3% annually during the five year forecast period to approximately \$2.250 million.

The Utility's historic reliance on consumption based charges has led to an inequity in the allocation of the system's fixed costs and also provides for more volatility in revenue based on conservation and weather related occurrences. This rate evaluation will take this historic reliance into consideration and will try to balance the system's fixed and variable costs more closely with the revenue generated by each type of charge.

Rate design

In developing a rate design, a number of factors can and should be included. We based our review of the relevant data on principles outlined in the American Water Works manual of water supply practices (M1) "Principles of Water Rates, Fees, and Charges" which outlines best practices in evaluating local

utility rates. The Manual considers investor owned, private and publicly owned utilities and components of rate structures that apply to each type of utility system.

For the most part, each utility looks at its water rate structure as a user charge, or schedule of user charges designed primarily to recover its costs and provide for necessary investments in infrastructure to continue to provide an appropriate level of service. Generally consideration is given to the makeup of the utility's customers, the frequency of billing and the schedule of charges. Some utilities charge differing rate schedules by customer classification i.e. residential, commercial and industrial. Historically the City has not used a differential schedule of charges, but utilized proportional base rates tied to meter size. In the previous analysis, we indicated that over ninety two percent of the utility's customers were served by the smallest meter provided in the system. A further analysis of customers indicates that seasonal usage mirrored residential usage in that spring and summer usage increased proportionately regardless of size, with only minor exceptions.

In accordance with M1, the first step in rate setting is to define goals and objectives. The City of Roseburg's rates historically provide relatively stable resources to carry out the utility objectives, however based on our most recent master plans the net resource available for capital investment is now falling short of projected needs to maintain our desired service levels. The primary goal of this study is to develop simple, understandable, and equitable rates that allow the utility to meet the needs of customers in today's environment as well as in the future. As a governmentally owned utility, the Roseburg City Council is the ultimate authority on setting utility rates. This study will be presented to the Public Works Commission to allow for input and to make a recommendation to the Council prior to rate setting action. A secondary, but important goal of this study, is to reallocate components of the rate (base fee versus consumption fee) to reduce elasticity in revenue generation.

Rate objectives common to utilities across the spectrum include- yielding necessary revenue in a stable and predictable manner, minimizing unexpected changes to customer bills, discouraging wasteful use, promoting fairness and equity, maintaining simplicity and certainty, and compliance with legal frameworks. "Evaluating and weighing the alternative rate structures and their effects against these objectives is, perhaps, the most important part in the process of selecting a rate structure" (Principles of Public Utility Rates).

The second step in the rate setting process is to evaluate alternative rate structures. Rate structures can differ by type of utility (investor owned vs. publicly owned); however they are generally designed to meet the objectives outlined in similar ways. Water rates are almost always composed of a base rate and commodity charge. Various additional charges such as service level charges, reservoir charges, or other differential cost of service charges may be added, however the primary rate structures rarely vary from a base and commodity charge.

Currently the City includes a base fee, a commodity charge, and various cost of service charges. In evaluating available alternatives we looked at standard rate models that included uniform consumption, increasing block, decreasing block and seasonal charges. Given the relative uniformity of the City's

system users consumption patterns, developing complex rate structures for consumption clearly outweighed our objective to provide simple and equitable rates. We determined early in the process that a uniform consumption charge provides for equitable, simple and understandable rates. Given that usage generally increases during warmer periods based on customer utilization of outside water, a uniform rate provides an incentive to conserve during warmer weather, and to not waste the commodity. It is simple to understand and consistent with the City's historical rate design. Increasing block rates and seasonal rates tend exacerbate increases in customer bills during warmer weather and generally leads to more uncertainty in usage patterns, which in turn leads to less predictability in our modeling.

A uniform consumption rate is expressed as a constant price per thousand gallons or price per hundred cubic feet, which is the case currently in our system. The system currently utilizes meters that allow for charges based on one hundred cubic feet units of measure. As stated previously, one hundred cubic feet approximates 748 gallons of water. We bill based on full units, so increments for billing are always expressed in whole rather than partial units. Uniform rates are simple to implement and easy to understand. A uniform rate provides customers with clear usage based price signals and understandable cost containment options. The obvious correlation for users is that the more water they consume, the higher the bill. Given that seasonal water use trends are relatively consistent throughout the system, a uniform rate rightfully implies that generally speaking, all increments of water provided are associated with the same unit cost of providing the service.

Historically, utilities that began charging base on uniform water rates considered other alternatives. Decreasing block rates generally favored large users, theoretically based on a lower per unit cost of service. Decreasing block rates generally shift the cost from larger users to residential customers, and given our density of residential customers, it seems inappropriate to consider a decreasing block rate. In some utilities, if there is an actual cost for raw water, a decreasing block rate may still be appropriate. The City has no raw water cost.

As water conservation became more popular, and in some cases a necessity, decreasing block rates were discouraged and increasing block rates became popular. However increasing block rates tend to penalize larger consistent users of the commodity and unfairly transfer the cost burden. In utilities where capacity utilization and mandatory water conservation are a necessity, increasing block rates provide incentives to use less water, and can be very affective at moderating utilization. Currently the City does not face capacity issues nor are we currently in a situation where conservation mandates have become necessary. If that happens in the future, an increasing block rate may need to be considered.

As outlined earlier, there are two primary rate components, a fixed, or base rate and the consumption charge. It is our opinion that utilizing a uniform consumption charge is the most appropriate for our utility after evaluating a number of factors previously identified. Identifying the proportion of resources that should be generated by each component of the charge is an important function of the rate study. The base charge is referred to as the fixed charge portion of the bill because it does not change from

billing period to billing period and generally serves as the minimum charge a customer must pay to receive access to the water commodity.

Water usage and sales have been declining in many parts of the county, including Roseburg. There are many reasons for the drop in sales including greater environmental awareness, conservation, consumer awareness and in some areas regulatory pressure. Certainly in our area, environmental awareness and conservation have impacted commodity utilization as has economic reality. Those who have been able to reduce commodity usage during the recession to save money certainly did. The impact of reduced usage has impacted overall utility revenues and has stressed the ability of current rates to meet system and user service level demands. In an effort to stabilize revenues at a level sufficient to meet the system infrastructure cost demands, it will be necessary to increase the current base rates at a higher proportion than the commodity charge.

It is appropriate that all users of the system pay an equitable amount for access to the commodity through the base fee. A predictable revenue stream provided by the base fee allows the utility to allocate a more equitable "cost" for provision of the actual commodity to those placing more demand on the system. It does, however, more equitably allocate the more fixed cost components of running the utility to all users. A cost of service approach to setting water rates results in a reasonable distribution of costs to all customers based, generally, on the costs that each customer causes. The allocation of fixed and variable (consumption) charge is an extension of that theory. All utilities incur significant costs associated with serving each customer irrespective of the amount of water consumption that occurs. It is appropriate to allocate all or a portion of the utility's fixed costs to customers based on a monthly or bi-monthly base charge.

Utilities have used many different types of fixed charges to allocate these costs to customers. Various types of charges include billing fees, service or meter fees, and minimum charges with or without a consumption allowance. The City has historically charged a base fee that included components of a billing fee and service fee. The base fee has not covered the cost of basic service and billing, but both components were included in the cost allocation. It is our intention to continue charging fees, by meter size, that include cost components relating to billing and basic services exclusive of commodity usage. As outlined in our analysis, the current base fee generates approximately 35% of our total utility revenues while the more elastic and volatile commodity charge generates approximately 65% of our revenues.

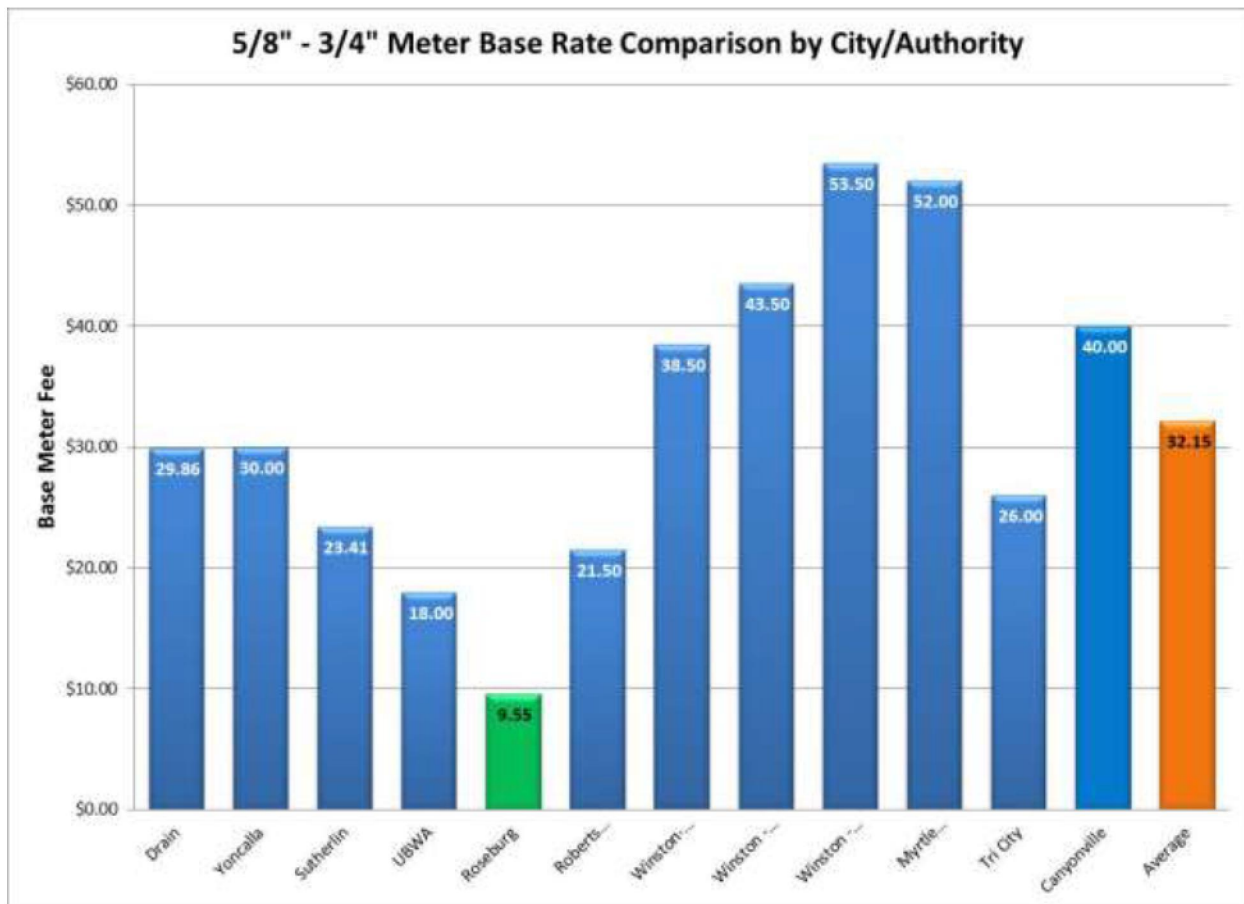
In an effort to stabilize our resources and provide for more predictable revenues, more of the system fixed cost burden will be shifted to the base charge and a more equitable cost per unit will be allocated to the commodity charge in the recommended fee structure.

Rate recommendations

The outcome of our modeling indicates that fees will need to increase to meet our system demands. In an effort to spread the overall cost increases through the system in an equitable manner, we are recommending that the base fee increases be more front loaded and that commodity fee increases be fairly uniform throughout a five year rate implementation time frame. We do not believe that it is

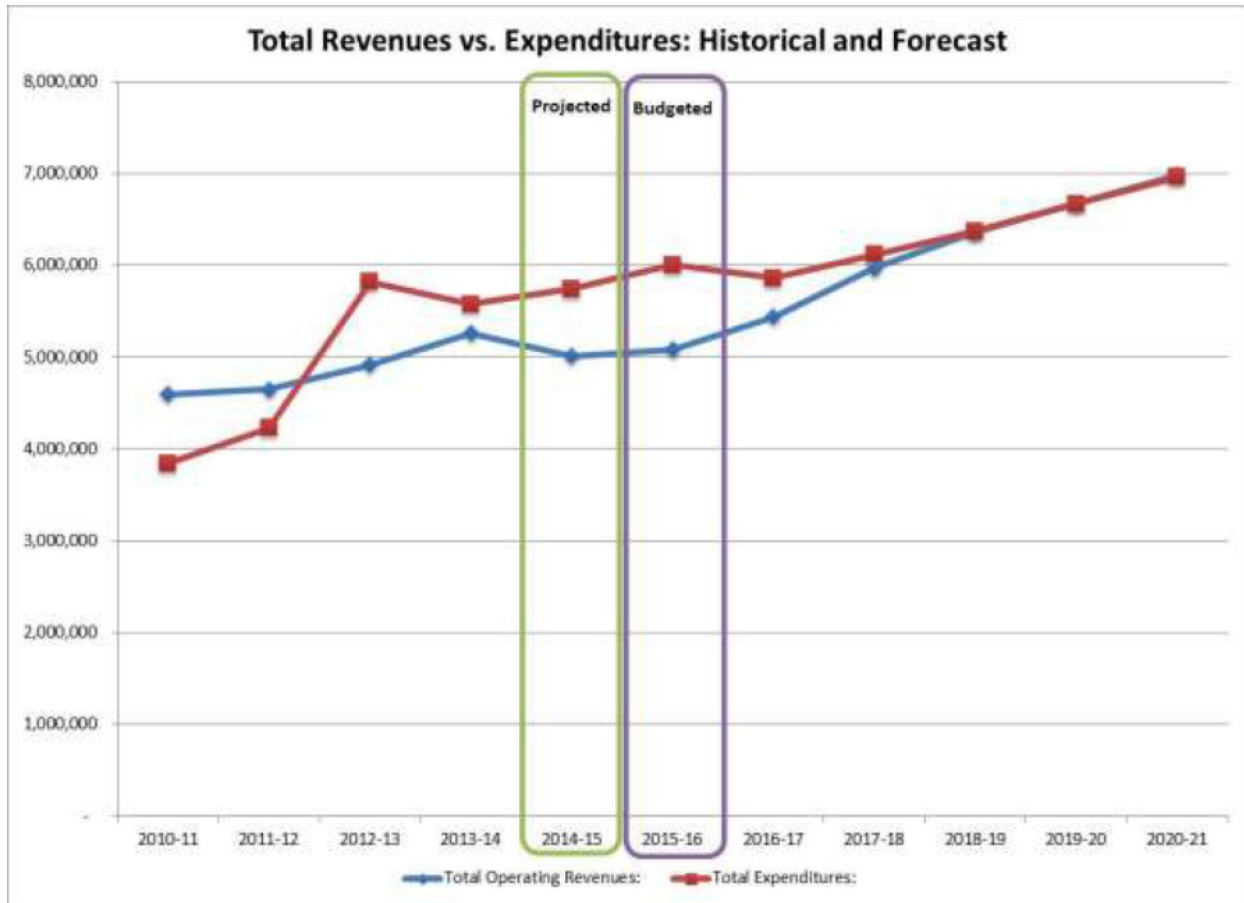
necessary to raise the rates to the maximum proposed amount immediately to meet the utility’s needs, but we do believe strongly that a systematic approach to increasing rates is necessary to implementing our master plans and meeting our community’s and customer’s demand for high quality water service.

Based on the attached model, it is staff’s recommendation that the base fee for a standard 5/8 by ¾ inch be adjust January 1, 2016 from \$9.55 per month to \$11.46, and that the base fee be increased January 1 of the succeeding years to \$13.75, \$15.13, \$15.88, and \$16.68. These fee increases will allow us to shift the approximate revenue generated by the base fee from 35% of total revenues currently to approximately 40% of total revenues in five years. At the end of the five-year period, the base fee for a standard meter will still be lower than any other local provider is charging as of the date of this report. The current base fees charged for standard meters by utilities in Douglas County ranges from the City of Roseburg’s rate of \$9.55 to a high of \$53.50 with an average monthly base rate of \$32.15. The next lowest base rate in the County is Umpqua Basin Water District at \$18.00, however their commodity charge (\$4.38 per 1,000 gallons) is over double that of the City’s.



The base fee proposal above increases the base fee 20% in each of the first two years, then 10% in year three and 5% in years four and five. (Larger meter base fee charges will be increased proportionately.) At that point, the system revenue allocated to the base fee would meet our objectives. It will likely then still need to increase proportionately in the future to sustain the approximate 40% base, 60%

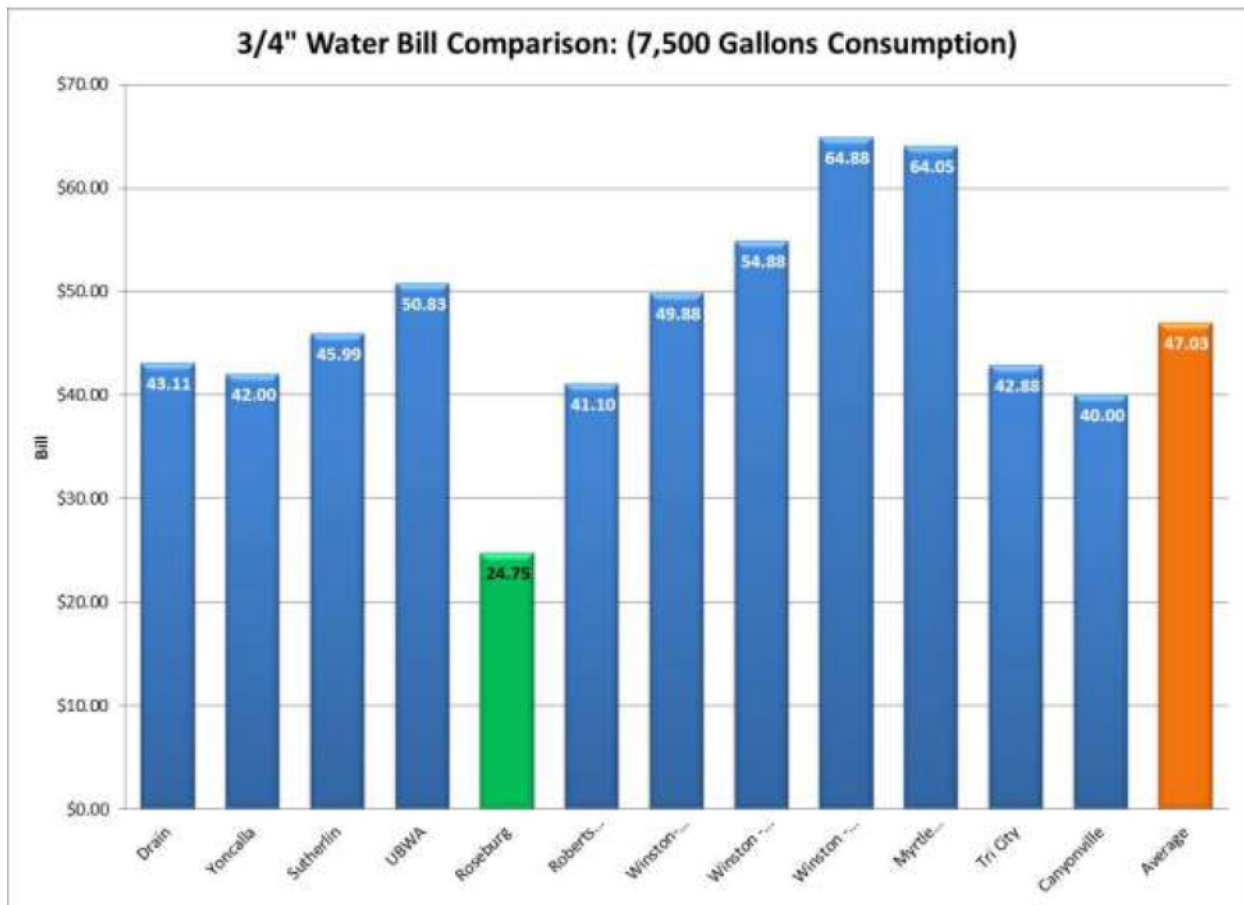
commodity fee goal. At those levels, the base fee will cover the personnel costs for production and transmission and distribution which do not change materially based on the amount of water used, and will also cover the administrative charges allocated to the Water Utility based on staff budgeted in the General Fund that provide direct services to the Utility. It is important to note that we will be able to keep the commodity fee increases lower as a result of increasing the base fee to an appropriate level.



The current commodity charge, which is imposed at a uniform rate throughout the system, is \$1.52 per 100 cubic foot unit (\$2.03 per 1,000 gallons). As outlined above, the commodity charge provides approximately 65% of the current gross system utility revenue, but has become much more volatile in recent years. As environmental concerns and conservation practices improve, the commodity charge will become more elastic, but likely more predictable. Our goal to shift a more equitable cost component away from the commodity to the base fee is reflected in staff's recommendation to increase the commodity charge at a lower rate (approximately 5% annually) over the next five years. Over that period, the commodity charge, while increasing, will provide an estimated 60% of the gross system revenue at the end of five years.

The proposed rate implementation schedule for the commodity charge, which is recommended to continue as a uniform rate, would be \$1.60 per unit January 1, 2016 and increasing each successive January to \$1.68, \$1.76, \$1.85 and \$1.94.

The proposed rates will likely not, in and of themselves, create additional conservation efforts as a means to control the financial impact of individual’s water bills, however it is the component of each individual bill that can be controlled by the utility user. If these two rate components are approved the average residential water charge will increase in the first year from \$25 per month to \$27.73 per month. The City bills every two months, so residential customer average bills would go from \$50 per two month billing cycle to \$55.46 in the first year, a roughly 10.9% increase. The proposed rates, given uniform average usage would then increase approximately 11.2% in 2017, 7.1% in 2018 and approximately 5% in 2019 and 2020. In 2020, the average residential monthly bill would then be \$36.40, which again, is lower than any other utility provider in Douglas County currently charges.



Summary and conclusion

It is important to consider many factors when designing and implementing utility rates. From the utility’s perspective, it is essential to develop rates that will allow for the equitable distribution of cost to customers and to derive the minimum amount of revenues necessary to reinvest in the infrastructure necessary to provide the high quality of water service our community expects and requires. It is also necessary to generate adequate revenues to meet changing environmental requirements and future demand.

Based on the goals of this rate study and the importance of continuing to reinvest in the system infrastructure, it is staff's recommendation that the rate schedule outlined in exhibit A, attached, be approved and implemented in annual increments beginning in January 2016 and continuing through January 2020. During the five-year period it is recommended the revenue generation and expenditure modeling be closely monitored to ensure that the infrastructure investments outlined in the analysis can be carried out. It will be important to review the financial circumstances annually during this period and that a comprehensive rate review be done no later than 2019.

Proposed Water Rates: Current through Five Years

	Base Fee					
	Current	Year 1	Year 2	Year 3	Year 4	Year 5
3/4" Level 1	9.55	11.46	13.75	15.13	15.88	16.68
3/4" Level 2	12.88	15.46	18.55	20.40	21.42	22.49
3/4" Level 3	16.21	19.45	23.34	25.68	26.96	28.31
3/4" Level 4	19.54	23.45	28.14	30.96	32.51	34.13
1" level 1	23.98	28.78	34.53	37.99	39.89	41.88
1" level 2	27.31	32.77	39.33	43.26	45.43	47.70
1" level 3	30.64	36.77	44.13	48.54	50.97	53.52
1-1/2" Level 1	37.09	44.51	53.41	58.75	61.69	64.78
1-1/2" Level 2	40.42	48.51	58.21	64.03	67.23	70.59
2" Level 1	52.78	63.34	76.00	83.60	87.78	92.17
2" Level 2	56.11	67.33	80.80	88.88	93.32	97.99
3" Level 1	81.68	98.02	117.62	129.38	135.85	142.65
4" Level 1	108.21	129.85	155.82	171.40	179.97	188.97
6" Level 1	204.00	244.80	293.76	323.14	339.29	356.26
8" Level 1	305.30	366.36	439.63	483.60	507.78	533.17
10" Level 1	409.42	491.31	589.57	648.52	680.95	714.99
Stacie Court Surcharge	20.00	20.00	20.00	20.00	20.00	20.00

	Commodity Charge					
	Current	Year 1	Year 2	Year 3	Year 4	Year 5
Per Unit (750 Gallons)	1.52	1.60	1.68	1.76	1.85	1.94

Appendix 2

Billing Impact Per Service Analysis

Service		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
3/4" Level 1 (Residential)	Base Rate	9.55	11.46	13.75	15.13	15.88	16.68
	Actual Change		1.91	2.29	1.38	0.76	0.80
	% Change		20.00%	19.98%	10.00%	4.99%	5.01%
	Consumption	1.52	1.60	1.68	1.76	1.85	1.94
	Actual Change		0.08	0.08	0.08	0.09	0.09
	% Change		5.26%	5.00%	4.76%	5.11%	4.86%
	Average Monthly Consumption	10.17	10.17	10.17	10.17	10.17	10.17
	Average Bill (2 Months)	\$ 50.01	\$ 55.45	\$ 61.66	\$ 66.04	\$ 69.38	\$ 72.80
	Actual Change		\$ 5.45	\$ 6.21	\$ 4.38	\$ 3.34	\$ 3.42
	% Change		10.89%	11.19%	7.10%	5.06%	4.93%
3/4" Level 2 (Residential)	Base Rate	12.88	15.46	18.55	20.40	21.42	22.49
	Actual Change		2.58	3.09	1.86	1.02	1.07
	% Change		19.99%	19.99%	10.00%	5.00%	5.00%
	Consumption	1.52	1.60	1.68	1.76	1.85	1.94
	Actual Change		0.08	0.08	0.08	0.09	0.09
	% Change		5.26%	5.00%	4.76%	5.11%	4.86%
	Average Monthly Consumption	9.75	9.75	9.75	9.75	9.75	9.75
	Average Bill (2 Months)	\$ 55.40	\$ 62.11	\$ 69.85	\$ 75.12	\$ 78.92	\$ 82.81
	Actual Change		\$ 6.71	\$ 7.74	\$ 5.27	\$ 3.80	\$ 3.90
	% Change		12.11%	12.46%	7.54%	5.05%	4.94%
3/4" Level 3 (Residential)	Base Rate	16.21	19.45	23.34	25.68	26.96	28.31
	Actual Change		3.24	3.89	2.34	1.29	1.35
	% Change		19.99%	20.00%	10.00%	5.00%	5.01%
	Consumption	1.52	1.60	1.68	1.76	1.85	1.94
	Actual Change		0.08	0.08	0.08	0.09	0.09
	% Change		5.26%	5.00%	4.76%	5.11%	4.86%
	Average Monthly Consumption	11.17	11.17	11.17	11.17	11.17	11.17
	Average Bill (2 Months)	\$ 66.37	\$ 74.63	\$ 84.20	\$ 90.66	\$ 95.24	\$ 99.95
	Actual Change		\$ 8.27	\$ 9.57	\$ 6.46	\$ 4.58	\$ 4.71
	% Change		12.46%	12.82%	7.67%	5.05%	4.95%
3/4" Level 4 (Residential)	Base Rate	19.54	23.45	28.14	30.96	32.51	34.13
	Actual Change		3.91	4.69	2.82	1.55	1.63
	% Change		20.01%	20.00%	10.00%	5.01%	5.00%
	Consumption	1.52	1.60	1.68	1.76	1.85	1.94
	Actual Change		0.08	0.08	0.08	0.09	0.09
	% Change		5.26%	5.00%	4.76%	5.11%	4.86%
	Average Monthly Consumption	7.50	7.50	7.50	7.50	7.50	7.50
	Average Bill (2 Months)	\$ 61.88	\$ 70.90	\$ 81.48	\$ 88.31	\$ 92.76	\$ 97.36
	Actual Change		\$ 9.02	\$ 10.58	\$ 6.83	\$ 4.45	\$ 4.60
	% Change		14.58%	14.92%	8.38%	5.04%	4.96%

Service		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
1" Level 1 (Residential)	Base Rate	23.98	28.78	34.53	37.99	39.89	41.88
	Actual Change		4.80	5.76	3.46	1.90	2.00
	% Change		20.00%	20.00%	10.01%	5.00%	5.00%
	Consumption	1.52	1.60	1.68	1.76	1.85	1.94
	Actual Change		0.08	0.08	0.08	0.09	0.09
	% Change		5.26%	5.00%	4.76%	5.11%	4.86%
	Average Monthly						
	Consumption	16.58	16.58	16.58	16.58	16.58	16.58
	Average Bill						
	(2 Months)	\$ 98.37	\$ 110.62	\$ 124.78	\$ 134.34	\$ 141.13	\$ 148.10
	Actual Change		\$ 12.24	\$ 14.16	\$ 9.56	\$ 6.79	\$ 6.98
	% Change		12.45%	12.80%	7.66%	5.05%	4.94%
1" Level 2 (Residential)	Base Rate	27.31	32.77	39.33	43.26	45.43	47.70
	Actual Change		5.46	6.56	3.94	2.17	2.27
	% Change		19.99%	20.00%	10.01%	5.00%	5.00%
	Consumption	1.52	1.60	1.68	1.76	1.85	1.94
	Actual Change		0.08	0.08	0.08	0.09	0.09
	% Change		5.26%	5.00%	4.76%	5.11%	4.86%
	Average Monthly						
	Consumption	11.67	11.67	11.67	11.67	11.67	11.67
	Average Bill						
	(2 Months)	\$ 90.09	\$ 102.87	\$ 117.85	\$ 127.59	\$ 134.02	\$ 140.66
	Actual Change		\$ 12.79	\$ 14.98	\$ 9.74	\$ 6.43	\$ 6.64
	% Change		14.19%	14.56%	8.26%	5.04%	4.95%
1" Level 3 (Residential)	Base Rate	30.64	36.77	44.13	48.54	50.97	53.52
	Actual Change		6.13	7.36	4.42	2.43	2.55
	% Change		20.01%	20.00%	10.01%	5.00%	5.00%
	Consumption	1.52	1.60	1.68	1.76	1.85	1.94
	Actual Change		0.08	0.08	0.08	0.09	0.09
	% Change		5.26%	5.00%	4.76%	5.11%	4.86%
	Average Monthly						
	Consumption	12.50	12.50	12.50	12.50	12.50	12.50
	Average Bill						
	(2 Months)	\$ 99.28	\$ 113.54	\$ 130.25	\$ 141.08	\$ 148.18	\$ 155.53
	Actual Change		\$ 14.26	\$ 16.71	\$ 10.83	\$ 7.10	\$ 7.35
	% Change		14.36%	14.72%	8.31%	5.03%	4.96%
1-1/2" Level 1 (Residential)	Base Rate	37.09	44.51	53.41	58.75	61.69	64.78
	Actual Change		7.42	8.90	5.34	2.94	3.09
	% Change		20.01%	20.00%	10.00%	5.00%	5.00%
	Consumption	1.52	1.60	1.68	1.76	1.85	1.94
	Actual Change		0.08	0.08	0.08	0.09	0.09
	% Change		5.26%	5.00%	4.76%	5.11%	4.86%
	Average Monthly						
	Consumption	57.00	57.00	57.00	57.00	57.00	57.00
	Average Bill						
	(2 Months)	\$ 247.46	\$ 271.42	\$ 298.34	\$ 318.14	\$ 334.28	\$ 350.71
	Actual Change		\$ 23.96	\$ 26.92	\$ 19.80	\$ 16.14	\$ 16.43
	% Change		9.68%	9.92%	6.64%	5.07%	4.92%

Service		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	
1-1/2" Level 2 (Commercial)	Base Rate	40.42	48.51	58.21	64.03	67.23	70.59	
	Actual Change		8.09	9.70	5.82	3.20	3.36	
	% Change		20.01%	20.00%	10.00%	5.00%	5.00%	
	Consumption	1.52	1.60	1.68	1.76	1.85	1.94	
	Actual Change		0.08	0.08	0.08	0.09	0.09	
	% Change		5.26%	5.00%	4.76%	5.11%	4.86%	
	Average Monthly Consumption	Currently no customers in this rate category						-
	Average Bill (2 Months)	\$ 80.84	\$ 97.02	\$ 116.42	\$ 128.06	\$ 134.46	\$ 141.18	
	Actual Change		\$ 16.18	\$ 19.40	\$ 11.64	\$ 6.40	\$ 6.72	
	% Change		20.01%	20.00%	10.00%	5.00%	5.00%	
2" Level 1 (Commercial)	Base Rate	52.78	63.34	76.00	83.60	87.78	92.17	
	Actual Change		10.56	12.67	7.60	4.18	4.39	
	% Change		20.00%	20.00%	10.00%	5.00%	5.00%	
	Consumption	1.52	1.60	1.68	1.76	1.85	1.94	
	Actual Change		0.08	0.08	0.08	0.09	0.09	
	% Change		5.26%	5.00%	4.76%	5.11%	4.86%	
	Average Monthly Consumption	192.67	192.67	192.67	192.67	192.67	192.67	
	Average Bill (2 Months)	\$ 691.27	\$ 743.20	\$ 799.36	\$ 845.39	\$ 888.43	\$ 931.89	
	Actual Change		\$ 51.94	\$ 56.16	\$ 46.03	\$ 43.04	\$ 43.46	
	% Change		7.51%	7.56%	5.76%	5.09%	4.89%	
2" Level 2 (Commercial)	Base Rate	56.11	67.33	80.80	88.88	93.32	97.99	
	Actual Change		11.22	13.47	8.08	4.44	4.67	
	% Change		20.00%	20.00%	10.00%	5.00%	5.00%	
	Consumption	1.52	1.60	1.68	1.76	1.85	1.94	
	Actual Change		0.08	0.08	0.08	0.09	0.09	
	% Change		5.26%	5.00%	4.76%	5.11%	4.86%	
	Average Monthly Consumption	15.33	15.33	15.33	15.33	15.33	15.33	
	Average Bill (2 Months)	\$ 158.83	\$ 183.73	\$ 213.11	\$ 231.72	\$ 243.37	\$ 255.46	
	Actual Change		\$ 24.89	\$ 29.38	\$ 18.61	\$ 11.65	\$ 12.09	
	% Change		15.67%	15.99%	8.73%	5.03%	4.97%	
3" Level 1 (Commercial)	Base Rate	81.68	98.02	117.62	129.38	135.85	142.65	
	Actual Change		16.34	19.61	11.76	6.47	6.80	
	% Change		20.00%	20.00%	10.00%	5.00%	5.00%	
	Consumption	1.52	1.60	1.68	1.76	1.85	1.94	
	Actual Change		0.08	0.08	0.08	0.09	0.09	
	% Change		5.26%	5.00%	4.76%	5.11%	4.86%	
	Average Monthly Consumption	516.17	516.17	516.17	516.17	516.17	516.17	
	Average Bill (2 Months)	\$ 1,732.51	\$ 1,847.76	\$ 1,969.56	\$ 2,075.67	\$ 2,181.52	\$ 2,288.02	
	Actual Change		\$ 115.26	\$ 121.80	\$ 106.11	\$ 105.85	\$ 106.50	
	% Change		6.65%	6.59%	5.39%	5.10%	4.88%	

Service		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
4" Level 1 (Commercial)	Base Rate	108.21	129.85	155.82	171.40	179.97	188.97
	Actual Change		21.64	25.97	15.58	8.57	9.00
	% Change		20.00%	20.00%	10.00%	5.00%	5.00%
	Consumption	1.52	1.60	1.68	1.76	1.85	1.94
	Actual Change		0.08	0.08	0.08	0.09	0.09
	% Change		5.26%	5.00%	4.76%	5.11%	4.86%
	Average Monthly Consumption	125.67	125.67	125.67	125.67	125.67	125.67
	Average Bill (2 Months)	\$ 598.45	\$ 661.83	\$ 733.88	\$ 785.15	\$ 824.91	\$ 865.53
	Actual Change		\$ 63.39	\$ 72.05	\$ 51.27	\$ 39.76	\$ 40.62
	% Change		10.59%	10.89%	6.99%	5.06%	4.92%
6" Level 1 (Commercial & Public)	Base Rate	204.00	244.80	293.76	323.14	339.29	356.26
	Actual Change		40.80	48.96	29.38	16.15	16.97
	% Change		20.00%	20.00%	10.00%	5.00%	5.00%
	Consumption	1.52	1.60	1.68	1.76	1.85	1.94
	Actual Change		0.08	0.08	0.08	0.09	0.09
	% Change		5.26%	5.00%	4.76%	5.11%	4.86%
	Average Monthly Consumption	Currently no customers in this rate category					
	Average Bill (2 Months)	\$ 408.00	\$ 489.60	\$ 587.52	\$ 646.28	\$ 678.58	\$ 712.52
	Actual Change		\$ 81.60	\$ 97.92	\$ 58.76	\$ 32.30	\$ 33.94
	% Change		20.00%	20.00%	10.00%	5.00%	5.00%
8" Level 1 (Public)	Base Rate	305.30	366.36	439.63	483.60	507.78	533.17
	Actual Change		61.06	73.27	43.97	24.18	25.39
	% Change		20.00%	20.00%	10.00%	5.00%	5.00%
	Consumption	1.52	1.60	1.68	1.76	1.85	1.94
	Actual Change		0.08	0.08	0.08	0.09	0.09
	% Change		5.26%	5.00%	4.76%	5.11%	4.86%
	Average Monthly Consumption	3,512.75	3,512.75	3,512.75	3,512.75	3,512.75	3,512.75
	Average Bill (2 Months)	\$ 11,289.36	\$ 11,973.52	\$ 12,682.10	\$ 13,332.07	\$ 14,012.73	\$ 14,695.80
	Actual Change		\$ 684.16	\$ 708.58	\$ 649.97	\$ 680.66	\$ 683.07
	% Change		6.06%	5.92%	5.13%	5.11%	4.87%
10" Level 1 (Public)	Base Rate	409.42	491.31	589.57	648.52	680.95	714.99
	Actual Change		81.89	98.26	58.95	32.43	34.04
	% Change		20.00%	20.00%	10.00%	5.00%	5.00%
	Consumption	1.52	1.60	1.68	1.76	1.85	1.94
	Actual Change		0.08	0.08	0.08	0.09	0.09
	% Change		5.26%	5.00%	4.76%	5.11%	4.86%
	Average Monthly Consumption	Currently no customers in this rate category					
	Average Bill (2 Months)	\$ 818.84	\$ 982.62	\$ 1,179.14	\$ 1,297.04	\$ 1,361.90	\$ 1,429.98
	Actual Change		\$ 163.78	\$ 196.52	\$ 117.90	\$ 64.86	\$ 68.08
	% Change		20.00%	20.00%	10.00%	5.00%	5.00%

Water Operations Forecast Model: Expenditures and Revenues (Impact of Proposed New Rates)

	Actuals					Projected		Forecast				
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	
Resources												
Charges for Services	4,545,780	4,554,175	4,858,073	4,903,305	4,961,437	5,053,449	5,411,782	5,945,702	6,333,270	6,642,748	6,958,488	
Intergovernmental	-	48,852	-	318,750	10,971	-	-	-	-	-	-	
Special Assessments	-	-	12,500	-	-	-	-	-	-	-	-	
Interest	28,910	31,619	31,288	22,577	23,816	18,000	13,073	11,176	10,508	10,447	10,447	
Proceeds from Sale of Assets	9,489	2,838	2,900	710	-	-	-	-	-	-	-	
Miscellaneous	14,048	13,428	10,880	15,452	14,378	11,500	13,637	13,637	13,637	13,637	13,637	
Total Operating Revenues:	4,598,227	4,650,912	4,915,641	5,260,794	5,010,602	5,082,949	5,438,493	5,970,516	6,357,416	6,666,833	6,982,573	
Bond/Loan Proceeds	9,380	9,591	9,807	10,027	-	-	-	-	-	-	-	
Beginning Fund Balance	4,599,055	5,366,766	5,800,433	4,909,309	4,603,995	3,825,731	2,905,147	2,483,561	2,335,030	2,321,621	2,321,529	
Total Resources:	9,206,662	10,027,269	10,725,881	10,180,130	9,614,597	8,908,680	8,343,640	8,454,076	8,692,446	8,988,453	9,304,102	
Personnel												
Production	548,188	586,338	598,780	590,875	603,239	629,036	644,806	671,991	689,130	714,960	733,345	
Transmission & Distribution	811,047	845,009	927,303	937,927	959,060	1,012,974	1,038,784	1,081,239	1,109,306	1,150,392	1,180,514	
Total Personnel:	1,359,235	1,431,347	1,526,083	1,528,802	1,562,299	1,642,010	1,683,590	1,753,230	1,798,436	1,865,352	1,913,859	
Materials and Services												
Production	350,140	382,817	401,470	395,434	439,554	481,790	502,025	523,110	545,081	567,974	591,829	
Transmission & Distribution	358,794	354,047	304,291	317,514	319,031	346,086	347,993	362,215	371,618	385,381	395,472	
Administration	1,095,817	1,163,494	1,222,304	1,286,151	1,292,798	1,259,147	1,326,471	1,420,491	1,533,890	1,662,763	1,807,423	
Total M&S:	1,804,751	1,900,358	1,928,065	1,999,099	2,051,383	2,087,023	2,176,489	2,305,816	2,450,589	2,616,118	2,794,724	
Capital Outlay												
Capital Outlay	675,910	895,131	2,362,424	2,048,234	2,125,675	2,274,500	2,000,000	2,060,000	2,121,800	2,185,454	2,251,018	
Debt Service												
Debt Service	-	-	-	-	-	-	-	-	-	-	-	
Total Expenditures:	3,839,896	4,226,836	5,816,572	5,576,135	5,739,357	6,003,533	5,860,079	6,119,046	6,370,825	6,666,924	6,959,601	
Ending Fund Balance	5,366,766	5,800,433	4,909,309	4,603,995	3,825,731	2,905,147	2,483,561	2,335,030	2,321,621	2,321,529	2,344,501	
Total Expenditures and Ending Fund Balance:	9,206,662	10,027,269	10,725,881	10,180,130	9,565,088	8,908,680	8,343,640	8,454,076	8,692,446	8,988,453	9,304,102	