

CITY OF GOLD BEACH - WATER

WATER RATE ANALYSIS

May 2016

Prepared by:



RosAnna Noval, Project Lead

Many thanks for their efforts during the analysis to:
City Administrator, Jodi Fritts-Matthey
Utility Clerk, Kim Hunnicutt
Utility Supervisor, Will Newdall

Table of Contents

1. Purpose and Objective
2. Revenue Requirement and Financial Planning
3. Customer Water Demands
4. Current Rate
5. Water Rate Options
6. Conclusion and Recommendations

Appendices

- A. Ten Year Financial Spreadsheet
- B. Reserve Account Definitions
- C. Capital Outlay Needs

1. Purpose and Objective

The City of Gold Beach Oregon operates a water utility as a separate enterprise fund which is managed by city staff at the direction of the Gold Beach City Council and Mayor. The city policy is to adjust rates annually based on inflation. With multiple capital improvement projects outlined in the 2016 Water Master Plan and a focus on water supply and efficient use, the city desires a third-party evaluation of the water rates.

The City of Gold Beach requested assistance from the Rural Community Assistance Corporation (RCAC) to complete an analysis of the water rates and provide recommendations. The rate analysis was derived using historical water utility financial data provided by the City, for fiscal years ending (FYE) 2012-2015, as well as using the FYE 2016 approved budget. Historical trends, industry standards and input from city staff and decision makers contributed to the five year budget projection.

An accurate and useful rate analysis not only identifies the total annual revenue required by a utility to conduct its normal day-to-day operations, but it also anticipates and plans for future operating and capital needs. It attempts to determine whether the projected revenue under existing rates will satisfy those needs. The primary objective of this process is to ensure that the utility has the ability to obtain sufficient funds to develop, construct, operate, maintain, and manage its water system on a continuing basis, in full compliance with federal, state, and local requirements.

The objective of this rate analysis is to ensure customers of the City of Gold Beach water utility services are provided with safe drinking water from a system that is financially sustainable for generations to come. The approach to meet this objective is to create a rate structure which fully funds the water utility to meet regulatory and public health concerns, contribute to planned capital improvement projects, and encourage the responsible management and use of this natural resource. The major steps included in this approach are:

- Determine revenues needed to support the budget,
- Evaluate water usage versus revenue received as related to equity,
- Identify alternative structures/options for water rate charges,
- Review impacts of potential capital improvements on the rates, and
- Make recommendations for rate structure adjustments.

Rate structures and options were evaluated on the basis of

- Encouraging water use efficiency,
- Keeping the structure simple to understand and administer,
- Ensuring revenues were adequate to sustain the utility, and
- Preparing for future capital improvements.

The information contained in this document will assist the City of Gold Beach in making prudent financial decisions to ensure the long-term viability of the water utility.

2. Revenue Requirement and Financial Planning

The objective of developing a financial plan for a water system is to determine cash needs, revenue requirements and anticipated timing of utility costs to ensure that adequate funds are available to meet operational and maintenance needs as they occur. Financial planning for a small water system normally includes an examination of:

- Operating revenues;
- Operation and maintenance (O&M) expenses;
- Debt service (principal and interest payments) on borrowed funds, and
- Reserve requirements.

Planning for the future requires an examination of past and current activities. The annual budget outlines what it costs the City to provide services to its customers. Each year, the City and budget committee conduct a comprehensive line item review of the budgetary expenditures to maximize available resources and reduce operational costs where possible. In 2015, the City hired The Dyer Partnership to create a Water Master Plan. The plan was completed in early 2016 and identifies three phases of capital improvement projects.

Table 2.1 shows the actual financial numbers for the last four fiscal years and the budget information for the current fiscal year for the Gold Beach Water Fund. The fund balance is decreasing over time as shown in the last row of the table below. Revenues are fairly stable and are generally sufficient to meet basic operating expenses. In the last 4 years, the City of Gold Beach has self-funded multiple improvement projects shown in the Capital Outlay row below. Capital Outlay costs are the main driver of the decreasing fund balance. *The fund balance will not be sufficient to meet all future operational and capital project needs. Additional funding from loans, grants, customer revenues or a combination will be required.* The water financial data spreadsheet found in Appendix A provides additional detail.

Table 2.1 Historical and Current Gold Beach Water Fund Financial Data

Water Fund	FYE 2012 Actual	FYE 2013 Actual	FYE 2014 Actual	FYE 2015 Actual	FYE 2016 Budget
Operating Revenue	\$ 533,652	\$ 533,730	\$ 532,650	\$ 567,555	\$ 547,000
Non-Operating Revenue	\$ 128,756	\$ 2,433	\$ 5,514	\$ 171,424	\$ 154,200
Expenses	\$ 587,544	\$ 510,506	\$ 555,372	\$ 499,636	\$ 652,257
Contingency (Emergency Reserve)	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Net Income (Loss)	\$ 74,864	\$ 25,656	\$ (17,208)	\$ 239,343	\$ (1,057)
Capital Outlay	\$ 245,462	\$ 66,553	\$ 24,620	\$ 417,900	\$ 468,000
Fund Balance	\$ 692,506	\$ 682,324	\$ 579,052	\$ 415,547	

Operating Revenues

Revenues are the main source of income to a utility and are typically thought of as operating and non-operating. Operating revenue is the stable and reliable income that comes from customer rates or user charges. Non-operating revenue such as interest on checking and reserve accounts, meter deposits, connection fees, and late payments, penalties and reconnection fees may be considered operating revenue, if they are stable and dependable revenue sources. Beginning fund balances may be considered non-operating revenue or included in the reserves description. As economic fluctuations in recent years have shown, caution should be used when predicting future revenue from growth related fees.

Operating Expenses

This is the first cost category that is considered when developing a financial plan. Operating and maintenance costs include the day to day expenses of getting drinking water to customers. Common expense items include labor, insurance, materials, electricity, and chemicals.

Water System Reserves

Reserves are an accepted way to stabilize and support a utility financial management. Small systems usually fund the operating expenses. However, they often don't consider putting money aside for a specific upcoming financial need or for an amount that can be used to provide rate stabilization in years when revenues are unusually low or expenditures are unusually high.

The rationale for maintaining adequate reserve levels is twofold. First, it helps to assure that the utility will have adequate funds available to meet its financial obligations in times of varying needs. Secondly, it provides a framework around which financial decisions can be made to determine when reserve balances are inadequate or excessive and what specific actions need to be taken to remedy the situation.

Utility reserve levels can be thought of as a savings account. Reserve balances are funds that are set aside for a specific cash flow requirement, financial need, project, task, or legal covenant. Common reserve balances are established around the following four areas: operating reserve, capital improvement/equipment replacement, emergency, and debt service reserve. These balances are maintained in order to meet short-term cash flow requirements, and at the same time, minimize the risk associated with meeting financial obligations and continued operational needs under adverse conditions. Additional information on the four common reserves can be found in Appendix B.

Deposits to reserve accounts may be broken into reduced annual installments to minimize the overall impact on rates. Once the target reserve has been met, the contributions can be redirected to other water reserve funds or water projects. Evaluate operating reserve levels on a regular basis to reflect current costs and utility needs.

In an effort to reduce costs for small water infrastructure improvements by self-funding projects when possible, the City implemented a water reserve charge separate from the base rate and water consumption charges. The City currently charges each account \$2.00 per month.

This charge generates approximately \$2,700 per month which is saved in a dedicated water reserve fund. In February 2016, the water reserve fund balance was -\$109,939.64 due to the transfer of \$150,000 from the reserve fund to the water fund earlier in the fiscal year. The FYE 2016 budget presents the Net Total for the fund to be a loss of \$96,896. The FYE 2016 budget includes \$35,000 in revenue for this fund, in addition to misc. revenue of \$18,104 which is primarily from the Highway 101 Loan annual payment. Total annual revenue for the reserve fund is estimated at \$53,000.

As a result of Resolution R1314-17 effective May 27, 2014, the water system reserve fund loaned the Highway 101 Sewer Debt Fund \$154,000 at 3% interest as part of a larger financial decision to pay off a 2005 Oregon Department of Environmental Quality loan. The resolution states the Water Reserve Fund will receive \$18,053.50 annually for ten years beginning in FYE 2015.

Table 2.2 Recommended Reserve Targets

Purpose	Amount
Debt Service Reserve	\$808,173
Capital Improvement Plan (CIP) Reserve	\$200,000
Emergency Reserve	\$50,000
Operating Reserve	\$134,566
Total Reserves	\$1,192,739

Table 2.2 shows the recommended reserve targets as determined through conversations with city staff. Specific amounts were determined as follows:

- **Debt Service Reserve** – Target is based on the equivalent of one annual payment being required by the lending agency which is estimated at \$808,173. See the debt service explanation under the Five Year Budget Forecast section for additional details on the amount.
- **Capital Improvement Plan (CIP) Reserve** – Determined after discussions with city staff about expected projects. The city is considering a large capital project in the next 5 years based on the recent master plan. The city knows that self-funding the entire multi-million dollar project estimate is not feasible. A target was set at \$200,000 which will provide the city with some cash flow to complete small projects and to prepare documents necessary to secure funding for the large infrastructure project. After the major improvements are complete, this target will allow the city to proactively maintain the system in future years.
- **Emergency Reserve** – Current and prior budgets have included a contingency line item of \$50,000. This amount is maintained as the target.
- **Operating Reserve** – Standard industry recommendation is 12.5% or 45 days of operational costs which covers one monthly billing cycle. The city previously set a goal to establish reserves for all funds at 90 days of operating costs for that fund. Based on a 4 year average of operating expenses, the target amount is $\$538,265 \text{ (annual avg)} / 4 \text{ (90 days or 3 months)} = \$134,566$.

Table 2.3 Scenario One - Reach Fully Funded Reserve Targets in Five Years

Reserve	Target	FYE 16 Budget	Difference	Needed Annual Contribution	Additional Cost/Customer/Month*
Debt Service	\$808,173	\$0	\$808,173	\$108,635	\$6.72
CIP	\$200,000	\$0	\$200,000	\$40,000	\$2.47
Emergency	\$50,000	\$0	\$50,000	\$10,000	\$0.62
Operating	\$134,566	\$0	\$134,566	\$26,913	\$1.67
Total	\$1,192,739	\$0	\$1,192,739	\$185,548	\$11.48

*Based on 1347 paying accounts. See Section 4 for explanation of number of accounts.

Assumptions for this rate study are Debt Service and CIP Reserves are connected to the Water Reserve Fund account, Emergency Reserve is the Water Fund contingency line item and the Operating Reserve is in the Water Fund balance.

All amounts in the Difference column have been divided by five years to determine the needed annual contribution in the table above. Five years is provided simply as an example; the city could choose more or less time or choose to prioritize one of the reserve targets to fully fund first, then work on the others.

Debt service reserve requirements vary by funding agency. Some require the amount be established upfront; others allow the reserve to be established over time. If possible, begin saving for this reserve now, prior to loan closing. Since the water reserve fund receives \$18,054 annually for the next ten years for loan repayment and \$35,000 from current reserve charges, the needed annual contribution for the debt service has been reduced by \$53,000.

According to the July 31, 2015 balance sheet, the Water Fund balance was \$415,547. However, the fund balance is depleting each year and will be depleted by any loss incurred in FYE 2016. The FYE Budget anticipates a net loss of \$469,057. Meaning the fund balance would be completely depleted. Unless expenses were significantly lower than budgeted, the water fund would require a transfer from the water reserve or another source. Therefore, in Table 2.3, the operating reserve and the emergency reserve were calculated as if no money was currently set aside and the target amounts would be saved over the next five years.

Five Year Budget Forecast

RCAC utilized the FYE 2016 approved budget and developed projections for FYE 2017 to FYE 2021. A detailed spreadsheet of the water financial data can be found in Appendix A. Assumptions used when developing the five-year budget forecast include:

- **Revenues** – If current practices continue, rates would increase slightly each year based on inflation. Projections estimate a 1% increase each year for revenues from water sales.
- **Operational Expense** – Projections were determined based on conversations with city staff regarding inflation and RCAC knowledge of similar systems and industry practices. Wages and benefits are estimated to each increase at 2% and the remaining items to increase by 1% each fiscal year. Exceptions to this estimate are: *Transfers Out All Others, Capital Outlay and Contingency which are all 0% inflation.*

Capital Outlay was adjusted to zero for year 1, and \$50,000 for years 2-5, expecting that the city will incur some out of pocket costs for the major projects or have small projects that will be self-funded.

- **Annual Reserve Contribution** – For the projected budget, contributions to the emergency and contingency reserves are included at \$36,913 per year based on Table 2.3. This study assumes continuation of the existing system of a separate Water Reserve Fund charge, where the City currently charges each account \$2.00 per month. This charge would be increased to reflect the desired targets for debt service and capital improvement reserves only and would be in addition to the water rate fees. *The additional reserve charge per account would increase from \$2.00 to \$9.19.*
- **Debt Service** – Annual payment amounts are determined by funding agencies when loans are acquired. For the purposes of this study and projections, the City Council asked RCAC to evaluate the potential costs of Phase 1 & 2 projects identified in Section 9 of the Water Master Plan. (Phase 3 projects did not include cost estimates and, therefore, are not included in this financial analysis.) The Master Plan outlined a tentative schedule of completing Phase 1 construction by Dec. 2019 with a total cost of \$12,364,200. Based on Council direction, RCAC evaluated funding options for Phase 1 & 2 projects at a total cost of \$19,942,500. Potential funding implications are shown in table 2.4. A conservative funding package (shown in bold in Table 2.4) with 10% grant and a loan with 3.25% interest rate at 40 years was chosen to estimate future costs and rate requirements. Annual loan payment is estimated at \$808,173 with an annual cost per account of \$600 or \$50.00 per month. Debt service is added to expenses for the last two years of the projections.
 - Actual debt service will vary. More than one funding source will likely be needed and funding packages may occur over multiple years. The information below will need to be updated as soon as the Council makes decisions regarding financing and phasing of projects. Rates will likely require adjustment based on actual debt service conditions and initial payment date.

Table 2.4 Potential Funding Scenarios

20 Year Period				40 Year Period		
	Interest Rate	Annual Payment	Monthly Cost per Account*	Interest Rate	Annual Payment	Monthly Cost per Account*
100% Loan \$19,942,500		0% Grant \$0				
	2.0	\$1,219,618	\$75.45	2.0	\$729,013	\$45.10
	3.25	\$1,371,623	\$84.86	3.25	\$897,970	\$55.55
90% Loan \$17,948,250		10% Grant \$1,994,250				
	2.0	\$1,097,656	\$67.91	2.0	\$656,112	\$40.59
	3.25	\$1,234,461	\$76.37	3.25	\$808,173	\$50.00
80% Loan \$15,954,000		20% Grant \$3,988,500				
	2.0	\$975,694	\$60.36	2.0	\$583,210	\$36.08
	3.25	\$1,097,298	\$67.89	3.25	\$718,376	\$44.44

*Based on 1347 paying accounts. See Section 4 for explanation of number of accounts.

Table 2.5 Water Fund Budget Forecast

	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
Operating Revenue	\$552,300	\$557,653	\$563,060	\$568,520	\$574,035
Non-Operating Revenue	\$4,200	\$4,200	\$4,200	\$4,200	\$4,200
Expenses	\$584,413	\$592,276	\$600,262	\$1,416,546	\$1,424,784
Emergency & Operating Reserve	\$36,913	\$36,913	\$36,913	\$36,913	\$36,913
Net Income (Loss)	\$(62,809)	\$(65,318)	\$(67,897)	\$(878,719)	\$(881,440)
Capital Outlay	\$0	\$50,000	\$50,000	\$50,000	\$50,000

Graph 2.1 Water Fund 10 Year Financial Picture

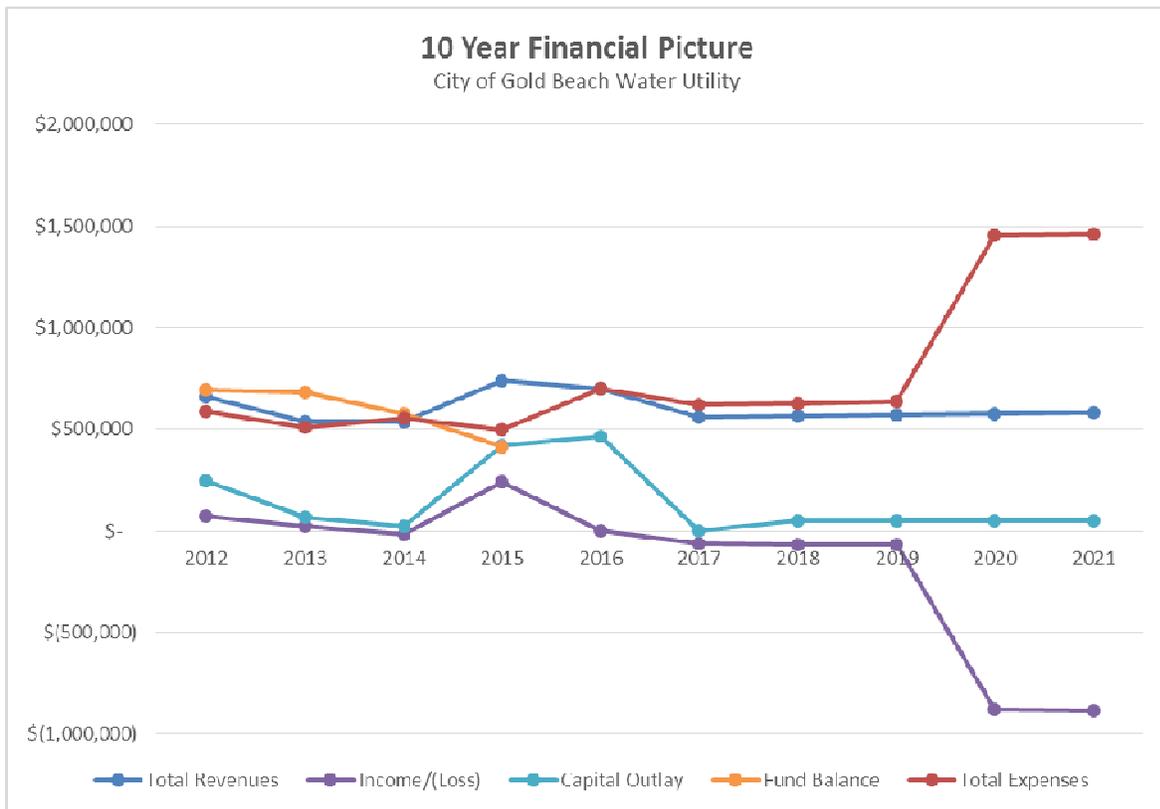


Table 2.5 and Graph 2.1 both reflect the budgetary impacts of inflation and saving for capital projects. In FYE 2020, debt service is added to the expenses. Revenues will not meet expenses as projected. *An adjustment will be required to maintain the fund balance and create a financial sustainable utility.* The Water Fund **revenue requirement** includes the expenses, transfers to reserve fund, and capital outlay amounts. The Water Reserve Fund revenue requirement is an additional amount that includes the annual contribution for the debt service and CIP reserves.

3. Customer Water Demands

When analyzing water rates it's vital to understand existing patterns of consumption among the system's customers. A large portion of customers may use a small percentage of water, and a small portion of customers may use a large percentage. The City of Gold Beach Water Utility currently separates accounts into five customer classes. Four classes designate residential customers from commercial accounts and those inside or outside of the city. The fifth class is only for water meters owned and operated for city purposes. City meters are read for utility operational purposes, but do not generate any revenue. For the purposes of this study, RCAC examined water use and revenue data from July 2014 to June 2015 to correspond with the city's fiscal year. The following table provides a breakdown of customer characteristics.

Table 4.1 Water Use Customer Characteristics by Class

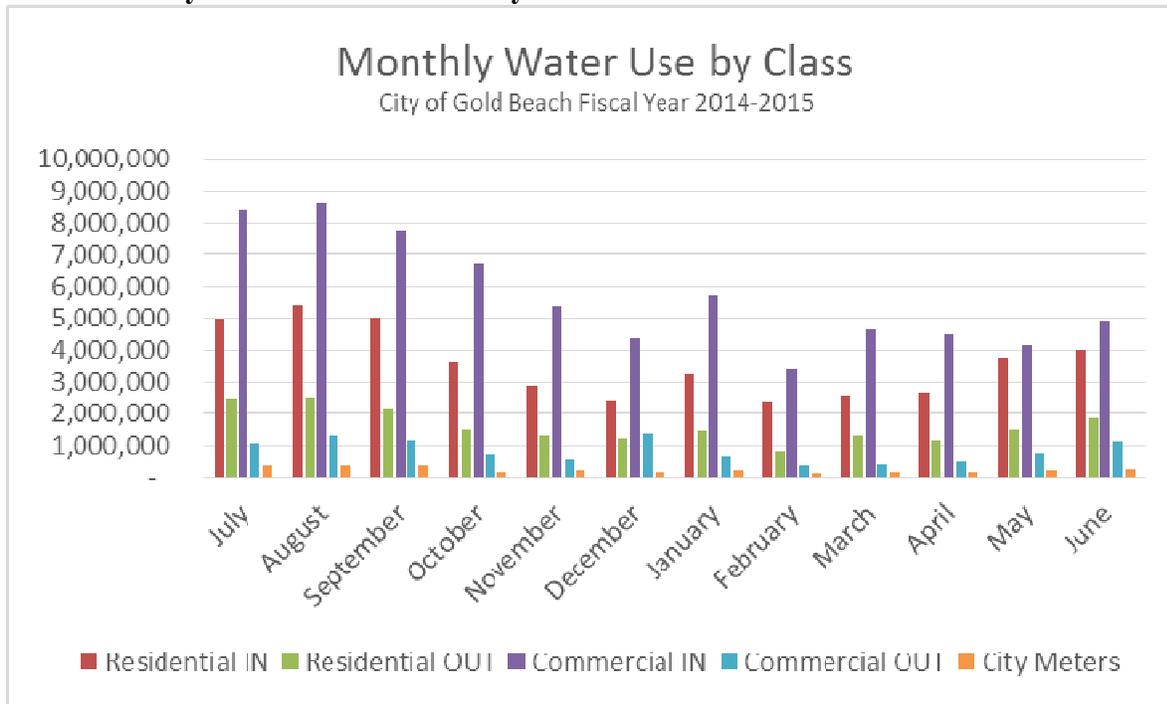
Class	Residential		Commercial		City Meter
	IN	OUT	IN	OUT	
City Rate Code	101	105	121	125	171
Number of Connections	989	324	253	40	15
Number of Active Accounts	842	298	236	40	13
Avg Monthly Use - Mean	4,264	5,360	24,228	20,790	17,380
Avg Monthly Use - Median	3,375	3,746	4,479	6,446	5,833
Active Accts 0 Gal	60	11	10	1	1
Total Annual Use in gallons	43,085,136	19,165,887	68,614,811	9,979,300	2,711,300
% of Total Use	30.0	13.4	47.8	7.0	1.9

During Fiscal Year Ending (FYE) June 2015, the City of Gold Beach data showed 1,621 metered connections with an average of 1,429 active accounts in the billing and use data. The difference between metered connections and active accounts includes all of the locations in the water system where there is a service line coming off of the main water line but there is no activity at that location. Perhaps there is a home site that installed water and sewer service but a home has not yet been built, or a building was destroyed by fire and not yet rebuilt. The water is turned off with no anticipation of when it will be turned back on, however the infrastructure remains and service may occur in the future. Active accounts appear in the annual billing and use data reports analyzed for this rate study. Of the "active" accounts, a total of 83 used zero gallons of water during the 12 month period.

The average monthly use was calculated for each account. In the table above, both the mean (average) and median figures are determined based on the averages for each account sorted smallest to largest. The difference between the two numbers is affected by the number of accounts with zero gallons and the high users.

For example, the commercial inside class with 14 accounts averaging more than 100,000 gallons per month skews the mean result higher. Whereas half of the accounts in that same category average 4,479 gallons or less each month.

Chart 4.1 City of Gold Beach Monthly Water Use



Water use by month is similar to most communities with higher water use in the summer and lower in the winter months. January is the exception; likely a result of the holiday season. (Note that while the meters were read in January and the water use recorded as January above, actual water use, for the most part, occurred in the month of December. Meters are read on a monthly cycle.) These fluctuations are consistent across all of the customer classes. Interpreting the trends in water use is important for understanding and predicting potential fluctuations in revenue. A rate structure that includes a charge based on water use, particularly if an increasing block rate is used, will result in additional revenue during summer months and potentially significantly less revenue in the winter months. A fully funded operations and maintenance reserve will minimize potential financial issues arising from the seasonal fluctuation in revenue.

In FYE 2015, the City sold 140,845,134 gallons of water. Expenses for that same time, not including capital outlay, were \$499,636. The cost equals \$3.55 per 1,000 gallons sold.

4. Current Rate

Rate Structures

The following are types of rates structures common to small drinking water systems:

- **Uniform Flat Rate** - Customers pay the same amount regardless of the quantity of water used. This type of rate is easiest to administer; however, it may not be fair to the lowest water users and does not promote water conservation or monitoring of use, leaks and wasted water.
- **Single or Uniform Block Rate** - Customers are charged a constant price per volume regardless of the amount of water used. The cost per block of water is often added to a minimum charge for having service available. This rate tends to be more equitable to customers than a flat rate as the cost to customer is in direct proportion to the amount use.
- **Declining or Decreasing Block Rate** - The price of water decreases as the amount used increases. This rate is effective for systems seeking to promote commercial users with high water use or for systems that experience few additional costs as water use increases. Be aware of impacts to low water users. This structure provides no monetary incentive for water conservation.
- **Inclining or Increasing Block Rate** - Designed to promote water use efficiency, the price of water increases as the amount used increases. This rate is effective for systems seeking to discourage high water use and minimizes cost impacts to low water users. Be aware of impacts to industrial or commercial customers that are high water users.

Block rates are commonly paired with a base rate. The base rate is a flat charge per month, which may or may not include a specified amount of water. The block rates are fees charged in addition to the base rate and directly determined by the amount of water used.

Current Rate Structure

For most small water systems, income from the sales of water (utility rates) is the single source of operating revenue. The City of Gold Beach currently uses a base rate, which includes some water use, with a multi-tiered declining block rate. The more water a customer uses the less they pay per gallon. The current rates and usage tiers are outlined in Table 4.1. This rate structure can be effective in certain situations, however it does not encourage water efficiency and, for some small systems, does not reflect the additional costs of higher water use. (Additional costs associated with higher water use may come from increased storage requirements, larger water main lines, additional chemical and treatment costs, wear and tear on equipment, etc.)

The City adjusts the base rate annually, depending on inflation. Years ago, city decision makers chose to charge customers outside of the city limits more than customers inside city limits. This additional charge was designed to account for higher costs to maintain and respond outside the City. The utility's current rate structure for water service is shown below. For the purposes of this financial analysis, the Council requested RCAC maintain this cost difference between the inside and outside city limits users.

Table 4.1 City of Gold Beach Water Rate Schedule

Residential:		IN	OUT
Base	0- 1,500 gallons	\$17.23	\$18.94
Tier 1	1,501- 2,500 gallons	\$3.75	\$4.32
Tier 2	2,501- 3,000 gallons	\$2.54	\$2.93
Tier 3	3,001-5 ,000 gallons	\$1.27	\$1.46
Tier 4	5,000+ gallons	\$0.54	\$0.63
Commercial:			
Base	0- 3,000 gallons	\$23.55	\$26.22
Tier 1	3,001- 7,000 gallons	\$3.75	\$4.32
Tier 2	7,001-10,000 gallons	\$2.54	\$2.92
Tier 3	10,001-20,000 gallons	\$1.88	\$2.16
Tier 4	20,001-30,000 gallons	\$1.27	\$1.46
Tier 5	30,000+ gallons	\$0.61	\$0.70
Tier prices are per 1,000 gallons for every class.			
Plus Water Reserve Fund Charge			\$2.00 per account
Effective July 1, 2015			

Table 4.2 Water Rate Customer Characteristics

Class	Residential		Commercial		City Meter
	IN	OUT	IN	OUT	
City Rate Code	101	105	121	125	171
Number of Connections	989	324	253	40	15
Number of Active Accounts	842	298	236	40	13
Avg Monthly Bill -Mean	\$23.87	\$28.68	\$60.23	\$64.09	\$0.00
Avg Monthly Bill - Median	\$23.74	\$27.23	\$30.45	\$39.81	\$0.00
Active Accts \$0 annual bill	43	5	2	4	13
Total Annual Revenue	\$241,212	\$102,557	\$170,557	\$30,764	\$0.00
% of Total Revenue	44.3	18.8	31.3	5.6	0
% of Total Use	30.0	13.4	47.8	7.0	1.9

During Fiscal Year Ending (FYE) June 2015, the City of Gold Beach data shows 1,621 metered connections with an average of 1,429 active accounts in the billing and use data. Of the “active” accounts, a total of 67 had a bill of \$0 during the 12 month period. In addition, 15 residential accounts were charged less than \$100 total for 12 months. Therefore, 82 of the “active” accounts contributed little or no revenue. *For planning purposes, all revenue estimates in Section 5 will be based on 1,347 active, bill paying accounts: Residential 1,077 and Commercial 270.* All 13 City Meters are included in the 82. Those meters may use water, however the city water utility does not charge other city departments for the water used.

Residential customers heavily subsidize the commercial customers. Residential customers used about 43% of the water and generated 63% of the revenue.

The average monthly bill was calculated for each account. In the table above, both the mean (average) and median figures are determined based on the averages for each account sorted smallest to largest. The difference between the two numbers is affected by the number of accounts with \$0 bills and the high bills. For example, the commercial inside class with 11 accounts averaging more than \$200 per month skews the mean result higher. Whereas half of the accounts in that same category average \$30.45 or less per bill each month.

5. Water Rate Options

Section 2 demonstrated the need for additional revenue. Current practices are generally sufficient to meet basic operational expenses, however capital projects are reducing the fund balance. Projects outlined in the recent Water Master Plan will require loans or other outside funding. The revenue requirement was projected for the next five years and includes: operational expenses adjusted for inflation, contribution to reserve accounts, capital outlay expenses and debt service. The table below shows the projected revenue requirement.

Table 5.1 Water Fund Revenue Requirement

	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
Expenses	\$584,413	\$592,276	\$600,262	\$1,416,546	\$1,424,784
Emergency and Operating Reserve	\$36,913	\$36,913	\$36,913	\$36,913	\$36,913
Capital Outlay	\$0	\$50,000	\$50,000	\$50,000	\$50,000
Revenue Requirement	\$621,326	\$679,189	\$687,175	\$1,503,459	\$1,511,697
Current Revenue	\$558,517	\$563,871	\$569,279	\$574,740	\$580,256
Difference	\$62,809	\$115,318	\$117,896	\$928,719	\$931,441

Rates need to be adjusted in order to meet expenses and avoid depleting the fund balance and other reserves. For example, to generate enough revenue to make up the difference for FY 2016-17, an additional \$3.89 per month would need to be collected from each account.

The City of Gold Beach desires to implement a rate structure which encourages efficient use of water and is easy to understand. The City wishes to keep the current residential and commercial and inside and outside city limits classifications. The City decided to continue with the additional 5% charge to customers outside of the city limits.

Changes to the current structure include reducing the number of tiers to a base rate plus 3 usage tiers. The new tiers were determined by analysis of customer water use during FY 2014-15. The new tiers are structured based on natural breaks and correspond to approximately 15% of accounts within the base rate range, 50% will be in Tier 1, 30% in Tier 2 and roughly 5% in Tier 3. The usage charges changed from a decreasing block rate to an increasing block rate. This change will assist with the City's goal of encouraging sustainable water use that will allow the water system to better manage any changes in future water supply.

During the study period, the water treatment plant produced 187,866,000 gallons of water. Assuming similar water production in FY 2016-2017, the cost to produce 1,000 gallons of water would be \$3.31. The cost per 1,000 gallons sold would be higher since the city produces approximately 47,000,000 gallons more than it sells. Creating a rate structure on this number alone is not recommended due to large fluctuations in revenue, potential for cash flow problems, and questions of rate equity.

However, knowledge of the cost to produce 1,000 gallons can be useful when comparing rate structures and in analyzing system operations from one year to the next. In all of the options below, rates for each of the usage tiers are below \$3.31, with one exception in Option 1A.

The rate options shown below are designed to meet the revenue requirements shown for FYE 2017 and FYE 2021 in the table above.

Rate Option 1A

Revenue generated is set to match the **current percent use**: Residential at 45% and Commercial at 55%. (To equal 100% percent, use was adjusted slightly due to city meter use.) Base rate is established to generate approximately 75% of the revenue requirement to assist with financial stability of the utility.

		FY 2016-2017		FY 2020-2021	
Residential:		IN	OUT	IN	OUT
Base	0- 1,500 gallons	\$16.20	\$17.01	\$39.50	\$41.48
Tier 1	1,501- 5,000 gallons	\$0.75	\$0.79	\$3.00	\$3.15
Tier 2	5,001- 15,000 gallons	\$1.50	\$1.58	\$4.00	\$4.20
Tier 3	15,001+ gallons	\$2.00	\$2.10	\$4.75	\$4.99
Commercial:		IN	OUT	IN	OUT
Base	0- 1,000 gallons	\$79.00	\$82.95	\$192.50	\$202.13
Tier 1	1,001- 7,000 gallons	\$0.50	\$0.53	\$2.00	\$2.10
Tier 2	7,001-83,000 gallons	\$1.00	\$1.05	\$2.60	\$2.73
Tier 3	83,001+ gallons	\$1.50	\$1.58	\$3.00	\$3.15
Tier prices are per 1,000 gallons for every class.					
Plus Water Reserve Fund Charge:		\$9.19 per account			

Rate Option 1B

Revenue generated is set to match the **current percent revenue**: Residential at 63% and Commercial at 37%. Base rate is established to generate approximately 75% of the revenue requirement to assist with financial stability of the utility.

		FY 2016-2017		FY 2020-2021	
Residential:		IN	OUT	IN	OUT
Base	0- 1,500 gallons	\$22.50	\$23.63	\$55.25	\$58.01
Tier 1	1,501- 5,000 gallons	\$1.00	\$1.05	\$4.61	\$4.84
Tier 2	5,001- 15,000 gallons	\$2.25	\$2.36	\$5.50	\$5.78
Tier 3	15,001+ gallons	\$3.50	\$3.68	\$6.00	\$6.30
Commercial:		IN	OUT	IN	OUT
Base	0- 1,000 gallons	\$53.00	\$55.65	\$129.50	\$135.98
Tier 1	1,001- 7,000 gallons	\$0.25	\$0.26	\$1.00	\$1.05
Tier 2	7,001-83,000 gallons	\$0.70	\$0.74	\$1.50	\$1.58
Tier 3	83,001+ gallons	\$1.00	\$1.05	\$2.45	\$2.57
Tier prices are per 1,000 gallons for every class.					
Plus Water Reserve Fund Charge:		\$9.19 per account			

Rate Option 2

Base rate is established by increasing inside city limit customers by \$5.00 from current rates for FY2016-2017. Plus \$5.00 per year after resulting in FY 2020-2021 rates \$25.00 above current rates. Tier rates are adjusted to meet the remaining revenue requirement not generated from the base rates. Outside classes are adjusted based on the current percent differences between that class and the inside class.

		FY 2016-2017		FY 2020-2021	
Residential:		IN	OUT	IN	OUT
Base	0- 1,500 gallons	\$22.23	\$23.34	\$42.23	\$44.34
Tier 1	1,501- 5,000 gallons	\$1.00	\$1.05	\$5.00	\$5.25
Tier 2	5,001- 15,000 gallons	\$2.00	\$2.10	\$6.50	\$6.83
Tier 3	15,001+ gallons	\$2.75	\$2.89	\$8.00	\$8.40
Commercial:		IN	OUT	IN	OUT
Base	0- 1,000 gallons	\$28.55	\$29.98	\$48.55	\$50.98
Tier 1	1,001- 7,000 gallons	\$1.00	\$1.05	\$5.00	\$5.25
Tier 2	7,001-83,000 gallons	\$2.00	\$2.10	\$6.50	\$6.83
Tier 3	83,001+ gallons	\$2.75	\$2.89	\$8.00	\$8.40
Tier prices are per 1,000 gallons for every class.					
Plus Water Reserve Fund Charge:		\$9.19 per account			

Rate Equity

In setting or adjusting water rates, “equity” is the art of spreading the burden fairly among the system’s customers. A system may not be able to entirely control the cost of producing, treating, storing, and distributing safe water to its customers, but it must recover the full cost of providing water and is responsible to ensure all customers are paying their fair share - not too much, not too little.

Most water systems strive to adopt a rate structure in which the amount of money paid by each customer is roughly proportional to that customer’s demand on the system’s capacity and resources. Within this overall strategy, concessions may be made for low or fixed income customers, attraction of commercial and industrial activity and the jobs they provide, and a wide range of other local and political considerations. In a detailed water use analysis, many systems discover large discrepancies between demands made on the system and revenue received. Sections 3 & 4 outline the current differences between percent water use per customer class and percent revenue recovered.

Revenue vs. Use Comparison

Class	Residential	Commercial
% of Total Use	45	55
% of Total Revenue		
Current	63	37
Option 1A	45	55
Option 1B	63	37
Option 2	59	41

Sample bills are helpful to see how the rate options translate into real numbers for customers. Below is a sampling of potential bills under the current and potential rate options for FY2016-2017. Take note of how bills change for customers at the low, mid and high water use for each customer class, as well as the median user (third column). For comparison of impacts to high water users, the cost per additional 10,000 gallons of water used is shown in the far right column.

In addition, the reserve charge, \$2.00 for the current fee or \$9.19 for the proposed reserve amounts, would be added to the amount shown below.

Sample Bills for FY2016-2017

Residential Inside							
Use	0	2,500	3,400	7,000	10,000	20,000	Add. 10K
Current	\$17.23	\$20.98	\$24.36	\$31.98	\$37.61	\$46.69	\$5.40
Option 1A	\$16.20	\$16.95	\$17.61	\$21.83	\$26.33	\$43.83	\$20.00
Option 1B	\$22.50	\$23.50	\$24.38	\$30.50	\$37.25	\$66.00	\$35.00
Option 2	\$22.23	\$23.23	\$24.11	\$29.73	\$35.73	\$59.48	\$27.50

Residential Outside							
Use	0	2,500	3,700	7,000	10,000	20,000	Add. 10K
Current	\$18.94	\$23.26	\$28.45	\$37.23	\$43.70	\$54.17	\$6.30
Option 1A	\$17.01	\$17.80	\$18.78	\$22.94	\$27.68	\$46.08	\$21.00
Option 1B	\$23.63	\$24.68	\$25.99	\$32.03	\$39.11	\$69.31	\$36.80
Option 2	\$23.34	\$24.39	\$25.31	\$31.22	\$37.52	\$62.47	\$28.90

Commercial Inside							
Use	0	2,000	4,500	10,000	20,000	85,000	Add. 10K
Current	\$23.55	\$23.55	\$29.18	\$49.82	\$75.23	\$185.68	\$6.10
Option 1A	\$79.00	\$79.50	\$80.74	\$85.00	\$95.00	\$161.00	\$15.00
Option 1B	\$53.00	\$53.25	\$53.87	\$56.60	\$63.60	\$109.70	\$10.00
Option 2	\$28.55	\$29.55	\$32.03	\$40.55	\$60.55	\$192.05	\$27.50

Commercial Outside							
Use	0	2,000	6,400	10,000	20,000	85,000	Add. 10K
Current	\$26.22	\$26.22	\$40.89	\$56.43	\$85.66	\$212.67	\$7.00
Option 1A	\$82.95	\$83.48	\$85.84	\$89.28	\$99.78	\$169.09	\$15.80
Option 1B	\$55.65	\$55.91	\$57.07	\$59.43	\$66.83	\$115.55	\$10.50
Option 2	\$29.98	\$31.03	\$35.70	\$42.58	\$63.58	\$201.66	\$28.90

6. Conclusions and Recommendations

Rates

- The fund balance will not be sufficient to meet future operational and capital project needs. Additional funding from loans, grants, customer revenues or a combination will be required.
- **Recommend** the city take action as soon as possible to adjust the rate structure and generate the additional revenue needed as shown in one of the options in section 5.
- Seek guidance before choosing a rate structure significantly different than those shown as revenue may not be sufficient to meet utility need.

Reserves

- Reserve amounts are below city desired and industry recommended best practices.
- **Recommend** the city prioritize additional revenue toward creating adequate reserves.

Customer Education

- A rate structure change requires adequate customer education prior to and during implementation.
- **Recommend** the city plan for customer education and support staff during this transition with appropriate policies or guidance for customer outreach.

Key points to remember with any rate adjustment:

- Successful utilities strive to *be transparent*. A sustainable utility must promote its services (highlights and the low points) and continuously educate its customers.
- Maintain a vigorous *collection and shut-off policy* to keep delinquent accounts at a minimum.
- When a utility implements a significant rate change, users may reduce their consumption with subsequent effect on revenue levels and the utility's ability to meet its financial obligations. Within 12 to 18 months after a rate increase, a thorough review should be conducted to *assess the actual impacts* to water use and revenue. Make adjustments as needed to ensure revenues will sufficiently cover expenses.
- *Review the budget and rates annually* or no less than every two years. Keeping track of customer seasonal and annual water demands and revenues generated will help determine operations needs, budget forecasts and rate adjustments.
- Establish a *pattern of small rate adjustments* every year to keep up with inflation and capital projects. This practice improves customer awareness of the cost of operating the water service and minimizes large rate increases every 5 or 10 years.

Additional Considerations:

- *Water loss* evaluation is separate from the rate analysis process. A goal of water loss less than 10% may be challenging to achieve but is highly encouraged. Reducing and managing water loss is critical to using resources efficiently. Minimizing water loss can reduce public health risks, electrical expenses, unnecessary wear and tear on pumps, tanks and water lines, and other costly impacts.
- *Identify all areas of service* provided and consider if a fee is appropriate. Fire protection service, irrigation, bulk water, construction site water use, public/community buildings & parks can be overlooked services. Any service provided incurs an expense. Whether the expense is divided among all users or charged to a specific user is determined by the utility's governing body.

Appendix A – Ten Year Financial Spreadsheet

Gold Beach Water		2011-12	2012-13	2013-14	2014-15	Previous 4 yr. Average	2015-2016	Annual Inflation Factor %	2016-17	2017-18	2018-19	2019-20	2020-21
		(Year End Actual)	(Year End Actual)	(Year End Actual)	(Year End Actual)		Budgeted						
Operating Income													
1	Inside Water Sales	\$ 384,343.60	\$ 388,038.45	\$ 396,153.78	\$ 412,565.48	\$ 395,275.33	\$ 400,000	1.00%	\$ 404,000	\$ 408,040	\$ 412,120	\$ 416,242	\$ 420,404
2	Outside Water Sales	\$ 132,182.75	\$ 128,407.00	\$ 123,116.35	\$ 132,544.98	\$ 129,062.77	\$ 130,000	1.00%	\$ 131,300	\$ 132,613	\$ 133,939	\$ 135,279	\$ 136,631
3	Penalties	\$ 17,126.12	\$ 17,284.18	\$ 13,379.39	\$ 22,444.91	\$ 17,558.65	\$ 17,000	0.00%	\$ 17,000	\$ 17,000	\$ 17,000	\$ 17,000	\$ 17,000
11	Total Operating Income (Add lines 1 thru 10)	\$ 533,652.47	\$ 533,729.63	\$ 532,649.52	\$ 567,555.37	\$ 541,897	\$ 547,000		\$ 552,300	\$ 557,653	\$ 563,060	\$ 568,520	\$ 574,035
Operating Expense													
12	Personnel Services - Wages	\$ 95,908.00	\$ 126,110.92	\$ 123,052.56	\$ 126,660.56	\$ 117,933.01	\$ 131,600	2.00%	\$ 134,232	\$ 136,917	\$ 139,655	\$ 142,448	\$ 145,297
13	Personnel Services - Benefits	\$ 60,685.32	\$ 76,787.40	\$ 80,136.90	\$ 79,781.12	\$ 74,347.69	\$ 83,700	2.00%	\$ 85,374	\$ 87,081	\$ 88,823	\$ 90,600	\$ 92,412
14	Mat and Serv Dist & Gen (Lines <\$10,000)	\$ 43,528.87	\$ 25,914.26	\$ 21,664.91	\$ 32,167.17	\$ 30,818.80	\$ 41,000	1.00%	\$ 41,410	\$ 41,824	\$ 42,242	\$ 42,665	\$ 43,091
15	Mat and Serv Dist & Gen (Equipment O&M)	\$ 9,056.62	\$ 9,196.17	\$ 10,107.60	\$ 4,556.95	\$ 8,229.34	\$ 14,000	1.00%	\$ 14,140	\$ 14,281	\$ 14,424	\$ 14,568	\$ 14,714
16	Mat and Serv Dist & Gen (Materials & Fittings)	\$ 10,365.09	\$ 8,320.75	\$ 15,655.20	\$ 5,827.07	\$ 10,042.03	\$ 10,000	1.00%	\$ 10,100	\$ 10,201	\$ 10,303	\$ 10,406	\$ 10,510
17	Mat and Serv Dist & Gen (System Const. O&M)	\$ 21,311.29	\$ 20,467.71	\$ 32,874.89	\$ 27,004.77	\$ 25,414.67	\$ 25,000	1.00%	\$ 25,250	\$ 25,503	\$ 25,758	\$ 26,015	\$ 26,275
18	Mat and Serv Dist & Gen (Contract Services)	\$ 25,825.25	\$ 24,133.16	\$ 57,011.00	\$ 15,406.26	\$ 30,593.92	\$ 25,000	1.00%	\$ 25,250	\$ 25,503	\$ 25,758	\$ 26,015	\$ 26,275
19	Mat and Serv Intake & Treatment (Lines <\$10,000)	\$ 8,669.58	\$ 6,191.35	\$ 16,207.56	\$ 4,345.11	\$ 8,853.40	\$ 84,300	1.00%	\$ 8,800	\$ 8,888	\$ 8,977	\$ 9,067	\$ 9,157
20	Mat and Serv Intake & Treatment (Equip & Plant O&M)	\$ 14,581.29	\$ 8,669.74	\$ 11,761.52	\$ 7,053.66	\$ 10,516.55	\$ 12,000	1.00%	\$ 12,120	\$ 12,241	\$ 12,364	\$ 12,487	\$ 12,612
21	Mat and Serv Intake & Trtmt (Treatment & Chemicals)	\$ 12,429.55	\$ 15,072.23	\$ 10,251.30	\$ 13,447.41	\$ 12,800.12	\$ 14,000	1.00%	\$ 14,140	\$ 14,281	\$ 14,424	\$ 14,568	\$ 14,714
22	Mat and Serv Intake & Treatment (Electricity)	\$ 27,364.40	\$ 25,337.55	\$ 27,614.51	\$ 25,119.15	\$ 26,358.90	\$ 30,000	1.00%	\$ 30,300	\$ 30,603	\$ 30,909	\$ 31,218	\$ 31,530
23	Transfers Out General Indirect	\$ 102,819.00	\$ 132,805.00	\$ 143,034.00	\$ 152,267.00	\$ 132,731.25	\$ 163,989	1.00%	\$ 165,629	\$ 167,285	\$ 168,958	\$ 170,648	\$ 172,354
24	Transfers Out All Others	\$ 155,000.00	\$ 31,500.00	\$ 6,000.00	\$ 6,000.00	\$ 49,625.00	\$ 17,668	0.00%	\$ 17,668	\$ 17,668	\$ 17,668	\$ 17,668	\$ 17,668
25	Debt Service (Anticipated Start FYE 2020)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -	\$ 808,173	\$ 808,173
26	Capital Outlay Total (Not an operating expense)	\$ 245,462.46	\$ 66,553.13	\$ 24,620.02	\$ 417,900.08	\$ 188,633.92	\$ 468,000	0.00%	\$ -	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000
27		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -	\$ -	\$ -
28		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -	\$ -	\$ -
29	Transfer to Reserves (Totals only if NOT allocated)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -	\$ -	\$ -
30	*Operating Cash Reserve [25% * (Annual O&M)]	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.00%	\$ 26,913	\$ 26,913	\$ 26,913	\$ 26,913	\$ 26,913
31	*Capital Improvement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -	\$ -	\$ -
32	*Debt Service Reserve	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -	\$ -	\$ -
33	*Emergency Reserve	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 50,000	0.00%	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000
34	Total Operating Expense (Add lines 12 thru 34)	\$ 833,006.72	\$ 577,059.37	\$ 579,991.97	\$ 917,536.31	\$ 726,899	\$ 1,170,257		\$ 621,326	\$ 679,189	\$ 687,175	\$ 1,503,459	\$ 1,511,697
35	NET OPERATING INCOME (LOSS) (Line 11 less Line 34)	\$ (299,354.25)	\$ (43,329.74)	\$ (47,342.45)	\$ (349,980.94)	\$ (185,002)	\$ (623,257)		\$ (69,026)	\$ (121,536)	\$ (124,116)	\$ (934,939)	\$ (937,661)
Non-Operating Income													
36	Interest (All Checking, Savings & Reserves)	\$ 8,755.83	\$ 176.45	\$ 183.45	\$ 192.20	\$ 2,326.98	\$ 200	0.00%	\$ 200	\$ 200	\$ 200	\$ 200	\$ 200
37	Other (Misc & SDC)	\$ -	\$ 2,256.63	\$ 5,330.48	\$ 21,231.65	\$ 7,204.69	\$ 4,000	0.00%	\$ 4,000	\$ 4,000	\$ 4,000	\$ 4,000	\$ 4,000
38	Other (Transfer In - Water Reserve)	\$ 120,000.00	\$ -	\$ -	\$ 150,000.00	\$ 67,500.00	\$ 150,000	0.00%	\$ -	\$ -	\$ -	\$ -	\$ -
39	Total Non-Operating Income (Add 36 thru 38)	\$ 128,755.83	\$ 2,433.08	\$ 5,513.93	\$ 171,423.85	\$ 77,031.67	\$ 154,200.00		\$ 4,200	\$ 4,200	\$ 4,200	\$ 4,200	\$ 4,200
	NET INCOME (LOSS) (Add Line 35 and 39)	\$ (170,598.42)	\$ (40,896.66)	\$ (41,828.52)	\$ (178,557.09)	\$ (107,970)	\$ (469,057)		\$ (64,826)	\$ (117,336)	\$ (119,916)	\$ (930,739)	\$ (933,461)

Appendix B – Reserve Account Definitions

Reserves are an accepted way to stabilize and support a utility financial management. Small systems usually fund the operating expenses but don't consider putting money for a specific upcoming financial need or for an amount that can be used to provide rate stabilization in years when revenues are unusually low or expenditures are unusually high. The rationale for maintaining adequate reserve levels is twofold. First, it helps to assure that the utility will have adequate funds available to meet its financial obligations in times of varying needs. Secondly, it provides a framework around which financial decisions can be made to determine when reserve balances are inadequate or excessive and what specific actions need to be taken to remedy the situation.

Utility reserve levels can be thought of as a savings account. Reserve balances are funds that are set aside for a specific cash flow requirement, financial need, project, task, or legal covenant. Common reserve balances are established around the following four areas: operating reserve, capital improvement/equipment replacement, emergency, and debt service reserve. These balances are maintained in order to meet short-term cash flow requirements, and at the same time, minimize the risk associated with meeting financial obligations and continued operational needs under adverse conditions.

Deposits to reserve accounts may be broken into reduced annual installments to minimize the overall impact on rates. Once the target reserve has been met, the contributions can be redirected to other water reserve funds or water projects. Operating reserve levels should be adjusted on a regular basis to reflect current costs.

Debt Service Reserve

Water utilities that have issued debt to pay for capital assets will often have required reserves that are specifically defined to meet the legal covenants of the debt. Debt service reserve requirements vary based on funding agency requirements. Commonly, debt service reserve represents an amount equal to one full annual loan payment and sometimes can be accumulated to this level over a period of five to ten years.

Operating Reserve

Operating reserves are established to provide the utility with the ability to withstand short term cash-flow fluctuations. There can be a significant length of time between when a system provides a service and when a customer pays for that service. In addition, a system's cash flow can be affected by weather and seasonal demand patterns. A 45-day operating reserve is a frequently used industry norm. Because of potential delays in collecting payment many utilities attempt to keep an amount of cash equal to at least 45 days or one-eighth of their annual cash O&M expenses in an operating reserve to mitigate potential cash flow problems.

Emergency Reserve

In addition to operating reserves, emergency reserves are an important tool for financial sustainability. Emergency reserves are intended to help utilities deal with short term emergencies which arise from time to time such as main breaks or pump failures.

The appropriate amount of emergency reserves will vary greatly with the size of the utilities and should depend on major infrastructure assets. An emergency reserve is intended to fund the immediate replacement or reconstruction of the system's single most critical asset; an asset whose failure will result in an immediate water outage or threat to public safety. For example, given that the largest single asset for a small rural utility may be the primary pump, the cost of replacing that pump in the case of a failure would be a good amount to save in emergency reserves.

Capital Improvement Reserve

A capital improvement reserve (also called an equipment replacement reserve) is intended to be used for replacing system assets that have become worn out or obsolete. Annual depreciation is frequently used to estimate the minimum level of funding for this capital reserve but it's important to understand that depreciation expense is an accounting concept for estimating the decline in useful life of an asset and does not represent the current replacement cost of that asset. As an example, a brand new system with a construction cost of \$1 million and a service life of 100 years should (in theory) be setting aside \$10,000 per year to fully capitalize the replacement cost of the infrastructure as it wears out. Many smaller systems find this to be impossible because of the effect on rates. A large number of small systems are falling into disrepair due to a lack of capital improvement planning.

To initiate a capital improvement plan (CIP), a small water or sewer system will start with a list of assets that includes the remaining service life, theoretical replacement costs in today's dollars and the remaining service life. It then calculates the monthly and annual reserve that must be collected from each customer to fully capitalize the replacement cost of each asset.

An alternative method is to set aside an annual amount equal to 1% to 2% of the total original cost asset value of the utility's property. Larger systems often have sufficient non-operating revenue to fund these reserve levels without affecting rates, but smaller systems often do not, leaving them to fund their CIP reserves from rates alone.

Regardless of the method used, creating a CIP and establishing even a minimal capital improvement reserve is highly recommended for any system that strives to remain financially viable in future years.

Appendix C – Capital Outlay Needs

Section

9

Capital Improvement Plan

9.1 Background

A capital improvement plan (CIP) is a long-term program for replacement of existing or installation of new infrastructure required to improve a system's function or maintenance. The Capital Improvement Plan for water and wastewater systems provides City Council, staff and residents with a systematic approach to dealing with its short-term and long-term infrastructure needs and demands.

Under ORS 223.309(1), a capital plan, public facilities plan, master plan or comparable plan must be prepared before the adoption of system development charges (SDCs). This plan must list the capital improvements that may be funded with improvement fee revenues and include the estimated cost and timing of each improvement. Oregon Revised Statutes discuss which improvements may be funded by SDC revenues (ORS 223.307) and what type of projects qualify for credit purposes. The capital improvement plan may be modified at any time pursuant to ORS 223.309 (2).

Water system improvements recommended for the City of Gold Beach are provided in this Plan along with associated costs. The recommended improvements for the City's Capital Improvement Plan were derived from the analysis presented in Sections 8, 9, and 10.

9.2 Project Priority

A summary of the Priority 1 improvements is presented in Table 9.2.1.

TABLE 9.2.1
SUMMARY OF PRIORITY 1 WATER SYSTEM PROJECTS

No. as per Fig. 9.3.1	Project Description	Total Project Cost
1	June St.	\$204,900
2	Hunter Creek Rd. – Orchard Ln.	\$114,000
3	Hunter Creek Loop Rd. – Mateer Rd.	\$225,500
4	Hunter Creek Loop Rd. to Meyers	\$234,100
5	Mateer Bridge	\$144,000
6	Ferry Well Raw Water Intake	\$1,200,000
7	Water Treatment Plant Improvements	\$879,600
8	SCADA System	\$262,000
9	Jerry's Flat Rd./Ellensburg Ave.	\$9,300,100
	Total	\$12,364,200

A summary of the Priority 2 improvements is presented in Table 9.2.2.

**TABLE 9.2.2
SUMMARY OF PRIORITY 2 WATER SYSTEM PROJECTS**

No. as per Fig. 9.3.2	Project Description	Total Project Cost
10	Wedderburn Loop Rd.	\$287,000
11	Colvin St.	\$155,600
12	Anns Ct.	\$70,800
13	Hwy 101 -Hunter Creek Loop Rd.	\$930,800
14	Hunter Creek Loop Rd. to Brooks	\$419,300
15	3 rd St.	\$163,400
	Total	\$2,026,900

A summary of the Priority 3 improvements is presented in Table 9.2.3.

**TABLE 9.2.3
SUMMARY OF PRIORITY 3 WATER SYSTEM PROJECTS**

No. as per Fig. 9.3.3	Project Description	Total Project Cost
16	Hwy 101 - Wedderburn Loop Rd.	\$110,000
17	Tom Cat Dr.	\$217,500
18	Park Dr.	\$90,000
19	Kerber - Hwy 101	\$57,800
20	Hunter Creek Loop Rd. to Mateer Rd.	\$820,100
21	Mateer Rd.	\$185,500
22	New Tank – Jerry’s Flat Rd.	\$1,752,000
23	Old Coast Hwy.	\$348,400
24	Hwy 101 – Driftwood	\$120,300
25	Doyle Pt.	\$95,400
26	Hound Dog	\$83,500
27	Big Prairie Reservoir	\$170,000
28	Hound Dog Reservoir	\$67,100
29	Wallace Reservoir	\$71,700
30	Wedderburn/Knoxville Reservoir	\$112,300
31	Hunter Creek Heights Reservoir	\$7,900
32	Brooks Reservoir	\$50,600
33	Seismic Shutoff Valves	\$601,400
34	New Well – Hunter Creek Heights	\$787,100
	Total	\$5,548,600