
DOMESTIC WATER SYSTEM 2012 RATE UPDATE

PREPARED FOR THE
CITY OF YAKIMA
YAKIMA, WASHINGTON

CONSULTING SERVICES PROVIDED BY:



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October 18, 2012



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Mr. Dave Brown
Water/Irrigation Division Manager
City of Yakima
2301 Fruitvale Blvd.
Yakima, WA 98902

Draft Report: 2012 Domestic Water System Rate Update

Dear Mr. Brown:

FCS GROUP is pleased to submit our report for the 2012 Domestic Water System Rate Update for the City of Yakima (City). This letter provides a brief summary of the study objectives, finding and conclusions.

A. STUDY OBJECTIVES AND APPROACH:

The 2012 Domestic Water System Rate Update involved a review of previously established Utility financial policies, development of a capital funding plan for the Capital Improvement Program, an update of annual revenue needs, and a schedule of proposed rates for years 2013 through 2017. An update of Utility connection charges and a Utility performance benchmarking analysis are currently underway and will be provided under separate cover by year-end 2012.

The methods used in this study follow general industry guidelines for developing utility rates – rates must generate enough revenue to maintain self-supporting and financially viable utilities without undue discrimination toward or against any customer. In compliance with the Washington State Supreme Court Ruling (*Lane vs. Seattle*), this study removes fire protection-related costs from general service water rates; and, as allowed by the Court, increases the water utility tax as necessary to recover those costs from the City's General Fund.

B. SUMMARY OF KEY ASSUMPTIONS AND FINDINGS

Key study assumptions and findings are highlighted below. Additional detail is provided throughout the study report:

- This study continues the financial policies established in the City's previous Utility rate studies updated to reflect current conditions. The Utility is well within industry best practices for debt-to-equity ratios, debt coverage policies, system reinvestment funding, and cash reserves. Maintaining sufficient operating reserves over the study period will require rate adjustments as proposed herein.
- The City has identified \$23.9 million (inflated dollars) in projects over the next five years consisting of replacement and rehabilitation projects necessary to sustain viable operation of the system, as well as supply and treatment projects

necessary to comply with state and federal regulations and ensure the public health and safety of the community. In addition to the use of direct rate-funding and cash reserves, \$8.5 million in approved low-interest loans and \$8.6 million in new revenue bond proceeds will be used to fund identified capital projects.

- New annual debt service payments reach \$1.1 million by the end of the study period, which when added to the existing debt burden of \$0.6 million, totals \$1.7 million in debt service payments.
- Operating and maintenance (O&M) expenses (excluding utility taxes) are assumed to increase at inflationary levels from \$5.5 million to \$6.4 million over study period.
- Fire protection costs of \$317,433 were identified for removal from general service water rates (Washington State Supreme Court Ruling – *Lane vs. Seattle*). The reduction in water rates for fire protection cost removal is offset by an increase to the water utility tax. The Utility is made whole by receiving payment from the General Fund to recover the fire protection costs, and the General Fund is made whole by receiving the incremental revenue generated from the increased water utility tax. The current utility tax rate is 20.0 percent of revenues, increasing to 23.9% assuming recovery of fire protection costs from this tax.
- Water sales revenue have been steadily declining over past few years, down about 17% over the last five years - due to a combination of water conservation efforts, economic conditions, and weather patterns. This pattern is expected to continue for this study period. Assuming nominal customer growth, revenue under existing rates is assumed to increase from \$7.5 million to \$7.8 million over the study period.
- Study findings concluded that annual revenue adjustments are necessary over the study period to fund the capital program and address the declining revenue stream. The recommended rate strategy calls for three years of 9.0% increases (2013-2015) followed by two years of 3.5% increases (2016-2017). For 2013, this results in an increase to the average residential customer bi-monthly water bill of \$4.06, or about \$24 over the course of the year (assuming a 3/4-inch meter and 2,200 cubic feet per bill).
- Rates were designed to recover a slightly higher amount of revenue from the fixed charge portion of the rate structure to maintain rate stability in light of current economic conditions and changing water demands. Proposed rates recover about 25% from fixed charges (up from about 22% currently). The detailed schedule of rates and sample typical bills are presented on Pages 20-21 of the study report.

C. CONCLUSIONS AND RECOMMENDATIONS

The proposed rates presented herein are designed to generate the revenues necessary to fund the capital program, cover forecasted ongoing annual expenditures, and meet cash reserve targets. FCS GROUP and City staff recommends that City Council approve the five-year schedule of proposed rates presented herein. The study assumes adoption in

January 2013, with implementation of rates effective January 1, 2013, and January 1 of each subsequent year in the study period.

Of special note, the City has been successful in maintaining some of the lowest water rates in the area, while continuously improving its level of service. The City has undertaken a variety of Utility organizational, operational, and financial studies to promote water system sustainability and sound fiscal management practices - including strategic business plans, comprehensive system plans, and regular rate and charge studies. Since 1998, the City Council has adopted a rolling five-year schedule of water rates to fund its current five-year capital program, ongoing operations, and special program incentives. The City Council should be commended for this proactive approach to fiscal management. Regular review of actual financial performance of the Utility should be an integral part of the successful implementation of this study.

As always, it has been a pleasure working with you and the City and hope to be of continued service in the future.

Sincerely,

Karyn Johnson
Principal

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SECTION 1

STUDY FRAMEWORK

A. BACKGROUND

The City of Yakima (City) owns and operates a Domestic Water Utility System (Utility), which provides service to a population base of slightly over 65,000 through just over 18,000 service connections. The main goal of the water system is to provide customers with a clean, safe and adequate supply of water. In support of this goal, the City continually evaluates its water system capital needs to address federal and state regulations and environmental concerns; periodically reviews its strategic plan to ensure alignment with City goals and Utility conditions; and regularly updates its Utility rates and charges to support identified programs and initiatives.

Of special note, the City has been successful in maintaining some of the lowest water rates in the area, while continuously improving its level of service. The City has undertaken a variety of Utility organizational, operational, and financial studies to promote water system sustainability and sound fiscal management practices - including strategic business plans, comprehensive system plans, and regular rate and charge studies. Since 1998, the City Council has adopted a rolling five-year schedule of water rates to fund its current five-year capital program, ongoing operations, and special program incentives. The City Council should be commended for this proactive approach to fiscal management.

The City updated its Water System Comprehensive Plan (WSCP) in 2011 and implemented the final installment of the previous five-year rate adjustment strategy (2008-2012); with additional adjustments necessary to address changes in legal requirements for water rate setting (Washington State Supreme Court decision in *Lane vs. Seattle*, discussed later in this report).

B. STUDY OBJECTIVES

In May 2011, the City retained FCS GROUP to update the Domestic Water Rate Study to evaluate Utility capital needs and ongoing operations and maintenance expenses and develop a rate strategy to recover costs for the current five-year planning period (2013-2017). The scope of this study included the following major elements:

1. Update operating and capital reserve targets, debt management strategies, and other fiscal policies as appropriate to ensure sound financial operations of the Utility.
2. Develop financing strategies for funding the Utility's current five-year capital program (2013-2017).
3. Forecast revenue requirements for the study period, incorporating fiscal policies, capital-related costs, ongoing operating & maintenance expenses, and other cash

obligations of the Utility. Determine annual revenue adjustments necessary to fund revenue requirements for the five-year period (2013-2017).

4. Identify and remove fire protection-related costs from general service water rates, in compliance with the Washington State Supreme Court Ruling (*Lane vs. Seattle*). Calculate the water utility tax increase necessary to recover those costs from the City's General Fund.
5. Update the schedule of rates to recover total Utility costs through an appropriate balance of fixed and variable rate components. Assignment of costs to customer classes is not necessary since the same schedule of general service rates applies to all domestic service customers on the system (e.g., residential, governmental, commercial, and industrial). A unique schedule of charges applies to customers receiving private fire protection (e.g., commercial sprinkler systems).
6. Present findings and document study results in a project report, including technical appendices containing the detailed analyses.

The above scope elements are addressed throughout each section described in this report. An update of Utility connection charges and a Utility performance benchmarking analysis are currently underway and will be provided under separate cover by year-end 2012.

C. METHODOLOGY

The methods used to complete our work employed analytical principles that are generally accepted and widely followed throughout the industry – rates and charges should generate sufficient revenue to maintain a self-supporting and financially viable Utility without undue discrimination toward or against any customer.

We worked closely with City staff to develop a five-year rate strategy that recovers the forecasted costs of Utility operations, complies with legal requirements and industry practices, supports City pricing goals, and remains affordable to customers. This report documents our assumptions, findings and recommendations for the study period (2013-2017).

D. REPORT ORGANIZATION

The remainder of this report provides separate sections for Financial Policies (Section 2), Revenue Requirements (Section 3); Removal of Fire Protection Costs (Section 4); and Rate Design (Section 5). The technical appendix contains the analytical detail supporting study conclusions.

SECTION 2

FINANCIAL POLICIES

The purpose of establishing financial policies is to promote the financial integrity and stability of the Utility and to provide for the sustainability of essential water system services. These policies form the foundation of Utility management and, with routine application, can act as overarching guidelines for consistent decision making.

Some financial policies are imposed by outside sources (e.g., minimum debt service coverage and bond reserves) while other policies are specific to the agency and its utility (e.g., discretionary reserve levels, reinvestment protocols, and use of debt). This study continues the financial policies established in the City's previous Utility rate studies updated to reflect current conditions.

A. FUND ACCOUNTING

From an industry and fiscal management perspective, cash balances are a necessary and appropriate part of prudent utility budgeting. Within each utility enterprise, appropriate segregation of monies should be established and maintained to provide adequate controls as to the sources and uses of funds. This practice helps to ensure that funds raised through the utility are applied to the appropriate purposes, and that equity attained through rate and charge structures is maintained in application. Above all, the City should establish and maintain a financial structure that provides for adequate and predictable revenues to meet the forecasted needs and operational, legal, and policy objective of its utility systems.

The City maintains separate fund accounting for the Utility and segregates account balances for operating activities, capital activities, and restricted debt reserves. The rate management strategy presented in this study presumes that the Utility will continue to operate as a self-supporting enterprise fund. This means Utility rates and charges have been designed to recover the forecasted costs and financial obligations of the water system – without subsidy from other City utilities or General Fund revenues sources, such as property taxes.

1. Operating Reserves

The operating reserve is designed to provide a liquidity cushion to maintain financial viability of the Utility despite short-term variability in revenues and expenses – primarily caused by seasonal fluctuations in billings and receipts, unanticipated cash operating expenses, or lower than expected revenue collections. Target funding levels are generally expressed in number of days' cash operating expenses, with the minimum requirement varying with the expected risk of unanticipated needs.

FCS GROUP recommends that the City maintain a minimum cash balance in the Utility operating account equal to between 45 and 60 days (12% to 16.5%) of annual O&M expense. The current financial plan continues the City's historical practice of

maintaining a minimum target balance of \$1 million, which falls within the recommended target. This target should be evaluated over time to reflect changing demand patterns and associated revenue risk.

2. Capital Reserves

A capital reserve is an amount of cash set aside in case of an emergency, should a piece of equipment or a portion of the Utility's infrastructure fail unexpectedly. Additionally, the reserve could be used for other unanticipated capital needs, including project cost overruns. These reserves are not intended to cover the cost of system-wide failures resulting from catastrophic events; a more common practice is to carry insurance for such purposes. The capital account holds loan and bond proceeds; other capital-related revenues, and transfers from the operating fund designated for capital construction and replacement projects.

FCS GROUP recommends that the City maintain a minimum cash balance in the Utility capital account equal to 1.0% to 2.0% of water system fixed assets. The current capital funding plan continues the City's historical practice of maintaining a minimum target balance of \$750,000, which falls within the recommended target. This target should be evaluated over time to increase as the Utility's asset base increases.

3. Restricted Debt Reserves

When issuing revenue bonds, underwriters require the municipality to establish and maintain a restricted cash reserve for the utility through the term of debt repayment. The purpose of a debt reserve is to provide one safeguard for bondholders, in the event the utility has insufficient funds to meet annual debt service payments. This reserve is generally equal to one year's debt service payment for each bond issue. The reserve can be used to fund the last year's debt service payment for each issue.

The City has historically used both revenue bonds and low-interest state loans to finance Utility capital projects. The rate management strategy presented in this study conservatively presumes that the City will issue revenue bonds for future debt-financing needs, unless grants or state loans have been approved. Additional reserves have been incorporated for each proposed future bond issue (assumed to be funded with debt proceeds equal to one year's principal and interest payment). The City will continue to pursue grants and low-cost loans to reduce future bond financing requirements.

B. SYSTEM REINVESTMENT FUNDING

The purpose of system replacement funding is to provide for the replacement of aging system facilities to ensure sustainability of the system for ongoing operations. A common approach of municipal utilities is to incorporate a replacement funding (or equity accumulation) mechanism based on annual depreciation expense as a reasonable level of reinvestment in the system.

Annual depreciation is a non-cash expense intended to recognize the consumption of utility assets over their useful lives. Collecting the amount of annual depreciation expense through rates provides a funding source for capital expenditures, especially those related to repair and replacement of existing utility plant. Further, funding

depreciation through rates helps to ensure that existing ratepayers pay for the use of the assets serving them, with the cash flow funding at least a portion of the eventual replacement of those assets. As an alternative to full depreciation funding, depreciation funding net of debt principal payments is sometimes used as a relatively moderate replacement funding strategy. Using this approach, the full funding of depreciation is seen as having two uses: first, reducing liabilities by paying debt principal as due, and second, generating a cash asset for system reinvestment. Debt reduction, cash accumulation, or both thereby offset depreciation.

The Utility's annual depreciation expense is currently about \$1 million. The City includes a water main replacement program in the five-year capital program. Further, the City plans to transfer between \$600,000 and \$650,000 per year from the operating account to the capital account for direct rate-funding of capital projects. Given this level of rate-funding, FCS GROUP does not see a need to generate additional rate revenues for reinvestment funding during this study period. Over time, the City should consider phasing in an increase to the direct rate-funding of capital projects to reach about \$1 million to more closely align with funding annual depreciation expense.

C. DEBT SERVICE COVERAGE

When a municipality issues revenue bonds (and other types of debt instruments), it agrees to certain terms and conditions related to the repayment of those bonds. One of those terms is referred to as bond coverage. Simply put, the agency agrees to collect enough in annual system revenues to meet all operating expenses and not only pay debt service, but actually collect an additional multiple of that debt service. Bond coverage ratios typically range from 1.10 to 1.50, meaning that the agency would collect O&M expenses plus 1.10 to 1.50 times revenue bond debt service as a minimum legal level of revenues. The stated coverage factor is a minimum requirement – meaning anything less than this level would be a technical default of the bond covenant.

The City's current minimum coverage requirement on outstanding revenue bonds is 1.25 times annual revenue bond debt service, using the net revenues of the Utility. This study continues the City's internal policy to set Utility rates at a level that will achieve coverage of at least 2.0 times revenue bond debt service. Revenue generated above cash needs to comply with coverage requirements may be used for capital purposes, and thus reduce future borrowing needs.

D. USE OF CONNECTION CHARGE REVENUES

Connection charges are assessed on new development as a condition of connection to the utility system. Because of the variability in customer growth from year to year, the annual revenue stream from this resource can be unreliable and subject to wide fluctuations. The City should estimate and budget Utility connection charge revenues based on long-term growth estimates, recent growth experience, and the scale of known development planned or underway. The purpose is to establish a reasonable and conservative estimate of potential connection charge revenue collections.

Connection charge revenue should be deposited in the capital account and made available for capital purposes only. Connection charges can legally be used in two ways – they can be applied to capital project costs directly (reducing the amount of debt issued), or they can be applied toward annual debt service payments. FCS GROUP recommends that, as a general policy, connection charge revenues be used to directly fund capital expenditures. This practice serves to mitigate the risk of relying on this volatile revenue source to pay debt obligations.

E. CAPITAL PROGRAM FUNDING / DEBT MANAGEMENT

In conjunction with establishing or planning its Utility capital program, the City should develop a corresponding capital-financing plan that supports execution of that program. This program should incorporate system replacement and rehabilitation, system upgrade and improvement, and system expansion. The policy intent is to establish an integrated capital funding strategy that considers best management practices for debt management.

1. Capital Funding

Utilities can typically draw funds for capital projects from a variety of sources:

- Grants
- Developer contributions
- Connection charges
- System reinvestment funding
- Direct funding from rates
- Other capital revenues
- Debt

Given these potential funding sources, utilities often find themselves choosing between funding sources when establishing a capital funding plan. While available grants and developer contributions would logically be applied to project costs first, the next choice in the funding “hierarchy” is not necessarily apparent.

The specific decision regarding whether to fund projects by cash or debt is an important policy decision that will likely be driven by a number of considerations. Cash funding might be cheaper in the long-run because there is no interest, but debt funding could be the more practical option since it allows for the payment of project costs over an extended period of time. In addition, using debt to spread the cost over time will help ensure that future customers pay for their fair share of system costs.

Finding the appropriate balance of cash versus debt financing requires an evaluation of debt management policies discussed below.

2. Debt Management

Historically, the City has funded Utility capital projects through a combination of “pay-as-you-go” cash funding (cash reserves, connection charges, rates) and debt issuance. Excessive use of debt is unfavorable for a utility, and can damage the utility’s credit rating, reducing its ability to acquire low-cost debt in the future. On the other hand,

“pay-as-you-go” funding might create excessive burdens for existing customers, raising questions of practicality and equity between current and future customers.

Industry best practices (and bond underwriter’s preference) suggest that municipalities should maintain a debt-to-equity ratio (total debt divided by the sum of total debt and equity) of no greater than 50% debt and 50% equity (cash). The Utility’s current debt-to-equity ratio is 14% debt /86% equity – well within industry capacity benchmarks to fund near-term capital projects through debt instruments.

The City’s general policy is to maintain debt service below 25 percent of the total Utility budget. Utility debt service is currently 7.5 percent of the budget, forecasted to increase to 15 percent by the end of the study period - well within the City’s established target.

F. CUMULATIVE IMPACT OF FINANCIAL POLICIES

Satisfying all of these policy objectives might seem daunting at first, but the outcome is that multiple benchmarks overlap, resulting in the simultaneous achievement of multiple objectives within the same level of rates. For example, the higher internal policy for debt service coverage provides a cash resource to the capital account that helps maintain a healthy debt-to-equity ratio and contributes to the recommended capital reserve.

Each criterion provides a different perspective on how much revenue is appropriate, and satisfying them all generally results in a higher rate than if only a single standard is considered. However, this approach reduces financial risk and increases financial stability – any near term increases that result will help to promote more stable, and lower, long-term rates. This is evidenced by the City’s continued delivery of high quality water service while maintaining relatively low water rates.

SECTION 3

REVENUE REQUIREMENTS

The revenue requirement analysis forms the basis for a long-range financial plan and multi-year rate management strategy. It also forms the basis for the City to set Utility rate structures that are rooted in the “cost-of-service” and which fully recover the total costs of operating the utility: capital improvement and replacement, operations and maintenance, general administration, and fiscal policy attainment. Linking Utility rate levels to a financial plan such as this helps to enable not only sound financial performance for the Utility, but also, a clear and reasonable relationship between the costs imposed on water system customers and the costs incurred to provide them the service.

A. METHODOLOGY

The financial plan includes the following core elements, which together, form a complete portrayal of the water system’s financial obligations:

- *Capital Funding Analysis* – Defines a strategy for funding the water system capital improvement program including an analysis of available resources from rate revenues, connection charges, debt financing, and any special resources (e.g., grants, developer participation, etc.).
- *Operating Forecast* – Identifies future annual non-capital costs associated with the operation, maintenance, and administration of the water system.
- *Sufficiency Testing* – Evaluates the sufficiency of Utility revenues in meeting all obligations, including cash uses such as operating expenses, debt service, capital outlays, and reserve contributions, as well as any coverage requirements associated with long-term debt.
- *Rate Strategy Development* – Designs a forward-looking strategy for adjusting Utility resources to fully fund all utility obligations on an annual or periodic basis over the forecast period.
- *Reserve Analysis* – Forecasts cash flow and fund balance activity in Utility reserves. Tests for satisfaction of recommended minimum fund balance policies (as discussed in Section 2 – Financial Policies).

From this foundation, Utility rate structures can be adjusted to meet the defined annual and long-term funding targets, as well as the City’s pricing objectives.

The financial plan was developed for the five-year planning period 2013-2017, using 2012 as the baseline.

B. CAPITAL PROGRAM AND FUNDING PLAN

1. Assumptions

The following assumptions were used in developing the capital funding plan:

- The five-year capital program includes projects identified in the CWSP, updated to incorporate completed projects and current estimates for years 2012-2017. Costs include an allowance for inflation estimated at 4.0% per year, consistent with the industry construction cost index (*Engineering News Record*). Routine capital outlays are funded from the Utility operating account and are not included in the CIP.
- 2012 beginning fund balance for the capital account reflect year-end 2011 financial records.
- Capital connection charge revenues are based on the 2012 budget (\$44,000), and are assumed to remain at the current level throughout the study period. Consistent with State guidelines, such revenues are used to fund capital projects.
- Transfers from the operating account of \$600,000 in 2012, \$625,000 in 2013 and \$650,000 a year thereafter are planned for direct rate-funding of capital projects.

2. Results

The City has identified \$22.1 million (\$23.9 million in inflated dollars) in capital projects (2012-2017) consisting of replacement and rehabilitation projects necessary to sustain viable operation of the system, as well as supply and treatment projects necessary to comply with state and federal regulations and ensure the public health and safety of the community.

In addition to the Utility capital resources identified above, \$3.5 million in State Revolving Fund loans are planned for water treatment plant projects in 2012-2013; \$5.0 million in Public Works Trust Fund loans are planned for the automated metering project in 2012-2013; and revenue bond proceeds are assumed at \$2.7 million in 2013, \$3.7 million in 2015, and \$2.3 million in 2017.

Exhibit 3-1 presents the 2012-2017 Capital Improvement Program and **Exhibit 3-2** presents the capital funding plan.

Exhibit 3-1: Capital Improvement Program (inflated)

CAPITAL PROGRAM	2012	2013	2014	2015	2016	2017
Leak Detection	\$ -	\$ 20,800	\$ 21,632	\$ -	\$ 23,397	\$ 24,333
WTP PLC Replacement	-	260,000	-	-	-	-
WTP Lagoon / Electrical service	450,000	3,239,392	-	-	-	-
Intake Flood Repair	-	1,040,000	-	-	-	-
Automated Metering Infrastructure	1,500,000	6,760,000	-	-	-	-
Open Gear Valve Replacement	25,000	26,000	27,040	28,122	29,246	30,416
Private Water Main Replacement	175,000	182,000	189,280	196,851	204,725	212,914
Lead-Oakum Joint Line Replacement	-	-	2,163,200	2,249,728	2,339,717	2,433,306
Total	\$ 2,150,000	\$11,528,192	\$ 2,401,152	\$ 2,474,701	\$ 2,597,086	\$ 2,700,969

Exhibit 3-2: Capital Funding Plan

CAPITAL FINANCING PLAN	2012	2013	2014	2015	2016	2017
Beginning Fund Balance	\$ 3,374,890	\$ 3,818,890	\$ 2,253,770	\$ 546,618	\$ 2,404,947	\$ 501,861
Funding Sources						
Connection Charges	\$ 44,000	\$ 44,000	\$ 44,000	\$ 44,000	\$ 44,000	\$ 44,000
Direct Funding from Rates	600,000	625,000	650,000	650,000	650,000	650,000
Net Loan Proceeds	1,950,000	6,564,800	-	-	-	-
Net Bond Proceeds	-	2,729,272	-	3,639,030	-	2,274,394
Total Funding Sources	\$ 2,594,000	\$ 9,963,072	\$ 694,000	\$ 4,333,030	\$ 694,000	\$ 2,968,394
Less: Capital Projects [a]	(\$2,150,000)	(\$11,528,192)	(\$2,401,152)	(\$2,474,701)	(\$2,597,086)	(\$2,700,969)
Fund Balance	\$ 3,818,890	\$ 2,253,770	\$ 546,618	\$ 2,404,947	\$ 501,861	\$ 769,285
<i>Actual % of Assets:</i>	7.1%	4.2%	1.0%	4.4%	0.9%	1.4%
<i>Minimum Target Balance [1.0% of assets]:</i>	\$ 540,974	\$ 540,974	\$ 540,974	\$ 540,974	\$ 540,974	\$ 540,974
<i>City Established Target Balance:</i>	\$750,000	\$750,000	\$750,000	\$750,000	\$750,000	\$750,000

[a] Includes an allowance for inflation of 4.0 percent per year.

C. OPERATING FORECAST

1. Assumptions

The following assumptions were used in developing the operating forecast:

- Operating & maintenance (O&M) expenses consist of the cost of personnel and materials to supply, pump, and distribute water on a routine basis. Since these costs are an annual obligation of the Utility, they must be met from water rates. O&M expense projections are based on the 2012 budget, plus 3.0 percent annual inflation (consistent with the *Consumer Price Index*). No additional staff is planned for this study period. Electricity costs are assumed to increase by \$25,000 per year (plus inflation) for additional pumping requirements for the new well.
- Utility taxes are excluded from the O&M forecast and shown separately in order to illustrate the impacts of the Washington Supreme Court Decision (*Lane vs. Seattle*), which dictates the removal of fire protection costs from general service water rates and prescribes the potential recovery of those costs from an increase to the utility tax (Further discussed in Section 4 – Removal of Fire Protection Costs).

2. Results

The operating forecast focuses on annual expenses incurred to operate, maintain, and manage the water system. While the cost of skilled labor, employee benefits, and certain materials continue to increase, the City has strived to achieve cost savings wherever possible to maintain overall operating increases at or below inflationary levels. As noted previously, the City is in the process of conducting a benchmarking study to assist in evaluating the cost effectiveness and efficiency of the Utility as compared to industry performance. This information will be used to identify potential areas for further investigation. Results are expected by the end of the year.

Exhibit 3-3 presents the O&M expense forecast over the study period (excluding utility taxes).

Exhibit 3-3: Operating and Maintenance Forecast

OPERATING & MAINTENANCE	2012	2013	2014	2015	2016	2017
Functional Categories						
Fire Suppression	\$ 288,094	\$ 296,737	\$ 305,639	\$ 314,808	\$ 324,252	\$ 333,980
Fire Suppression Admin	32,496	33,471	34,475	35,509	36,575	37,672
Water Distribution	2,129,807	2,193,701	2,259,512	2,327,298	2,397,117	2,469,030
WTP, Trans & Storage	1,652,832	1,702,417	1,753,489	1,806,094	1,860,277	1,916,085
Water/Irrigation Engineer	57,870	59,606	61,394	63,236	65,133	67,087
Water Administration	1,378,832	1,420,197	1,462,803	1,506,687	1,551,888	1,598,444
Total O&M Expenses [a]	\$ 5,539,931	\$ 5,706,129	\$ 5,877,313	\$ 6,053,632	\$ 6,235,241	\$ 6,422,298

[a] Includes inflation of 3.0 percent per year, plus known operational changes; excludes Utility Taxes.

D. REVENUE NEEDS ASSESSMENT

1. Assumptions

The following assumptions were used in developing the revenue needs assessment:

- Existing rate revenues are based on actual 2011 billing system records applied to current rates. Future revenues (under existing rates) incorporate annual customer growth. Projected revenue under existing rates provides the benchmark upon which to evaluate the need for revenue adjustments over the study period. Such revenue is a function of the number and size of meters, water usage, and current water rates. Note that water sales revenue is down from historical levels as a result of lower water demands - due to a combination of water conservation efforts, economic conditions, and weather patterns. Water use has declined about 17% over the last five years. This pattern is expected to continue for this study period.
- Miscellaneous revenues from charges for new water services, personnel services, and hydrant fees are based on the 2012 budget and assumed to remain at current levels. Interest earnings on Utility cash balances are assumed to be deposited into the General Fund per City policy.
- 2012 beginning fund balances for the operating account reflect 2011 actual financial records.
- A new revenue source, “General Fund Payment for Fire Protection”, represents the fire protection costs historically included in the general service water rates - now to be paid from the General Fund per the Supreme Court decision in *Lane vs. Seattle*. (Further discussed in Section 4 – Removal of Fire Protection Costs).
- Utility taxes are a function of Utility revenues and as such, increase as the total revenues for the Utility increase. The current utility tax rate is 20.0 percent of revenues (excluding annual debt service payments on revenue bonds). Based on this study, the utility tax is proposed to increase to 24.0 percent assuming

recovery of fire protection costs from this tax. (Further discussed in Section 4 – Removal of Fire Protection Costs).

- Existing debt service schedules were provided by City staff and include outstanding revenues bonds, Public Works Trust Fund loans, and State Revolving Fund loans. New debt service incorporates the impacts of the proposed capital funding plan as shown in Exhibit 3-2.
- Residual equity transfers are transfers from the Utility operating account to other City funds for the Utility’s allocated share of other City debt.

2. Results

The Utility faces \$10 million in total cash obligations over the study period. Total revenues (excluding the use of cash reserves) are forecasted at \$8.3 million over the same time period – yielding a deficit of \$1.7 million. The proposed rate strategy calls for three years of 9.0% increases (2013-2015), followed by two years of 3.5% increases (2016-2017). Note that in addition to proposed rate increases, cash reserves are used to supplement annual revenue shortfalls in years (2012-2014). For 2013, this results in an increase to the average residential customer bi-monthly water bill of \$4.06, or about \$24 over the course of the year (3/4-inch meter and 2,200 cubic feet per bill). Additional sample bills are presented in Section 5 – Rate Design. **Exhibit 3-4** presents the revenue requirement analysis for the study period.

Exhibit 3-4: Revenue Requirement and Reserve Analysis

REVENUE REQUIREMENTS SUMMARY	2012	2013	2014	2015	2016	2017
Revenues						
Water Sales (w/ existing rates)	\$ 7,480,452	\$ 7,677,228	\$ 7,696,421	\$ 7,715,662	\$ 7,734,951	\$ 7,754,289
General Fund Payment for Fire Protection	-	317,433	347,405	380,597	395,369	410,699
Other Revenues	258,500	258,500	258,500	258,500	258,500	258,500
Total Revenues	\$ 7,738,952	\$ 8,253,161	\$ 8,302,326	\$ 8,354,759	\$ 8,388,820	\$ 8,423,487
Expenses						
Operating & Maintenance Expenses	\$ 5,539,931	\$ 5,706,129	\$ 5,877,313	\$ 6,053,632	\$ 6,235,241	\$ 6,422,298
Interfund In lieu Utility Tax	1,025,000	1,944,529	2,128,128	2,331,459	2,421,945	2,515,853
Existing Debt Service	558,963	556,006	562,896	559,188	555,279	551,169
New Debt Service	28,487	406,996	708,782	869,267	1,029,752	1,130,056
Residual Equity Transfers	64,497	64,497	64,497	64,497	64,497	64,497
Transfers to the Capital Fund	600,000	625,000	650,000	650,000	650,000	650,000
Total Expenses	\$ 7,816,878	\$ 9,303,157	\$ 9,991,616	\$10,528,043	\$10,956,714	\$11,333,873
Annual Surplus/(Deficiency)	\$ (77,925)	\$ (1,049,996)	\$ (1,689,290)	\$ (2,173,284)	\$ (2,567,895)	\$ (2,910,386)
Annual Rate Adjustment	0.00%	9.00%	9.00%	9.00%	3.50%	3.50%
Additional Revenue from Rate Adjustments	\$ -	\$ 690,951	\$ 1,447,697	\$ 2,276,344	\$ 2,632,629	\$ 3,002,984
Net Surplus/(Deficiency)	\$ (77,925)	\$ (359,045)	\$ (241,594)	\$ 103,060	\$ 64,735	\$ 92,598
Beginning Fund Balance	\$ 2,015,478	\$ 1,937,553	\$ 1,578,507	\$ 1,336,914	\$ 1,439,974	\$ 1,504,709
Cumulative Fund Balance	\$ 1,937,553	\$ 1,578,507	\$ 1,336,914	\$ 1,439,974	\$ 1,504,709	\$ 1,597,307
<i>Actual Days of O&M:</i>	108	75	61	63	63	65
<i>Minimum Target Balance [60 days]:</i>	\$1,079,167	\$1,257,642	\$1,315,963	\$1,378,371	\$1,423,099	\$1,469,285
<i>City Established Target Balance:</i>	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000

The proposed increases represent the system-wide adjustments necessary to recover total revenue requirements for the Utility. The design of the fixed and variable components of the rate structure is discussed in Section 5 – Rate Design.

SECTION 4

REMOVAL OF FIRE PROTECTION COSTS

The Washington State Supreme Court decision in *Lane vs. Seattle* defines fire protection as a general government service that cannot be funded through water rates. This analysis aims to facilitate compliance with the verdict by identifying fire protection costs embedded in the City's water rates and removing those costs from the general service water rate structure.

To finance this shift in funding responsibility, the court upheld "a solution" that an increase to the utility tax on the water utility to recover identified fire protection costs is valid and within statutory authority. This analysis presumes the City will follow this approach. Alternatively, the City could directly bill the General Fund for payment. The City should consult with its own legal counsel regarding the mechanism for recovery.

It is important to note that compliance with this ruling under the proposed approach will be transparent to the Utility customer. Meaning, it will not materially impact general service water rates or resulting customer bills. It involves simply removing the fire protection costs from domestic water rates and replacing that dollar amount with an equal amount (with adjustments for private fire services) generated from an increase to the current tax imposed on the Utility by the General Fund. The utility tax is treated as a water utility expense, with the cost embedded in the calculation of water rates, just like all other expenses. Thus, the reduction in water rates for fire protection cost removal is offset by the increase to the utility tax. The Utility is made whole by receiving payment from the General Fund to recover the fire protection costs, and the General Fund is made whole by receiving the incremental revenue generated from the increased water utility tax. Should the City choose the alternative approach of a direct payment from the General Fund without a corresponding increase to the water utility tax, the General Fund would not be made whole.

A. METHODOLOGY

While the decision in *Lane vs. Seattle* requires the removal of "the cost of providing hydrants" from water rates, it does not provide a specific methodology for identifying such costs. Consequently, local governments have considerable discretion in determining the best way to address this decision. There is ambiguity in the definition of the "cost of providing fire hydrants." The most literal interpretations would suggest that it only includes costs specifically related to fire hydrants (such as the operation and maintenance of fire hydrants) that are embedded in water rates; other interpretations may be more aggressive in allocating water system facilities and revenue requirement components to fire protection. There is flexibility in assigning the water system to fire protection, depending on how the water system is viewed:

- *Most Common* – Allocating primary cost to general water service, with incremental costs allocated to fire protection service. This would result in relatively lower fire protection costs.
- *Rare* – Allocating primary cost to fire protection service, with additional costs allocated to general water service. This would result in relatively higher fire protection costs.
- *Seattle Method* – Allocating costs to general water service and fire protection on a proportional basis.

The methodology used in this study is based on cost allocations that are driven by an analysis of the City’s entire water system to identify costs related to fire protection. We believe that this methodology is most consistent with the intent of the decision in *Lane vs. Seattle*.

B. RESULTS

Results of the fire removal analysis for the Utility are summarized in this section. Additional detail can be viewed in the technical appendix.

1. Allocation of Assets to “Fire Protection”

The first step is to allocate water system assets to functional categories, including:

- **Customer:** Related to providing customer service.
- **Meters & Services:** Related to servicing meters and customer connections.
- **Base Capacity:** Related to providing capacity to meet average demands.
- **Peak Capacity:** Related to providing capacity to meet peak demands.
- **Fire Protection:** Related to providing capacity for fire flow, including portions of certain assets (mains, pumping facilities and storage facilities) dedicated to fire protection, plus direct fire protection costs related to fire hydrants, hydrant stub lines, and private fire sprinkler systems.

The water system fixed asset schedule and system design criteria form the basis for allocating the water costs between functions of service, as discussed in further detail below.

Supply/treatment and **pumping** assets are assigned to base and peak capacity using the ratio of peak day to average day demand. As cited in the WSCP, this ratio is 1.75, resulting in a split of 57% and 43%, respectively, to base and peak capacity.

Storage assets are allocated to the functions based on the WSCP analysis of operational, equalizing, standby, fire suppression, and dead storage requirements.

Exhibit 4-1 summarizes the storage allocation.

Exhibit 4-1: Allocation of Storage Facilities

Function	GALLONS OF STORAGE [a]	GENERAL WATER SERVICE FUNCTIONS				FIRE PROTECTION	AS ALL OTHERS	TOTAL	ALLOCATION BASIS
		CUSTOMER	METERS & SERVICES	BASE	PEAK				
Operational Storage	1.89	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	All to Base
Equalizing Storage	1.89	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	All to Peak
Standby Storage	27.20	0.00%	0.00%	57.14%	42.86%	0.00%	0.00%	100.00%	Peak/Average Day Ratio
Fire Flow Storage	5.20	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	All to Fire Capacity
TOTAL STORAGE	36.17	0.00%	0.00%	48.18%	37.44%	14.38%	0.00%	100.00%	

[a] Source: City of Yakima Comprehensive Water System Plan, Table 3-34

Mains are allocated to the functions based on the estimated replacement cost, type, and size of pipe. Pipes are allocated to fire capacity based on the estimated cost of oversizing pipes. **Exhibit 4-2** shows the functional allocation of mains:

- Pipe sizes up through 6-inches are assumed to provide domestic capacity only, and thus, are allocated to base and peak capacity using the peak day to average day demand ratio.
- Pipe sizes between 8 and 12-inches are assumed to be oversized one increment from 6-inch pipes to provide fire capacity.
- Pipes greater than 12-inches are assumed to be transmission mains, allocated to base and peak capacity.

Exhibit 4-2: Allocation of Water System Mains

Pipe	Replacement Cost per lf. [b]	Estimated Cost	Incremental Cost for Fire Oversizing [c]	BASE	PEAK	FIRE PROTECTION	AS ALL OTHERS	TOTAL	ALLOCATION BASIS
4" or less	130	2,460,120		44.05%	55.95%	0.00%	0.00%	100.00%	Domestic: Base/Peak
6"	160	86,505,760		44.05%	55.95%	0.00%	0.00%	100.00%	Domestic: Base/Peak
8"	185	101,853,415	13,763,975	49.42%	37.07%	13.51%	0.00%	100.00%	Fire Flow Capacity Oversizing: Base/Peak
10"	215	818,505	114,210	49.17%	36.88%	13.95%	0.00%	100.00%	Fire Flow Capacity Oversizing: Base/Peak
12"	230	60,250,110	3,929,355	53.42%	40.06%	6.52%	0.00%	100.00%	Fire Flow Capacity Oversizing: Base/Peak
16"	280	21,251,720		44.05%	55.95%		0.00%	100.00%	Transmission: Base/Peak
Total		\$273,139,630	\$17,807,540	48.14%	45.35%	6.52%	0.00%	100.00%	

[a] Source: City of Yakima Comprehensive Water System Plan, Table 3-36

[b] Source: General planning estimates, to be updated

[c] Incremental unit cost times linear feet of pipe at each size. Minimum distribution line size = 8"

Hydrant assets are assigned directly to fire protection, **Meter & services** assets are directly assigned to meters and services, and **general plant** assets are allocated in proportion to all other assets.

Exhibit 4 -3 shows the resulting functional allocation of total water system assets.

Exhibit 4-3: Functional Allocation of Assets

PLANT-IN-SERVICE	TOTAL COSTS	GENERAL WATER SERVICE FUNCTIONS				FIRE PROTECTION	AS ALL OTHERS	TOTAL	ALLOCATION BASIS
		CUSTOMER	METERS & SERVICES	BASE	PEAK				
Source of Supply / Treatment	\$ 11,896,540	0.00%	0.00%	57.14%	42.86%	0.00%	0.00%	100.00%	Peak/Average Ratio - Max Day = 1.75
Pumping Plant	1,280,515	0.00%	0.00%	57.14%	42.86%	0.00%	0.00%	100.00%	Peak/Average Ratio - Max Day = 1.75
Reservoirs / Standpipes	3,301,452	0.00%	0.00%	48.18%	37.44%	14.38%	0.00%	100.00%	See Storage Capacity Allocation Table
Transmission & Distribution	22,051,442	0.00%	0.00%	48.14%	45.35%	6.52%	0.00%	100.00%	See Pipe Capacity Allocation Table
Meters	1,548,738	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	All to Meters & Services
Service Connections	9,585,460	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	All to Customer
Hydrants	1,630,174	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	All to Fire Protection
General Plant / Intangible Plant	2,803,031	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	As All Other
Total Utility Plant	\$ 54,097,352	\$ -	\$ 11,134,198	\$ 19,735,017	\$ 16,882,636	\$ 3,542,469	\$ 2,803,031	\$ 54,097,352	
Total Water Service Functions		0.00%	20.58%	36.48%	31.21%	6.55%	5.18%	100.00%	
General Water Service Functions		0.00%	23.32%	41.33%	35.35%			100.00%	
Allocation of "As All Other"		\$ -	\$ 653,577	\$ 1,158,445	\$ 991,010		\$(2,803,031)	\$ -	
TOTAL	\$ 54,097,352	\$ -	\$ 11,787,775	\$ 20,893,462	\$ 17,873,646	\$ 3,542,469	\$ -	\$ 54,097,352	
Total Allocation Percentages		0.00%	21.79%	38.62%	33.04%	6.55%	0.00%	100.00%	
General Water Service Allocation %		0.00%	23.32%	41.33%	35.35%		0.00%	100.00%	

[a] Source: City of Yakima Comprehensive Water System Plan, Table 2-33

2. Functional Allocation of Revenue Requirement

The allocation principles developed in this analysis will extend to the determination of water rates for 2013 and subsequent years. This step involved a detailed review of 2013 revenue requirements, as summarized below:

- City staff identified specific fire suppression related O&M costs, including administrative costs. These costs were directly assigned to the fire protection component. Other O&M costs were allocated to functional components based on assumed cost causation.
- Debt service payments and rate-funded capital are allocated in proportion to total plant in service.
- Miscellaneous operating revenues (non-rate revenues and interest earnings) are allocated in proportion to total operating and maintenance expenses.
- The analysis incorporates a transfer from the General Fund to the Utility for the fire protection costs identified for domestic water service. This revenue stream effectively "reimburses" the Utility for fire protection costs that are incurred by the water system. This new cost to the General Fund is assumed to be funded through an incremental increase to the current water utility tax (treated as an expense of the Utility). The resulting tax increase is embedded within the proposed 2013 rates.

Exhibit 4-4 shows the 2013 O&M allocation to functional components and **Exhibit 4-5** presents the total revenue requirement allocation to functional components.

Exhibit 4-4: Functional Allocation of O&M Expenses

OPERATING & MAINTENANCE EXPENSE	2012	2013	2014	2015	2016	2017
Functional Categories						
Fire Suppression	\$ 288,094	\$ 296,737	\$ 305,639	\$ 314,808	\$ 324,252	\$ 333,980
Fire Suppression Admin	32,496	33,471	34,475	35,509	36,575	37,672
Water Distribution	2,129,807	2,193,701	2,259,512	2,327,298	2,397,117	2,469,030
WTP, Trans & Storage	1,652,832	1,702,417	1,753,489	1,806,094	1,860,277	1,916,085
Water/Irrigation Engineer	57,870	59,606	61,394	63,236	65,133	67,087
Water Administration	1,378,832	1,420,197	1,462,803	1,506,687	1,551,888	1,598,444
Interfund In lieu Utility Tax						
Total O&M Expenses [a]	\$ 5,539,931	\$ 5,706,129	\$ 5,877,313	\$ 6,053,632	\$ 6,235,241	\$ 6,422,298

[a] Includes an allowance for inflation of 3.0 percent per year, plus known operational changes; excludes utility taxes.

Exhibit 4-4: Functional Allocation of Total Revenue Requirement

REVENUE REQUIREMENT	TOTAL COSTS	GENERAL WATER SERVICE FUNCTIONS				FIRE PROTECTION	AS ALL OTHERS	TOTAL	ALLOCATION BASIS
		CUSTOMER	METER SERVICES	BASE	PEAK				
OPERATING AND CAPITAL EXPENSES									
Cash Operating Expenses	\$ 7,650,658	25.28%	0.00%	40.69%	29.72%	4.32%	0.00%	100.00%	As O&M Expense
Existing Debt Service	620,503	0.00%	21.79%	38.62%	33.04%	6.55%	0.00%	100.00%	As Plant In Service
New Debt Service	406,996	0.00%	21.79%	38.62%	33.04%	6.55%	0.00%	100.00%	As Plant In Service
Rate-Funded Capital	625,000	0.00%	21.79%	38.62%	33.04%	6.55%	0.00%	100.00%	As Plant In Service
	\$ 9,303,157	20.79%	3.87%	40.32%	30.31%	4.71%	0.00%	100.00%	
OTHER REVENUES AND ADJUSTMENTS									
Less: Other Revenues	(258,500)	25.28%	0.00%	40.69%	29.72%	4.32%	0.00%	100.00%	As O&M Expense
Less: Operating Fund Interest Earnings	-	25.28%	0.00%	40.69%	29.72%	4.32%	0.00%	100.00%	As O&M Expense
Plus: Adjustment for Partial Year Increase	-	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	As All Other
Plus: Net Cash Flow after Rate Increase	(359,045)	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	As All Other
Rate Revenue Requirement	\$ 8,685,612	\$ 1,868,555	\$ 360,078	\$ 3,645,868	\$ 2,742,894	\$ 427,262	\$ (359,045)	\$ 8,685,612	
Water Service Functions		20.66%	3.98%	40.31%	30.33%	4.72%		100.00%	
Water Service Functions (Excluding Fire)		21.68%	4.18%	42.31%	31.83%			100.00%	
Allocation of "As All Others"		\$ (77,854)	\$ (15,003)	\$ (151,906)	\$ (114,283)		\$ 359,045	\$ -	
Total Rate Revenue Requirement	\$ 8,685,612	\$ 1,790,701	\$ 345,076	\$ 3,493,962	\$ 2,628,611	\$ 427,262	\$ -	\$ 8,685,612	
less: Provision for Operational Use of Fire Assets [a]		\$ 9,265	\$ 1,785	\$ 18,077	\$ 13,600	\$ (42,726)		\$ -	
Cost Allocation Before Fire Protection Adjustment	\$ 8,685,612	\$ 1,799,966	\$ 346,861	\$ 3,512,039	\$ 2,642,211	\$ 384,535		\$ 8,685,612	
Total Fire Protection						\$ 384,535			
Fire Protection Allocated to Private Fire Services						67,102			
less: Public Fire Payment from General Fund						(317,433)			
Rate Revenue Requirement	8,368,178	\$ 1,799,966	\$ 346,861	\$ 3,512,039	\$ 2,642,211	\$ 67,102		\$ 8,368,178	
Allocation Percentages		21.51%	4.15%	41.97%	31.57%	0.80%	0.00%	100.00%	

[a] Percent of fire assets used for operations.

10.00%

As shown in the table above, 10% of the costs allocated to fire protection are separated out from that category and reallocated proportionally amongst the other functions. This adjustment recognizes that fire protection-related assets are periodically used for water system operations such as water main flushing.

The remaining fire protection costs of \$384,535 are allocated between public fire protection (domestic service) and private fire service based on equivalent number of hydrants. Private fire service represents 17% of total equivalent hydrants (476 out of 2,254) resulting in an allocation of \$67,102. Private fire service charges need to recover the allocated share of fire protection costs for those customers with private fire suppression systems. Service to these unique customers is not of general benefit thus

should not be considered a General Fund obligation. These costs are more appropriately recovered from water rates imposed on only those customers requiring the specific service from the water system.

The remaining cost of \$317,433 is allocated to domestic water service and removed from general service water service rates.

3. Water Utility Tax Rate Increase

The domestic water service share of fire protection costs (\$317,433) forms the basis for the General Fund payment to the Utility, as well as the calculation of the necessary utility tax increment. The payment from the General Fund to the Utility is offset by an increase to the water utility tax rate.

The City's existing water utility tax rate is 20.0%. This tax would need to increase to 23.9% (perhaps rounded to 24.0%) in order to offset the General Fund payment. The incremental portion of the tax related to fire protection costs and the basis for the annual General Fund payment is 3.9% (or rounded to 4.0%). This percentage would be applied to the annual budgeted Utility rate revenues in subsequent years to determine the annual payment from the General fund to the Utility for fire protection costs.

4. Removal of Fire Protection Costs and Reallocation of Water Utility Tax

The City currently applies the same schedule of water rates to all domestic customer classes, thus, the fire protection costs were removed from each domestic customer class in proportion to existing rate revenues. The dollar amount generated from the incremental utility tax (3.9%) was then allocated to all customers on the water system (including private fire services) in portion to revenues. Note that the impact to private fire services is higher since there is no fire protection cost deduction, yet an impact for the system-wide increase (9.0%) and application of the incremental utility tax.

Exhibit 4-5 shows the progression of customer bill impacts.

Exhibit 4-5: Total Customer Bill Impacts

Customer Classes	2013 Revenue Under Existing Rates	2013 Revenue with 9% ATB Rate Increase	% Change with ATB Increase [a]	Fire Removal from Rates	Reallocation of Additional Utility Tax	2013 Revenue with ATB Increase Net of Fire	Total % Rate Change with ATB Net of Fire [b]
Domestic Water Customers	\$ 7,529,461	\$ 8,207,112	9.00%	\$ (317,433)	\$ 311,323	\$ 8,201,002	8.92%
Private Fire Services	147,767	161,066	9.00%	-	6,110	167,176	13.13%
TOTAL	\$ 7,677,228	\$ 8,368,178	9.00%	\$ (317,433)	\$ 317,433	\$ 8,368,178	9.00%

[a] Rate increase applied Jan. 1, 2013

[b] To be applied across-the-board (ATB) to existing rate structure and rates to meet revenue requirements and comply with Lane vs. Seattle.

SECTION 5

RATE DESIGN

The rate design focuses on constructing rate structures, including fixed and variable components for each class of customer, to recover the appropriate amount of revenue from each class and to recover the revenue necessary in total to fund utility financial obligations. Further, City pricing objectives regarding rate stability, affordability, equity, and conservation are applied.

A. METHODOLOGY

Prior to this section, our findings rested on financial and technical analyses to derive the total annual revenue need of the Utility and to determine the amount that should be collected from domestic and private fire service customers. In this section, we focus on the design of the pricing structure itself to achieve intended outcomes that carry out desired public policy.

The existing domestic water rate structure consists of a fixed charge increasing by meter size (“readiness-to-serve” and a uniform volume charge (“unit of cost”). The same schedule of rates applies to all domestic service customers, with a 1.50 multiplier applied to outside city customers. Private fire services are charged a readiness-to-service charge increasing by line size; no charge is applied to actual water usage, if any. Cost recovery under the existing rate structure is about 22% from the fixed charge and 78% from volume charges.

In general, the fixed charge component recovers customer related costs, meters & services related costs, and commonly a portion of peak demand costs. The volume charge recovers base (average) demand costs and a portion of peak demand costs. Including a portion of peak costs in the fixed charge enhances revenue stability. Relying too heavily on volume charges to recover costs can result in revenue shortfalls if water sales are less than anticipated (due to unusually wet summers and/or or increased water conservation practices).

B. RESULTS

The proposed rates have been developed in accordance with the City’s policy to apply the same schedule of rates to all domestic customer classes and to recover an appropriate balance of system costs from the fixed and variable components of the rate structure to maintain revenue stability. The proposed rate structure increases the fixed charge cost recovery to 25% to improve revenue stability without unduly burdening customers with relatively low water usage. We recommend that the City monitor water usage patterns over time to determine if a further increase to the fixed charge component is warranted to maintain a stable revenue stream.

1. Rate Design

Exhibit 5-1 presents a comparison of existing Utility rates and the updated five-year schedule of Utility rates reflecting the removal of fire protection costs from the domestic rates, incorporation of the annual system-wide increases, and the shift to more cost recovery from the fixed charges.

Exhibit 5-1: Existing & Proposed Water Rates

Readiness-To-Service Charge - \$/Bi-Monthly Billing Period [a]						
Meter Size	Existing 2012	Proposed				
		2013	2014	2015	2016	2017
3/4"	\$ 15.91	\$ 16.25	\$ 17.71	\$ 19.31	\$ 19.98	\$ 20.68
1"	\$ 20.09	\$ 20.52	\$ 22.37	\$ 24.38	\$ 25.23	\$ 26.12
1-1/2"	\$ 31.24	\$ 31.91	\$ 34.78	\$ 37.91	\$ 39.24	\$ 40.61
2"	\$ 44.67	\$ 45.63	\$ 49.73	\$ 54.21	\$ 56.11	\$ 58.07
3"	\$ 76.03	\$ 77.66	\$ 84.65	\$ 92.27	\$ 95.50	\$ 98.84
4"	\$ 120.82	\$ 123.41	\$ 134.52	\$ 146.62	\$ 151.75	\$ 157.07
6"	\$ 232.70	\$ 237.69	\$ 259.08	\$ 282.40	\$ 292.28	\$ 302.51
8"	\$ 453.59	\$ 463.31	\$ 505.01	\$ 550.46	\$ 569.72	\$ 589.66
10"	\$ 680.41	\$ 694.99	\$ 757.54	\$ 825.72	\$ 854.62	\$ 884.53
12"	\$ 993.82	\$ 1,015.12	\$ 1,106.48	\$ 1,206.06	\$ 1,248.27	\$ 1,291.96
Volume Charge - \$/ccf [a]						
Commodity Rate	Existing 2012	Proposed				
		2013	2014	2015	2016	2017
\$/ccf	\$ 1.51	\$ 1.68	\$ 1.83	\$ 1.99	\$ 2.06	\$ 2.14
Private Fire Services - \$/Bi-Monthly Period [a]						
Line Size	Existing 2012	Proposed				
		2013	2014	2015	2016	2017
2"	\$6.00	\$ 6.79	\$ 7.40	\$ 8.06	\$ 8.35	\$ 8.64
3"	\$8.76	\$ 9.91	\$ 10.80	\$ 11.77	\$ 12.19	\$ 12.61
4"	\$17.54	\$ 19.84	\$ 21.63	\$ 23.58	\$ 24.40	\$ 25.26
6"	\$51.56	\$ 58.33	\$ 63.58	\$ 69.30	\$ 71.73	\$ 74.24
8"	\$109.82	\$ 124.24	\$ 135.43	\$ 147.61	\$ 152.78	\$ 158.13
10"	\$197.46	\$ 223.40	\$ 243.50	\$ 265.42	\$ 274.71	\$ 284.32
12"	\$319.12	\$ 361.04	\$ 393.53	\$ 428.95	\$ 443.96	\$ 459.50
Bulk Water Rate - \$/ccf						
	Existing 2012	Proposed				
		2013	2014	2015	2016	2017
	\$1.51	\$ 1.68	\$ 1.83	\$ 1.99	\$ 2.06	\$ 2.14
Daily water meter rental remains at \$4.00 per day						

[a] Outside City rates are 1.50 times inside City rates

2. Customer Bill Impacts

Based on the City's billing system information, the residential class uses an average of about 2,200 cubic feet (22 ccf) of water per bi-monthly billing period over the course of a year. The commercial class uses an average of about 10,600 cubic feet (106 ccf) per billing period, and industrial customers average about 32,700 cubic feet (327 ccf) per billing period. Actual water usage will likely vary by customer and by billing period. For example, residential customers typically experience higher than average usage in summer months and lower than average usage in the winter months. As such, the water bill will also vary by customer and by billing period.

Exhibit 5-2 presents a comparison of sample customer water bills under existing rates and the proposed 2013 rates.

Exhibit 5-2 - Sample Residential Water Bills

Residential				
Meter Size (inches)	Bi-Mthly Usage (ccf)	Existing Bi-Mthly Bill	2013 Bi-Mthly Bill	\$ Change from Existing
3/4	6	\$24.97	\$26.32	\$1.35
3/4	15	\$38.56	\$41.43	\$2.87
3/4	22	\$49.13	\$53.19	\$4.06
3/4	40	\$76.31	\$83.40	\$7.09
1	50	\$95.59	\$104.46	\$20.18
Commercial				
Meter Size (inches)	Bi-Mthly Usage (ccf)	Existing Bi-Mthly Bill	2013 Bi-Mthly Bill	\$ Change from Existing
3/4	75	\$129.16	\$142.16	\$25.67
3/4	106	\$175.97	\$ 194.21	\$18.24
1	200	\$322.09	\$ 356.29	\$34.20
1	300	\$473.09	\$ 524.17	\$51.08
Industrial				
Meter Size (inches)	Bi-Mthly Usage (ccf)	Existing Bi-Mthly Bill	2013 Bi-Mthly Bill	\$ Change from Existing
2	100	\$195.67	\$ 213.51	\$17.84
2	327	\$538.44	\$ 594.61	\$56.17
2	400	\$648.67	\$ 717.16	\$68.49

C. CONCLUSIONS AND RECOMMENDATIONS

Projections are by nature conjectural and rely on many assumptions regarding growth, water usage, inflations and other factors, and no guarantee as to their ultimate accuracy can be made. We have endeavored to apply the best available estimates of future conditions that affect these findings, and believe the analyses performed in this study provide a reasonable level of assurance with respect to the adequacy of the proposed rates and rate structure. However, regular review of actual financial performance of the Utility should be an integral part of the successful implementation of this study. The next rate study update is anticipated to be completed in 2017.

FCS GROUP and City staff recommends that this study be utilized as support for the adoption of the five-year rate schedule presented herein. The study assumes adoption in December 2012, with implementation of 2013 rates effective January 1, 2013. Subsequent years' rates in the five-year forecast would become effective January 1 of each year.

Following implementation of this five-year rate strategy, the City might consider implementing rate ordinance language providing for the automatic adjustments of rates based on the *Consumer Price Index* (CPI) or other similar index to become effective January 1 of each year. The intent of this policy is to avoid large rate increases that can occur when rates are not adjusted annually in recognition of the constant rise in the cost of delivering services.

Automatic index adjustments may generate excess revenues in some years, while falling short of revenue requirements in other years. Additional revenues generated from the annual index adjustments could be used to build operating reserves or to cash-finance capital projects to help mitigate future debt issuance. Adjustments above the index should be reviewed as part of the rate study.

APPENDIX

Spreadsheet Model Outputs

City of Yakima, Washington

Water Utility

Control Panel

RESULTS	2012	2013	2014	2015	2016	2017
Required Annual Rate Increases:	0.0%	9.0%	9.0%	9.0%	3.5%	3.5%
Ending Annual Fund Balances						
Operating Fund:	(\$77,925)	\$ (359,045)	\$ (241,594)	\$ 103,060	\$ 64,735	\$ 92,598
Capital Fund:	3,818,890	2,253,770	546,618	2,404,947	501,861	769,285
	\$3,740,965	\$1,894,725	\$305,025	\$2,508,008	\$566,596	\$861,883
Capital Improvements:	\$2,150,000	\$11,528,192	\$2,401,152	\$2,474,701	\$2,597,086	\$2,700,969
New Debt						
Additional Bond Issues	\$0	\$3,000,000	\$0	\$4,000,000	\$0	\$2,500,000
Addition Loans	1,950,000	3,064,800	-	-	-	-
	\$1,950,000	\$6,064,800	\$0	\$4,000,000	\$0	\$2,500,000

ASSUMPTIONS	2012	2013	2014	2015	2016	2017
Growth Rate						
Residential Inside City		0.25%	0.25%	0.25%	0.25%	0.25%
Other Inside City		0.25%	0.25%	0.25%	0.25%	0.25%
Residential Outside City		0.25%	0.25%	0.25%	0.25%	0.25%
Other Outside City		0.25%	0.25%	0.25%	0.25%	0.25%
Irrigation		0.25%	0.25%	0.25%	0.25%	0.25%
O&M Inflation Rate:		3.00%	3.00%	3.00%	3.00%	3.00%
Capital Inflation Rate:		4.00%	4.00%	4.00%	4.00%	4.00%
Interest Earnings:						
Taxes						
Interfund In Lieu Tax [a]	20.00%	23.90%	23.90%	23.90%	23.90%	23.90%
General Fund Payment for Fire Suppression	n/a	3.90%	3.90%	3.90%	3.90%	3.90%
State Excise Tax [b]	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%
State B&O Tax [c]	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Revenue Bonds						
Term (years):	20	20	20	20	20	20
# of Months Issued	6	6	6	6	6	6
Interest Rate:	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Issuance Expense:	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Reserve Rqmt:	1 Year Equal Annual Debt Service					
Low-Interest Loans-SRF						
Term (years):	20	20	20	20	20	20
# of Months Issued	4	6	6	6	6	6
Interest Rate:	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Issuance Expense:	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Reserve Rqmt:	None					
Low-Interest Loans - PWTF						
Term (years):	20	20	20	20	20	20
# of Months Issued	3	6	6	6	6	6
Interest Rate:	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Issuance Expense:	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Reserve Rqmt:	None					

Karyn Johnson:
General fund receives all interest earnings, so excluded from analysis

[a] Applied to total rate revenue less debt service. Revenues transferred to General Fund.

[b] Applied to total rate revenue excluding City & irrigation accounts.

[c] Applied to miscellaneous revenue and connection charge revenue.

Budget Year:

2012

Test Year for Cost Allocations:

2013

City of Yakima, Washington

Water Utility

Units

Worksheet Description

The Units worksheet summarizes historical and projected number of accounts, no of meters by size, equivalent meters, and water usage by customer class.

Projected Number of Meters

Customer Class	Adjusted to match billed revenues	Actual 2011	Projected						Test Year 2013
			2012	2013	2014	2015	2016	2017	
Residential Inside W10, W11	94.67% 16,305	15,435	15,435	15,474	15,513	15,551	15,590	15,629	15,474
Commercial Inside W12, W52	94.67% 2,065	1,955	1,955	1,960	1,965	1,970	1,974	1,979	1,960
Industrial Inside W13,W23	94.67% 102	97	97	97	97	97	98	98	97
Interdepartmental Inside W15, W55	94.67% 149	141	141	141	142	142	142	143	141
Fire Service Inside W31, W35	93.19% 391	364	364	365	366	367	368	369	365
Residential Outside W20, W21	127.01% 72	91	91	92	92	92	92	93	92
Commercial Outside W22	127.01% 19	24	24	24	24	24	24	24	24
Fire Service Outside W41	118.52% 8	9	9	10	10	10	10	10	10
Total		18,117	18,117	18,163	18,208	18,254	18,299	18,345	18,163
		-6.81%	0.00%	0.25%	0.25%	0.25%	0.25%	0.25%	-0.99%
		18.52%	0.00%	0.25%	0.25%	0.25%	0.25%	0.25%	-0.99%

Number of Meters as of:

12/31/11

Customer Class	Meter Size (inches)										Total
	3/4	1	1-1/2	2	3	4	6	8	10	12	
Residential Inside W10, W11	14,632	599	114	68	18	5					15,435
Commercial Inside W12, W52	1,018	472	206	172	60	25	2				1,955
Industrial Inside W13,W23	13	27	10	30	9	4	3			1	97
Interdepartmental Inside W15, W55	59	28	25	20	6	3					141
Fire Service Inside W31, W35			1	19	7	66	160	90	21		364
Residential Outside W20, W21	86	5									91
Commercial Outside W22	14	5	4	1							24
Fire Service Outside W41						1	5	4			9
Total	15,822	1,137	360	311	99	103	170	95	21	-	18,117

Number of Meters as of:

Test Year: 2013

Customer Class	Growth:		Meter Size (inches)										Total
			3/4	1	1-1/2	2	3	4	6	8	10	12	
Residential Inside W10, W11	1.0025	14,668	601	114	68	18	5	-	-	-	-	15,474	
Commercial Inside W12, W52	1.0025	1,020	474	207	173	60	25	2	-	-	-	1,960	
Industrial Inside W13,W23	1.0025	13	27	10	30	9	4	3	-	1	-	97	
Interdepartmental Inside W15, W55	1.0025	59	28	25	20	6	3	-	1	-	-	141	
Fire Service Inside W31, W35	1.0025	-	-	1	19	7	66	161	91	21	-	365	
Residential Outside W20, W21	1.0025	87	5	-	-	-	-	-	-	-	-	92	
Commercial Outside W22	1.0025	14	5	4	1	-	-	-	-	-	-	24	
Fire Service Outside W41	1.0025	-	-	-	-	-	1	5	4	-	-	10	
Total		15,861	1,140	361	311	100	104	170	95	22	-	18,163	

City of Yakima, Washington

Water Utility

Units

Equivalent Customers

Equivalent Customers: 12/31/11

Customer Class	Meter Size (inches)										Total	Test Year 2013
	3/4	1	1-1/2	2	3	4	6	8	10	12		
Equivalent Meter Ratio(Capacity):	1.00	1.67	3.33	5.33	10.00	16.67	33.33	66.67	100.00	146.67		
Equivalent Hydrant Ratio(Demand):	0.06	0.06	0.06	0.06	0.16	0.34	1.00	2.13	3.83	6.19		
Residential Inside W10, W11	14,632	1,001	378	363	180	79	-	-	-	-	16,633	16,674
Commercial Inside W12, W52	1,018	789	687	918	596	410	63	-	-	-	4,482	4,493
Industrial Inside W13,W23	13	44	35	161	85	63	95	-	95	-	591	593
Interdepartmental Inside W15, W55	59	47	82	106	57	47	-	63	-	-	461	462
Fire Service Inside W31, W35	-	-	0	1	1	22	160	193	79	-	456	457
Residential Outside W20, W21	86	8	-	-	-	-	-	-	-	-	95	95
Commercial Outside W22	14	8	13	7	-	-	-	-	-	-	42	42
Fire Service Outside W41	-	-	-	-	-	0	5	8	-	-	13	13
Total	15,822	1,898	1,195	1,557	919	623	323	263	173	-	22,773	22,830

Equivalent Meters as of: Test Year: 2013 01/00/00

Customer Class			Meter Size (inches)										Total
			3/4	1	1-1/2	2	3	4	6	8	10	12	
Equivalent Meter Ratio(Capacity):			1.00	1.67	3.33	5.33	10.00	16.67	33.33	66.67	100.00	146.67	
Equivalent Hydrant Ratio(Demand):			0.06	0.06	0.06	0.06	0.16	0.34	1.00	2.13	3.83	6.19	
Residential Inside W10, W11	Growth:	1.0025	14,668	1,003	379	364	180	79	-	-	-	-	16,674
Commercial Inside W12, W52		1.0025	1,020	791	689	921	598	411	63	-	-	-	4,493
Industrial Inside W13,W23		1.0025	13	44	35	162	85	63	95	-	95	-	593
Interdepartmental Inside W15, W55		1.0025	59	48	82	106	57	47	-	63	-	-	462
Fire Service Inside W31, W35		1.0025	-	-	0	1	1	23	161	193	79	-	457
Residential Outside W20, W21		1.0025	87	9	-	-	-	-	-	-	-	-	95
Commercial Outside W22		1.0025	14	9	13	7	-	-	-	-	-	-	42
Fire Service Outside W41		1.0025	-	-	-	-	-	0	5	8	-	-	13
Total			15,861	1,903	1,198	1,561	922	624	324	264	174	-	22,830

Projected Usage (based on historical average use/meter)

Customer Class	Adjusted to match billed revenues	Actual 2011 Ccf	Projected							Test Year 2013 Ccf	Actual Use/Meter 2011	Projected Use/Meter 2012	Bi-monthly Use/Meter	Monthly Use/Meter
			2012 Ccf	2013 Ccf	2014 Ccf	2015 Ccf	2016 Ccf	2017 Ccf						
Residential Inside W10, W11	90.20%	2,234,860	2,015,744	2,015,744	2,020,784	2,025,836	2,030,900	2,035,977	2,041,067	2,020,784	131	131	21.8	10.9
Commercial Inside W12, W52	90.20%	1,383,773	1,248,102	1,248,102	1,251,222	1,254,350	1,257,486	1,260,630	1,263,781	1,251,222	638	638	106.4	53.2
Industrial Inside W13,W23	90.20%	210,250	189,636	189,636	190,110	190,586	191,062	191,540	192,018	190,110	1,964	1,964	327.3	163.7
Interdepartmental Inside W15, W55	90.20%	276,902	249,753	249,753	250,378	251,004	251,631	252,260	252,891	250,378	1,771	1,771	295.1	147.6
Fire Service Inside W31, W35	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residential Outside W20, W21	107.56%	10,986	11,816	11,816	11,846	11,875	11,905	11,935	11,965	11,846	129	129	21.5	10.8
Commercial Outside W22	107.56%	5,027	5,407	5,407	5,420	5,434	5,448	5,461	5,475	5,420	224	224	37.3	18.7
Fire Service Outside W41	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			3,720,459	3,720,459	3,729,760	3,739,084	3,748,432	3,757,803	3,767,197	3,729,760				

City of Yakima, Washington

Water Utility

Price Out

Worksheet Description

The Price Out worksheet calculates revenue under historical year rates and historical bill tabulation and historical number of customers and usage.

CALCULATION OF REVENUE UNDER HISTORICAL RATES

HISTORICAL RATES

Effective Date of Rates: 01/01/11

Ready-to-Serve Charge

	Size of Meter (inches)									
	3/4	1	1-1/2	2	3	4	6	8	10	12
Ready-to-Serve Charge - Two-month Period (\$)	\$ 11.04	\$ 15.33	\$ 25.95	\$ 38.74	\$ 68.62	\$ 111.30	\$ 217.90	\$ 431.22	\$ 644.47	\$ 943.08

Commodity Charge

Usage Block (ccf)	\$/ccf
All Usage	\$ 1.44
Outside City Factor	1.50

Fire Service Charges

Line Size	Inside City	Outside City
1.5 inch	\$ 6.00	\$ 9.00
2 inch	\$ 6.00	\$ 9.00
3 inch	\$ 8.40	\$ 12.60
4 inch, including hydrant only	\$ 16.60	\$ 24.90
6 inch, including hydrant only	\$ 48.84	\$ 73.26
8 inch	\$ 104.00	\$ 156.00
10 inch	\$ 187.00	\$ 280.50
12 inch	\$ 302.30	\$ 453.45

City of Yakima, Washington

Water Utility

Price Out

NUMBER OF METERS AS OF : 12/31/11

Customer Class	Meter Size (inches)										Total	Equivalent Annual Service Charge
	3/4	1	1-1/2	2	3	4	6	8	10	12		
Ready-to-Serve Charge - IC	\$ 11.04	\$ 15.33	\$ 25.95	\$ 38.74	\$ 68.62	\$ 111.30	\$ 217.90	\$ 431.22	\$ 644.47	\$ 943.08		
Ready-to-Serve Charge - OC	\$ 16.56	\$ 23.00	\$ 38.93	\$ 58.11	\$ 102.93	\$ 166.95	\$ 326.85	\$ 646.83	\$ 966.71	\$ 1,414.62		
Fire Service Charge - IC	\$ 6.00	\$ 6.00	\$ 6.00	\$ 6.00	\$ 8.40	\$ 16.60	\$ 48.84	\$ 104.00	\$ 187.00	\$ 302.30		
Fire Service Charge - OC	\$ 9.00	\$ 9.00	\$ 9.00	\$ 9.00	\$ 12.60	\$ 24.90	\$ 73.26	\$ 156.00	\$ 280.50	\$ 453.45		
Residential Inside	14,632	599	114	68	18	5	-	-	-	-	15,435	\$ 69.22
Commercial Inside	1,018	472	206	172	60	25	2	-	-	-	1,955	\$ 115.87
Industrial Inside	13	27	10	30	9	4	3	-	1	-	97	\$ 262.93
Interdepartmental Inside	59	28	25	20	6	3	-	1	-	-	141	\$ 153.40
Fire Service Inside	-	-	1	19	7	66	160	90	21	-	364	\$ 367.89
Residential Outside	86	5	-	-	-	-	-	-	-	-	91	\$ 101.51
Commercial Outside	14	5	4	1	-	-	-	-	-	-	24	\$ 141.80
Fire Service Outside	-	-	-	-	-	1	5	4	-	-	9	\$ 589.46
Total	15,822	1,137	360	311	99	103	170	95	21	-	18,117	
	0.00	0.00	33.55	670.96	375.74	6589.99	46970.17	56405.71	23002.88	0.00		
	0	0	0	0	0	177	2,084	3,328	0	0		

SUMMARY NUMBER OF METERS

Customer Class	Actual 2011
Residential Inside	15,435
Commercial Inside	1,955
Industrial Inside	97
Interdepartmental Inside	141
Fire Service Inside	364
Residential Outside	91
Commercial Outside	24
Fire Service Outside	9
Total	18,117

City of Yakima, Washington

Water Utility

Price Out

SUMMARY USAGE

Customer Class	Actual 2011
Residential Inside	2,015,744
Commercial Inside	1,248,102
Industrial Inside	189,636
Interdepartmental Inside	249,753
Fire Service Inside	-
Residential Outside	11,816
Commercial Outside	5,407
Fire Service Outside	-
Total	3,720,459

BREAKDOWN OF HISTORICAL USAGE

	Historical Year	
	Actual Total Usage (ccf)	Volume Charge (\$/ccf)
Usage Charge - IC - \$/ccf		
Usage Charge - IC - \$/ccf		
Residential Inside	2,015,744	\$ 1.44
Commercial Inside	1,248,102	\$ 1.44
Industrial Inside	189,636	\$ 1.44
Interdepartmental Inside	249,753	\$ 1.44
Fire Service Inside	-	\$ -
Residential Outside	11,816	\$ 2.16
Commercial Outside	5,407	\$ 2.16
Fire Service Outside	-	-
Total	3,720,459	

City of Yakima, Washington

Water Utility

Price Out

CALCULATED REVENUE UNDER EXISTING RATES

Revenue from Ready-to-Serve Charge

Customer Class	Calculated 2011
Residential Inside	\$ 1,068,419
Commercial Inside	226,508
Industrial Inside	25,389
Interdepartmental Inside	21,638
Fire Service Inside	134,049
Residential Outside	9,282
Commercial Outside	3,422
Fire Service Outside	5,589
Total	\$ 1,494,296

Inside	Outside	Fire-Inside	Fire-Outside	Total
\$ 1,341,954	12,704	134,049	5,589	\$ 1,494,296
<u>\$ 1,341,954</u>	<u>\$ 12,704</u>	<u>\$ 134,049</u>	<u>\$ 5,589</u>	<u>\$ 1,494,296</u>
\$ -	\$ -	\$ -	\$ -	\$ -
1.00	1.00	1.00	1.00	1.00
-5.33%	27.01%	-6.81%	18.52%	

Revenue from Usage Charges

Customer Class	Calculated 2011
Residential Inside	\$ 2,902,672
Commercial Inside	1,797,266
Industrial Inside	273,076
Interdepartmental Inside	359,645
Fire Service Inside	-
Residential Outside	25,523
Commercial Outside	11,679
Fire Service Outside	-
Total	\$ 5,369,861

Inside	Outside	Fire-Inside	Fire-Outside	Total
\$5,332,659	\$37,202			\$ 5,369,861
<u>\$5,332,659</u>	<u>\$37,202</u>			<u>\$5,369,861</u>
\$ (0)	\$ (0)			\$ (0)
1.0000	1.0000			1.0000
-9.80%	7.56%			

City of Yakima, Washington

Water Utility

Price Out

Total Revenue Under Existing Rates

Customer Class	Calculated 2011
Residential Inside	\$ 3,971,091
Commercial Inside	2,023,774
Industrial Inside	298,465
Interdepartmental Inside	381,282
Fire Service Inside	134,049
Residential Outside	34,805
Commercial Outside	15,101
Fire Service Outside	5,589
Total	\$ 6,864,157

Inside	Outside	Fire-Inside	Fire-Outside	Total
\$ 6,674,613	\$ 49,906	\$ 134,049	\$ 5,589	\$ 6,864,157
<u>\$ 6,674,613</u>	<u>\$ 49,906</u>	<u>\$ 134,049</u>	<u>\$ 5,589</u>	<u>\$ 6,864,157</u>
\$ (0)	\$ (0)	\$ -	\$ -	\$ (0)
1.00	1.00	1.00	1.00	1.00

CALCULATED REVENUE USING EFFECTIVE RATES (Historical Year)

Customer Class	Calculated Revenue Under Historical Rates			
	Service Charge \$	Commodity Charge \$	Total \$	
Residential Inside	\$ 1,068,419	\$ 2,902,672	\$ 3,971,091	
Commercial Inside	226,508	1,797,266	2,023,774	
Industrial Inside	25,389	273,076	298,465	
Interdepartmental Inside	21,638	359,645	381,282	
Fire Service Inside	134,049	-	134,049	
Residential Outside	9,282	25,523	34,805	
Commercial Outside	3,422	11,679	15,101	
Fire Service Outside	5,589	-	5,589	
Total	\$ 1,494,296	\$ 5,369,861	\$ 6,864,157	21.77%

Billing System Data: \$ 1,494,296 \$5,369,861 6,864,157
1.00 1.00 1.00

Trial Balance: 6,850,868 1.00
Statement of Revenues: 6,792,444 1.01
Email Report: 6,856,198 1.00

City of Yakima, Washington

Water Utility

Revenue

Worksheet Description

The Revenue worksheet calculates revenue under existing rates and projected number of customers and usage.

CALCULATION OF REVENUE UNDER EXISTING RATES

EXISTING RATES

Effective Date of Rates: 02/01/12 (2 month lag in billings)

Ready-to-Serve Charge

	Size of Meter (inches)									
	3/4	1	1-1/2	2	3	4	6	8	10	12
Ready-to-Serve Charge - Two-month Period (\$)	\$ 15.91	\$ 20.09	\$ 31.24	\$ 44.67	\$ 76.03	\$ 120.82	\$ 232.70	\$ 453.59	\$ 680.41	\$ 993.82
Fixed Charge Ratio		1.26	1.96	2.81	4.78	7.59	14.63	28.51	42.77	62.47

Commodity Charge

Usage Block (ccf)	\$/ccf
All Usage	\$ 1.51
Outside City Factor	1.50

Fire Service Charges

Line Size	Inside City	Outside City
1.5 inch	\$ 6.00	\$ 9.00
2 inch	\$ 6.00	\$ 9.00
3 inch	\$ 8.76	\$ 13.14
4 inch, including hydrant only	\$ 17.54	\$ 26.31
6 inch, including hydrant only	\$ 51.56	\$ 77.34
8 inch	\$ 109.82	\$ 164.73
10 inch	\$ 197.46	\$ 296.19
12 inch	\$ 319.12	\$ 478.68

City of Yakima, Washington
Water Utility
Revenue

PROJECTED NUMBER OF METERS: 02/01/12

Customer Class	Meter Size (inches)											Total	Current Equivalent Annual Service Charge (a)	Projected Equivalent Annual Service Charge	Change Current to Projected
	3/4	1	1-1/2	2	3	4	6	8	10	12					
Ready-to-Serve Charge - IC	\$ 15.91	\$ 20.09	\$ 31.24	\$ 44.67	\$ 76.03	\$ 120.82	\$ 232.70	\$ 453.59	\$ 680.41	\$ 993.82					
Ready-to-Serve Charge - OC	\$ 23.87	\$ 30.14	\$ 46.86	\$ 67.01	\$ 114.05	\$ 181.23	\$ 349.05	\$ 680.39	\$ 1,020.62	\$ 1,490.73					
Fire Service Charge - IC	\$ 6.00	\$ 6.00	\$ 6.00	\$ 6.00	\$ 8.76	\$ 17.54	\$ 51.56	\$ 109.82	\$ 197.46	\$ 319.12					
Fire Service Charge - OC	\$ 9.00	\$ 9.00	\$ 9.00	\$ 9.00	\$ 13.14	\$ 26.31	\$ 77.34	\$ 164.73	\$ 296.19	\$ 478.68					
Residential Inside	14,632	599	114	68	18	5	-	-	-	-	15,435	\$ 88.73	\$ 98.49	10.99%	
Commercial Inside	1,018	472	206	172	60	25	2	-	-	-	1,955	\$ 136.38	\$ 146.63	7.52%	
Industrial Inside	13	27	10	30	9	4	3	-	1	-	97	\$ 287.82	\$ 300.26	4.32%	
Interdepartmental Inside	59	28	25	20	6	3	-	1	-	-	141	\$ 174.94	\$ 185.70	6.16%	
Fire Service Inside	-	-	1	19	7	66	160	90	21	-	364	\$ 381.52	\$ 388.33	1.79%	
Residential Outside	86	5	-	-	-	-	-	-	-	-	91	\$ 130.69	\$ 145.28	11.17%	
Commercial Outside	14	5	4	1	-	-	-	-	-	-	24	\$ 171.61	\$ 186.52	8.69%	
Fire Service Outside	-	-	-	-	-	1	5	4	-	-	9	\$ 611.42	\$ 622.40	1.80%	
Total	15,822	1,137	360	311	99	103	170	95	21	-	18,117				

(a) Assumes 2 months billings at previous year's rates and 4 months billings at current rates

PROJECTED NUMBER OF METERS

Customer Class	Projected					
	2012	2013	2014	2015	2016	2017
Residential Inside	15,435	15,474	15,513	15,551	15,590	15,629
Commercial Inside	1,955	1,960	1,965	1,970	1,974	1,979
Industrial Inside	97	97	97	97	98	98
Interdepartmental Inside	141	141	142	142	142	143
Fire Service Inside	364	365	366	367	368	369
Residential Outside	91	92	92	92	92	93
Commercial Outside	24	24	24	24	24	24
Fire Service Outside	9	10	10	10	10	10
Total	18,117	18,163	18,208	18,254	18,299	18,345

City of Yakima, Washington
Water Utility
Revenue

PROJECTED USAGE

Customer Class	Projected					
	2012	2013	2014	2015	2016	2017
Residential Inside	2,015,744	2,020,784	2,025,836	2,030,900	2,035,977	2,041,067
Commercial Inside	1,248,102	1,251,222	1,254,350	1,257,486	1,260,630	1,263,781
Industrial Inside	189,636	190,110	190,586	191,062	191,540	192,018
Interdepartmental Inside	249,753	250,378	251,004	251,631	252,260	252,891
Fire Service Inside	-	-	-	-	-	-
Residential Outside	11,816	11,846	11,875	11,905	11,935	11,965
Commercial Outside	5,407	5,420	5,434	5,448	5,461	5,475
Fire Service Outside	-	-	-	-	-	-
Total	3,720,459	3,729,760	3,739,084	3,748,432	3,757,803	3,767,197

BREAKDOWN OF PROJECTED USAGE

	Budget Year	
	Projected Total Usage (ccf)	Volume Charge (\$/ccf)
Usage Charge - IC - \$/ccf		
Usage Charge - IC - \$/ccf		
Residential Inside	2,015,744	\$ 1.51
Commercial Inside	1,248,102	\$ 1.51
Industrial Inside	189,636	\$ 1.51
Interdepartmental Inside	249,753	\$ 1.51
Fire Service Inside	-	\$ -
Residential Outside	11,816	\$ 2.27
Commercial Outside	5,407	\$ 2.27
Fire Service Outside	-	\$ -
Total	3,720,459	

City of Yakima, Washington
Water Utility
Revenue

CALCULATED REVENUE UNDER EXISTING RATES

Revenue from Ready-to-Serve Charge

Customer Class	Projected					
	2012	2013	2014	2015	2016	2017
Residential Inside	\$ 1,369,588	\$ 1,523,973	\$ 1,527,783	\$ 1,531,603	\$ 1,535,432	\$ 1,539,270
Commercial Inside	266,597	287,358	288,077	288,797	289,519	290,243
Industrial Inside	27,792	29,066	29,138	29,211	29,284	29,357
Interdepartmental Inside	24,675	26,260	26,325	26,391	26,457	26,523
Fire Service Inside	139,015	141,851	142,206	142,561	142,918	143,275
Residential Outside	11,951	13,318	13,352	13,385	13,419	13,452
Commercial Outside	4,141	4,512	4,523	4,535	4,546	4,558
Fire Service Outside	5,797	5,916	5,931	5,946	5,961	5,975
Total	\$ 1,849,557	\$ 2,032,255	\$ 2,037,335	\$ 2,042,429	\$ 2,047,535	\$ 2,052,654
		2.04%	0.25%	0.25%	0.25%	0.25%

Revenue from Usage Charges

Customer Class	Projected					
	2012	2013	2014	2015	2016	2017
Residential Inside	\$ 3,043,774	\$ 3,051,383	\$ 3,059,012	\$ 3,066,659	\$ 3,074,326	\$ 3,082,012
Commercial Inside	1,884,634	1,889,345	1,894,068	1,898,804	1,903,551	1,908,310
Industrial Inside	286,351	287,066	287,784	288,504	289,225	289,948
Interdepartmental Inside	377,127	378,070	379,015	379,963	380,913	381,865
Fire Service Inside	-	-	-	-	-	-
Residential Outside	26,764	26,831	26,898	26,965	27,032	27,100
Commercial Outside	12,247	12,277	12,308	12,339	12,370	12,400
Fire Service Outside	-	-	-	-	-	-
Total	\$ 5,630,896	\$ 5,644,973	\$ 5,659,086	\$ 5,673,233	\$ 5,687,416	\$ 5,701,635

Total Revenue Under Existing Rates

Customer Class	Projected					
	2012	2013	2014	2015	2016	2017
Residential Inside	\$ 4,413,362	\$ 4,575,357	\$ 4,586,795	\$ 4,598,262	\$ 4,609,758	\$ 4,621,282
Commercial Inside	2,151,231	2,176,704	2,182,145	2,187,601	2,193,070	2,198,552
Industrial Inside	314,142	316,132	316,922	317,715	318,509	319,305
Interdepartmental Inside	401,803	404,330	405,341	406,354	407,370	408,389
Fire Service Inside	139,015	141,851	142,206	142,561	142,918	143,275
Residential Outside	38,715	40,149	40,250	40,350	40,451	40,552
Commercial Outside	16,388	16,789	16,831	16,874	16,916	16,958
Fire Service Outside	5,797	5,916	5,931	5,946	5,961	5,975
Total	\$ 7,480,452	\$ 7,677,228	\$ 7,696,421	\$ 7,715,662	\$ 7,734,951	\$ 7,754,289

City of Yakima, Washington
Water Utility
Revenue

CALCULATED REVENUE USING EFFECTIVE RATES (Current Budget Year)

	(1)	(2)	(3)
	Revenue Under Existing Rate Structure		
Customer Class	Service Charge \$	Commodity Charge \$	Total \$
Residential Inside	\$ 1,369,588	\$ 3,043,774	\$ 4,413,362
Commercial Inside	266,597	1,884,634	2,151,231
Industrial Inside	27,792	286,351	314,142
Interdepartmental Inside	24,675	377,127	401,803
Fire Service Inside	139,015	-	139,015
Residential Outside	11,951	26,764	38,715
Commercial Outside	4,141	12,247	16,388
Fire Service Outside	5,797	-	5,797
Total	\$ 1,849,557	\$ 5,630,896	\$ 7,480,452

PROJECTED WATER SALES REVENUE

Customer Class	Projected						Test Year 2013
	2012	2013	2014	2015	2016	2017	
Residential Inside	\$ 4,413,362	\$ 4,575,357	\$ 4,586,795	\$ 4,598,262	\$ 4,609,758	\$ 4,621,282	\$4,575,357
Commercial Inside	2,151,231	2,176,704	2,182,145	2,187,601	2,193,070	2,198,552	2,176,704
Industrial Inside	314,142	316,132	316,922	317,715	318,509	319,305	316,132
Interdepartmental Inside	401,803	404,330	405,341	406,354	407,370	408,389	404,330
Fire Service Inside	139,015	141,851	142,206	142,561	142,918	143,275	141,851
Residential Outside	38,715	40,149	40,250	40,350	40,451	40,552	40,149
Commercial Outside	16,388	16,789	16,831	16,874	16,916	16,958	16,789
Fire Service Outside	5,797	5,916	5,931	5,946	5,961	5,975	5,916
Total	\$ 7,480,452	\$ 7,677,228	\$ 7,696,421	\$ 7,715,662	\$ 7,734,951	\$ 7,754,289	\$7,677,228

Budget \$ 7,400,000
Variance: 1.01

City of Yakima, Washington

Water Utility

Operating & Maintenance

Worksheet Description

The Operating and maintenance worksheet presents historical and budgeted expense detail and calculated projected expenses.

Excludes debt service, residual equity xfers, state taxes & utility taxes. These costs are reflected in the cashflow worksheet

OPERATING AND MAINTENANCE EXPENSES-DETAIL

Notes:	Budget 2012	2013	2014	Projected			Year 2013
				2015	2016	2017	
EXISTING OPERATING EXPENSES:							
Fire Suppression	\$ 288,094	\$ 296,737	\$ 305,639	\$ 314,808	\$ 324,252	\$ 333,980	\$ 296,737
Fire Suppression Admin	32,496	33,471	34,475	35,509	36,575	37,672	33,471
Water Distribution	2,129,807	2,193,701	2,259,512	2,327,298	2,397,117	2,469,030	2,193,701
WTP, Trans & Storage	1,627,832	1,676,667	1,726,967	1,778,776	1,832,139	1,887,103	1,676,667
Water/Irrigation Engineer	57,870	59,606	61,394	63,236	65,133	67,087	59,606
Water Administration	2,403,832	2,475,947	2,550,225	2,626,732	2,705,534	2,786,700	2,475,947
Total Operating Expenses	\$ 6,539,931	\$ 6,736,129	\$ 6,938,213	\$ 7,146,359	\$ 7,360,750	\$ 7,581,572	\$ 6,736,129
ADDITIONAL OPERATING EXPENSES:							
Fire Suppression	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Fire Suppression Admin	-	-	-	-	-	-	-
Water Distribution	-	-	-	-	-	-	-
WTP, Trans & Storage	25,000	25,750	26,523	27,318	28,138	28,982	25,750
Water/Irrigation Engineer	-	-	-	-	-	-	-
Water Administration	(1,025,000)	(1,055,750)	(1,087,423)	(1,120,045)	(1,153,647)	(1,188,256)	(1,055,750)
Total Operating Expenses	\$ (1,000,000)	\$ (1,030,000)	\$ (1,060,900)	\$ (1,092,727)	\$ (1,125,509)	\$ (1,159,274)	\$ (1,030,000)
TOTAL OPERATING EXPENSES:							
Fire Suppression	\$ 288,094	\$ 296,737	\$ 305,639	\$ 314,808	\$ 324,252	\$ 333,980	\$ 296,737
Fire Suppression Admin	32,496	33,471	34,475	35,509	36,575	37,672	33,471
Water Distribution	2,129,807	2,193,701	2,259,512	2,327,298	2,397,117	2,469,030	2,193,701
WTP, Trans & Storage	1,652,832	1,702,417	1,753,489	1,806,094	1,860,277	1,916,085	1,702,417
Water/Irrigation Engineer	57,870	59,606	61,394	63,236	65,133	67,087	59,606
Water Administration	1,378,832	1,420,197	1,462,803	1,506,687	1,551,888	1,598,444	1,420,197
Total Operating Expenses	\$ 5,539,931	\$ 5,706,129	\$ 5,877,313	\$ 6,053,632	\$ 6,235,241	\$ 6,422,298	\$ 5,706,129

City of Yakima, Washington
Water Utility
Operating & Maintenance

OPERATING AND MAINTENANCE EXPENSES-SUMMARY

Total Expenses	Budget	Projected					Year 2013
	2012	2013	2014	2015	2016	2017	
Fire Suppression	\$ 288,094	\$ 296,737	\$ 305,639	\$ 314,808	\$ 324,252	\$ 333,980	\$ 296,737
Fire Suppression Admin	32,496	33,471	34,475	35,509	36,575	37,672	33,471
Water Distribution	2,129,807	2,193,701	2,259,512	2,327,298	2,397,117	2,469,030	2,193,701
WTP, Trans & Storage	1,652,832	1,702,417	1,753,489	1,806,094	1,860,277	1,916,085	1,702,417
Water/Irrigation Engineer	57,870	59,606	61,394	63,236	65,133	67,087	59,606
Water Administration	1,378,832	1,420,197	1,462,803	1,506,687	1,551,888	1,598,444	1,420,197
Total Operating Expenses	\$ 5,539,931	\$ 5,706,129	\$ 5,877,313	\$ 6,053,632	\$ 6,235,241	\$ 6,422,298	\$ 5,706,129

City of Yakima, Washington

Water Utility

CIP

Worksheet Description

The CIP worksheet identified detailed capital projects and associated costs in current day dollars. An allowance for annual inflation is then included and projects are summarized by functional componet.

CAPITAL IMPROVEMENT PROGRAM

(Current Dollars):

2012

Karyn Johnson:
I estimated these for the last year based on historical expenditure levels

Line No.	Project Description	2012	2013	2014	2015	2016	2017	Function Description	Funding Source
1	Leak Detection		20,000	20,000		20,000	20,000	1	Cash / Rates
2	WTP PLC Replacement		250,000					1	Existing SRF
3	WTP Lagoon / Electrical service	450,000	3,114,800					1	Existing SRF
4	Intake Flood Repair		1,000,000					1	Bonds / Cash
5	Automated Metering Infrastructure	1,500,000	6,500,000					5	Existing PWTF
6	Open Gear Vale Replacement	25,000	25,000	25,000	25,000	25,000	25,000	5	Cash / Rates
7	Private Water Main Replacement	175,000	175,000	175,000	175,000	175,000	175,000	5	Cash / Rates
8	Lead-Oakum Joint Line Replacement			2,000,000	2,000,000	2,000,000	2,000,000	5	TBD
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
	TOTAL	\$ 2,150,000	\$ 11,084,800	\$ 2,220,000	\$ 2,200,000	\$ 2,220,000	\$ 2,220,000		

Budget \$ 4,450,000

City of Yakima, Washington
Water Utility
CIP

Line No.	Project Description	Inflated Dollars						Funding Source
		2012	2013	2014	2015	2016	2017	
1	Leak Detection	-	20,800	21,632	-	23,397	24,333	Cash / Rates
2	WTP PLC Replacement	-	260,000	-	-	-	-	Existing SRF
3	WTP Lagoon / Electrical service	450,000	3,239,392	-	-	-	-	Existing SRF
4	Intake Flood Repair	-	1,040,000	-	-	-	-	Bonds / Cash
5	Automated Metering Infrastructure	1,500,000	6,760,000	-	-	-	-	Existing PWTF
6	Open Gear Valve Replacement	25,000	26,000	27,040	28,122	29,246	30,416	Cash / Rates
7	Private Water Main Replacement	175,000	182,000	189,280	196,851	204,725	212,914	Cash / Rates
8	Lead-Oakum Joint Line Replacement	-	-	2,163,200	2,249,728	2,339,717	2,433,306	TBD
9	0	-	-	-	-	-	-	0
10	0	-	-	-	-	-	-	0
11	0	-	-	-	-	-	-	0
12	0	-	-	-	-	-	-	0
13	0	-	-	-	-	-	-	0
14	0	-	-	-	-	-	-	0
15	0	-	-	-	-	-	-	0
16	0	-	-	-	-	-	-	0
17	0	-	-	-	-	-	-	0
18	0	-	-	-	-	-	-	0
19	0	-	-	-	-	-	-	0
20	0	-	-	-	-	-	-	0
21	0	-	-	-	-	-	-	0
22	0	-	-	-	-	-	-	0
23	0	-	-	-	-	-	-	0
24	0	-	-	-	-	-	-	0
TOTAL		\$ 2,150,000	\$ 11,528,192	\$ 2,401,152	\$ 2,474,701	\$ 2,597,086	\$ 2,700,969	

City of Yakima, Washington

Water Utility

CIP

CAPITAL IMPROVEMENT PROGRAM (Inflated Dollars)

Function No.	Description	2012	2013	2014	2015	2016	2017	Test Year 2013
1	Supply / treatment	\$ 450,000	\$ 4,560,192	\$ 21,632	\$ -	\$ 23,397	\$ 24,333	\$ 4,560,192
2	Pumping	-	-	-	-	-	-	-
3	Storage	-	-	-	-	-	-	-
4	Transmission	-	-	-	-	-	-	-
5	Distribution	1,700,000	6,968,000	2,379,520	2,474,701	2,573,689	2,676,636	6,968,000
6	Hydrants	-	-	-	-	-	-	-
7	Services	-	-	-	-	-	-	-
8	Meters	-	-	-	-	-	-	-
9	General Plant	-	-	-	-	-	-	-
	Total	\$ 2,150,000	\$ 11,528,192	\$ 2,401,152	\$ 2,474,701	\$ 2,597,086	\$ 2,700,969	\$ 11,528,192

Check: \$ 2,150,000 \$ 11,528,192 \$ 2,401,152 \$ 2,474,701 \$ 2,597,086 \$ 2,700,969

City of Yakima, Washington

Water Utility

Cashflow

Worksheet Description

The Cashflow worksheet projects operating and capital cashflows for a five-year period.

From Edna (phone call)

FUNDING PLAN FOR CIP (477)	2012	2013	2014	2015	2016	2017	
SOURCE OF FUNDS							
Beginning of Year Fund Balance	\$ 3,374,890	\$ 3,818,890	\$ 2,253,770	\$ 546,618	\$ 2,404,947	\$ 501,861	
Proposed Bond Sales							
Issue Amount	\$ -	\$ 3,000,000		\$ 4,000,000	\$ -	\$ 2,500,000	\$ 9,500,000
Less: Issuance Costs	-	(30,000)	-	(40,000)	-	(25,000)	
Less: Reserve Requirement	-	(240,728)	-	(320,970)	-	(200,606)	
Net Proceeds	\$ -	\$ 2,729,272	\$ -	\$ 3,639,030	\$ -	\$ 2,274,394	
Low Interest Rate Loans - SRF							
Amount of Loan	\$ 450,000	\$ 3,064,800	\$ -	\$ -	\$ -	\$ -	\$ 3,514,800
Less: Issuance Costs	-	-	-	-	-	-	
Less: Reserve Requirement	-	-	-	-	-	-	
Total Available Loan Funds	\$ 450,000	\$ 3,064,800	\$ -	\$ -	\$ -	\$ -	
Low Interest Rate Loans - PWTF							
Amount of Loan	\$ 1,500,000	\$ 3,500,000	\$ -	\$ -	\$ -	\$ -	\$ 5,000,000
Less: Issuance Costs	-	-	-	-	-	-	
Less: Reserve Requirement	-	-	-	-	-	-	
Total Available Loan Funds	\$ 1,500,000	\$ 3,500,000	\$ -	\$ -	\$ -	\$ -	
Grant Funds/Contributions	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Non-Operating Revenues	\$ 44,000	\$ 44,000	\$ 44,000	\$ 44,000	\$ 44,000	\$ 44,000	
Transfer from Operating Fund	\$ 600,000	\$ 625,000	\$ 650,000	\$ 650,000	\$ 650,000	\$ 650,000	
Other	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Interest Earnings							
Total Funds Available	\$ 5,968,890	\$ 13,781,962	\$ 2,947,770	\$ 4,879,648	\$ 3,098,947	\$ 3,470,255	
APPLICATION OF FUNDS							
Major Capital Improvements	\$ 2,150,000	\$ 11,528,192	\$ 2,401,152	\$ 2,474,701	\$ 2,597,086	\$ 2,700,969	
Total Funds Applied	\$ 2,150,000	\$ 11,528,192	\$ 2,401,152	\$ 2,474,701	\$ 2,597,086	\$ 2,700,969	
End of Year Fund Balance	\$ 3,818,890	\$ 2,253,770	\$ 546,618	\$ 2,404,947	\$ 501,861	\$ 769,285	
Minimum Desired balance	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	

Per budget, total loan = \$3,870,000; per email total loan =

Per budget & email, total loan = \$5 million

City of Yakima, Washington

Water Utility

Cashflow

CALCULATION OF PROJECTED ANNUAL DEBT SERVICE

	2012	2013	2014	2015	2016	2017
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REVENUE BONDS

Calculation of Projected Debt Service:

Bond Issue - \$	\$ -	\$ 3,000,000	\$ -	\$ 4,000,000	\$ -	\$ 2,500,000
Interest Rate - %	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Bond Term - yrs	20	20	20	20	20	20
Equal Annual Payment - \$	\$ -	\$ 240,728	\$ -	\$ 320,970	\$ -	\$ 200,606
# of Months Bonds Issued (yr 1)	6	6	6	6	6	6
First Year Debt Service - \$	\$ -	\$ 120,364	\$ -	\$ 160,485	\$ -	\$ 100,303
Total Proposed Additional Debt Service - \$	\$ -	\$ 120,364	\$ 240,728	\$ 401,213	\$ 561,698	\$ 662,001

LOW-INTEREST RATE LOANS - SRF

Calculation of Projected Debt Service:

Loan Amount - \$	\$ 450,000	\$ 3,064,800	\$ -	\$ -	\$ -	\$ -
Interest Rate - %	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Loan Term - yrs	20	20	20	20	20	20
Equal Annual Payment - \$	\$ 26,211	\$ 178,512	\$ -	\$ -	\$ -	\$ -
# of Months Loan Issued (yr 1)	4	6	6	6	6	6
First Year Debt Service - \$	\$ 8,737	\$ 89,256	\$ -	\$ -	\$ -	\$ -
Total Proposed Additional Debt Service - \$	\$ 8,737	\$ 115,466	\$ 204,722	\$ 204,722	\$ 204,722	\$ 204,722

LOW-INTEREST RATE LOANS - PWTF

Calculation of Projected Debt Service:

Loan Amount - \$	\$ 1,500,000	\$ 3,500,000	\$ -	\$ -	\$ -	\$ -
Interest Rate - %	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Loan Term - yrs	20	20	20	20	20	20
Equal Annual Payment - \$	\$ 79,000	\$ 184,333	\$ -	\$ -	\$ -	\$ -
# of Months Loan Issued (yr 1)	3	6	6	6	6	6
First Year Debt Service - \$	\$ 19,750	\$ 92,166	\$ -	\$ -	\$ -	\$ -
Total Proposed Additional Debt Service - \$	\$ 19,750	\$ 171,166	\$ 263,332	\$ 263,332	\$ 263,332	\$ 263,332

City of Yakima, Washington

Water Utility

Cashflow

SUMMARY OF EXISTING AND PROJECTED ANNUAL DEBT SERVICE REQUIREMENTS

	2012	2013	2014	2015	2016	2017
Existing Debt						
Bonds						
2008 Refunding 1998 (water only)	\$ 234,700	\$ 232,700	\$ 240,500	\$ 237,700	\$ 234,700	\$ 231,500
	\$ 234,700	\$ 232,700	\$ 240,500	\$ 237,700	\$ 234,700	\$ 231,500
Loans						
PWTF - Naches WTP Improvements	\$ 142,809	\$ 142,135	\$ 141,461	\$ 140,788	\$ 140,114	\$ 139,440
SRF - Naches WTP Filter Rehab	50,368	50,085	49,849	49,614	49,379	49,143
PWTF - Gardner Well	131,086	131,086	131,086	131,086	131,086	131,086
SRF - WTP Recycle Lagoon						
PWTF - AMI						
	\$ 324,263	\$ 323,306	\$ 322,396	\$ 321,488	\$ 320,579	\$ 319,669
Total Existing Debt	\$ 558,963	\$ 556,006	\$ 562,896	\$ 559,188	\$ 555,279	\$ 551,169
Proposed Revenue Bonds						
Principal and Interest)						
2012 Bonds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2013 Bonds		120,364	240,728	240,728	240,728	240,728
2014 Bonds			-	-	-	-
2015 Bonds				160,485	320,970	320,970
2016 Bonds					-	-
2017 Bonds						100,303
Total Proposed Bonds	\$ -	\$ 120,364	\$ 240,728	\$ 401,213	\$ 561,698	\$ 662,001
Proposed Low-Interest Loans - SRF						
Principal and Interest						
2012 Loans	\$ 8,737	\$ 26,211	\$ 26,211	\$ 26,211	\$ 26,211	\$ 26,211
2013 Loans		89,256	178,512	178,512	178,512	178,512
2014 Loans			-	-	-	-
2015 Loans				-	-	-
2016 Loans					-	-
2017 Loans						-
Total Proposed Loans	\$ 8,737	\$ 115,466	\$ 204,722	\$ 204,722	\$ 204,722	\$ 204,722
Proposed Low-Interest Loans - PWTF						
Principal and Interest						
2012 Loans	\$ 19,750	\$ 79,000	\$ 79,000	\$ 79,000	\$ 79,000	\$ 79,000
2013 Loans		92,166	184,333	184,333	184,333	184,333
2014 Loans			-	-	-	-
2015 Loans				-	-	-
2016 Loans					-	-
2017 Loans						-
Total Proposed Loans	\$ 19,750	\$ 171,166	\$ 263,332	\$ 263,332	\$ 263,332	\$ 263,332
Total Debt Service	\$ 587,450	\$ 963,002	\$ 1,271,678	\$ 1,428,455	\$ 1,585,031	\$ 1,681,225

City of Yakima, Washington
Water Utility
Cashflow

PROJECTED OPERATING AND NONOPERATING REVENUE	2012	2013	2014	2015	2016	2017	Year 2013
Operating Fund Revenue							
Water Sales Revenue	\$ 7,480,452	\$ 7,677,228	\$ 7,696,421	\$ 7,715,662	\$ 7,734,951	\$ 7,754,289	\$ 7,677,228
GF Payment for Fire Suppression	\$ -	\$ 317,433	\$ 347,405	\$ 380,597	\$ 395,369	\$ 410,699	\$ 317,433
Other Operating Income							
Water from Hydrant	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Personnel Services	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Water New Services	75,000	75,000	75,000	75,000	75,000	75,000	75,000
Base Irrigation Charges	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Miscellaneous Revenue	36,500	36,500	36,500	36,500	36,500	36,500	36,500
Sale of Materials	65,000	65,000	65,000	65,000	65,000	65,000	65,000
Sale of Salvage	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Subtotal	\$ 258,500	\$ 258,500	\$ 258,500	\$ 258,500	\$ 258,500	\$ 258,500	\$ 258,500
Total Operating Revenue	\$ 7,738,952	\$ 8,253,161	\$ 8,302,326	\$ 8,354,759	\$ 8,388,820	\$ 8,423,487	\$ 8,253,161
Capital Fund Revenue							
Domestic Connection Charges	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000
Distribution Connection Charges	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Total Non-Operating Revenue	\$ 44,000	\$ 44,000	\$ 44,000	\$ 44,000	\$ 44,000	\$ 44,000	\$ 44,000
Interest Income							\$ -
Total Revenue	\$ 7,782,952	\$ 8,297,161	\$ 8,346,326	\$ 8,398,759	\$ 8,432,820	\$ 8,467,487	\$ 8,297,161

City of Yakima, Washington

Water Utility

Cashflow

CASH FLOW ANALYSIS (474):							Year	
							2013	
	2012	2013	2014	2015	2016	2017		
REVENUE								
<u>Revenue Under Existing Rates</u>								
Water Sales Revenue	\$ 7,480,452	\$ 7,677,228	\$ 7,696,421	\$ 7,715,662	\$ 7,734,951	\$ 7,754,289	\$ 7,677,228	
Total Revenue Under Existing Rates	\$ 7,480,452	\$ 7,677,228	\$ 7,696,421	\$ 7,715,662	\$ 7,734,951	\$ 7,754,289	\$ 7,677,228	
<u>Additional Revenue Required</u>								
	Percent Increase	# of Months Effective						
Year								
2012	0.0%	12	\$ -	\$ -	\$ -	\$ -	\$ -	
2013	9.0%	12	690,951	692,678	694,410	696,146	697,886	
2014	9.0%	12		755,019	756,906	758,799	760,696	
2015	9.0%	12			825,028	827,091	829,158	
2016	3.5%	12				350,595	351,471	
2017	3.5%	12					363,772	
Total Additional Revenue Required			\$ -	\$ 690,951	\$ 1,447,697	\$ 2,276,344	\$ 2,632,629	\$ 3,002,984
Total Revenue Under Proposed Rates			\$ 7,480,452	\$ 8,368,178	\$ 9,144,118	\$ 9,992,006	\$ 10,367,581	\$ 10,757,272
General Fund Payment for Fire Protection	\$ -	\$ 317,433	\$ 347,405	\$ 380,597	\$ 395,369	\$ 410,699	\$ 317,433	
Other Operating Revenue	258,500	258,500	258,500	258,500	258,500	258,500	258,500	
Total Operating Revenue	\$ 7,738,952	\$ 8,944,112	\$ 9,750,023	\$ 10,631,103	\$ 11,021,449	\$ 11,426,471	\$ 8,944,112	
Interest Income							0	
Total Revenue	\$ 7,738,952	\$ 8,944,112	\$ 9,750,023	\$ 10,631,103	\$ 11,021,449	\$ 11,426,471	\$ 8,944,112	
REVENUE REQUIREMENTS								
Total Operation and Maintenance	\$ 5,539,931	\$ 5,706,129	\$ 5,877,313	\$ 6,053,632	\$ 6,235,241	\$ 6,422,298	\$ 5,706,129	
Interfund In lieu Utility Tax	1,025,000	1,944,529	2,128,128	2,331,459	2,421,945	2,515,853	1,944,529	
Debt Service								
Existing Bonds	\$ 234,700	\$ 232,700	\$ 240,500	\$ 237,700	\$ 234,700	\$ 231,500	\$ 232,700	
Proposed Bonds	-	120,364	240,728	401,213	561,698	662,001	120,364	
Total Bonds	\$ 234,700	\$ 353,064	\$ 481,228	\$ 638,913	\$ 796,398	\$ 893,501	\$ 353,064	
Existing Loans	\$ 324,263	\$ 323,306	\$ 322,396	\$ 321,488	\$ 320,579	\$ 319,669	\$ 323,306	
Proposed Loans	28,487	286,632	468,054	468,054	468,054	468,054	286,632	
Total Loans	\$ 352,750	\$ 609,938	\$ 790,450	\$ 789,542	\$ 788,633	\$ 787,723	\$ 609,938	
Total Debt Service	\$ 587,450	\$ 963,002	\$ 1,271,678	\$ 1,428,455	\$ 1,585,031	\$ 1,681,225	\$ 963,002	
Transfer to Capital Fund	\$ 600,000	\$ 625,000	\$ 650,000	\$ 650,000	\$ 650,000	\$ 650,000	\$ 625,000	
Residual Equity Transfers	\$ 64,497	\$ 64,497	\$ 64,497	\$ 64,497	\$ 64,497	\$ 64,497	\$ 64,497	
Total Revenue Requirements	\$ 7,816,878	\$ 9,303,157	\$ 9,991,616	\$ 10,528,043	\$ 10,956,714	\$ 11,333,873	\$ 9,303,157	
FUND BALANCES								
Annual Ending Cash Balance	\$ (77,925)	\$ (359,045)	\$ (241,594)	\$ 103,060	\$ 64,735	\$ 92,598	\$ (359,045)	
Beginning Fund Balance	\$ 2,015,478	\$ 1,937,553	\$ 1,578,507	\$ 1,336,914	\$ 1,439,974	\$ 1,504,709	\$ 1,937,553	
Cumulative Fund Balance	\$ 1,937,553	\$ 1,578,507	\$ 1,336,914	\$ 1,439,974	\$ 1,504,709	\$ 1,597,307	\$ 1,578,507	
Minimum Desired Balance	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	
Bond Debt Service Coverage	9.37	9.17	8.05	7.16	6.01	5.60		

Karyn Johnson:

Statement of cash flows:
operating cash and bond
redemption cash
(\$1,228,289). Email =
\$2,015,478

City of Yakima, Washington
Water Utility
Functional Allocations

Allocation of Plant-in-Service

PLANT-IN-SERVICE	TOTAL COSTS	GENERAL WATER SERVICE FUNCTIONS				FIRE PROTECTION	AS ALL OTHERS	TOTAL	ALLOCATION BASIS
		CUSTOMER	METERS & SERVICES	BASE	PEAK				
Source of Supply / Treatment	\$ 11,896,540	0.00%	0.00%	57.14%	42.86%	0.00%	0.00%	100.00%	Peak/Average Ratio - Max Day = 1.75
Pumping Plant	1,280,515	0.00%	0.00%	57.14%	42.86%	0.00%	0.00%	100.00%	Peak/Average Ratio - Max Day = 1.75
Reservoirs / Standpipes	3,301,452	0.00%	0.00%	48.18%	37.44%	14.38%	0.00%	100.00%	See Storage Capacity Allocation Table
Transmission & Distribution	22,051,442	0.00%	0.00%	48.14%	45.35%	6.52%	0.00%	100.00%	See Pipe Capacity Allocation Table
Meters	1,548,738	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	All to Meters & Services
Service Connections	9,585,460	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	All to Customer
Hydrants	1,630,174	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	All to Fire Protection
General Plant / Intangible Plant	2,803,031	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	As All Other
Total Utility Plant	\$ 54,097,352	\$ -	\$ 11,134,198	\$ 19,735,017	\$ 16,882,636	\$ 3,542,469	\$ 2,803,031	\$ 54,097,352	
Total Water Service Functions		0.00%	20.58%	36.48%	31.21%	6.55%	5.18%	100.00%	
General Water Service Functions		0.00%	23.32%	41.33%	35.35%			100.00%	
Allocation of "As All Other"		\$ -	\$ 653,577	\$ 1,158,445	\$ 991,010		\$(2,803,031)	\$ -	
TOTAL	\$ 54,097,352	\$ -	\$ 11,787,775	\$ 20,893,462	\$ 17,873,646	\$ 3,542,469	\$ -	\$ 54,097,352	
Total Allocation Percentages		0.00%	21.79%	38.62%	33.04%	6.55%	0.00%	100.00%	
General Water Service Allocation %		0.00%	23.32%	41.33%	35.35%		0.00%	100.00%	

[a] Source: City of Yakima Comprehensive Water System Plan, Table 2-33

City of Yakima, Washington
Water Utility
Functional Allocations

Storage Capacity Allocation

Function	GALLONS OF STORAGE [a]	GENERAL WATER SERVICE FUNCTIONS				FIRE PROTECTION	AS ALL OTHERS	TOTAL	ALLOCATION BASIS
		CUSTOMER	METERS & SERVICES	BASE	PEAK				
Operational Storage	1.89	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	All to Base
Equalizing Storage	1.89	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	All to Peak
Standby Storage	27.20	0.00%	0.00%	57.14%	42.86%	0.00%	0.00%	100.00%	Peak/Average Day Ratio
Fire Flow Storage	5.20	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	All to Fire Capacity
TOTAL STORAGE	36.17	0.00%	0.00%	48.18%	37.44%	14.38%	0.00%	100.00%	

[a] Source: City of Yakima Comprehensive Water System Plan, Table 3-34

Pipe Capacity Allocation

Pipe	Replacement Cost per lf. [b]	Estimated Cost	Incremental Cost for Fire Oversizing [c]	BASE	PEAK	FIRE PROTECTION	AS ALL OTHERS	TOTAL	ALLOCATION BASIS
4" or less	130	2,460,120		44.05%	55.95%	0.00%	0.00%	100.00%	Domestic: Base/Peak
6"	160	86,505,760		44.05%	55.95%	0.00%	0.00%	100.00%	Domestic: Base/Peak
8"	185	101,853,415	13,763,975	49.42%	37.07%	13.51%	0.00%	100.00%	Fire Flow Capacity Oversizing: Base/Peak
10"	215	818,505	114,210	49.17%	36.88%	13.95%	0.00%	100.00%	Fire Flow Capacity Oversizing: Base/Peak
12"	230	60,250,110	3,929,355	53.42%	40.06%	6.52%	0.00%	100.00%	Fire Flow Capacity Oversizing: Base/Peak
16"	280	21,251,720		44.05%	55.95%		0.00%	100.00%	Transmission: Base/Peak
Total		\$273,139,630	\$ 17,807,540	48.14%	45.35%	6.52%	0.00%	100.00%	

[a] Source: City of Yakima Comprehensive Water System Plan, Table 3-36

[b] Source: General planning estimates, to be updated

[c] Incremental unit cost times linear feet of pipe at each size. Minimum distribution line size = 8"

Distribution % of Total T&D =

City of Yakima, Washington
Water Utility
Functional Allocations

Allocation of Operating Expenses

OPERATING EXPENSE	2013								ALLOCATION BASIS
	TOTAL COSTS	GENERAL WATER SERVICE FUNCTIONS				FIRE PROTECTION	AS ALL OTHERS	TOTAL	
		CUSTOMER	METERS & SERVICES	BASE	PEAK				
Fire Suppression	296,737	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	Direct Fire
Fire Suppression Admin	33,471	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	Direct Fire
Water Distribution	2,193,701	0.00%	0.00%	57.14%	42.86%	0.00%	0.00%	100.00%	Base Peak
WTP, Trans & Storage	1,702,417	0.00%	0.00%	57.14%	42.86%	0.00%	0.00%	100.00%	Base Peak
Water/Irrigation Engineer	59,606	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	All to Base
Water Administration	1,420,197	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	All to Customer
Interfund In Lieu Utility Tax	1,944,529	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	As all Other
Total Operating Expenses	\$ 7,650,658	\$ 1,420,197	\$ -	\$ 2,285,959	\$ 1,669,765	\$ 330,208	\$ 1,944,529	\$ 7,650,658	
Total Water Service Functions		18.56%	0.00%	29.88%	21.83%	4.32%	25.42%	100.00%	
Total General Water Service Functions		26.42%	0.00%	42.52%	31.06%			100.00%	
Allocation of "As All Other"		\$ 513,701	\$ -	\$ 826,856	\$ 603,972		\$(1,944,529)	\$ -	
TOTAL	\$ 7,650,658	\$ 1,933,898	\$ -	\$ 3,112,816	\$ 2,273,737	\$ 330,208	\$ -	\$ 7,650,658	
Allocation Percentages		25.28%	0.00%	40.69%	29.72%	4.32%	0.00%	100.00%	

\$(1,944,529)
 \$ -

City of Yakima, Washington
Water Utility
Functional Allocations

Allocation of Revenue Requirement

REVENUE REQUIREMENT	2013								ALLOCATION BASIS
	TOTAL COSTS	GENERAL WATER SERVICE FUNCTIONS				FIRE PROTECTION	AS ALL OTHERS	TOTAL	
		CUSTOMER	METER SERVICES	BASE	PEAK				
OPERATING AND CAPITAL EXPENSES									
Cash Operating Expenses	\$ 7,650,658	25.28%	0.00%	40.69%	29.72%	4.32%	0.00%	100.00%	As O&M Expense
Existing Debt Service	620,503	0.00%	21.79%	38.62%	33.04%	6.55%	0.00%	100.00%	As Plant In Service
New Debt Service	406,996	0.00%	21.79%	38.62%	33.04%	6.55%	0.00%	100.00%	As Plant In Service
Rate-Funded Capital	625,000	0.00%	21.79%	38.62%	33.04%	6.55%	0.00%	100.00%	As Plant In Service
	\$ 9,303,157	20.79%	3.87%	40.32%	30.31%	4.71%	0.00%	100.00%	
OTHER REVENUES AND ADJUSTMENTS									
Less: Other Revenues	(258,500)	25.28%	0.00%	40.69%	29.72%	4.32%	0.00%	100.00%	As O&M Expense
Less: Operating Fund Interest Earnings	-	25.28%	0.00%	40.69%	29.72%	4.32%	0.00%	100.00%	As O&M Expense
Plus: Adjustment for Partial Year Increase	-	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	As All Other
Plus: Net Cash Flow after Rate Increase	(359,045)	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%	As All Other
Rate Revenue Requirement	\$ 8,685,612	\$ 1,868,555	\$ 360,078	\$ 3,645,868	\$ 2,742,894	\$ 427,262	\$ (359,045)	\$ 8,685,612	
Water Service Functions		20.66%	3.98%	40.31%	30.33%	4.72%		100.00%	
Water Service Functions (Excluding Fire)		21.68%	4.18%	42.31%	31.83%			100.00%	
Allocation of "As All Others"		\$ (77,854)	\$ (15,003)	\$ (151,906)	\$ (114,283)		\$ 359,045	\$ -	
Total Rate Revenue Requirement	\$ 8,685,612	\$ 1,790,701	\$ 345,076	\$ 3,493,962	\$ 2,628,611	\$ 427,262	\$ -	\$ 8,685,612	
less: Provision for Operational Use of Fire Assets [a]		\$ 9,265	\$ 1,785	\$ 18,077	\$ 13,600	\$ (42,726)		\$ -	
Cost Allocation Before Fire Protection Adjustment	\$ 8,685,612	\$ 1,799,966	\$ 346,861	\$ 3,512,039	\$ 2,642,211	\$ 384,535		\$ 8,685,612	
Total Fire Protection	\$ (384,535)					\$ 384,535			
Fire Protection Allocated to Private Fire Services	67,102								
less: Public Fire Payment from General Fund	\$ (317,433)					\$ (317,433)		\$ (317,433)	
Rate Revenue Requirement	8,368,178	\$ 1,799,966	\$ 346,861	\$ 3,512,039	\$ 2,642,211	\$ 67,102		\$ 8,368,178	
Allocation Percentages		21.51%	4.15%	41.97%	31.57%	0.80%	0.00%	100.00%	

[a] Percent of fire assets used for operations. **10.00%**

Informational: Fire Costs	
Fire Allocation	384,535
Share of Equivalent Hydrants	
2,254	83%
476	17%
Public Fire Payment from General Fund	317,433
Fire Costs Allocated to Private Fire Line	67,102
Total	384,535

check: \$0

City of Yakima, Washington
Water Utility

Water Utility Tax Rate	2013	
Projected Water Sales Revenue Collection	\$ 8,368,178	
less: 2008 Refunding Bond Debt Service	<u>(232,700)</u>	
Net Water Sales Revenue	\$ 8,135,478	
Existing Utility Tax Rate	20.00%	
Projected Utility Tax Revenue to GF	\$ 1,627,096	
Additional Utility Tax Revenue for Fire Suppression	<u>317,433</u>	
Total Utility Tax Revenue	\$ 1,944,529	
Incremental Utility Tax Rate (Additional/Net Water Sales)	3.90%	
Updated 2012 Water Utility Tax Rate	23.90%	
Reduction to Water Rates for Fire Suppression	\$ (317,433)	
Water Rate Increase for Increased Utility Tax Rate	<u>317,433</u>	
Net Change to Water Rates	\$ -	
Updated Water Utility Tax Rate	23.90%	
Total Water Utility Tax Collection	\$ 1,944,529	
General Fund Fire Payment Rate	3.90%	
GF Transfer to Water Fund for Fire Suppression	\$ 317,433	\$ (0)

City of Yakima, Washington

Water Utility

Fire Removal Progression Table

Customer Classes	2013 Revenue Under Existing Rates	2013 Revenue with 9% ATB Rate Increase	% Change with ATB Increase [a]	Fire Removal from Rates	Reallocation of Additional Utility Tax	2013 Revenue with ATB Increase Net of Fire	Total % Rate Change with ATB Net of Fire [b]
Domestic Water Customers	\$ 7,529,461	\$ 8,207,112	9.00%	\$ (317,433)	\$ 311,323	\$ 8,201,002	8.92%
Private Fire Services	147,767	161,066	9.00%	-	6,110	167,176	13.13%
TOTAL	\$ 7,677,228	\$ 8,368,178	9.00%	\$ (317,433)	\$ 317,433	\$ 8,368,178	9.00%

[a] Rate increase applied Jan. 1, 2013

[b] To be applied across-the-board (ATB) to existing rate structure and rates to meet revenue requirements and comply with Lane vs. Seattle.

City of Yakima, Washington
Water Utility
Test Year Customer Summary

Test Year	2013
Outside of City Equivalent	150%

Test Year Customer Data

Meters:	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"	
Meter Equivalent Code	1	2	3	4	5	6	7	8	9	10	
Meter Service Ratio:	1.00	1.27	1.64	2.64	10.00	12.73	19.09	26.36	43.17	70.68	
Equivalent Hydrant Ratio:	0.06	0.06	0.06	0.06	0.16	0.34	1.00	2.13	3.83	6.19	TOTAL

Current Customer Classes											
Inside City											
Residential	14,668	601	114	68	18	5	0	0	0	0	15,474
Commercial	1,020	474	207	173	60	25	2	0	0	0	1,960
Industrial	13	27	10	30	9	4	3	0	1	0	97
Interdepartmental	59	28	25	20	6	3	0	1	0	0	141
Private Fire	0	0	1	19	7	66	161	91	21	0	365
Outside City											
* Residential	130	8	0	0	0	0	0	0	0	0	138
* Commercial	21	8	6	2	0	0	0	0	0	0	36
* Private Fire	0	0	0	0	0	2	7	5	0	0	14
TOTAL	15,912	1,145	363	312	100	104	173	97	22	0	18,225

Note: * denotes weighted customer statistic

Current Customer Classes	Customer Classes	Number of Accounts	Meter Equivalents	Hydrant Equivalents	Total Usage	Bi-Monthly Average ccf	Combined Inside/Outside
Inside City							
Residential	1 Domestic Water	15,474	16,040		2,020,784	21.0	22
Commercial	1 Domestic Water	1,960	3,365		1,251,222	106.4	105
Industrial	1 Domestic Water	97	373		190,110	327.3	327
Interdepartmental	1 Domestic Water	141	306		250,378	295.1	295
Private Fire	2 Private Fire	365	7,314	457			
Outside City							
Residential	1 Domestic Water	138	140		17,769	21.5	
Commercial	1 Domestic Water	36	45		8,131	37.3	
Private Fire	2 Private Fire	14	300	19			
TOTAL		18,225	27,883	476	3,738,393	34.2	

City of Yakima, Washington
Water Utility
Test Year Customer Summary

Test Year	2013
Outside of City Equivalent	150%

Summary of Test Year Customer Data

	Number of Accounts	Meter Equivalents	Hydrant Equivalents	Total Usage
1 Domestic Water	17,846	20,269	-	3,738,393
2 Private Fire	380	7,613	476	-
3 Public Fire	-	-	2,254	-
TOTAL	18,225	27,883	2,730	3,738,393

Weighted Meters:		3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"	
1 Domestic Water		15,912	1,145	362	293	92	36	5	1	1	0	17,846
2 Private Fire		0	0	1	19	7	68	168	96	21	0	380
TOTAL		15,912	1,145	363	312	100	104	173	97	22	0	18,225

UNWEIGHTED Statistics:		3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"	
1 Inside City Domestic Water		15,761	1,129	356	291	92	36	5	1	1	0	17,672
2 Private Fire		0	0	1	19	7	66	161	91	21	0	365
1 Outside City Domestic Water		101	10	4	1	0	0	0	0	0	0	116
2 Private Fire		0	0	0	0	0	1	5	4	0	0	10
TOTAL		15,861	1,140	361	311	100	104	170	95	22	0	18,163

Usage	ccf
Inside Domestic Service	3,712,494
Outside Domestic Service	17,266
Total Water Service Usage	3,729,760

City of Yakima, Washington Water Utility

Rate Design - Proposed Rates

Test Year	2013
Outside City Mark-up:	150%
Target Fixed Revenue Share	25%

Domestic Service

Inside City

Bi-Monthly Rate Schedule				Customer Statistics		Calculated Revenues			Equivalent Service Unit	Weighted	
Meter Size	Fixed Charge Ratio	Total Bi-Monthly Svc Charge	Commodity Charge (per ccf)	# of Meters	Total Usage (ccf)	Base	Volume	Total			
3/4"	1.00	\$ 16.25		15,761		\$1,536,748			15,761	15,761	
1"	1.26	20.52		1,129		139,049			1,426	1,426	
1 1/2"	1.96	31.91		356		68,137			699	699	
2"	2.81	45.63		291		79,762			818	818	
3"	4.78	77.66		92		42,894			440	440	
4"	7.59	123.41		36		26,703			274	274	
6"	14.63	237.69		5		6,767			69	69	
8"	28.51	463.31		1		2,638			27	27	
10"	42.77	694.99		1		3,957			41	41	
12"	62.47	1,015.12		-		-			0	0	
				\$ 1.68	17,672	3,712,494	\$1,906,656	\$ 6,232,653	\$ 8,139,309	19,554	19,554
							23.43%	76.57%			

Outside City

Bi-Monthly Rate Schedule				Customer Statistics		Calculated Revenues			Equivalent Service Unit	Weighted	
Meter Size	Fixed Charge Ratio	Total Bi-Monthly Svc Charge	Commodity Charge (per ccf)	# of Meters	Total Usage (ccf)	Base	Volume	Total			
3/4"	1.00	\$ 24.38		101		\$ 14,712			101	151	
1"	1.26	30.78		10		1,881			13	19	
1 1/2"	1.96	47.86		4		1,097			8	11	
2"	2.81	68.44		1		523			4	5	
3"	4.78	116.49		-		-			0	0	
4"	7.59	185.11		-		-			0	0	
6"	14.63	356.53		-		-			0	0	
8"	28.51	694.96		-		-			0	0	
10"	42.77	1,042.48		-		-			0	0	
12"	62.47	1,522.67		-		-			0	0	
				\$ 2.52	116	17,266	\$ 18,213	\$ 43,481	\$ 61,693	125	187
							23.47%	76.53%			

	Service	Commodity	Total	Allocated
Inside	\$1,906,656	\$ 6,232,653	\$ 8,139,309	
Outside	18,213	43,481	61,693	
	\$1,924,869	\$ 6,276,134	\$ 8,201,002	\$ 8,201,002 \$ -

City of Yakima, Washington Water Utility

Rate Design - Proposed Rates

Test Year

Private Fire

Inside City

Bi-Monthly Rate Schedule				Customer Statistics		Calculated Revenues		
Meter Size		Total Bi-Monthly Svc Charge	Commodity Charge (per ccf)	# of Meters	Total Usage (ccf)	Base	Volume	Total
3/4"				-		\$ -		
1"				-		-		
1 1/2"		6.79		1		38		
2"		6.79		19		761		
3"		9.91		7		444		
4"		19.84		66		7,897		
6"		58.33		161		56,239		
8"		124.24		91		67,554		
10"		223.40		21		27,549		
12"		361.04		-		-		
				365		\$ 160,483		\$ 160,483

100.00% 0.00%

Outside City

Rate Schedule				Customer Statistics		Calculated Revenues		
Meter Size		Total Bi-Monthly Svc Charge	Commodity Charge (per CCF)	# of Meters	Total Usage (CCF)	Base	Volume	Total
3/4"				-		\$ -		
1"				-		-		
1 1/2"		10.18		-		-		
2"		10.18		-		-		
3"		14.87		-		-		
4"		29.77		1		212		
6"		87.50		5		2,495		
8"		186.37		4		3,986		
10"		335.09		-		-		
12"		541.55		-		-		
				10	-	\$ 6,693	\$ -	\$ 6,693

100.00% 0.00%

	Service	Commodity	Total	Allocated
Inside	\$ 160,483	\$ -	\$ 160,483	
Outside	6,693	-	6,693	
	\$ 167,176	\$ -	\$ 167,176	\$ 167,176

	Service Charge	Commodity Chg	Total
Water Service Inside	\$ 1,906,656	\$ 6,232,653	\$ 8,139,309
Water Service Outside	18,213	43,481	61,693
Private Fire Inside	160,483	-	160,483
Private Fire Outside	6,693	-	6,693
Total Revenues	\$ 2,092,045	\$ 6,276,134	\$ 8,368,178
Total Revenue Requirement			\$ 8,368,178
Surplus (Deficit):			\$ 0

25% 75% 100%

Rate Revenue Split

	Existing	Proposed
Fixed	22%	25%
Volume	78%	75%
TOTAL	100%	100%

City of Yakima, Washington
Water Utility
Proposed Rates Price- Out

Current Customer Classes	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"	Total
ACCOUNTS											
Inside City											
Residential	14,668	601	114	68	18	5	0	0	0	0	15,474
Commercial	1,020	474	207	173	60	25	2	0	0	0	1,960
Industrial	13	27	10	30	9	4	3	0	1	0	97
Interdepartmental	59	28	25	20	6	3	0	1	0	0	141
Private Fire	0	0	1	19	7	66	161	91	21	0	365
Outside City											
Residential	87	5	0	0	0	0	0	0	0	0	92
Commercial	14	5	4	1	0	0	0	0	0	0	24
Private Fire	0	0	0	0	0	1	5	4	0	0	10
Total	15,861	1,140	361	311	100	104	170	95	22	0	18,163
CCF											
Inside City											
Residential	2,020,784										
Commercial	1,251,222										
Industrial	190,110										
Interdepartmental	250,378										
Outside City											
Residential	11,846										
Commercial	<u>5,420</u>										
Total	3,729,760										

City of Yakima, Washington
Water Utility
Proposed Rates Price- Out

Proposed Bi-Monthly Rates	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"
SERVICE CHARGE										
Inside City										
Residential	\$16.25	\$20.52	\$31.91	\$45.63	\$77.66	\$123.41	\$237.69	\$463.31	\$694.99	\$1,015.12
Commercial	\$16.25	\$20.52	\$31.91	\$45.63	\$77.66	\$123.41	\$237.69	\$463.31	\$694.99	\$1,015.12
Industrial	\$16.25	\$20.52	\$31.91	\$45.63	\$77.66	\$123.41	\$237.69	\$463.31	\$694.99	\$1,015.12
Interdepartmental	\$16.25	\$20.52	\$31.91	\$45.63	\$77.66	\$123.41	\$237.69	\$463.31	\$694.99	\$1,015.12
Private Fire	\$0.00	\$0.00	\$6.79	\$6.79	\$9.91	\$19.84	\$58.33	\$124.24	\$223.40	\$361.04
Outside City										
Residential	\$24.38	\$30.78	\$47.86	\$68.44	\$116.49	\$185.11	\$356.53	\$694.96	\$1,042.48	\$1,522.67
Commercial	\$24.38	\$30.78	\$47.86	\$68.44	\$116.49	\$185.11	\$356.53	\$694.96	\$1,042.48	\$1,522.67
Private Fire	\$0.00	\$0.00	\$10.18	\$10.18	\$14.87	\$29.77	\$87.50	\$186.37	\$335.09	\$541.55
COMMODITY RATE										
Inside City										
Residential	\$1.68									
Commercial	\$1.68									
Industrial	\$1.68									
Interdepartmental	\$1.68									
Outside City										
Residential	\$2.52									
Commercial	\$2.52									

Projected Revenue (Full Year)	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"	Total
FIXED REVENUE											
Inside City											
Residential	\$ 1,430,239	\$ 73,965	\$ 21,804	\$ 18,706	\$ 8,402	\$ 3,514	\$ -	\$ -	\$ -	\$ -	1,556,629
Commercial	\$ 99,476	\$ 58,307	\$ 39,610	\$ 47,286	\$ 27,859	\$ 18,271	\$ 2,707	\$ -	\$ -	\$ -	293,516
Industrial	\$ 1,296	\$ 3,272	\$ 1,999	\$ 8,314	\$ 3,980	\$ 2,811	\$ 4,060	\$ -	\$ 3,957	\$ -	29,688
Interdepartmental	\$ 5,737	\$ 3,505	\$ 4,724	\$ 5,456	\$ 2,653	\$ 2,108	\$ -	\$ 2,638	\$ -	\$ -	26,822
Private Fire	\$ -	\$ -	\$ 38	\$ 761	\$ 444	\$ 7,897	\$ 56,239	\$ 67,554	\$ 27,549	\$ -	160,483
Outside City											
Residential	\$ 12,663	\$ 941	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	13,604
Commercial	\$ 2,048	\$ 941	\$ 1,097	\$ 523	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	4,609
Private Fire	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 212	\$ 2,495	\$ 3,986	\$ -	\$ -	6,693
Total Fixed Revenue	\$ 1,551,459	\$ 140,930	\$ 69,272	\$ 81,046	\$ 43,339	\$ 34,813	\$ 65,502	\$ 74,178	\$ 31,506	\$ -	\$ 2,092,045
COMMODITY REVENUE											
Inside City											
Residential	\$ 3,392,556										
Commercial	2,100,592										
Industrial	319,163										
Interdepartmental	420,342										
Outside City											
Residential	29,831										
Commercial	13,650										
Total Commodity Revenue	\$ 6,276,134										

City of Yakima, Washington
Water Utility
Proposed Rates Price- Out

PROPOSED RATES

Total Revenue	Fixed Revenue	Volume Revenue	Total Revenue	Share Under Proposed	Share Under Existing
Inside City					
Residential	\$ 1,556,629	\$ 3,392,556	\$ 4,949,186	59.14%	54.68%
Commercial	293,516	2,100,592	2,394,108	28.61%	26.01%
Industrial	29,688	319,163	348,852	4.17%	3.78%
Interdepartmental	26,822	420,342	447,165	5.34%	4.83%
Private Fire	160,483	-	160,483	1.92%	1.70%
Outside City					
Residential	13,604	29,831	43,434	0.52%	0.48%
Commercial	4,609	13,650	18,259	0.22%	0.20%
Private Fire	6,693	-	6,693	0.08%	0.07%
Total Revenue	\$ 2,092,045	\$ 6,276,134	\$ 8,368,178	\$ 0	

Domestic	1,924,869	6,276,134	8,201,002
Fire	<u>167,176</u>	<u>-</u>	<u>167,176</u>
	2,092,045	6,276,134	8,368,178

EXISTING RATES

Total Revenue	Fixed Revenue	Volume Revenue	Total Revenue		
Inside City					
Residential	\$ 1,523,973	\$ 3,051,383	\$ 4,575,357	54.68%	
Commercial	287,358	1,889,345	2,176,704	26.01%	
Industrial	29,066	287,066	316,132	3.78%	
Interdepartmental	26,260	378,070	404,330	4.83%	
Private Fire	141,851	-	141,851	1.70%	
Outside City					
Residential	13,318	26,831	40,149	0.48%	
Commercial	4,512	12,277	16,789	0.20%	
Private Fire	5,916	-	5,916	0.07%	
Total Revenue	\$ 2,032,255	\$ 5,644,973	\$ 7,677,228	\$ 7,677,228	9.00%
				\$ -	

Domestic	1,884,488	5,644,973	7,529,461
Fire	<u>147,767</u>	<u>-</u>	<u>147,767</u>
	2,032,255	5,644,973	7,677,228

City of Yakima, Washington
Water Utility
Proposed Rates Price- Out

Existing Bi-Monthly Rates	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"
SERVICE CHARGE										
Inside City										
Residential	\$15.91	\$20.09	\$31.24	\$44.67	\$76.03	\$120.82	\$232.70	\$453.59	\$680.41	\$993.82
Commercial	\$15.91	\$20.09	\$31.24	\$44.67	\$76.03	\$120.82	\$232.70	\$453.59	\$680.41	\$993.82
Industrial	\$15.91	\$20.09	\$31.24	\$44.67	\$76.03	\$120.82	\$232.70	\$453.59	\$680.41	\$993.82
Interdepartmental	\$15.91	\$20.09	\$31.24	\$44.67	\$76.03	\$120.82	\$232.70	\$453.59	\$680.41	\$993.82
Private Fire	\$6.00	\$6.00	\$6.00	\$6.00	\$8.76	\$17.54	\$51.56	\$109.82	\$197.46	\$319.12
Outside City										
Residential	\$23.87	\$30.14	\$46.86	\$67.01	\$114.05	\$181.23	\$349.05	\$680.39	\$1,020.62	\$1,490.73
Commercial	\$23.87	\$30.14	\$46.86	\$67.01	\$114.05	\$181.23	\$349.05	\$680.39	\$1,020.62	\$1,490.73
Private Fire	\$9.00	\$9.00	\$9.00	\$9.00	\$13.14	\$26.31	\$77.34	\$164.73	\$296.19	\$478.68

COMMODITY RATE	
Inside City	
Residential	\$1.51
Commercial	\$1.51
Industrial	\$1.51
Interdepartmental	\$1.51
Outside City	
Residential	\$2.27
Commercial	\$2.27

Projected Revenue (Full Year)	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"	Total
FIXED REVENUE											
Inside City											
Residential	\$ 1,400,234	\$ 72,413	\$ 21,346	\$ 18,314	\$ 8,226	\$ 3,440	\$ -	\$ -	\$ -	\$ -	\$ 1,523,973
Commercial	97,389	57,084	38,779	46,294	27,275	17,887	2,650	-	-	-	287,358
Industrial	1,268	3,203	1,957	8,140	3,896	2,752	3,975	-	3,874	-	29,066
Interdepartmental	5,617	3,432	4,625	5,342	2,598	2,064	-	2,583	-	-	26,260
Private Fire	-	-	34	673	393	6,981	49,710	59,711	24,350	-	141,851
Outside City											
Residential	12,398	921	-	-	-	-	-	-	-	-	13,318
Commercial	2,005	921	1,074	512	-	-	-	-	-	-	4,512
Private Fire	-	-	-	-	-	188	2,205	3,523	-	-	5,916
Total Fixed Revenue	\$ 1,518,912	\$ 137,974	\$ 67,815	\$ 79,273	\$ 42,387	\$ 33,311	\$ 58,541	\$ 65,817	\$ 28,225	\$ -	\$ 2,032,255

COMMODITY REVENUE	
Inside City	
Residential	\$ 3,051,383
Commercial	1,889,345
Industrial	287,066
Interdepartmental	378,070
Outside City	
Residential	26,831
Commercial	12,277
Total Commodity Revenue	\$ 5,644,973

City of Yakima, Washington

Water Utility

Typical Bill Comparison Test Year 2013

Line No.	Meter Size inches	Bi-Mthly Usage (Ccf)	Existing Bi-Mthly Bill \$	Proposed Rates			
				Bi-Mthly Bill \$	\$ change from Existing \$	% change from Existing %	
1	3/4	0	\$15.91	\$ 16.25	\$0.34	2.1%	
2	3/4	6	\$24.97	\$ 26.32	\$1.35	5.4%	
3	3/4	15	\$38.56	\$ 41.43	\$2.87	7.5%	
4	3/4	22	\$49.13	\$ 53.19	\$4.06	8.3%	Residential Avg
5	3/4	40	\$76.31	\$ 83.40	\$7.09	9.3%	
6	3/4	75	\$129.16	\$ 142.16	\$13.00	10.1%	
7	3/4	106	\$175.97	\$ 194.21	\$18.24	10.4%	Commercial Avg
8	3/4	150	\$242.41	\$ 268.08	\$25.67	10.6%	
9	3/4	200	\$317.91	\$ 352.02	\$34.11	10.7%	
10	3/4	295	\$461.36	\$ 511.51	\$50.15	10.9%	Interdepartmental Avg
11	3/4	350	\$544.41	\$ 603.84	\$59.43	10.9%	
12	3/4	400	\$619.91	\$ 687.78	\$67.87	10.9%	
9	1	0	\$20.09	\$ 20.52	\$0.43	2.1%	
10	1	50	\$95.59	\$ 104.46	\$8.87	9.3%	
11	1	117	\$196.76	\$ 216.94	\$20.18	10.3%	
12	1	200	\$322.09	\$ 356.29	\$34.20	10.6%	
13	1	300	\$473.09	\$ 524.17	\$51.08	10.8%	
14	2	0	\$44.67	\$ 45.63	\$0.96	2.1%	
15	2	100	\$195.67	\$ 213.51	\$17.84	9.1%	
16	2	327	\$538.44	\$ 594.61	\$56.17	10.4%	Industrial Avg
17	2	400	\$648.67	\$ 717.16	\$68.49	10.6%	
18	2	500	\$799.67	\$ 885.04	\$85.37	10.7%	
19	4	0	\$120.82	\$ 123.41	\$2.59	2.1%	
20	4	200	\$422.82	\$ 459.18	\$36.36	8.6%	
21	4	400	\$724.82	\$ 794.94	\$70.12	9.7%	
22	4	600	\$1,026.82	\$ 1,130.71	\$103.89	10.1%	
23	4	800	\$1,328.82	\$ 1,466.47	\$137.65	10.4%	
24	6	0	\$232.70	\$ 237.69	\$4.99	2.1%	
25	6	500	\$987.70	\$ 1,077.10	\$89.40	9.1%	
26	6	2,500	\$4,007.70	\$ 4,434.77	\$427.07	10.7%	
27	6	5,000	\$7,782.70	\$ 8,631.85	\$849.15	10.9%	
28	6	15,000	\$22,882.70	\$ 25,420.17	\$2,537.47	11.1%	

(a) Outside City customers pay a 1.50 rate differential.