

**To:** Chris Cotta, Assistant Public Works Director  
City of Petersburg, Alaska

**Date:** June 12, 2012

**From:** Karyn Johnson, Principal  
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**RE: Utility Rate Study – Water, Sewer, and Sanitation**

This memorandum documents the objectives, assumptions, findings, and recommendations for the Water, Sewer, and Sanitation utility rate studies for the City of Petersburg, Alaska (“City”). Major study elements include:

- Evaluation of Financial Policies
- Development of Capital Financing Strategies
- Assessment of Revenue Needs
- Forecast of Rate Adjustments

Further detail can be found in the following notebook appendices:

- Appendix A – Study Presentation Materials
- Appendix B – Water Utility Spreadsheet Model
- Appendix C – Sewer Utility Spreadsheet Models
- Appendix D – Sanitation Utility Spreadsheet Model

## A. FINANCIAL POLICIES

In order to establish adequate utility rates, a utility must define its benchmark(s) for financial performance. Typically, several different standards are necessary to satisfy all financial objectives. Like any business, a municipal utility requires certain minimum levels of cash reserves to operate; these reserves address variability and timing of expenditures and receipts, as well as occasional disruptions in activities, costs or revenues. In addition, as a public service provider, a municipal utility has a commitment to provide an essential service at a certain standard. Therefore, protection against financial disruption is very important.

This section outlines best practice financial policies that the City might consider in the context of this mission. It also addresses policy direction from City staff for incorporation of selected policies into this rate study, appropriate to the unique needs and circumstances of the City. These policies form the foundation of utility management and, with routine application, can act as overarching guidelines for consistent decision making. The following policies are evaluated:

- Self-Supporting Enterprise Fund
- Cash Reserves
- System Reinvestment Funding
- Debt Management

## 1. SELF SUPPORTING ENTERPRISE FUND

A fund is an accountability unit used to maintain control over resources segregated for specific activities or objectives. Proprietary, or enterprise, funds report services for which a utility charges customers a fee. These funds are generally self-supporting, receiving revenues for payment of services on a user fee basis as opposed to property taxes or other general fund revenue sources.

Conceptually, and by accounting convention, each utility is divided into two primary activity centers; operating and capital. For financial forecasting purposes, operating costs tend to be ongoing and predictable, while capital costs are highly variable in comparison. In addition, each of these has specific funding sources and mechanisms available to them.

When determining the amount of rate revenue required, we necessarily separate these cost centers to reflect these differences. Note, however, that there is some interaction between the two centers – for example, capital projects may be funded through a policy of system reinvestment funding from rates, direct rate funding, or through debt issuance. In each case, rates are paying for capital projects. These demands on operational resources (primarily rates) thus become expenditures from that perspective.

This ideal separation is illustrated in the exhibit below.

| Capital Account   | Operating Account   |
|---|---|
| <p><b><u>Sources of Funding</u></b></p> <ul style="list-style-type: none"> <li>Development Connection Charges</li> <li>Debt Proceeds</li> <li>Transfers from Operations</li> <li>Interest Earnings</li> <li>Grants</li> <li>Miscellaneous Proceeds</li> </ul> <p><b><u>Uses</u></b></p> <ul style="list-style-type: none"> <li>Capital Project Funding</li> </ul> | <p><b><u>Sources of Funding</u></b></p> <ul style="list-style-type: none"> <li>User Rates</li> <li>Interest Earnings</li> <li>Miscellaneous Service Fees</li> </ul> <p><b><u>Uses</u></b></p> <ul style="list-style-type: none"> <li>Operating &amp; Maintenance Expenses</li> <li>Administrative Expenses</li> <li>Rate-Funded Capital</li> <li>System Reinvestment (R&amp;R) Funding</li> <li>Debt Service</li> <li>Addition to Operating Reserves</li> </ul> |

Though virtually all utilities maintain reserves in some form, the segregation of those reserves can vary greatly between utilities. While a complete delineation of the functions of reserves is not always documented, the underlying purposes remain valid components of reserve management. Further, as reserve objectives are identified, the mechanisms for managing, using and replenishing those reserves become important elements of financial management.

When evaluating reserve levels and objectives, it is vital to recognize that the value of reserves lies in their use. It goes without saying that a strategy that deliberately avoids the use of reserves negates their purpose. Fluctuations of reserve levels merely indicate that the system is working, while lack of variation strongly suggests that the reserves are, in fact, unnecessary.

The City maintains a single enterprise fund for each utility in which operating and capital-related cash deposits and withdrawals are made. Some major capital projects have associated funds for

tracking purposes that receive transfers from the main enterprise fund for the related utility. No specific policy is in place to establish the desired level of cash balances.

Within each utility service, it is suggested that separate accounts be maintained to segregate operating and capital activities, with a separate operating reserve established for each utility, at a minimum. That said, the rate strategy developed for this study presumes that each utility will operate as a self-supporting enterprise fund, with minimum operating cash balances established for each utility (discussed further below).

## 2. OPERATING (WORKING CAPITAL) RESERVES

An operating reserve is essentially a minimum unrestricted fund balance used to accommodate the short-term cycles of revenues and expenses. For rate modeling, it would be a minimum balance that is maintained through rate increases as necessary; for budgeting, it would be a minimum ending balance for the utility operating fund; and for accounting, the balance would simply appear as part of unrestricted cash and investments.

Operating or working capital reserves provide a “cushion” that can be used to cover cash balance fluctuations. These reserves are intended to address both anticipated and unanticipated changes in revenues and expenses. Examples of the former include billing and receipt cycles, payroll cycles, and other payables; examples of the latter include droughts, economic cycles, and other periods of low demand.

Target funding levels are often characterized in terms of a recommended number of days of cash operating and maintenance expenses (O&M), with the minimum number of days varying with the expected risk of unanticipated needs – these are likely to vary among the utilities based on the relative volatility of revenues and expenses.

Industry practice ranges from 30 days to 120 days of O&M, with the lower end more appropriate for utilities with very stable revenue streams and the higher end more appropriate for utilities with significant seasonal variations. This study incorporates a minimum balance in the operating account equal to 60 days of annual operating & maintenance (O&M) expense sustained from rate revenue for the water and sewer utilities, and 45 days of O&M expense from rate revenue in the sanitation utility. These target levels are consistent with industry practices; utilities with primarily flat rate systems, such as sanitation, have relatively stable revenues year around, while metered rate structures, such as water and sewer, warrant a higher target.

The target balance should be evaluated as of June 30 of each fiscal year, with the balance expected to vary during the course of a year. In any year where the cash balance exceeds the target, we recommend transferring the excess to the capital account to help pay for capital projects.

## 3. CAPITAL CONTINGENCY

In addition to protecting against variations in operating costs and revenues, it is prudent to establish and maintain a capital contingency reserve to meet unexpected emergency capital outlays. While it would be impractical to reserve against major system-wide failures such as earthquake or other catastrophic events, it is reasonable and prudent to identify and quantify possible failures of individual system components. There are several methods used in the industry to set the level of these types of reserves, including:

- **Percentage of Utility Plant:** As a rule of thumb, a utility may elect to hold a contingency reserve equal to a percentage of the total costs of its fixed assets, usually 1% to 2% of asset value.
- **Most Costly Piece of Equipment:** A utility may predict the cost of replacing the most expensive piece of equipment or facility that each utility relies on, such as its largest or most powerful pump, and reserve an amount equal to the cost of a major repair of that facility.
- **Average Annual Cost of Capital Program:** Alternatively, a utility may use a percentage of its 5- or 10-year capital program, or set the reserve equal to the average annual costs of its capital program.
- **Use of Replacement Reserves:** Essentially, the contingency reserve becomes a minimum balance in the utility capital fund. If a system reinvestment funding policy has been established, those cash resources can also be relied on for this purpose (nesting system reinvestment funding monies within the contingency reserve). Again, this would avoid the need for multiple reserve policies when they can serve overlapping purposes.
- **Reliance on Other Reserve Resources:** Many cities maintain “rainy day” funds as hedges against emergencies or unusual circumstances. In such cases, extending the applicability of these funds to utility emergency repairs could preclude the need for a separate utility contingency.

Given the City’s high success rate in obtaining grant funds for capital projects, and the decision not to implement system reinvestment funding through rates at this time (discussed further below), a specific capital balance threshold was not established for this study. While the rate strategy for this study does not force funding of a capital contingency, varying levels of cash reserves are generated for each utility based on interest earnings and/or transfers of excess operating reserves. We suggest the City evaluate its capital funding resources on a regular basis and consider implementing this policy in conjunction with system reinvestment funding over time.

#### 4. SYSTEM REINVESTMENT FUNDING

System reinvestment funding from rates provides for: (1) ongoing system integrity through reinvestment in the system – replacing physical assets with cash assets; (2) rate stability through regular accumulation of cash toward funding future replacement costs; and (3) charging customers commensurate with their consumption of system facilities.

Each year, system assets lose value, and as they lose value they are moving toward eventual replacement. That accumulating loss in value and future liability is measured for financial purposes as annual depreciation expense, which is based on the original cost of the asset over its anticipated useful life. While this expense reflects the consumption of the existing asset at its original investment, the replacement of that asset will likely cost much more, factoring in inflation and construction conditions. Therefore, the added annual replacement liability is even greater than the recorded annual depreciation. Given the integrated nature of system assets, it is likely that multiple assets will have to be replaced concurrently. This further exacerbates the issue of capital investment “spikes”. It is prudent to develop a long-term replacement funding strategy for each system to mitigate the impacts to ratepayers during these periods of substantial system investment.

System reinvestment funding specifically addresses the concept of funding repair and replacements (R&R) through a regular and predictable rate provision. By establishing a steady funding mechanism,

a system reinvestment funding program can then be structured, which takes into account the defined funding source, accumulation of funds when funding exceeds near term needs, and augmentation of funds (for example through debt) when R&R needs exceed available cash resources. A common approach of municipal utilities is to establish a policy of system reinvestment funding through rates using depreciation expense as the benchmark for the appropriate level of funding. Depreciation is a commonly used accounting measure of the decline in asset value attributable to the wear and tear associated with routine use. Depreciation expense is recorded as a system expense for purposes of financial reporting. However, because depreciation expense is a non-cash expense, it generally does not appear in cash-based budgets, thus potentially disguising a very real and accumulating cost of the systems.

Collecting the amount of annual depreciation expense through rates provides a stable funding source for capital expenditures, especially those related to repair and replacement of existing system plant. It is important to note that depreciation is not equal to the future replacement cost of the utility systems, but serves simply as a starting point for addressing long-term replacement needs. As noted previously, actual system replacement costs will be significantly higher than the cost originally incurred to build the systems.

The City's historical practice has been to fund capital needs through a combination of grants, loans, and "pay-as-you-go" funding from rates. Rates have not been set at a level sufficient to fund depreciation. To mitigate near term rate increases, the City chose not to implement a policy to fund system reinvestment through rates at this time; but to rely on grant funding to minimize debt financing needs. We suggest the City evaluate its capital funding resources on a regular basis and consider phasing in this policy over time. It is worth noting that as state grant and low-cost loans are becoming more and more competitive, eligibility criterion are expanding to include review of best management practices such as system reinvestment funding policies.

## 5. DEBT MANAGEMENT

Debt management policies are intended to: (1) provide an appropriate balance of debt and equity financing of capital needs; (2) maintain credit worthiness for future debt issuance; and (3) promote equity between existing and future ratepayers. As noted above, a combination of sources (grant, loan, and cash) has been used to fund capital. The priority of funding will of course continue to secure as much grant funding as possible, followed by the combination of low cost loans and cash financing. Standard loan/bond underwriter preference for municipalities is to maintain a debt-to-equity ratio of no greater than 50% debt / 50% equity (cash). The current debt-to-equity ratios are as follows:

- Water – 18.5% debt
- Sewer – 5.9% debt
- Sanitation – 4.7% debt

These ratios are well within industry guidelines, providing ample capacity for additional debt issuance. To assist the City in maintaining appropriate ratios, we recommend debt-financing no more than 75% of the capital program over a six-year rolling period.

## 6. CUMULATIVE IMPACT OF FISCAL POICIES

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 policy for system reinvestment funding through rates serves

several beneficial purposes: it provides a cash resource to the capital accounts that helps build capital contingency reserves; it contributes to the cash funding of capital, helping to maintain healthy debt-to-equity ratios; and it helps to avoid rate spikes during periods of significant replacement needs.

Each criterion provides a different perspective on how much revenue is appropriate, and satisfying them all generally results in higher rates 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.

In summary, utility reserves are intended to absorb fluctuation in revenues or expenditures without abrupt rate impacts. As reserve levels vary, a policy structure can define the mechanisms for regulating those levels and returning them to intended targets. The general objectives of these and other policy elements are stable and predictable rates and funding sources, along with equitable recovery of costs from customers as they are being incurred.

## B. STUDY ASSUMPTIONS

In addition to the financial policies summarized above, the following major assumptions were used in preparing this analysis:

- Study period includes fiscal years (FY) 2012/13 through FY 2018/19.
- Revenue under existing rates is assumed to remain flat over the study period; a conservative estimate of no growth was given for the customer base.
- The FY 2012 beginning cash balances were provided by City staff for the operating and capital accounts. Interest earnings rate on available cash balances are projected to remain at the current level of 1.0% per year.
- Miscellaneous revenues and operating and maintenance (O&M) expenditures are based on the FY 2011/12 operating budget, escalated by 2.5% annual inflation, with the exception of employee benefits, which are escalated at 3.5%.
- Debt service on existing state loans totals about \$300,000 a year for the water utility and about \$39,000 a year for the sewer utility. The sanitation utility has no outstanding debt.
- Capital programs were provided by City staff in current day dollars and escalated at 3.0% per year to the date of anticipated construction for each project.
- Future years' debt service incorporates impacts of the proposed capital financing plan. State loans assume an interest rate of 1.5% and a 20-year repayment term, and are assumed to fund capital needs in excess of grant and cash funding.

## C. REVENUE REQUIREMENT ANALYSIS

The revenue requirement analysis determines the total amount of revenue needed each year of the study period to pay operating & maintenance costs, capital-related costs, and impacts of financial policies. A capital funding analysis, revenue needs assessment, rate forecast and reserves analysis was prepared for each utility. Forecasted total financial requirements were compared against forecasted total rate revenue under existing rates to determine annual and cumulative rate adjustments needed to ensure financial sustainability over time. Results are summarized below for each utility.

## 1. WATER UTILITY

### a) Capital Financing Strategy

The City has identified approximately \$4.5 million (escalated) in capital improvement and replacement projects planned for construction FY 2012/13 through FY 2015/16. Capital spending levels vary from year to year, with the largest project (Water Treatment Plant Upgrades Phase III - \$2.0 million) occurring in FY 2012/13. The capital funding plan assumes a mix of funding from cash balances, state grants, and loans. Exhibit 1 summarizes the water utility capital funding analysis.

#### Exhibit 1: Capital Financing Plan – Water

| Capital Funding               | FY Ending           |                   |                   |                   |             |             |             |                     |
|-------------------------------|---------------------|-------------------|-------------------|-------------------|-------------|-------------|-------------|---------------------|
|                               | 2013                | 2014              | 2015              | 2016              | 2017        | 2018        | 2019        | Total               |
| <b>Total Capital Projects</b> | <b>\$ 2,873,338</b> | <b>\$ 515,000</b> | <b>\$ 530,450</b> | <b>\$ 546,364</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 4,465,152</b> |
| Grants & Developer Donations  | 1,445,000           | 360,500           | 371,315           | 382,454           | -           | -           | -           | 2,559,269           |
| Principal Forgiveness         | 300,000             | -                 | -                 | -                 | -           | -           | -           | 300,000             |
| Use of Capital Fund Balance   | 158,040             | 154,500           | 85,028            | 8,054             | -           | -           | -           | 405,621             |
| ADEC & Other Loans            | 970,298             | -                 | 74,107            | 155,855           | -           | -           | -           | 1,200,261           |
| <b>Total Funding Sources</b>  | <b>\$ 2,873,338</b> | <b>\$ 515,000</b> | <b>\$ 530,450</b> | <b>\$ 546,364</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 4,465,152</b> |

Of the \$4.5 million in planned capital costs, about \$2.6 million (64%) is expected to be funded with grants and principal forgiveness loans, \$1.2 million (27%) from loans, and the remaining \$400,000 (9%) from cash reserves and operating reserve surplus.

Based on this financing plan, the capital program will remain well within the suggested debt management policies.

### b) Revenue Needs Assessment

Water revenue requirements (summarized in Exhibit 2) reflect the assumptions and utility information described herein. As shown, forecasted revenues under existing rates are not sufficient to meet the needs of the utility over the study period.

#### Exhibit 2: Revenue Needs Assessment – Water

| Revenue Requirements                 | FY Ending           |                     |                     |                     |                     |                     |                     |                     |
|--------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                      | 2013                | 2014                | 2015                | 2016                | 2017                | 2018                | 2019                |                     |
| <b>Revenues</b>                      |                     |                     |                     |                     |                     |                     |                     |                     |
| Rate Revenues Under Existing Rates   | \$ 855,000          | \$ 855,000          | \$ 855,000          | \$ 855,000          | \$ 855,000          | \$ 855,000          | \$ 855,000          | \$ 855,000          |
| Non-Rate Revenues                    | 16,086              | 16,483              | 16,897              | 17,321              | 17,755              | 18,168              | 18,601              | 18,601              |
| Transfers-In                         | 165,000             | 165,000             | 165,000             | 165,000             | 165,000             | 165,000             | 165,000             | 165,000             |
| <b>Total Revenues</b>                | <b>\$ 1,036,086</b> | <b>\$ 1,036,483</b> | <b>\$ 1,036,897</b> | <b>\$ 1,037,321</b> | <b>\$ 1,037,755</b> | <b>\$ 1,038,168</b> | <b>\$ 1,038,601</b> | <b>\$ 1,038,601</b> |
| <b>Expenses</b>                      |                     |                     |                     |                     |                     |                     |                     |                     |
| Cash Operating Expenses              | \$ 674,099          | \$ 691,897          | \$ 710,173          | \$ 728,941          | \$ 748,213          | \$ 768,003          | \$ 788,326          | \$ 788,326          |
| Existing Debt Service                | 305,201             | 303,779             | 302,357             | 300,936             | 299,515             | 298,093             | 296,672             | 296,672             |
| New Debt Service                     | -                   | 65,721              | 65,721              | 70,037              | 79,115              | 79,115              | 79,115              | 79,115              |
| <b>Total Expenses</b>                | <b>\$ 979,300</b>   | <b>\$ 1,061,397</b> | <b>\$ 1,078,251</b> | <b>\$ 1,099,914</b> | <b>\$ 1,126,843</b> | <b>\$ 1,145,212</b> | <b>\$ 1,164,114</b> | <b>\$ 1,164,114</b> |
| <b>Annual Surplus / (Deficiency)</b> | <b>\$ 56,785</b>    | <b>\$ (24,914)</b>  | <b>\$ (41,355)</b>  | <b>\$ (62,593)</b>  | <b>\$ (89,088)</b>  | <b>\$ (107,043)</b> | <b>\$ (125,513)</b> | <b>\$ (125,513)</b> |

### c) Rate Forecast

Exhibit 3 presents the proposed rate forecast for the study period. This rate strategy was designed to smooth in the necessary rate increases over time, while integrating selected financial policies, funding the capital program, and meeting the annual operational needs of the water utility.

#### Exhibit 3: Rate Forecast – Water

| Rate Forecast                       | FY Ending |         |         |         |         |         |         |         |
|-------------------------------------|-----------|---------|---------|---------|---------|---------|---------|---------|
|                                     | Existing  | 2013    | 2014    | 2015    | 2016    | 2017    | 2018    | 2019    |
| Annual Rate Adjustment              |           | 2.00%   | 2.00%   | 2.00%   | 2.00%   | 2.00%   | 2.00%   | 2.00%   |
| Cumulative Rate Increase            |           | 2.00%   | 4.04%   | 6.12%   | 8.24%   | 10.41%  | 12.62%  | 14.87%  |
| Sample Residential Monthly Bill [a] | \$39.14   | \$39.92 | \$40.72 | \$41.54 | \$42.37 | \$43.21 | \$44.08 | \$44.96 |
| Monthly Dollar Increase             |           | \$0.78  | \$0.80  | \$0.81  | \$0.83  | \$0.85  | \$0.86  | \$0.88  |

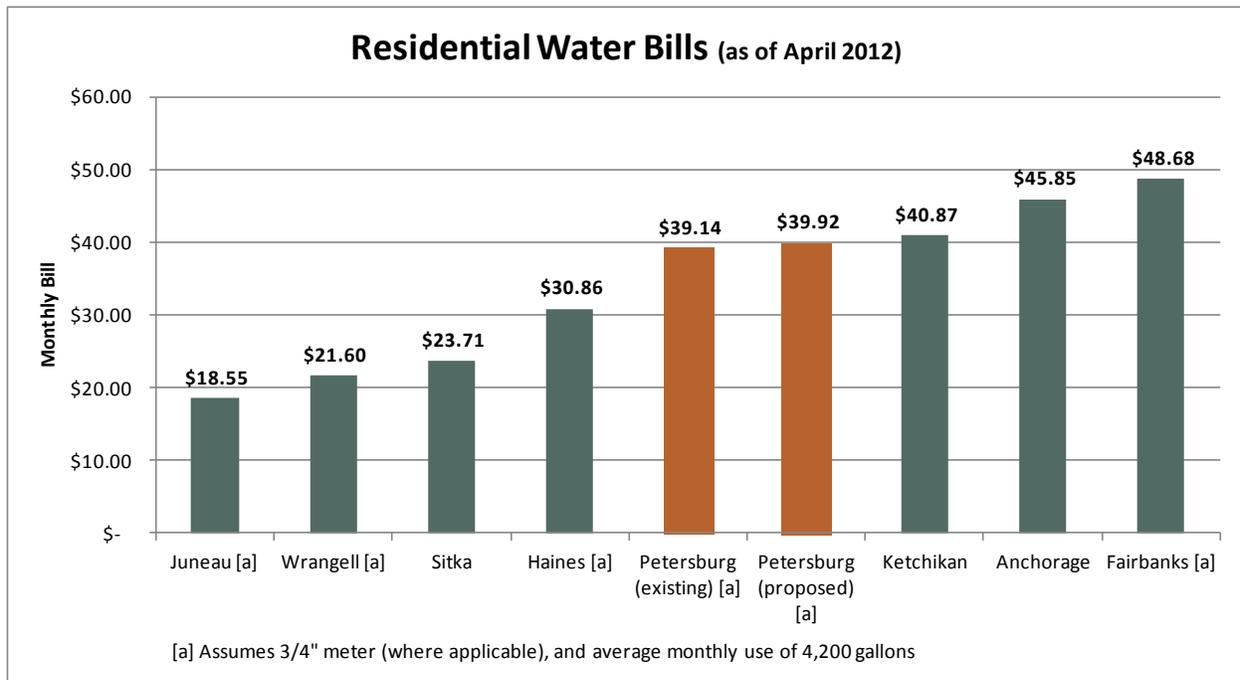
[a] 3/4" meter using 4,200 gallons per month

The sample residential bill shown is for a 3/4" meter, using the system average residential monthly water usage of 4,200 gallons. Bills for other usages and meter sizes will vary.

### d) Residential Bill Comparison

For informational purposes only, Exhibit 4 presents a comparison of current and proposed water rates (as of April 2012) with a sampling of neighboring jurisdictions.

#### Exhibit 4: Comparison of Residential Water Bills



## 2. SEWER UTILITY

### a) Capital Financing Strategy

The City has identified approximately \$8.3 million (escalated) in capital improvement and replacement projects planned for construction over the study period. Capital spending levels vary from year to year, with most of the capital spending budgeted in the first two years. The capital funding plan assumes a mix of funding from cash balances, state grants, and loans.

Two funding scenarios are presented for the Pump Stations 1&2 rehab project (\$2.0 million) in FY 2013:

- **Scenario A** – Assumes 70% grant funding, with the remainder funded through cash and loans.
- **Scenario B** – Assumes no grant funding, with the entire project funded through cash and loans.

Exhibits 5 and 6 summarize the two sewer capital financing scenarios.

#### Exhibit 5: Capital Financing Plan – Sewer Scenario A

| Capital Funding               | FY Ending           |                     |                     |                   |                   |                   |                   | Total               |
|-------------------------------|---------------------|---------------------|---------------------|-------------------|-------------------|-------------------|-------------------|---------------------|
|                               | 2013                | 2014                | 2015                | 2016              | 2017              | 2018              | 2019              |                     |
| <b>Total Capital Projects</b> | <b>\$ 3,320,904</b> | <b>\$ 1,905,500</b> | <b>\$ 1,432,215</b> | <b>\$ 928,818</b> | <b>\$ 450,204</b> | <b>\$ 115,927</b> | <b>\$ 119,405</b> | <b>\$ 8,272,973</b> |
| Grants & Developer Donations  | 1,400,000           | 1,333,850           | 1,002,551           | 650,173           | 315,142           | 81,149            | 83,584            | 4,866,448           |
| Use of Capital Fund Balance   | 985,634             | 60,657              | 19,987              | 5,637             | -                 | -                 | 8,850             | 1,080,764           |
| ADEC & Other Loans            | 935,270             | 510,993             | 409,678             | 273,009           | 135,061           | 34,778            | 26,972            | 2,325,761           |
| <b>Total Funding Sources</b>  | <b>\$ 3,320,904</b> | <b>\$ 1,905,500</b> | <b>\$ 1,432,215</b> | <b>\$ 928,818</b> | <b>\$ 450,204</b> | <b>\$ 115,927</b> | <b>\$ 119,405</b> | <b>\$ 8,272,973</b> |

Of the \$8.3 million in planned capital costs, Scenario A assumes grant funding of \$4.9 million (59%), loan funding of \$2.3 million (28%), and the remaining \$1.1 million (13%) funded from cash reserves and operating surpluses.

#### Exhibit 6: Capital Financing Plan – Sewer Scenario B

| Capital Funding               | FY Ending           |                     |                     |                   |                   |                   |                   | Total               |
|-------------------------------|---------------------|---------------------|---------------------|-------------------|-------------------|-------------------|-------------------|---------------------|
|                               | 2013                | 2014                | 2015                | 2016              | 2017              | 2018              | 2019              |                     |
| <b>Total Capital Projects</b> | <b>\$ 3,320,904</b> | <b>\$ 1,905,500</b> | <b>\$ 1,432,215</b> | <b>\$ 928,818</b> | <b>\$ 450,204</b> | <b>\$ 115,927</b> | <b>\$ 119,405</b> | <b>\$ 8,272,973</b> |
| Grants & Developer Donations  | -                   | 1,333,850           | 1,002,551           | 650,173           | 315,142           | 81,149            | 83,584            | 3,466,448           |
| Use of Capital Fund Balance   | 985,634             | 60,657              | -                   | -                 | -                 | 7,056             | 6,550             | 1,059,897           |
| ADEC & Other Loans            | 2,335,270           | 510,993             | 429,665             | 278,645           | 135,061           | 27,723            | 29,271            | 3,746,628           |
| <b>Total Funding Sources</b>  | <b>\$ 3,320,904</b> | <b>\$ 1,905,500</b> | <b>\$ 1,432,215</b> | <b>\$ 928,818</b> | <b>\$ 450,204</b> | <b>\$ 115,927</b> | <b>\$ 119,405</b> | <b>\$ 8,272,973</b> |

Under Scenario B, about \$3.5 million (42%) is expected to be funded with grants, another \$3.7 million (45%) funded from loans, and the remaining \$1.1 million (13%) funded from cash reserves and operating surpluses.

Based on both financing plans, the capital program will remain well within the suggested debt management policies.

## b) Revenue Needs Assessment

As shown in Exhibits 7 and 8, current revenues are insufficient to meet forecasted sewer utility financial obligations over the study period.

### Exhibit 7: Revenue Needs Assessment – Sewer Scenario A

| Revenue Requirements                 | FY Ending         |                    |                    |                     |                     |                     |                     |
|--------------------------------------|-------------------|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|
|                                      | 2013              | 2014               | 2015               | 2016                | 2017                | 2018                | 2019                |
| <b>Revenues</b>                      |                   |                    |                    |                     |                     |                     |                     |
| Rate Revenues Under Existing Rates   | \$ 630,000        | \$ 630,000         | \$ 630,000         | \$ 630,000          | \$ 630,000          | \$ 630,000          | \$ 630,000          |
| Non-Rate Revenues                    | 9,912             | 10,157             | 10,413             | 10,675              | 10,926              | 11,200              | 11,501              |
| <b>Total Revenues</b>                | <b>\$ 639,912</b> | <b>\$ 640,157</b>  | <b>\$ 640,413</b>  | <b>\$ 640,675</b>   | <b>\$ 640,926</b>   | <b>\$ 641,200</b>   | <b>\$ 641,501</b>   |
| <b>Expenses</b>                      |                   |                    |                    |                     |                     |                     |                     |
| Cash Operating Expenses              | \$ 567,104        | \$ 582,281         | \$ 597,872         | \$ 613,888          | \$ 630,342          | \$ 647,246          | \$ 664,612          |
| Existing Debt Service                | 39,093            | 39,093             | 39,093             | 39,093              | 39,093              | 39,093              | 39,093              |
| New Debt Service                     | -                 | 54,475             | 84,239             | 108,101             | 124,002             | 131,869             | 133,895             |
| <b>Total Expenses</b>                | <b>\$ 606,197</b> | <b>\$ 675,849</b>  | <b>\$ 721,204</b>  | <b>\$ 761,082</b>   | <b>\$ 793,438</b>   | <b>\$ 818,208</b>   | <b>\$ 837,600</b>   |
| <b>Annual Surplus / (Deficiency)</b> | <b>\$ 33,715</b>  | <b>\$ (35,692)</b> | <b>\$ (80,791)</b> | <b>\$ (120,407)</b> | <b>\$ (152,512)</b> | <b>\$ (177,008)</b> | <b>\$ (196,098)</b> |

### Exhibit 8: Revenue Needs Assessment – Sewer Scenario B

| Revenue Requirements                 | FY Ending         |                     |                     |                     |                     |                     |                     |
|--------------------------------------|-------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                      | 2013              | 2014                | 2015                | 2016                | 2017                | 2018                | 2019                |
| <b>Revenues</b>                      |                   |                     |                     |                     |                     |                     |                     |
| Rate Revenues Under Existing Rates   | \$ 630,000        | \$ 630,000          | \$ 630,000          | \$ 630,000          | \$ 630,000          | \$ 630,000          | \$ 630,000          |
| Non-Rate Revenues                    | 9,912             | 10,157              | 10,124              | 10,328              | 10,880              | 11,219              | 11,501              |
| <b>Total Revenues</b>                | <b>\$ 639,912</b> | <b>\$ 640,157</b>   | <b>\$ 640,124</b>   | <b>\$ 640,328</b>   | <b>\$ 640,880</b>   | <b>\$ 641,219</b>   | <b>\$ 641,501</b>   |
| <b>Expenses</b>                      |                   |                     |                     |                     |                     |                     |                     |
| Cash Operating Expenses              | \$ 567,104        | \$ 582,281          | \$ 597,872          | \$ 613,888          | \$ 630,342          | \$ 647,246          | \$ 664,612          |
| Existing Debt Service                | 39,093            | 39,093              | 39,093              | 39,093              | 39,093              | 39,093              | 39,093              |
| New Debt Service                     | -                 | 136,020             | 165,783             | 190,809             | 207,039             | 214,905             | 216,520             |
| <b>Total Expenses</b>                | <b>\$ 606,197</b> | <b>\$ 757,393</b>   | <b>\$ 802,748</b>   | <b>\$ 843,790</b>   | <b>\$ 876,474</b>   | <b>\$ 901,244</b>   | <b>\$ 920,225</b>   |
| <b>Annual Surplus / (Deficiency)</b> | <b>\$ 33,715</b>  | <b>\$ (117,236)</b> | <b>\$ (162,623)</b> | <b>\$ (203,462)</b> | <b>\$ (235,594)</b> | <b>\$ (260,026)</b> | <b>\$ (278,724)</b> |

## c) Rate Forecast

Exhibit 9 presents the proposed rate forecast for the study period. Under Scenario A, rates were smoothed in over the study period to meet the total financial needs of the sewer utility. For Scenario B, the first year increase was set equal to Scenario A, with remaining years' increases identified on as needed basis over the remaining period. The intent of this strategy is to keep the near term rates the same under either scenario while the City determines its eligibility for the grant funding.

**Exhibit 9: Rate Forecast**

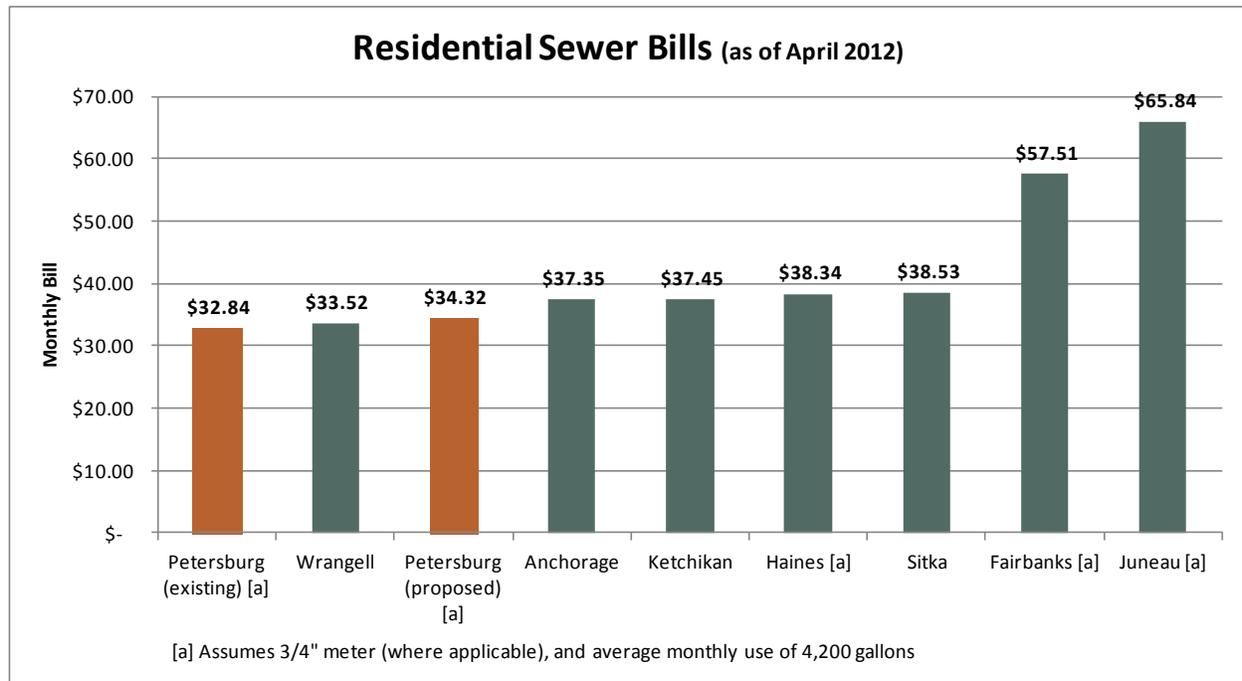
| Rate Forecast                       | FY Ending |         |         |         |         |         |         |
|-------------------------------------|-----------|---------|---------|---------|---------|---------|---------|
|                                     | 2013      | 2014    | 2015    | 2016    | 2017    | 2018    | 2019    |
| <b>Scenario A</b>                   |           |         |         |         |         |         |         |
| Annual Rate Adjustment              | 4.50%     | 4.50%   | 4.50%   | 4.50%   | 4.50%   | 4.50%   | 4.50%   |
| Cumulative Rate Increase            | 4.50%     | 9.20%   | 14.12%  | 19.25%  | 24.62%  | 30.23%  | 36.09%  |
| Sample Residential Monthly Bill [a] | \$34.32   | \$35.86 | \$37.48 | \$39.16 | \$40.92 | \$42.77 | \$44.69 |
| Monthly Dollar Increase             | \$1.48    | \$1.54  | \$1.61  | \$1.69  | \$1.76  | \$1.84  | \$1.92  |
| <b>Scenario B</b>                   |           |         |         |         |         |         |         |
| Annual Rate Adjustment              | 4.50%     | 9.50%   | 9.50%   | 9.50%   | 2.00%   | 2.00%   | 2.00%   |
| Cumulative Rate Increase            | 4.50%     | 14.43%  | 25.30%  | 37.20%  | 39.95%  | 42.74%  | 45.60%  |
| Sample Residential Monthly Bill [a] | \$34.32   | \$37.58 | \$41.15 | \$45.06 | \$45.96 | \$46.88 | \$47.81 |
| Monthly Dollar Increase             | \$1.48    | \$3.26  | \$3.57  | \$3.91  | \$0.90  | \$0.92  | \$0.94  |

[a] 3/4" meter using 4,200 gallons per month

d) Residential Bill Comparison

For informational purposes only, Exhibit 10 presents a comparison of current and proposed sewer rates (as of April 2012) with a sampling of neighboring jurisdictions.

**Exhibit 10: Comparison of Residential Sewer Bills**



### 3. SANITATION UTILITY

#### a) Capital Financing Strategy

The City has identified approximately \$1.1 million (escalated) in capital improvement and replacement projects planned for construction FY 2012/13 through FY 2017/18. Capital spending levels vary from year to year, with an average annual spending of roughly \$189,000. The capital funding plan assumes a mix of funding from cash balances, state grants, and loans.

Exhibit 11 summarizes the capital financing plan for the sanitation utility.

#### Exhibit 11: Capital Financing Plan – Sanitation

| Capital Funding               | FY Ending |            |            |            |            |            |      |              |
|-------------------------------|-----------|------------|------------|------------|------------|------------|------|--------------|
|                               | 2013      | 2014       | 2015       | 2016       | 2017       | 2018       | 2019 | Total        |
| <b>Total Capital Projects</b> | \$ 45,000 | \$ 257,500 | \$ 212,180 | \$ 163,909 | \$ 225,102 | \$ 231,855 | \$ - | \$ 1,135,546 |
| Grants & Developer Donations  | -         | 180,250    | 148,526    | 114,736    | 157,571    | 162,298    | -    | 763,382      |
| Use of Capital Fund Balance   | 45,000    | 77,250     | 63,654     | 49,173     | 67,531     | 69,556     | -    | 372,164      |
| ADEC & Other Loans            | -         | -          | -          | -          | -          | -          | -    | -            |
| <b>Total Funding Sources</b>  | \$ 45,000 | \$ 257,500 | \$ 212,180 | \$ 163,909 | \$ 225,102 | \$ 231,855 | \$ - | \$ 1,135,546 |

Of the \$1.1 million in planned capital costs, about \$760,000 (67%) is expected to be funded with grants, and \$370,000 (33%) funded from cash reserves and operating surpluses. No debt issuance is required to fund the sanitation capital program.

#### b) Revenue Needs Assessment

As shown in Exhibit 12, current revenues are insufficient to meet forecasted sanitation utility financial obligations over the study period.

#### Exhibit 12: Revenue Needs Assessment – Sanitation

| Revenue Requirements                 | FY Ending    |              |              |              |              |              |              |  |
|--------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--|
|                                      | 2013         | 2014         | 2015         | 2016         | 2017         | 2018         | 2019         |  |
| <b>Revenues</b>                      |              |              |              |              |              |              |              |  |
| Rate Revenues Under Existing Rates   | \$ 1,085,000 | \$ 1,085,000 | \$ 1,085,000 | \$ 1,085,000 | \$ 1,085,000 | \$ 1,085,000 | \$ 1,085,000 |  |
| Non-Rate Revenues                    | 11,281       | 11,324       | 11,358       | 11,394       | 11,431       | 11,468       | 11,507       |  |
| <b>Total Revenues</b>                | \$ 1,096,281 | \$ 1,096,324 | \$ 1,096,358 | \$ 1,096,394 | \$ 1,096,431 | \$ 1,096,468 | \$ 1,096,507 |  |
| <b>Expenses</b>                      |              |              |              |              |              |              |              |  |
| Cash Operating Expenses              | \$ 1,073,694 | \$ 1,101,885 | \$ 1,130,827 | \$ 1,160,542 | \$ 1,191,050 | \$ 1,222,374 | \$ 1,254,534 |  |
| Existing Debt Service                | -            | -            | -            | -            | -            | -            | -            |  |
| New Debt Service                     | -            | -            | -            | -            | -            | -            | -            |  |
| <b>Total Expenses</b>                | \$ 1,073,694 | \$ 1,101,885 | \$ 1,130,827 | \$ 1,160,542 | \$ 1,191,050 | \$ 1,222,374 | \$ 1,254,534 |  |
| <b>Annual Surplus / (Deficiency)</b> | \$ 22,587    | \$ (5,561)   | \$ (34,469)  | \$ (64,148)  | \$ (94,620)  | \$ (125,905) | \$ (158,027) |  |

#### c) Rate Forecast

Exhibit 13 presents the proposed rate forecast for the study period. This rate strategy was designed to smooth in the necessary rate increases over time, while integrating selected financial policies, funding the capital program, and meeting the annual operational needs of the sanitation utility.

**Exhibit 13: Rate Forecast – Sanitation**

| Rate Forecast                   | Existing | FY Ending    |              |              |              |               |               |               |
|---------------------------------|----------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|
|                                 |          | 2013         | 2014         | 2015         | 2016         | 2017          | 2018          | 2019          |
| <b>Annual Rate Adjustment</b>   |          | <b>2.00%</b> | <b>2.00%</b> | <b>2.00%</b> | <b>2.00%</b> | <b>2.00%</b>  | <b>2.00%</b>  | <b>2.00%</b>  |
| <b>Cumulative Rate Increase</b> |          | <b>2.00%</b> | <b>4.04%</b> | <b>6.12%</b> | <b>8.24%</b> | <b>10.41%</b> | <b>12.62%</b> | <b>14.87%</b> |
| Sample Residential Bill [a]     | \$26.56  | \$27.09      | \$27.63      | \$28.19      | \$28.75      | \$29.32       | \$29.91       | \$30.51       |
| Monthly Dollar Increase         |          | \$0.53       | \$0.54       | \$0.55       | \$0.56       | \$0.57        | \$0.59        | \$0.60        |

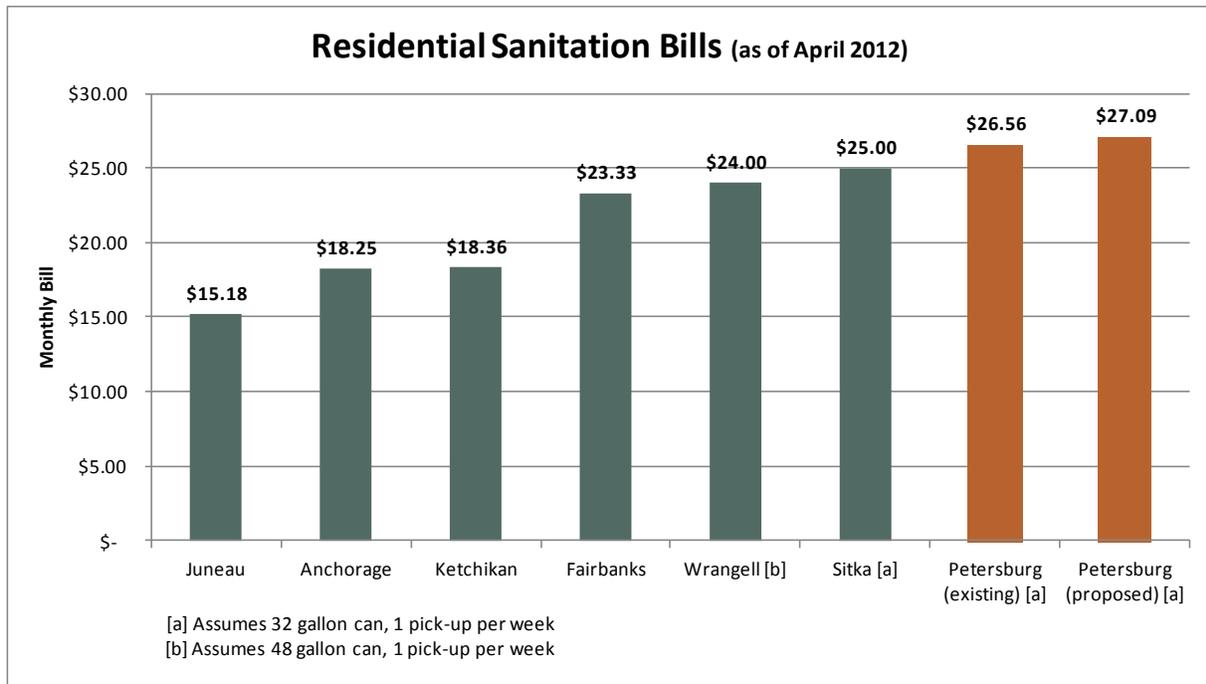
[a] 32 gallon container, 1 pick-up per week

The sample residential bill shown is for a 32 gallon container with one pick-up per week. Bills for other container sizes and pick-up frequencies will vary.

d) Residential Bill Comparison

For informational purposes only, Exhibit 14 presents comparisons of current and proposed sanitation rates (as of April 2012) with a sampling of neighboring jurisdictions.

**Exhibit 14: Comparison of Residential Sanitation Bills**



## D. COMBINED RESIDENTIAL BILL IMPACT

Exhibit 15 presents the combined impact of the proposed rate increases for all three utilities to a sample residential monthly bill over the projection period.

### Exhibit 15: Combined Residential Bill Impact

| Rate Forecast                          | FY Ending |             |             |             |             |             |             |             |
|--|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|  | Existing  | 2013        | 2014        | 2015        | 2016        | 2017        | 2018        | 2019        |
| Sample Residential Monthly Bill [a][b] | \$ 98.54  | \$ 101.33   | \$ 104.22   | \$ 107.20   | \$ 110.28   | \$ 113.46   | \$ 116.76   | \$ 120.16   |
| Water Monthly Increase                 |           | 0.78        | 0.80        | 0.81        | 0.83        | 0.85        | 0.86        | 0.88        |
| Sewer Monthly Increase: Scenario A     |           | 1.48        | 1.54        | 1.61        | 1.69        | 1.76        | 1.84        | 1.92        |
| Sanitation Monthly Increase            |           | <u>0.53</u> | <u>0.54</u> | <u>0.55</u> | <u>0.56</u> | <u>0.57</u> | <u>0.59</u> | <u>0.60</u> |
| Total Monthly Dollar Increase          |           | 2.79        | 2.88        | 2.98        | 3.08        | 3.18        | 3.29        | 3.40        |
| Sample Residential Monthly Bill [a][b] | \$ 98.54  | \$ 101.33   | \$ 105.93   | \$ 110.87   | \$ 116.17   | \$ 118.50   | \$ 120.87   | \$ 123.28   |
| Water Monthly Increase                 |           | 0.78        | 0.80        | 0.81        | 0.83        | 0.85        | 0.86        | 0.88        |
| Sewer Monthly Increase: Scenario B     |           | 1.48        | 3.26        | 3.57        | 3.91        | 0.90        | 0.92        | 0.94        |
| Sanitation Monthly Increase            |           | <u>0.53</u> | <u>0.54</u> | <u>0.55</u> | <u>0.56</u> | <u>0.57</u> | <u>0.59</u> | <u>0.60</u> |
| Total Monthly Dollar Increase          |           | 2.79        | 4.60        | 4.94        | 5.30        | 2.32        | 2.37        | 2.42        |

[a] Water, Sewer: 3/4" meter using 4,200 gallons per month

[b] Sanitation: 32 gallon container, 1 pick-up per week

FCS GROUP recommends regular review of all underlying assumptions and an update of the rate analysis as necessary to meet financial obligations of each utility.