



King County

Department of Natural Resources and Parks
Wastewater Treatment Division

King County Executive 2018 Monthly Sewer Rate and Capacity Charge Proposal

April 27, 2017

This information is available in alternative formats upon request by calling 206-477-5371 (voice) or Relay Service 711 (TTY).

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1.0 Introduction

This report describes the underlying assumptions, projections, and key factors considered in developing the King County Executive's proposal for the Wastewater Treatment Division's (WTD) 2018 monthly sewer rate and capacity charge. WTD proposes to maintain the \$44.22 monthly sewer rate that was adopted for 2017 and to increase the 2018 monthly capacity charge by \$1.80, the planned 3.0 percent increase, to \$62.60 from \$60.80 in 2017.

Of immediate concern is the potential cost and rate impacts for restoration efforts at the West Point Treatment Plant (West Point). Given the expectation that insurance will cover the expenses minus the deductible, WTD does not anticipate the need to adjust its rates. In addition, the cash reserves available from the Brightwater litigation and good financial performance in 2016 enables the division to address cash needs if there is any delay in the insurance claims process. This is further detailed in Section 2.0.

Current, proposed and projected rates for the monthly sewer rate and capacity charge during the 2017-2023 period are shown in the table below:

Table 1-1 Current, Proposed and Projected Monthly Sewer Rates

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|----------------------------------|----------|-----------------|----------|----------|-----------|-----------|-----------|
| Sewer Rate | | | | | | | |
| Monthly Rate (Proposed) | \$44.22 | \$44.22 | \$45.85 | \$45.85 | \$46.64 | \$47.79 | \$48.71 |
| Amount of Increase | \$ 2.19 | \$0.0 | \$1.63 | \$0.0 | \$0.80 | \$1.15 | \$0.92 |
| Percent Change | 5.2% | 0.0% | 3.7% | 0.0% | 1.7% | 2.5% | 1.9% |
| Annual Amount | \$ 531 | \$ 531 | \$ 550 | \$ 550 | \$ 560 | \$ 573 | \$ 585 |
| Capacity Charge | | | | | | | |
| Monthly Rate (Proposed) | \$ 60.80 | \$ 62.60 | \$ 64.48 | \$ 66.41 | \$ 68.40 | \$ 70.46 | \$ 72.57 |
| Amount of Increase | \$1.80 | \$1.80 | \$1.88 | \$1.93 | \$1.99 | \$2.05 | \$2.11 |
| Percent Change | 3.6% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% |
| Annual Amount | \$ 730 | \$ 751 | \$ 774 | \$ 797 | \$ 821 | \$ 845 | \$ 871 |
| Early Payoff Total [*] | \$ 8,912 | \$ 9,179 | \$ 9,455 | \$ 9,738 | \$ 10,031 | \$ 10,331 | \$ 10,641 |

*2018-2023 assumes the current early payoff discount rate of 2.9 percent.

The remainder of this document discusses the major factors underlying the 2018 monthly sewer rate and capacity charge proposal, including the following sections: 2.0 sewer rate management, 3.0 WTD's operating revenues and expenses, 4.0 WTD's capital improvement program, spending accomplishment rate, revenues, and financing, 5.0 current Residential Customer Equivalents (RCEs) and new customer connections, and 6.0 a summary of projections and assumptions. These various projections and assumptions are presented in Table 6-1.

2.0 Sewer Rate Management

In its simplest form, the monthly sewer rate is determined by the amount of revenue required to pay all the costs of the utility, given the estimated number of customers and other revenues for the year, while meeting the requirements of the County's financial policies and bond requirements.

During periods in which costs (capital or operating) are particularly volatile, the resulting revenue requirements could lead to large annual fluctuations in the rate and have adverse impacts on debt service coverage. Past examples include the 2001 energy crisis, which led to a sharp spike in operating costs, and the construction of Brightwater, which led to a period of relatively high capital costs. Unmanaged, the resulting sewer rate fluctuations could prove disruptive to residential and commercial customers. It could also lead to higher borrowing costs due to market and rating agency perceptions that WTD was not financially prepared to manage volatility in revenue or expenses.

2.1 Financing West Point Treatment Plant's Recovery Efforts

2.1.1 Impact on the 2018 Rate

The flooding at West Point Treatment Plant (West Point) and resultant restoration costs may potentially impact WTD's cash balances and debt service coverage ratios in 2017 and subsequent years. Although WTD expects the costs to be paid for by insurance, the total restoration costs or the timing of insurance reimbursements are not yet known. WTD is not proposing a rate increase for 2018, in light of: (a) strongly positive 2016 financial performance; (b) receipt of funds from the favorable Brightwater judgment and (c) available rate stabilization funds. These sources are believed to provide adequate resources to mitigate any delayed or unreimbursed costs associated with the restoration effort. Using Brightwater settlement or rate stabilization funds will not disrupt current programs, projects and levels of service, and the use of these funds is expected to be well-received by the bond rating agencies. Following is a summary of each of these three areas and their impact on WTD's financial plan.

2.1.2 Financial Performance 2016

In 2016, positive financial performance in several key areas strengthened WTD's financial position to begin 2017. They included a bond refunding in September 2016 which will generate \$10.8 million in debt service savings in 2016, 2017, and 2018. In addition, greater than expected customer growth resulted in \$12.3 additional sewer rate and capacity charge revenue in 2016. Operating fund under-expenditures totaling \$4.9 million were also realized in 2016. These were

key components which resulted in a year-end debt service coverage of 1.40, well above the required ratio of 1.15.

2.1.3 Receipt of Brightwater Settlement Funds

In September 2016, the Washington State Supreme Court upheld lower court rulings that awarded \$129.6 million in damages to the County for cost overruns incurred in the construction of the Brightwater treatment plant. The County received the settlement in 2013, and while under appeal, WTD excluded use of these funds when determining annual sewer rates from 2014 through 2017. The \$129.6 million is now included as part of the construction fund reserves in the current financial plan. If necessary, WTD will use these funds to pay unreimbursed and delayed reimbursed costs related to the West Point restoration. All unused Brightwater settlement funds will be available to support WTD's CIP and provide sewer rate relief after 2018.

2.1.4 Rate Stabilization

Maintaining a rate stabilization reserve supports the County's policy of limiting increases in the sewer rate to alternate years, as it provides flexibility to deal with financial exigencies that might arise. Funds in the rate stabilization reserve also enhance the liquidity metrics used by the rating analysts when they evaluate the credit quality of WTD.

The 2017 adopted sewer rate was based on a projected \$34.3 million of draws from the beginning balance of \$46.3 million from 2018 through 2023 to help moderate the rate increases associated with the amortization of variable rate debt and transition to the 40 percent funding level for the capital program. Even with potentially higher expenses due to West Point activity, these draws are no longer recommended. Additional revenues from the larger-than-expected customer base established in 2016 will mitigate projected rate increases without requiring these draws. Table 2-2 shows the \$46.3 million balance maintained through 2023.

Table 2-1 Rate Stabilization Reserve, 2016-2023 (millions of dollars)

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Beginning balance | \$46.3 | \$46.3 | \$46.3 | \$46.3 | \$46.3 | \$46.3 | \$46.3 | \$46.3 |
| Additions | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Reductions | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Ending balances | \$46.3 | \$46.3 | \$46.3 | \$46.3 | \$46.3 | \$46.3 | \$46.3 | \$46.3 |

If WTD anticipates that increased operating expenses will present issues meeting the required 1.15 debt service coverage ratio, the rate stabilization balances will be used to mitigate any debt service coverage issues. Any unused balance will be available to provide sewer rate relief after 2018.

2.2 Cost Containment

Cost containment also plays a critical role in managing rate increases. As in prior years, WTD continues to scrutinize all planned capital and operating expenditures with the goal of making reductions and implementing efficiencies while continuing to fulfill its regulatory obligations to protect public health and the environment. Table 2.2 provides a summary of this work. Through continuous improvement efforts and the Executive’s Best Run Government Initiative, WTD has implemented a program (“Bright Ideas”) which encourages creative problem-solving throughout the organization and uses employees’ ideas to improve how it does business. Using this and other tools, such as the Carbon and Energy Investment Program implemented in 2014, WTD has developed efficiency proposals for implementation which have provided past and current rate relief, and this effort will continue in the future.

Table 2-2 Current and Future Rate Reduction Measures

| | |
|--|---------------------|
| Budget Reductions from Ongoing Efficiencies | \$291,000 |
| Initiatives for Efficiency: | |
| Employee-initiated through Bright Ideas Program | \$524,000 |
| Carbon and Energy Fund efficiencies | <u>\$941,000</u> |
| Total | \$1,465,000 |
| 2017/2018 Debt Service Savings from Bond Refunding in 2016 | \$12,724,000 |
| Estimated Rate Reduction Measures | \$14,480,000 |
| Future Energy Program Operational Savings from Capital Investments over Time (6-year estimate) | \$1,032,000 |

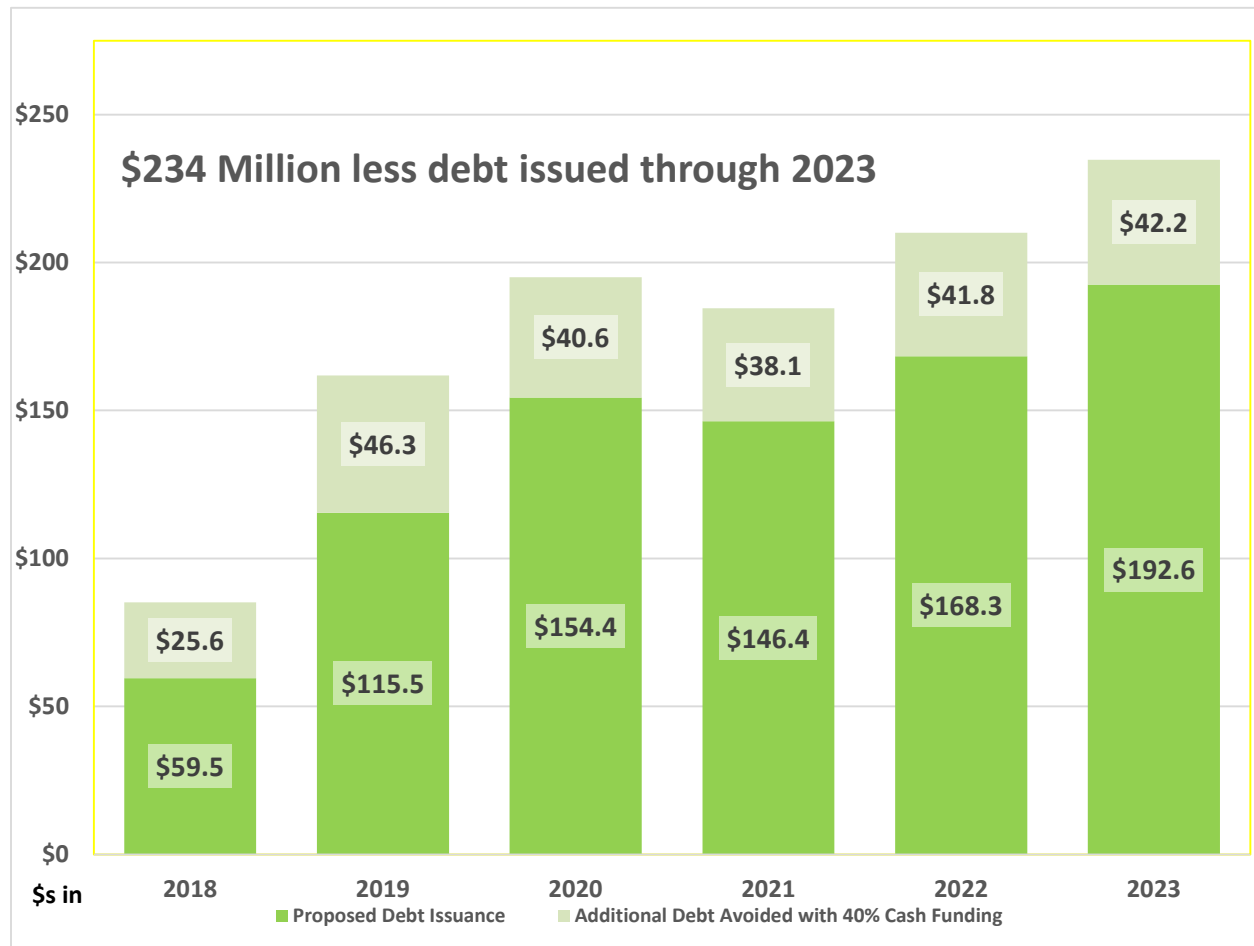
2.3 Cash Funding and Expected Debt Reduction

WTD established two new financial practices with the adopted 2017 sewer rate:

- 1) Funding, on average, 40 percent of the capital program from cash generated from revenues, and
- 2) Amortizing the utility’s \$500 million variable rate debt portfolio.

The 2018 financial plan and projected sewer rates incorporate these practices. WTD expects to amortize approximately \$1 million of variable rate debt in 2017 and an additional \$44.2 million through 2023. The projected rates of this proposal meet the goal of 40 percent of the capital expenditures, on average, being funded from cash during 2018 through 2023. WTD estimates that projected sewer rates in this financial plan will reduce outstanding debt by \$234 million by 2023, as shown on Chart 2-1.

Chart 2-1. Projected Debt Issuance Compared to Prior Financial Practices



3.0 Operations

3.1 Revenues

Operating revenues in 2016 were \$14.8 million or 3.3 percent greater than budgeted due to stronger performance in customer growth and capacity charge payments. In 2017 revenues are expected to increase to \$490.5 million. In 2018, total operating revenues (including capacity charge receipts¹) are projected to be \$499.0 million, a 1.8 percent increase over the 2017 forecast. In 2019, total operating revenues are projected to be \$524.0 million, a 5.0 percent increase over the 2017 forecast. As shown in Table 3-1, the net increase in revenues of \$8.6 million in 2018 is primarily from the expected customer growth and higher capacity charge

¹ Although the capacity charge does not fund any operating expenses, capacity charge revenues are categorized as operating revenue for purposes of the debt service coverage calculation.

revenues. The net increase of \$24.9 million in 2019 is largely due to anticipated rate increase in the monthly sewer rate along with increased capacity charge revenues. As explained in section 2.1.4 and shown in Table 3-1, no draws from the Rate Stabilization Reserve are anticipated until after 2023.

Table 3-1 2017 through 2019 Operating Revenues (million dollars)

| | 2017 Forecast | 2018 Forecast | Change | % Change | 2019 Forecast | Change | % Change |
|--------------------------|--------------------------|--------------------------|---------------|---------------------|--------------------------|---------------|---------------------|
| Sewer Rate | \$402.0 | \$404.4 | \$2.4 | 0.6% | \$421.6 | \$17.2 | 4.3% |
| Capacity Charge | \$70.4 | \$75.6 | \$5.3 | 7.5% | \$81.2 | \$5.2 | 1.0% |
| Other Income | \$13.0 | \$13.4 | \$0.3 | 2.5% | \$13.8 | \$0.4 | 3.0% |
| Investment Income | \$5.0 | \$5.6 | \$0.6 | 11.9% | \$7.4 | \$1.7 | 30.8% |
| Rate Stabilization (use) | \$0.0 | \$0.0 | \$0.0 | 0.0% | \$0.0 | \$0.0 | 0.0% |
| Totals | \$490.5 | \$499.0 | \$8.6 | 1.8% | \$524.0 | \$24.9 | 5.0% |

3.2 Expenses

Operating expenses of \$136.6 million in 2016 were \$4.9 million or 3.4% less than budgeted. Major factors resulting in this variance were the timing of the WaterWorks Grant Program, lower than planned diesel, electricity and chemical costs, and rebates from central service agencies due to lower costs incurred.

Operating expenses for 2017 are projected to be \$151.9 million, a \$10.4 million or 7.4 percent increase from the 2016 adopted budget. Of this increase, \$3.4 million, or approximately one-third, is attributed to the re-appropriation of previously committed but unexpended WaterWorks Grant funds. The remaining operating expense increase is attributed to increased labor costs for new staffing from the 2017-18 biennial budget, program support to provide for the sale of bio-methane and environmental attributes at the South Treatment Plant, exterior painting at the South Treatment Plant, and projected general inflation. Operating expenses for 2018 are projected to be \$155.2 million, an increase of \$ 3.3 million, 2.2 percent over the 2017 adopted budget. This increase is attributed to projected increases in WTD's insurance rate and general inflation.

For 2019, operating expenses are projected to be \$161.5 million, an increase of \$6.3 million, or 4.1 percent over the 2018 adopted budget. Major factors resulting in this increase are projected operating costs for the Rainier Valley Wet Weather Storage Project and projected general inflation. For 2020, operating expenses are projected to be \$167.9 million, an increase of \$6.4 million, or 3.9 percent over the 2019 projected operating expenses. Major factors resulting in this increase are operating costs for the Brandon/Michigan Combined Sewer Overflow (CSO) facility and projected general inflation.

4.0 Capital Improvement Program

4.1 Capital Spending

WTD capital spending for 2016 of \$167.5 million was 4.8 percentage points lower than the planned 85% accomplishment rate for capital spending of \$175.98 million (see section 4.2 for more detail on the capital accomplishment rate). Planned capital spending ranges from \$183.9 million in 2017 to \$265.5 million in 2023, averaging approximately \$223.3 million per year during the six-year period.

Construction activity for WTD facilities continues to be a significant source of regional job creation. In 2017, WTD will invest approximately \$76 million in construction, supporting more than 850 full- and part-time jobs in the region.

Two aspects of capital project spending affect the sewer rate: 1) the total cost of the project over its lifetime and 2) the amount of spending in the specific rate period. In the process of defining capital priorities for 2018 and beyond, WTD critically reviewed project scopes, schedules, cash flow projections, and risk analyses to ensure funding for critical projects. Key criteria for assessing risk include: ensuring the continued operation and reliability of existing wastewater conveyance and treatment assets, enhancing regional water quality in compliance with federal, state, and local regulations pertaining to wastewater treatment, reducing combined sewer overflow events, and continuing to create resources from wastewater. Below are key projects in the capital program (total project cost):

- **Chelan Ave CSO (\$118.7M)**

This consent-decree-driven project will design and construct a combined sewer overflow control facility to handle 4 to 5 million gallons of mixed storm and wastewater. The project estimate reflects work for design, construction, and property acquisition as the project team evaluate a tank alternative and a tunnel alternative. The current project schedule for substantial construction completion is June 2022.

- **CSO Control & Improvements – Magnolia (\$53.8M)**

This estimate reflects an increase of \$4.7 million to fund the repair of a 30 inch diameter pipe that has failed and prevents CSO flows from entering the facility storage tank. Repair is scheduled for completion at the end of July 2017 (July 2016 previous construction completion date). The contractor and its insurer have been put on notice that they are responsible for the repair of the damaged pipeline.

- **North Creek Interceptor (\$91.9M)**

This project provides a vital public benefit because it increases the capacity of the regional sewer system to address sanitary sewer overflows that impact public health and water quality and accommodates planned growth. On January 19, 2017, the County Executive signed a determination of emergency and waiver from competitive procurement. The determination of emergency was necessary because the construction work was not being completed in accordance with the specifications and time period of

the contract. The emergency declaration allows the Wastewater Treatment Division to hire a qualified follow-on contractor regarding the cost and schedule for completion of the remaining work. WTD signed a contract with J.W. Fowler Co. to complete the project.

- **West Duwamish CSO Control (\$57.3M)**

This project provides for the design, construction and property acquisition to control combined sewer overflows as mandated by the consent decree issued by the Department of Justice and the EPA. Construction completion is currently scheduled for January 2025.

- **SP Biogas and Heat Systems Improvements (\$67M)**

This project provides for the design and construction to replace the South Plant heating and gas scrubbing system that has reached the end of its useful life and become increasingly costly to maintain and operate. The system replacement is an opportunity to install an energy efficient system and comply with the higher quality standard for scrubbed biogas set by Puget Sound Energy. Complying with the higher quality standard allows the scrubbed gas to be sold to an expanded market. The project is scheduled to reach substantial completion in February 2021.

- **Jameson/Arcweld Buildings Replacement (\$23.4M)**

The Jameson and ArcWeld buildings are beyond their useful life, cramped, and inefficient. The project involves design, construction, and property acquisition activities to address the organizational business needs and requirements for housing the West Division maintenance and Construction Management staff. The project is scheduled to reach substantial completion in March 2022.

4.2 Capital Accomplishment Rate

The capital accomplishment rate is an estimate of the difference between planned capital spending as included in the budget and the capital spending that actually occurs. Using an accomplishment rate in the financial plan allows WTD to adjust the capital program's revenue requirements in anticipation of likely delays in the execution of capital projects that reduce spending and, therefore, cash needs. The accomplishment rate reflects the capital program as a whole and is expressed as the percentage of the capital budget expected to actually be spent in a given year.

In 2016, the accomplishment rate for the capital program was approximately 80 percent, compared to an assumed rate of 85 percent. This difference represents approximately \$8.5 million less capital spending in 2016 than anticipated. The accomplishment rate is assumed to remain at 85 percent for the forecast period 2017-2023.

To further illustrate the relationship between the sewer rate and the accomplishment rate, if the assumed accomplishment rate were lowered by 5 percentage points to 80 percent for the 2018 proposal, planned capital spending would be reduced by approximately \$11.3 million, and the rate would be reduced by \$0.08, all other things being equal. Conversely, if the assumed accomplishment rate were increased to 100 percent for 2018, estimated capital spending would

increase by \$34 million, increasing the 2018 sewer rate proposal by approximately \$0.24, in the absence of any other changes or accommodation.

4.3 Capital Revenues and Financing

4.3.1 Capacity Charge

The capacity charge is a monthly charge with a duration of 15 years that is levied on new connections to the wastewater system. King County Code (K.C.C.) 28.86.160, Financial Policy (FP-15) provides a methodology for calculating the capacity charge in support of the Regional Wastewater Services Plan. The methodology requires new connections to pay ninety-five percent of the allocated costs of the additional system capacity during 2003 to 2030 via the capacity charges and the rates paid by these customers. The policy outlines the conceptual framework by which costs are allocated between existing and newly connecting customers in accordance with King County Code (K.C.C.) 28.84.050 and the financial policies in K.C.C. 28.86.160.

The proposed capacity charge for 2018 is \$62.60, a 3.0 percent increase from the 2017 level of \$60.80. If paid quarterly over the fifteen-year period this totals \$11,268. If the charge is paid up-front as a lump sum at the current discount rate of 2.9 percent, the total charge is \$9,179.

Every three years the data underlying the capacity charge calculation are updated to reflect the most current data available. This includes incorporating the latest historical data, customer growth and projected costs. The charge is assumed to increase at 3 percent annually during the intervening years. The calculation was updated for the adopted 2017 charge with the 2018 and 2019 rates planned to increase by 3 percent, reflecting inflation.

The capacity charge has been in place since 1990 with much of the current methodology in place for over 12 years. In light of this, during 2017, WTD is undertaking a study and holding discussions with stakeholders on how the revenue requirements of the capacity charge are best distributed to various customer groups. The study will include evaluations of specific alternative approaches and if changes are warranted to maintain an equitable and reasonable means of assessing and collecting the capacity charge. WTD is carrying out a separate but concurrent study assessing the impacts of the capacity charge on low-income households and evaluating possible means of mitigating these effects.

4.3.2 Bonds and Interest Rates

Changes to cash funding policies, loans from the State Revolving Fund (detailed in the next section), and savings from the 2015 and 2016 bond refinancing have significantly lowered WTD's external financing requirements. As a consequence, only \$43.4 million of new variable rate debt for capital projects is planned in 2018. Substantial funding will come from the beginning 2017 cash balance available for construction (\$87 million) and \$187 million of cash

funding from 2017 and 2018 net revenues. WTD expects to issue \$270 million in new long-term debt in 2019 and 2020 to pay for \$454 million of capital improvements.

The financial plan also includes a total of \$29.6 million in transfers from the Bond Reserve account to the construction fund for capital spending from 2017 to 2019. With the retirement of all outstanding Sewer Revenue Bonds issued prior to 2010, a new ordinance provision has become effective allowing previously purchased surety bonds again to qualify as allowable investments for the Bond Reserve account. This enables WTD to reclaim a total of \$29.6 million of cash that it had deposited into the Bond Reserve account in 2009 and 2010 when Moody's and Standard & Poor's downgraded the insurance companies that had provided the sureties.

With the increase in interest rates since October 2016, WTD does not expect to see the level of refunding activity or savings experienced in 2015 and 2016 to persist. Subject to market conditions, WTD may refund \$197 million of 2008 Limited Tax General Obligation Bonds in the third quarter of 2017, but the current six-year financial plan does not incorporate any estimated savings from this or other potential refundings as the amount of savings are highly uncertain.

Investment interest rates used in the 2018 financial plan are from the March 2017 forecast from King County's Office of Economics and Financial Analysis and are detailed in Table 6-1. The yield on the King County Investment Pool did increase to 0.80 percent in 2016 from 0.57 percent in 2015, short-term investment rates remain at relatively low levels, and investment earnings are expected to comprise only one percent of 2018 revenues.

4.3.3 Alternative Financing

WTD has regularly obtained low-cost, alternative financing, including low-interest loans and, to a lesser degree, grants for capital projects. Grants for capital projects are often funded by federal or state agencies and, for energy-related projects, local utilities. While the allowable use of these grants is often highly restricted, they have the obvious benefit of not having to be repaid, in contrast to the low-interest loans. WTD continuously pursues grant funds as they become available. While alternative financing generally reduces total costs, it can sometimes result in upward pressure on the sewer rate if instruments have a shorter payback period than WTD's long-term bonds.

Low-interest loans are provided by the Department of Ecology (DOE) State Revolving Fund (SRF) or the Washington State Public Works Trust Fund (PWTF). WTD helps ensure the success of its work to obtain loans by conducting a review process to ensure that projects will be considered high priority water-quality projects in the grant ranking process. WTD also ensures that the project schedule fits within the loan criteria and that the project meets specific criteria or thresholds. Table 4-1 lists some of the completed projects that received SRF and PWTF funding. Table 4-2 lists the current SRF loans that partially or entirely fund the indicated WTD capital projects.

Table 4-1 Previous SRF & PWTF Fund Loans for WTD Capital Projects (million dollars)

| Project | Loan Amount | Loan Type | Term (Years) | Interest Rate | Estimated Debt Service Savings |
|--------------------------------------|-------------|-----------|--------------|---------------|--------------------------------|
| Brightwater Outfall | \$1.6 | SRF | 20 | 2.6% | \$11.8 |
| Henderson/MLK CSO | \$57.5 | SRF | 20 | 1.5% | \$64.8 |
| Denny Way CSO/Elliott West Pipelines | \$12.5 | SRF | 20 | 1.5% | \$14.1 |
| Carnation Treatment Plant | \$14.1 | SRF | 20 | 3.1% | \$14.1 |
| Vashon Treatment Plant | \$5.0 | SRF | 20 | 1.5% | \$3.9 |
| Barton CSO Facilities Plan | \$1.1 | SRF | 20 | 1.5% | \$0.9 |
| Murray CSO Facilities Plan | \$0.6 | SRF | 20 | 1.5% | \$0.5 |
| North Beach CSO Facilities Plan | \$0.5 | SRF | 20 | 1.5% | \$0.4 |
| North Creek Storage | \$10.0 | PWTF | 20 | 0.5% | \$10.4 |
| Juanita Bay Pump Station | \$10.0 | PWTF | 20 | 0.5% | \$12.3 |
| Brightwater Reclaimed Water Pipeline | \$7.0 | PWTF | 20 | 0.5% | \$8.6 |
| Hidden Lake Pump Station | \$10.0 | PWTF | 20 | 0.5% | \$12.0 |
| Barton CSO Control - Design | \$5.0 | SRF | 20 | 2.7% | \$5.7 |
| Murray CSO Control - Design | \$4.6 | SRF | 20 | 2.7% | \$6.2 |
| North Beach CSO Control - Design | \$2.9 | SRF | 20 | 2.7% | \$3.6 |
| S. Magnolia CSO Control - Design | \$5.1 | SRF | 20 | 2.7% | \$6.4 |
| Fremont Siphon – Facilities Plan | \$2.2 | SRF | 20 | 2.7% | \$2.7 |
| Ballard Siphon | \$31.9 | SRF | 20 | 2.8% | \$41.7 |
| Ballard Siphon | \$10.0 | PWTF | 20 | 0.5% | \$13.4 |
| South Plant Agitation Blowers | \$.668 | PWTF | 10 | 1.0% | \$.853 |
| Environmental Lab HVAC System | \$.332 | PWTF | 10 | 1.0% | \$.334 |
| West Point Dewatering Centrifuges | \$.300 | PWTF | 5 | 1.0% | \$.383 |
| North Beach CSO (Construction) | \$3.0 | SRF | 20 | 2.7% | \$1.5 |
| Barton CSO (Construction) | \$8.5 | SRF | 20 | 2.7% | \$4.0 |
| S. Magnolia CSO (Construction) | \$26.5 | SRF | 20 | 2.7% | \$12.3 |
| Total | \$230.9 | | | | \$252.8 |

Table 4-2 Current State Revolving Fund Loans for WTD Capital Projects (million dollars)

| Project | Loan Amount | Loan Type | Term (Years) | Interest Rate | Estimated Debt Service Savings |
|--------------------------------|-------------|-----------|--------------|---------------|--------------------------------|
| Fremont Siphon (Construction) | \$29.5 | SRF | 20 | 2.7% | \$15.7 |
| Murray CSO (Construction) | \$30.7 | SRF | 20 | 2.4% | \$11.8 |
| North Beach CSO (Construction) | \$9.1 | SRF | 20 | 2.4% | \$7.4 |
| Total | \$69.3 | | | | \$34.9 |

WTD is currently awaiting a loan agreement from DOE for the Rainier Valley Wet Weather Storage project in the amount of approximately \$21 million. This loan was approved by DOE in their SFY 2017 loan cycle. The terms of this loan cycle is 2.0 percent for a 20-year term. This will save WTD approximately \$5.3 million (present value) in interest versus conventional bond financing.

In 2012, WTD received \$3 million in Qualified Energy Conservation Bonds (QECCB). These bonds enable qualified state, tribal, and local government issuers to borrow money at attractive rates to fund energy conservation projects. These funds were allocated to WTD from King County's total share of the QECCB received from the Washington State Department of Energy. These bond proceeds are being used to fund capital expenditures for the South Plant Raw

Sewage Pumps Replacement project. Substantial completion of the project is scheduled at the end of the first quarter 2017. WTD will save approximately \$500,000 in interest over 10 years versus conventional bond financing.

5.0 Residential Customer Equivalents and New Connections

WTD continues to use conservative projections for future growth in Residential Customer Equivalents (RCEs) for rate and budget development. RCE and new connections forecasts take into consideration historical growth rates as well as regional economic forecasts and local water demand forecasts.

The near-term outlook for growth in our region suggests a deceleration in regional economic growth, bringing the Puget Sound region more in line with the national economy. The March 2017 Conway-Pedersen economic outlook forecasts employment growth for the Seattle-Tacoma region of 1.9 percent in 2017 and 1.4 percent in 2018, down from 3.0 percent in both 2015 and 2016.

Commercial, multi-family residential and industrial customers can reduce their customer equivalents, and therefore their sewer bill, by reducing water consumption. Increased water conservation can result in low growth or reductions in the WTD customer base. Seattle Public Utilities projects that customers will continue to reduce their daily water use over the forecast period through changes in the market for appliances and fixtures as well as utility-based programs to encourage conservation.

In 2016, the RCEs WTD's customer base reached 752,674, a 2.25 percent increase from 2015 and the highest rate of growth since 1993.² A portion of this growth can be attributed to dewatering activity on large construction projects in the 3rd and 4th quarters of 2015 (which are billed to customers at the start of the 1st and 2nd quarters of 2016) and which began to taper off in the second half of 2016. The current forecast anticipates the annual growth in RCEs to slow to 0.66 percent to 757,610 RCEs in 2017 and 0.60 percent in 2018 before returning to the long-term historic growth rate of 0.62 percent in 2020. Table 5-1 shows current and projected RCEs compared to those used in the 2017 sewer rate process.

² RCEs based on 2016 sewer revenues were 756,430 and include revenues arising from audit adjustments relating to 2015 and prior periods.

Table 5-1 Current Residential Customer Equivalents Forecast

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---------|---------|---------|---------|---------|---------|---------|
| 2018 Rate Proposal | 752,674 | 757,610 | 762,156 | 766,348 | 771,099 | 775,880 | 780,690 |
| Percent Change Between Years | 2.25% | 0.66% | 0.60% | 0.55% | 0.62% | 0.62% | 0.62% |
| 2017 Adopted Sewer Rate | 740,502 | 744,945 | 748,670 | 752,787 | 757,455 | 762,151 | 766,876 |
| Percent Change Between Years | 0.60% | 0.60% | 0.50% | 0.55% | 0.62% | 0.62% | 0.62% |
| Change between 2018 Rate Proposal and 2017 Adopted Sewer Rate | 12,172 | 12,665 | 13,486 | 13,560 | 13,644 | 13,729 | 13,814 |

New sewer connections to the regional wastewater system pay a capacity charge to fund new capacity. New connections to the system tend to reflect the cycles of residential and commercial construction. For example, during the 1998 to 2008 period, the number of new connections averaged 11,200 per year, with a peak of 12,700. Average connections for 2009–2011—a period dominated by the Great Recession—dropped to 5,700. The current forecast in Table 5-2 shows new connections peaking at 12,000 in 2016 and tapering from 2017 to 2019 to a long-term rate of 10,000 new connections annually thereafter³. These adjustments reflect the anticipated slow-down in regional construction, particularly in the multi-family housing market.

Table 5-2 Projected New Sewer Connections by Year of Connection

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|--------------------|---------|--------|--------|--------|--------|--------|--------|--------|
| 2018 Rate Proposal | 10,742 | 11,000 | 10,500 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| 2017 Sewer Rate | 12,000 | 11,000 | 10,500 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| Change | (1,258) | - | - | - | - | - | - | - |

² Annual connection totals are for the year that new customers connect to the sewer system. WTD also monitors connections by the year that new capacity accounts are created. Connections by year connected are a better indicator of emerging trends.

6.0 Summary of 2018 Rate Proposal Projections and Assumptions

Table 6-1 presents a summary of the general assumptions used in developing the 2018 rate proposal, compared to the values underlying the 2017/2018 Adopted Biennium Budget. Discussion of the various assumptions is included in the main body in this report.

Table 6-1 Assumptions Comparison: 2017/18 Adopted Budget and 2018 Proposed Rate

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| I. Wastewater Spending | | | | | | | |
| Operating Expense (000's) | | | | | | | |
| 2018 Proposed Rate Forecast | (\$151,897) | (\$155,249) | (\$161,459) | (\$167,917) | (\$174,634) | (\$181,619) | (\$188,884) |
| Adopted 2017-2018 Budget Forecast | (\$148,517) | (\$153,249) | (\$159,193) | (\$165,529) | (\$172,118) | (\$178,971) | (\$186,130) |
| Difference | (\$3,380) | (\$2,000) | (\$2,266) | (\$2,388) | (\$2,516) | (\$2,648) | (\$2,754) |
| Capital Expenditures (000's) | | | | | | | |
| 2018 Proposed Rate Forecast | (\$183,861) | (\$192,449) | (\$221,289) | (\$232,756) | (\$226,350) | (\$240,300) | (\$265,549) |
| Adopted 2017-2018 Budget Forecast | (\$168,264) | (\$206,437) | (\$226,773) | (\$228,894) | (\$222,193) | (\$239,144) | (\$237,676) |
| Difference | (\$15,597) | \$13,988 | \$5,484 | (\$3,862) | (\$4,157) | (\$1,156) | (\$27,873) |
| CIP Accomplishment Rate | | | | | | | |
| 2018 Proposed Rate Forecast | 85% | 85% | 85% | 85% | 85% | 85% | 85% |
| Adopted 2017-2018 Budget Forecast | 85% | 85% | 85% | 85% | 85% | 85% | 85% |
| II. Customers | | | | | | | |
| Total RCEs | | | | | | | |
| 2018 Proposed Rate Forecast | 757,610 | 762,156 | 766,348 | 771,099 | 775,880 | 780,690 | 785,530 |
| Percent Change | 0.66% | 0.60% | 0.55% | 0.62% | 0.62% | 0.62% | 0.00% |
| Adopted 2017-2018 Budget Forecast | 744,947 | 748,672 | 752,789 | 757,457 | 762,153 | 766,878 | 771,633 |
| Percent Change | 0.60% | 0.50% | 0.55% | 0.62% | 0.62% | 0.62% | 0.62% |
| Difference | 12,663 | 13,484 | 13,558 | 13,642 | 13,727 | 13,812 | 13,898 |
| New Connections | | | | | | | |
| 2018 Proposed Rate Forecast | 11,000 | 10,500 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| Adopted 2017-2018 Budget Forecast | 11,000 | 10,500 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| Difference | - | - | - | - | - | - | - |
| III. Interest Rates | | | | | | | |
| Bond Interest Rate | | | | | | | |
| 2018 Proposed Rate Forecast | 6.00% | 6.00% | 6.00% | 6.00% | 6.00% | 6.00% | 6.00% |
| Adopted 2017-2018 Budget Forecast | 6.00% | 6.00% | 6.00% | 6.00% | 6.00% | 6.00% | 6.00% |
| Difference | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Variable Debt Interest Rate | | | | | | | |
| 2018 Proposed Rate Forecast | 2.02% | 2.57% | 2.63% | 2.93% | 3.15% | 3.27% | 3.36% |
| Adopted 2017-2018 Budget Forecast | 2.30% | 2.45% | 2.55% | 2.65% | 2.75% | 2.90% | 3.00% |
| Difference | -0.28% | 0.12% | 0.08% | 0.28% | 0.40% | 0.37% | 0.36% |
| Investment Interest Rate | | | | | | | |
| 2018 Proposed Rate Forecast | 1.05% | 1.30% | 1.57% | 1.90% | 2.18% | 2.43% | 2.65% |
| Adopted 2017-2018 Budget Forecast | 0.80% | 0.85% | 1.22% | 1.65% | 2.02% | 2.37% | 2.70% |
| Difference | 0.25% | 0.45% | 0.35% | 0.25% | 0.16% | 0.06% | -0.05% |

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| IV. Reserves | | | | | | | |
| Bond & Loan Reserves (000's) | | | | | | | |
| 2018 Proposed Rate Forecast | \$162,897 | \$155,213 | \$155,642 | \$167,970 | \$179,218 | \$190,448 | \$201,298 |
| Adopted 2017-2018 Budget Forecast | \$165,070 | \$159,467 | \$161,448 | \$173,535 | \$184,719 | \$194,193 | \$204,697 |
| Difference | (\$2,173) | (\$4,253) | (\$5,806) | (\$5,565) | (\$5,501) | (\$3,745) | (\$3,398) |
| Rate Stabilization Reserve (000's) | | | | | | | |
| 2018 Proposed Rate Forecast | \$46,250 | \$46,250 | \$46,250 | \$46,250 | \$46,250 | \$46,250 | \$46,250 |
| Adopted 2017-2018 Budget Forecast | \$46,250 | \$43,750 | \$40,150 | \$32,265 | \$29,265 | \$19,900 | \$12,000 |
| Difference | \$0 | \$2,500 | \$6,100 | \$13,985 | \$16,985 | \$26,350 | \$34,250 |
| Rate Stabilization Use (000's) | | | | | | | |
| 2018 Proposed Rate Forecast | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Adopted 2017-2018 Budget Forecast | \$0 | \$2,500 | \$3,600 | \$7,885 | \$3,000 | \$9,365 | \$7,900 |
| Difference | - | (2,500) | (3,600) | (7,885) | (3,000) | (9,365) | (7,900) |

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| IV. Reserves | | | | | | | | | |
| Bond & Loan Reserves (000's) | | | | | | | | | |
| 2018 Proposed Rate Forecast | \$170,843 | \$162,897 | \$155,213 | \$155,642 | \$167,970 | \$179,218 | \$190,448 | \$201,298 | \$210,451 |
| Adopted 2017-2018 Budget Forecast | \$173,605 | \$165,070 | \$159,467 | \$161,448 | \$173,535 | \$184,719 | \$194,193 | \$204,697 | \$213,585 |
| Difference | (\$2,763) | (\$2,173) | (\$4,253) | (\$5,806) | (\$5,565) | (\$5,501) | (\$3,745) | (\$3,398) | (\$3,134) |
| Rate Stabilization Reserve (000's) | | | | | | | | | |
| 2018 Proposed Rate Forecast | \$46,250 | \$46,250 | \$46,250 | \$46,250 | \$46,250 | \$46,250 | \$46,250 | \$46,250 | \$46,250 |
| Adopted 2017-2018 Budget Forecast | \$46,250 | \$46,250 | \$43,750 | \$40,150 | \$32,265 | \$29,265 | \$19,900 | \$12,000 | \$12,000 |
| Difference | \$0 | \$0 | \$2,500 | \$6,100 | \$13,985 | \$16,985 | \$26,350 | \$34,250 | \$34,250 |
| Rate Stabilization Use (000's) | | | | | | | | | |
| 2018 Proposed Rate Forecast | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Adopted 2017-2018 Budget Forecast | \$0 | \$0 | \$2,500 | \$3,600 | \$7,885 | \$3,000 | \$9,365 | \$7,900 | \$0 |
| Difference | - | - | (2,500) | (3,600) | (7,885) | (3,000) | (9,365) | (7,900) | - |