

Capital Region Water

Fiscal Year 2019 Water and Wastewater Rate Study Report

Final Report / December 2018

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Appendix A

Wholesale Wastewater Rate Details

1. Introduction

1.1. Rate Study Scope and Objectives

This water and wastewater rate study report was prepared for Capital Region Water (“CRW”) for the purpose of reviewing and updating CRW’s water and wastewater rates for fiscal year (“FY”) 2019 and providing planning level estimates of rate increases in FY 2020 through FY 2023 (“the forecast period”). CRW provides retail water service for inside and outside-city customers and provides retail wastewater service to City of Harrisburg (“City”) customers and wholesale wastewater service to several communities outside of the City. Its fiscal year begins on January 1 of each year. The specific objectives of this rate study included the evaluation of:

1. Water system costs to be recovered from all customers and recommended annual rate revenue adjustments for FY 2019 through FY 2023.
2. The existing water rate structure and two rate structure scenarios in response to key pricing objectives identified by CRW.
3. Wastewater system costs allocable to Suburban communities to determine the resulting unit rates for Suburban wholesale customers in FY 2019.
4. Wastewater system costs to be recovered from City customers and recommended retail rate adjustments for FY 2019 through FY 2023.
5. Water and wastewater rates of similar utilities for the purpose of comparing CRW’s proposed FY 2019 rates to rates of other utilities located within the region.

1.2. Background

CRW is a municipal authority that owns and manages the greater Harrisburg area’s water and wastewater systems and infrastructure. The water system includes a supply, treatment, and distribution system that serves approximately 20,300 accounts in Harrisburg (“the City”), the Borough of Penbrook, and parts of various outlying municipalities, including the Townships of Susquehanna and Lower Paxton. CRW’s water system also provides the water quantities and pressures needed to serve municipal fire hydrants and residential and commercial fire sprinkler systems.

The primary source of drinking water is the William T. DeHart Dam and Reservoir located 20 miles northeast of the City in the Clarks Valley Watershed. The Dam and Reservoir collect water from a watershed that is approximately 22 square miles. The Susquehanna River provides CRW with a backup water supply and is only used during severe drought or emergency. Raw water flows by gravity from the DeHart Reservoir to be treated at CRW’s Robert E. Young Water Services Center. The treatment facility is capable of producing up to 20 million gallons per day of drinking water. Treated water is pumped and held in three finished water storage reservoirs in Reservoir Park. The finished water storage reservoirs have a combined capacity of approximately 40 million gallons. In addition, the water system includes over 20 miles of 36-42-inch diameter transmission mains, 200 miles of distribution piping ranging from six to 36-inches in diameter, more than 1,700 fire hydrants and 5,400 valves.

The wastewater system owned and operated by CRW includes an Advanced Wastewater Treatment Facility, a conveyance system, and wastewater and stormwater collection systems located within the City limits. Overall, the wastewater system includes approximately 48 miles of sanitary sewers, 29 miles of stormwater sewers, and 87 miles of combined sanitary and stormwater sewers. The wastewater collection system provides service to customers located within the City. The conveyance and treatment systems provide wastewater conveyance and

treatment services to City and Suburban wholesale customers. Suburban wholesale customers include Susquehanna Township, Lower Paxton Township, Swatara Township, Paxtang Borough, Penbrook Borough, and Steelton Borough.

1.3. Rate Study Process

The proposed water rates were calculated by estimating the water system's rate revenue requirement in FY 2019 and the remaining years of the forecast period and adjusting the water rates such that they generate sufficient revenues to match the annual rate revenue need.

The Suburban wholesale wastewater rates in FY 2019 were developed by completing the following steps:

1. Estimating the wastewater system rate revenue requirement in FY 2019.
2. Allocating the revenue requirement to cost categories attributable to City retail customers and Suburban wholesale customers.
3. Calculating the Suburban customer's cost responsibility in accordance with the intermunicipal agreement between the City and the Suburban customers, which involves dividing the costs attributable to Suburban customers (with adjustments) by the applicable units of service.

The retail wastewater rates were developed by estimating the wastewater system's rate revenue requirement for each year of the forecast period, subtracting the revenue estimated to be received from Suburban wholesale customers in each year plus any other non-rate revenues, and adjusting the retail wastewater rate such that they generate sufficient revenue to cover the annual revenue needs of the system and to comply with fiscal policies and financial covenants related to liquidity and debt service coverage.

2. Water System Rate Evaluation

The water system rate evaluation was prepared in general accordance with “Principles of Water Rates, Fees, and Charges, Manual of Water Supply Practices M1,” published by the American Water Works Association. In this evaluation, water system rate revenue requirements were estimated for each year of the forecast period, and revenues from existing retail water sales were projected and compared to the rate revenue requirement to assess the need for any water rate adjustments. The water system rate revenue requirements were prepared using the industry accepted and practiced cash-needs approach. The objective of the cash-needs approach is to provide revenues sufficient to recover total cash requirements of the water system in each year of the forecast period.

2.1. Existing Water Rates

CRW’s existing water rate structure consists of a fixed charge, which varies by meter size, and a uniform volumetric rate. The fixed charge, known as the Ready to Serve Charge, is billed on a monthly basis. The Ready to Serve Charge and the volumetric rate are the same for both inside and outside-city customers. The existing rate structure generates approximately 30 percent of the rate revenue from the Ready to Serve Charge and approximately 70 percent from the volumetric rate. The existing (FY 2018) water rates are shown in Table 2-1.

Table 2-1. Existing (FY 2018) Water Rates

Ready to Serve Charge	
Meter Size	Cost per Month
5/8”	\$7.47
3/4”	\$16.18
1”	\$32.45
1-1/2”	\$69.52
2”	\$127.45
3”	\$356.27
4”	\$637.23
6”	\$1,720
8”	\$3,058
10”	\$4,321
12”	\$6,882
Volumetric Rate	
Consumption	Cost per 1,000 gal.
All	\$9.46

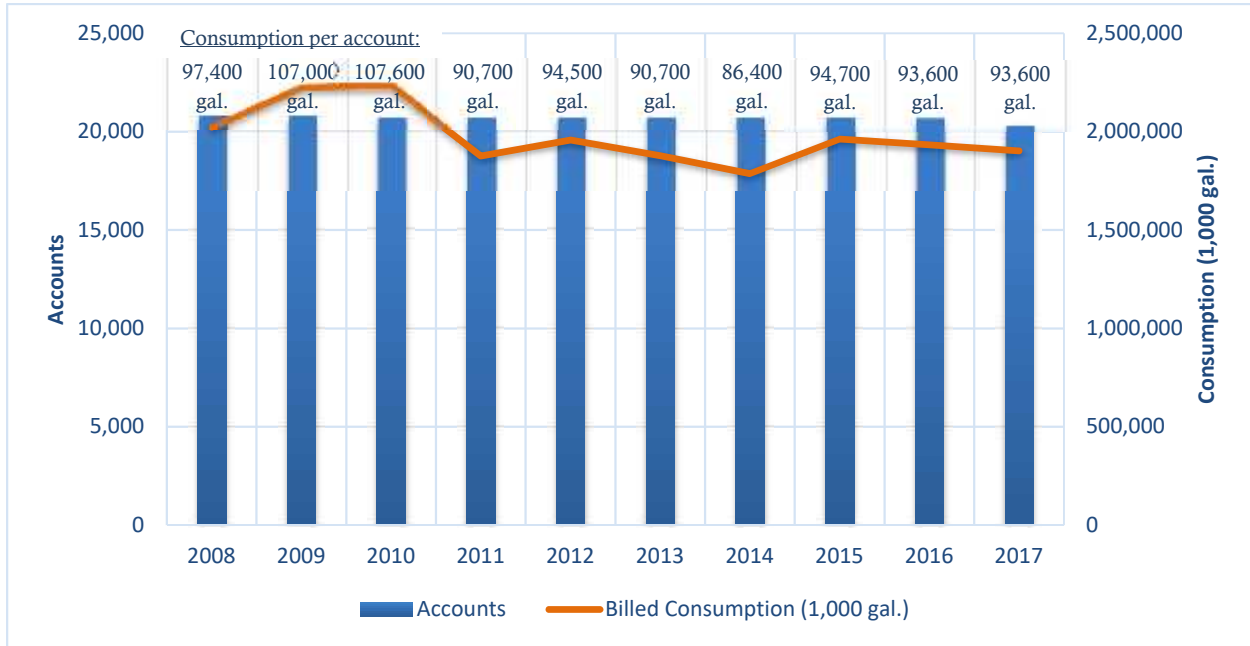
2.2. Customer Growth

The projection of water rate revenues was derived from anticipated water rates in future years and assumptions regarding future changes in customer accounts and billed consumption. An analysis of recent historical changes in accounts and consumption was completed to project these changes over the forecast period. The historical number of accounts and volume of billed consumption over the last ten fiscal years, from FY 2008 to FY 2017, was analyzed and is shown in Figure 2-1.

In FY 2015 billed water consumption increased relative to prior years, which may have been due to CRW’s meter repair and replacement work, as older customer meters were repaired or replaced with newer and more accurate

meters. This may also be evidence that declines in consumption per account may be slowing and annual consumption is beginning to stabilize within CRW’s water system.

Figure 2-1. Historical Accounts and Water Consumption



Based on the historical trends shown in Figure 2-1 and discussions with CRW (CRW expects no significant changes to the customer base over the forecast period), the average annual impact to the Ready to Serve Charges from the change in customer accounts was estimated to be about 0.1 percent, while billed consumption was projected to be unchanged from year to year. It should be noted that historical customer account data by meter size was not available; therefore, growth or declines in the number of customers by meter size was unable to be analyzed and incorporated into the projection of the Ready to Serve Charge. Therefore, the change in accounts was assumed to represent the overall revenue impact of the growth or decline in customer accounts with various meter sizes, as compared to the prior fiscal year.

2.3. Fiscal Requirements and Policies

2.3.1. CASH RESERVES

2.3.1.1. Operating Cash Reserves

Water and wastewater utilities commonly maintain operating reserves to meet unexpected operating costs, such as those related to unplanned minor repairs and maintenance, serve as a source of working capital to address timing differences between cash inflows and outflows, and act as a buffer against revenue shortfalls resulting from weather related declines in water usage, unforeseen economic influences, or fiscal emergencies. CRW has covenanted to maintain a specified level of operating reserves according to the terms of its existing Trust Indenture between CRW and the Bank of New York Mellon Trust Company, originally dated January 1, 1991 and as amended and restated (“Water Trust Indenture”),¹ and elects to hold additional reserves, above the minimum level specified in the Water Trust Indenture, as an internal fiscal policy target.

¹ Amended and Restated Trust Indenture, originally dated as of January 1, 1991, between CRW and the Bank of New York Mellon Trust Company, N.A., amended and restated as of April 1, 2014, and supplemented by a First, Second, and Third Supplemental Trust Indenture.

The reserves required to be maintained under the Water Trust Indenture are held within the Operating Reserve Account. The purpose of this account is to pay for unanticipated operating expenses and to cover expenditures in a given month when current revenues are insufficient. The Water Trust Indenture states that CRW shall maintain an amount in this account equal to at least 60 days (one sixth) of budgeted operating expenses for the current fiscal year. As of August 2018, the balance in this account was approximately \$1.6 million. In addition, CRW has established a cash management target of maintaining a total operating reserve, including amounts in the Operating Reserve Account, at a minimum of 200 days of annual operating expenses, a level in the range that is customary within the industry for water utilities with strong credit ratings. Given that CRW is required to maintain an operating reserve of 60 days of operating expenses per the Water Trust Indenture, an additional cash reserve level within the Revenue Fund equal to at least 140 days of operating expenses was included as a minimum cash target for the system. This amount, combined with funds held in the Operating Reserve Account, provides CRW with a minimum of a 200-day cash reserve.

In recent years, CRW has maintained total operating cash reserves in the Revenue Fund at a level well above the minimum cash reserve target. Specifically, as of the beginning of FY 2019, actual operating cash on-hand in the fund, which excludes amounts held in the Operating Reserve Account, was projected to be approximately \$14.9 million, while budgeted operating expenses for FY 2019 total roughly \$9.3 million, which equates to roughly 575 days cash on-hand in the Revenue Fund. Therefore, the beginning level of cash in the Revenue Fund in FY 2019 is anticipated to significantly exceed CRW's minimum operating cash reserve target for the fund.

2.3.1.2. Contingency Cash Reserve

As part of the Water Trust Indenture, CRW has also covenanted to maintain a Contingency Account. The Contingency Account is a residual account comprised of funds remaining in the Water Revenue Fund after the transfers required under the Water Trust Indenture have been made. These funds are to be used as payments for capital additions or for any other purpose relating solely to the water system, as may be designated by resolution of CRW. As of August 2018, the balance in this account was approximately \$3.2 million.

2.3.1.3. Conservation Easement Proceeds

In recent years, CRW has entered into a partnership with the Ward Burton Wildlife Foundation, the Nature Conservancy, and the Fort Indiantown Gap to conserve its 8,200-acre DeHart Watershed Property. Under the partnership, CRW has received approximately \$9.2 million through the Fort Indiantown Gap Army Compatible Use Buffer program to grant a conservation easement limiting development on the property. The Nature Conservancy has held and enforces the easement in perpetuity. However, CRW has retained all rights to manage the drinking water system, including the DeHart Reservoir, DeHart Dam, and all associated facilities and structures. As of August 2018, monies received as a result of this arrangement have totaled approximately \$9.2 million and there are no legal or formal restrictions on the future use of these funds.

2.3.2. DEBT SERVICE COVERAGE REQUIREMENTS

Debt service coverage is the amount of net operating revenue (operating revenue less operating expenditures) available to fund annual principal and interest payments on outstanding debt. Water and wastewater utilities typically set rates such that the resulting net revenues provide a margin of coverage over and above the utility's annual debt service obligations. Currently, CRW's outstanding debt related to the water system is comprised of the Series 2016A Revenue Refunding Bonds, the Series 2018 Revenue Bonds, and a 2015 loan with the Pennsylvania Infrastructure Investment Authority ("PENNVEST"). The required level of debt service coverage associated with the CRW's outstanding debt is described in the Water Trust Indenture and is summarized below.

"The Authority covenants that: (a) it has adopted and will charge, maintain and collect throughout its service area so long as any Bonds remain Outstanding and funds for their payment have not been provided, service rates, rents and other charges,

which (after making due and reasonable allowances for prompt payment discounts, if any, contingencies and a margin of error in the estimates), shall generate Net Revenues (exclusive of Assessment Revenues, including connection and tapping fees, which shall constitute Gross Revenues) which shall be sufficient in each Fiscal Year to provide funds to pay (1) an amount not less than 120% of the Debt Service Requirements with respect to its Outstanding Bonds in such Fiscal Year, (2) any amount required to replenish the Debt Service Reserve Fund in full and (3) the amount due in such Fiscal Year on all Subordinated Debt. For purposes of this covenant, Net Revenues may be increased as a result of any transfers from the Rate Stabilization Fund to the Water Revenue Fund and shall be decreased as a result of any transfers from the Contingency Account to the Rate Stabilization Fund in any Fiscal Year, subject to the limitations set forth in Section 6.08;"

CRW has established a management target for debt service coverage that is more restrictive than the bond covenant. The target consists of maintaining debt service coverage at a level of 1.45 times or greater with respect to annual debt service payments associated with the current and future outstanding senior lien debt of the system. Senior lien debt includes CRW's current and future Revenue Bond debt and the 2015 PENNVEST loan.

2.4. Revenues and Expenses

2.4.1. REVENUES

CRW's water revenues include revenues from the sale of water and from other miscellaneous revenues. The historical and projected revenues from the sale of water are shown in Table 2-7. Water sales include sales to inside- and outside-city customers on a retail basis, as well as metered water sales to the Lancaster County Solid Waste Management Authority ("LCSWMA") under a negotiated rate. The majority of water billed to LCSWMA is subject to a negotiated rate of \$4.70 per 1,000 gallons, based on a recent amendment to the Effluent Water Reuse System Agreement between CRW and LCSWMA (LCSWMA will continue to pay Ready-to-Serve Charges related to water meters at its location, and will also continue to receive about 100,000 gallons per year from CRW, at the retail water rate, for regular domestic purposes). Therefore, anticipated revenue from LCSWMA of approximately \$731,000 was budgeted in FY 2019 and then projected separately from other rate revenues.

Miscellaneous revenues are largely generated from private fire protection charges, penalties on past due accounts, timber sales, and interest income. Historically, these miscellaneous revenues have contributed to approximately 5.0 to 10 percent of the revenues of the system. With the exception of interest income, these revenues were projected in future years based on their FY 2019 budgeted amounts. Interest income was estimated based on the average annual balance of available cash associated with the water system and an interest earnings rate of approximately 0.9 percent per year. A summary of the historical and projected water system revenues is provided at the end of this section in Table 2-7.

2.4.2. EXPENSES

2.4.2.1. Operation and Maintenance Expenses

The projection of water system operation and maintenance ("O&M") expenses was prepared based on adopted budget figures for FY 2019, as provided by CRW. In general, O&M expenses are comprised of costs related to personnel, insurance, electricity, chemicals, parts and supplies, and general administrative costs. O&M expenses also include administrative costs of CRW attributable to the water system, which were anticipated to total approximately \$3.2 million in FY 2019. Individual O&M expenses were classified as labor, benefits, insurance, electricity, chemicals, professional services, minor capital, or general, and were escalated in future years based on an appropriate cost escalation factor. The escalation factors for each of the expense classifications are provided in Table 2-2 and were developed based on discussions with CRW management. A summary of the historical and projected O&M expenses is provided at the end of this section in Table 2-7.

Table 2-2. O&M Cost Escalation Factors

Expense Category	Escalation Rate
Labor	3.5%
Benefits	6.0%
Insurance	3.0%
Electricity	3.0%
Chemicals	4.0%
Professional Services	5.0%
Minor Capital/Equipment	3.0%
General	2.8%

2.4.2.2. Capital Expenditures

The projection of water system capital expenditures was prepared based on a schedule of future capital project costs as included in CRW’s 2018 Consulting Engineer’s Annual Report (“CEAR”) for the water system, as well as the incorporation of other projects added by CRW management that were not included in the CEAR. The annual capital project costs related to raw water supply, transmission, treatment, distribution, as well as other miscellaneous projects anticipated to be incurred in FY 2019 through FY 2023 were escalated to future year dollars and are summarized in Table 2-3. The capital plan in the years beyond FY 2019 continues to be a work in progress and it is possible that additional project costs may be added as CRW continues to refine its capital plan for these years.

Table 2-3. Water System Capital Plan

Project Type	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Raw Water Supply	\$1,579,333	\$816,893	\$10,380,907	\$10,692,334	\$11,013,104
Raw Water Transmission	519,352	424,360	0	0	0
Treatment	1,808,342	0	0	0	0
Distribution	3,491,039	3,288,790	3,387,454	3,489,077	3,593,750
Miscellaneous	1,456,420	1,563,767	1,781,145	1,028,715	819,607
Total	\$8,854,486	\$6,093,810	\$15,549,505	\$15,210,126	\$15,426,460

Note: Capital project costs shown in this table were estimated in 2018 dollars and escalated at a rate of 3.0 percent per year in future years for financial planning purposes.

2.5. Capital Project Funding

The financial plan assumed funding of water capital project costs with a mix of cash, grant monies, and new debt. The sources of cash to fund these capital projects included current revenues, reserves held in the Revenue Fund, and easement proceeds. It was assumed that cash reserves in the Operating Reserve Account and Contingency Account would not be utilized as a source to fund capital projects over the forecast period. This capital funding and financing plan scenario was prepared based on discussions with CRW management and CRW’s municipal bond advisor, Public Resource Advisory Group, Inc., was prepared for the purposes of this rate study only and should not be considered by CRW to be municipal securities advice. The financing assumptions employed should be discussed with CRW’s registered municipal advisor² prior to CRW taking any action.

A summary of the assumed capital funding and financing plan is shown in Figure 2-2, which assumes capital projects will be funded and financed with cash, grant monies, easement proceeds, and new revenue bonds in FY

² With meaning defined by the Securities Exchange Act of 1934 Rule 15Ba1-1(d)(3)vi.

2019 through FY 2021. Revenue Fund reserves were assumed to fund about \$3.2 million, or roughly 5.2 percent, of the total capital spend over the forecast period. Over the forecast period, cash was assumed to be used to fund approximately 68.2 percent of the capital project costs, while grants and new Revenue Bond debt was assumed to fund the remaining 31.8 percent. As discussed previously, new Revenue Bond debt was assumed to hold a senior claim to the net revenues of the water system and was assumed with level annual debt service payments, an annual interest rate of 5.0 percent, a repayment term of 20 years, issuance costs of 1.5 percent, and a debt service reserve equal to one year’s debt service, funded with issue proceeds. In addition, a full year of debt service was assumed in the year in which the funding was forecasted to be required.

Figure 2-2. Capital Project Funding Sources



2.5.1. REVENUE REQUIREMENTS

A summary of the estimated water system rate revenue requirements from FY 2019 through FY 2023 are shown in Table 2-4. The rate revenue requirements include O&M expenses, minor capital outlays, debt service, and cash funded capital project expenditures. Non-rate revenues were subtracted from the total revenue requirements in order to estimate the rate revenue requirement to be generated from water sales. The Sources and Uses of Funds Amount (Line 12) represents the use of cash reserves to fund capital project costs (when negative), and the accumulation of cash to be carried over into future years (when positive). The table also shows an adjustment to O&M and capital expenses for revenue from other sources. These adjustments are made to net out non-rate revenues, such as fireline charges, penalties, and interest income, in order to derive the O&M and capital related portions of the rate revenue requirement. As shown in Table 2-4, a rate revenue adjustment of 2.0 percent is recommended in FY 2019 to generate sufficient water sales revenues to cover the rate revenue requirement. In addition, a rate revenue adjustment of 2.0 percent per year is also projected in FY 2020, while adjustments of 3.5 percent are projected each year, from FY 2021 through FY 2023.

Table 2-4. Water Rate Revenue Requirements

Line No.	Description	Fiscal Year Ending December 31				
		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
O&M Expenses and Transfers						
1	Operating and Maintenance Expenses	\$ 9,305,971	\$ 9,299,798	\$ 9,621,004	\$ 9,954,450	\$ 10,300,659
2	Minor Capital	283,069	236,806	243,910	251,227	258,764
3	Transfer to Operating Reserve Account	-	5,714	56,794	58,958	61,213
4	Total O&M and Transfers Out	\$ 9,589,040	\$ 9,542,317	\$ 9,921,707	\$ 10,264,635	\$ 10,620,637
Capital Expenditures						
5	Debt Service	\$ 10,989,049	\$ 10,991,049	\$ 10,988,549	\$ 11,829,465	\$ 12,679,307
6	Cash Funded Capital	8,648,486	6,093,810	6,308,010	5,627,544	5,796,370
7	Total Capital Expenditures	\$ 19,637,535	\$ 17,084,859	\$ 17,296,559	\$ 17,457,009	\$ 18,475,677
8	Total O&M, Transfers Out, and Capital	\$ 29,226,575	\$ 26,627,176	\$ 27,218,267	\$ 27,721,644	\$ 29,096,313
Less Non-Rate Revenues						
9	Miscellaneous Revenue	\$ (1,703,810)	\$ (1,483,810)	\$ (1,483,810)	\$ (1,483,810)	\$ (1,454,810)
10	LCSWMA Revenue	(730,701)	(731,525)	(732,365)	(733,222)	(734,097)
11	Interest Revenue	(124,000)	(109,340)	(109,090)	(111,831)	(114,090)
12	Sources and Uses of Funds	(3,003,989)	(157,919)	104,129	487,006	300
13	Total Non-Rate Revenues	\$ (5,562,500)	\$ (2,482,593)	\$ (2,221,136)	\$ (1,841,857)	\$ (2,302,697)
14	Rate Revenue Requirement	\$ 23,664,074	\$ 24,144,583	\$ 24,997,131	\$ 25,879,787	\$ 26,793,616
Adjustment for Revenue from Other Sources						
15	Operating and Maintenance Expenses	\$ 6,747,460	\$ 6,980,837	\$ 7,352,532	\$ 7,684,545	\$ 8,058,876
16	Capital Expenditures	16,916,614	17,163,745	17,644,598	18,195,243	18,734,741
17	Rate Revenue Requirement	\$ 23,664,074	\$ 24,144,583	\$ 24,997,131	\$ 25,879,787	\$ 26,793,616
18	Proposed Rate Increase	2.0%	2.0%	3.5%	3.5%	3.5%

2.6. Proposed Water Rates

2.6.1. EXISTING RATE STRUCTURE

CRW's proposed water rates for FY 2019 through FY 2023 were developed by applying the proposed annual water rate increases proportionally to both the FY 2018 Ready to Serve Charges and the Volumetric Rate. The proposed water rates for FY 2019 through FY 2023 under this alternative are shown in Table 2-5. The current rate structure can be expected to generate approximately 30 percent of rate revenue from the Ready to Serve Charge and approximately 70 percent from the volumetric rate in FY 2019.

Table 2-5. Proposed FY 2019 Water Rates – Existing Rate Structure

Ready to Serve Charge (Cost per Month)						
Meter Size	Existing FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
5/8"	\$7.47	\$7.62	\$7.77	\$8.04	\$8.33	\$8.62
3/4"	\$16.18	\$16.50	\$16.83	\$17.42	\$18.03	\$18.66
1"	\$32.45	\$33.10	\$33.76	\$34.94	\$36.17	\$37.43
1-1/2"	\$69.52	\$70.91	\$72.33	\$74.86	\$77.48	\$80.19
2"	\$127.45	\$130.00	\$132.60	\$137.24	\$142.04	\$147.01
3"	\$356.27	\$363.40	\$370.66	\$383.64	\$397.06	\$410.96
4"	\$637.23	\$649.97	\$662.97	\$686.18	\$710.19	\$735.05
6"	\$1,720	\$1,754	\$1,789	\$1,852	\$1,917	\$1,984
8"	\$3,058	\$3,119	\$3,182	\$3,293	\$3,408	\$3,527
10"	\$4,321	\$4,407	\$4,496	\$4,653	\$4,816	\$4,984
12"	\$6,882	\$7,020	\$7,160	\$7,411	\$7,670	\$7,938

Volumetric Rate (per 1,000 gal.)						
Consumption	Existing FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
All	\$9.46	\$9.65	\$9.84	\$10.19	\$10.54	\$10.91

2.6.2. ALTERNATIVE RATE STRUCTURE

CRW’s proposed water rates under an alternative rate structure were prepared by keeping the Volumetric Rate unchanged from its existing amount and recovering the additional FY 2019 rate revenue need by adjusting only the Ready to Serve Charges. The proposed rates under this alternative are shown in Table 2-6 for FY 2019 through FY 2023. Implementing higher fixed charges is a trend in the industry in order to improve revenue stability in response to variability in billed consumption on a year to year basis and declines in consumption per account. This alternative can be expected to generate approximately 32 percent of annual rate revenues from the Ready to Serve Charge in FY 2019, with this percentage increasing to almost 40 percent by FY 2023.

Table 2-6. Proposed Water Rates – Alternative Rate Structure

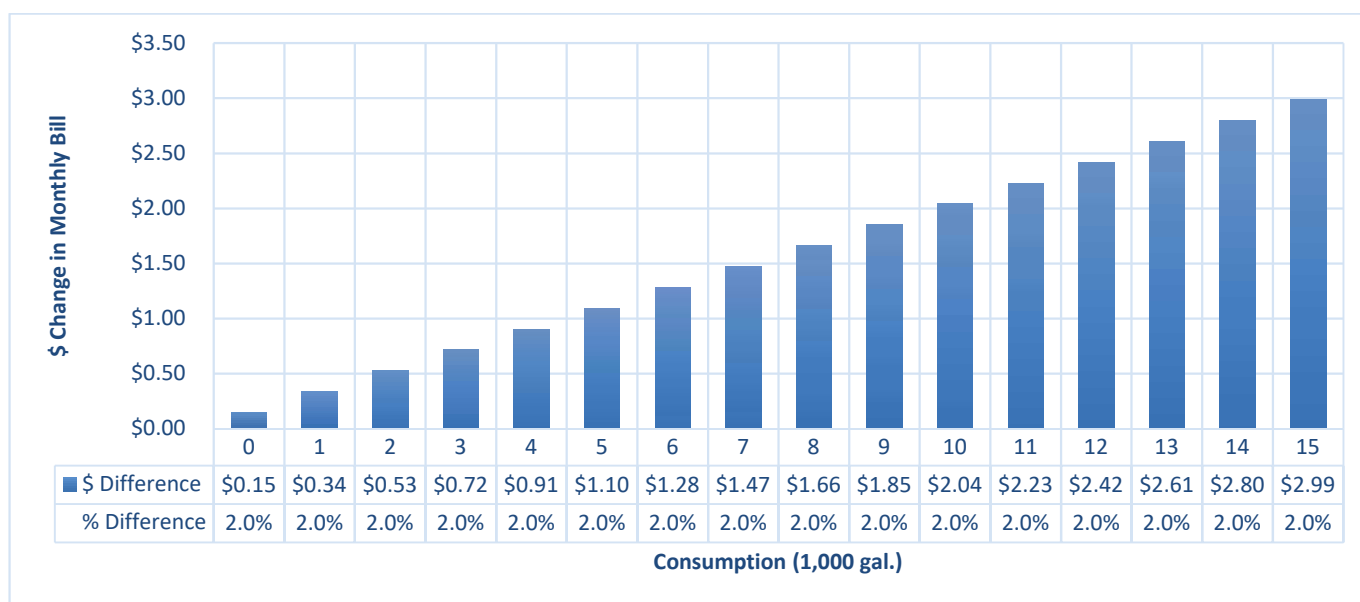
Ready to Serve Charge (Cost per Month)						
Meter Size	Existing FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
5/8"	\$7.47	\$7.96	\$8.46	\$9.35	\$10.28	\$11.24
3/4"	\$16.18	\$17.23	\$18.32	\$20.26	\$22.27	\$24.35
1"	\$32.45	\$34.56	\$36.74	\$40.64	\$44.67	\$48.84
1-1/2"	\$69.52	\$74.04	\$78.70	\$87.06	\$95.70	\$104.62
2"	\$127.45	\$135.73	\$144.28	\$159.61	\$175.44	\$191.81
3"	\$356.27	\$379.42	\$403.32	\$446.16	\$490.43	\$536.17
4"	\$637.23	\$678.64	\$721.39	\$798.02	\$877.19	\$959.00
6"	\$1,720	\$1,832	\$1,947	\$2,154	\$2,368	\$2,589
8"	\$3,058	\$3,257	\$3,462	\$3,830	\$4,210	\$4,602
10"	\$4,321	\$4,602	\$4,892	\$5,411	\$5,948	\$6,503
12"	\$6,882	\$7,329	\$7,791	\$8,618	\$9,473	\$10,357

Volumetric Rate (1,000 gal.)						
Consumption	Existing FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
All	\$9.46	\$9.46	\$9.46	\$9.46	\$9.46	\$9.46

2.6.3. CUSTOMER BILL IMPACTS

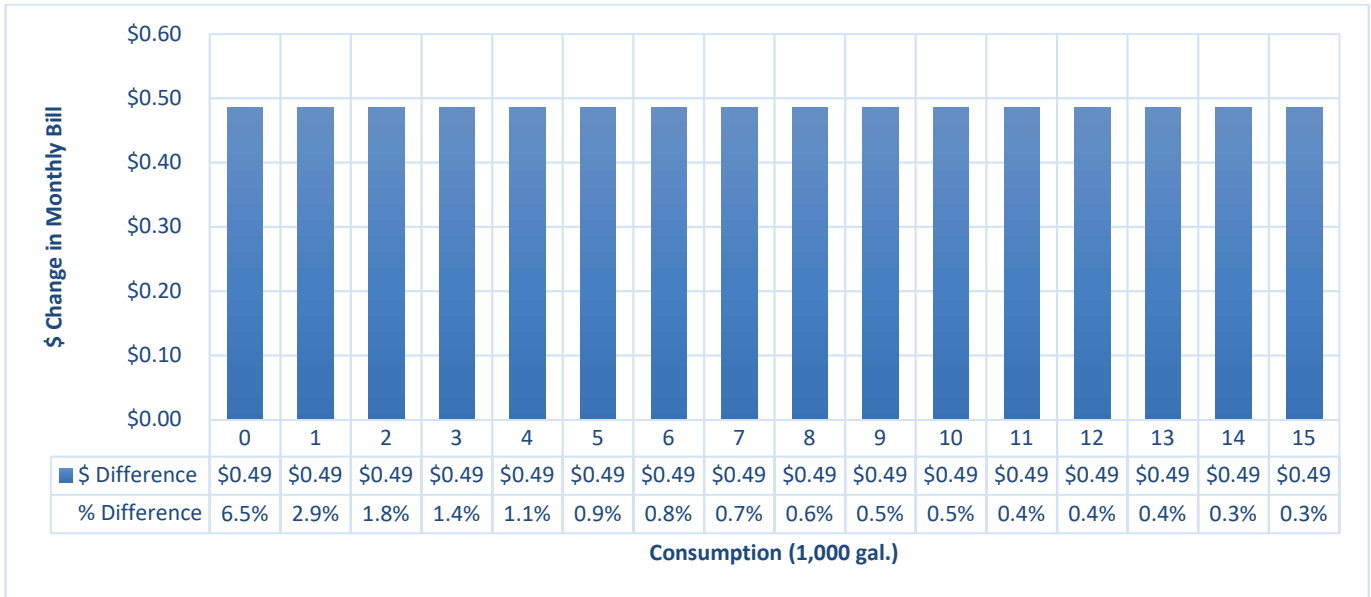
Anticipated residential customer bill impacts for FY 2019 resulting from the rates projected in Table 2-5 are provided in Figure 2-3 for a range of monthly consumption levels for customers using a 5/8-inch meter. As shown in Figure 2-3, a residential customer using between 4,000-5,000 gallons of water per month would experience an increase in their water bill of \$0.91 to \$1.10, or 2.0 percent per month, as compared to the existing (FY 2018) water rates. The dollar increase in the monthly bill amount becomes larger as the level of consumption rises. However, the percentage increase to a customer’s bill remains the same across all levels of consumption, at approximately 2.0 percent.

Figure 2-3. Residential (5/8”) Water Bill Impact (FY 2019)



Anticipated residential customer bill impacts for FY 2019 according to the rates projected in Table 2-6 (Alternative Rate Structure) are provided in Figure 2-4 for a range of monthly consumption levels for customers using a 5/8-inch meter. As shown in Figure 2-4, a residential customer using between 4,000-5,000 gallons of water per month would experience an increase in their water bill of \$0.49, or 0.9 to 1.1 percent per month, as compared to the existing (FY 2018) water rates. In this rate scenario, the dollar increase in the monthly bill amount remains the same across all levels of consumption, as only the Ready to Serve Charges were adjusted under this scenario. Therefore, the percentage increase to a customer’s bill decreases as the level of monthly consumption increases.

Figure 2-4. Residential (5/8”) Water Bill Impact (FY 2019) – Alternative Rate Structure



2.7. Water System Cash Flow Projection

A cash flow forecast for the water system for FY 2019 through FY 2023 is shown in Table 2-7 and reflects the recommended rate revenue increases shown in Table 2-4. As shown in the forecast, unrestricted cash is anticipated to be maintained at a level of at least 140 days of operating expenses, and the cash balance in the Operating Reserve Account is anticipated to be maintained at a level equal to at least 60 days of operating expenses. Therefore, in total, it is anticipated that CRW will maintain unrestricted cash reserves of at least 200 days of O&M expenses over the forecast period. This amount is in addition to the cash held within the Contingency Account. Combining all cash, including cash held for operations, as well as amounts held in the Operating Reserve Account and Contingency Account, it is estimated that CRW will maintain total cash reserves of between 598 and 645 days of cash over the forecast period.

Projected debt service coverage levels are also shown in Table 2-7. Debt service coverage is anticipated to be 1.50 times senior lien debt service in FY 2019, which is higher than the coverage requirement of 1.20, as stated in the Water Trust Indenture, and CRW’s management target of 1.45. Coverage levels associated with all senior lien debt are projected to be at least 1.45 times annual debt service in each of the remaining years of the forecast period.

Table 2-7. Water System Cash Flow Projection

Line No.	Description	Actual	Budget	Projected	Fiscal Year Ending December 31				
		FY 2017	FY 2018	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Revenues									
1	Sales to Inside City Customers	\$19,149,514	\$20,100,440	\$20,128,493	\$20,531,063	\$20,948,133	\$21,687,998	\$22,454,000	\$23,247,061
2	Sales to Outside City Customers	2,646,024	3,071,579	3,071,580	3,133,012	3,196,450	3,309,132	3,425,787	3,546,555
3	Sales to LCSWMA	707,385	703,703	729,489	730,701	731,525	732,365	733,222	734,097
4	Penalties	741,927	500,000	647,931	500,000	500,000	500,000	500,000	500,000
5	Private Fire Protection Service	318,405	315,000	317,695	315,000	315,000	315,000	315,000	315,000
6	Interest Income	67,102	26,457	111,867	124,000	109,340	109,090	111,831	114,090
7	Interest Income - DSRF	378,986	361,300	40,000	189,000	189,000	189,000	189,000	189,000
8	Other Revenue	455,614	731,500	578,155	699,810	479,810	479,810	479,810	450,810
9	Total Revenues	\$24,464,957	\$25,809,980	\$25,625,210	\$26,222,585	\$26,469,257	\$27,322,396	\$28,208,651	\$29,096,613
Operating Expenses									
Personnel:									
10	Management	\$ 557,225	\$ 713,882	\$ 572,226	\$ 628,255	\$ 655,284	\$ 681,353	\$ 708,589	\$ 737,050
11	Distribution	941,746	1,061,114	1,044,029	1,183,405	1,234,028	1,282,757	1,333,650	1,386,814
12	Treatment	1,403,247	1,441,963	1,390,103	1,418,718	1,478,089	1,534,791	1,593,935	1,655,640
13	Other	182,552	40,699	40,000	60,000	63,600	67,416	71,461	75,749
Operations:									
14	Management	\$ 478,046	\$ 506,838	\$ 453,299	\$ 492,786	\$ 473,845	\$ 487,775	\$ 502,115	\$ 516,877
15	Distribution	289,809	301,325	248,758	555,492	357,864	367,884	378,185	388,774
16	Treatment	1,123,769	1,157,618	1,147,281	1,362,972	1,373,461	1,425,805	1,480,273	1,536,958
17	Other	403,932	234,375	501,908	281,695	244,747	255,254	266,238	277,722
Other Operating Expenses:									
18	CRW Administrative Fund Expense	\$ 2,651,739	\$ 3,010,240	\$ 2,803,559	\$ 3,171,648	\$ 3,260,454	\$ 3,351,747	\$ 3,445,596	\$ 3,542,072
19	Engineering Services	571,362	320,090	170,963	148,500	155,925	163,721	171,907	180,503
20	Total Operating Expenses	\$ 8,603,427	\$ 8,788,144	\$ 8,372,126	\$ 9,303,471	\$ 9,297,298	\$ 9,618,504	\$ 9,951,950	\$10,298,159
Other Expenses									
21	Transfers to Operating Reserve Account	\$ -	\$ -	\$ -	\$ -	\$ 5,714	\$ 56,794	\$ 58,958	\$ 61,213
22	Minor Capital Outlay	159,679	242,200	200,000	283,069	236,806	243,910	251,227	258,764
23	CRW Bank and Trustee Fees	20,235	21,485	2,500	2,500	2,500	2,500	2,500	2,500
Debt Service									
Existing Debt Service:									
24	Rev Ref Bonds, Series of 2008	\$ 3,370,144	\$ 3,370,144	\$ 2,808,453	\$ -	\$ -	\$ -	\$ -	\$ -
25	Rev Ref Bonds, Series A of 2016	4,096,100	7,017,000	7,017,000	7,714,000	7,716,000	7,713,500	7,712,250	7,715,750
26	Rev Ref Bonds, Series B of 2016	2,513,200	-	-	-	-	-	-	-
27	Rev Bonds, Series of 2018	-	-	535,528	2,966,000	2,966,000	2,966,000	2,966,000	2,966,000
28	2015 PENNVEST Loan	309,049	309,049	309,049	309,049	309,049	309,049	309,049	309,049
29	2017 PENNVEST Loan	-	-	-	-	-	-	-	-
New Debt Service:									
30	Revenue Bonds	-	447,878	-	-	-	-	842,166	1,688,508
31	Total Debt Service	\$10,288,493	\$11,144,071	\$10,670,030	\$10,989,049	\$10,991,049	\$10,988,549	\$11,829,465	\$12,679,307
32	Capital Projects Funded with Cash	\$ 2,996,811	\$ 5,000,000	\$ 4,968,988	\$ 8,648,486	\$ 6,093,810	\$ 6,308,010	\$ 5,627,544	\$ 5,796,370
33	Total Revenue Requirements	\$22,068,645	\$25,195,899	\$24,213,644	\$29,226,575	\$26,627,176	\$27,218,267	\$27,721,644	\$29,096,313
34	Revenues Over (Under) Expenditures	\$ 2,396,313	\$ 614,080	\$ 1,411,566	\$ (3,003,989)	\$ (157,919)	\$ 104,129	\$ 487,006	\$ 300
35	Beginning Cash Balance				\$14,873,936	\$11,869,947	\$11,712,028	\$11,816,157	\$12,303,164
36	Revenues Over (Under) Expenditures				(3,003,989)	(157,919)	104,129	487,006	300
37	Ending Cash Balance¹				\$11,869,947	\$11,712,028	\$11,816,157	\$12,303,164	\$12,303,464
38	Ending Balance - Days O&M				459	453	442	445	430
39	Target Reserve Balance (140 days O&M)				\$ 3,618,989	\$ 3,616,588	\$ 3,741,501	\$ 3,871,175	\$ 4,005,812
40	Projected City Rate Increase				2.0%	2.0%	3.5%	3.5%	3.5%
41	DSC (Senior debt, 1.45x DS target)				1.50	1.53	1.57	1.51	1.45
42	DSC (All debt, 1.15x DS target)				1.50	1.53	1.57	1.51	1.45
43	Capital Projects - Cash Funded				\$ 8,648,486	\$ 6,093,810	\$ 6,308,010	\$ 5,627,544	\$ 5,796,370
44	Capital Projects - Funded with Easement Proceeds				-	-	9,241,495	-	-
45	Capital Projects - Grant Funded				206,000	-	-	-	-
46	Capital Projects - Funded with New Debt				-	-	-	9,582,582	9,630,090
47	Capital Projects - Total				\$ 8,854,486	\$ 6,093,810	\$15,549,505	\$15,210,126	\$15,426,460

¹Excludes cash held in the Operating Reserve Account and Contingency Account, as well as easement proceeds.

3. Wastewater System Rate Evaluation

The wastewater system rate evaluation was prepared in general accordance with “Financing and Charges for Wastewater Systems, Manual of Practice 27,” published by the Water Environment Federation, and the rate calculation for the Suburban municipalities was prepared in accordance with the Inter-Municipal Agreement between CRW and the Suburban wholesale municipalities (the “IMA”).³ As part of the wastewater system rate evaluation, an estimate of wastewater system revenue requirements was made for each year of the forecast period, the revenue requirements were proportioned to City retail and Suburban wholesale customers to estimate their cost responsibility, and City retail sewer rates were calculated based on the city retail revenue requirements. The sewer system revenue requirements were prepared using the industry accepted and practiced cash-needs approach. The objective of the cash-needs approach is to provide revenues sufficient to recover total cash requirements of the sewer system over the forecast period.

3.1. Existing Wastewater Rates

CRW’s existing wastewater rate structure is comprised of volumetric rates that differ based on service area, level of service provided, and the results of a cost of service evaluation. Customers located within the City pay for retail wastewater service, while the six Suburban municipalities served by CRW pay for wholesale wastewater service. The rates differ based on the service being provided by CRW. For example, customers located within the City utilize CRW’s treatment, conveyance, and collection systems and their rates reflect their proportionate share of the cost of operating and maintaining these facilities. However, the Suburban municipalities outside the City operate their own collection systems and primarily utilize CRW’s treatment and conveyance facilities. Therefore, the wastewater rates paid by these communities exclude costs attributable to CRW’s collection system, with the exception of a small number of Suburban connections whose wastewater flows through CRW’s collection system.

The Borough of Steelton operates its own collection system, maintains its own conveyance system and discharges wastewater directly to CRW’s Advanced Wastewater Treatment Plant (“AWTP”). Therefore, its wholesale cost of service is different than the other Suburban municipalities, as it reflects its proportionate share of the costs associated with the use of only CRW’s treatment facilities. The existing wastewater rates for all customers are provided in Table 3-1.

Table 3-1. Existing (FY 2018) Retail and Wholesale Rates

Customer Class	Cost per 1,000 gal.
Retail Customers:	
Utilization	\$6.08
Maintenance	<u>\$0.91</u>
Total	\$6.99
Wholesale Customers:	
Suburban	\$4.33
Steelton	\$2.89

³ Second Supplemental Agreement between the City of Harrisburg, Harrisburg Sewerage Authority, Borough of Penbrook, Borough of Paxtang, Township of Swatara, Township of Susquehanna, and the Township of Lower Paxton, dated September 15, 1976.

The IMA contains pricing provisions that specify how the wholesale rates are established. A summary of the pertinent sections of the IMA is provided below. References to the City in the excerpt below should be read as CRW.

5.02. Each Municipality agrees to pay the City for sewage transport, treatment, and disposal services rendered by the City with respect to sewage and wastes emanating from each such Municipality...in accordance with Schedule A of the Agreement.

5.03. Each Municipality agrees to pay to the City for each Industrial Establishment, a surcharge for pollutant load for all sewage and waste discharged to the Harrisburg Facilities and emanating from or containing a pollutant load of such strength character as to be classified as "high strength" by application of generally accepted engineering principles, or provisions of any Grant Agreement, or any state or federal law or regulation, which surcharge shall be determined by the City.

5.04. ...City agrees to deliver to each Municipality, a statement of any adjustments to the rates and charges for the next calendar year no later than December 1 of any year. The City will cause its Consulting Engineers to prepare and deliver to it no later than October 1 of each year, a report which shall include estimates of Operating Expenses, and other expenditures, costs, revenues, and changes to the rates for the next calendar year.

5.06. Each Municipality covenants to pay all taxes and assessments including income, profits, property, franchise, excise, and/or other taxes levied or assessed by Federal, State or any municipal government against the City upon or by reason of payment or receipt of any sums payable by such Municipality hereunder to the City.

6.02. Each of the Joint Municipalities agrees to pay to the City for sewage transportation, treatment, and disposal, the following separate and distinct charges for customers of any of the Joint Municipalities discharging sewage and wastes to City sewer collection lines referred to in Section 6.01:.

A. An amount equal to the amount charged per customer for sewage and wastes discharged through the Harrisburg Conveyance System; and

B. An amount equal to the separate amount charged per customer in the City as a sewer maintenance charge (as distinguished from sewer treatment charge).

6.07. If the City during the term hereof shall incur extra-ordinary costs in repairs to or in replacement of that part of its sewer lines governed by Article VI, to which sewage and wastes are discharged by one or more of the Joint Municipalities, any such Joint Municipality using that part of the sewer lines shall pay to the City such increased annual fees as are adequate to compensate the City for such additional costs...

6.08. If any Joint Municipality during the term hereof shall incur extraordinary costs in repair to or replacements of that part of its sewer collection system used jointly with the City, the City agrees to equitably share in the costs of such extraordinary repairs or replacements or to reduce annual fees paid by such Joint Municipality to the City under this Article VI..

Schedule A Rates and Charges for Sewage Services

1. The categories of rates and charges to be paid to the City for sewage transportation, treatment, and disposal services in accordance with Section 5.02 are as follows:

(a) Separate rates shall be applied to customers of the City, to customers of the Municipalities discharging wastes through the Harrisburg Conveyance System, and to customers of the Municipalities discharging wastes through the Steelton Conveyance System.

(b) For each Residence served by metered water service and for each Non-Residential establishment, a rate per 1,000 gallons of water used shall be charged, subject however to minimum charges. Water used for Non-Residential establishments shall be determined by water meter or by estimates made by the Municipality in accordance with generally accepted engineering standards and practices.

(c) For each Residence not served by metered water service, a flat rate shall be charged.

2. The rates and charges described above shall be determined in accordance with the following:

(a) Rates apply to all customers of the Municipalities and the City shall be based upon a uniform distribution of the estimated amount to be received allocable to the Operating Expenses of the Harrisburg Facilities, subject to (c).

(b) Rates applied to customers in the Municipalities shall equal the rates applied to customers of the City, plus 15 percent of the portion of the City rates that is based on upon the estimated amount to be received allocable to Lease Rental payments and a margin of the same, as required under the Lease, subject to (c).

(c) Rates applied to customers of the Municipalities discharging wastes through the Steelton Conveyance System shall be based on the Harrisburg Facilities annual revenue requirements allocated only to the sewage treatment plant.

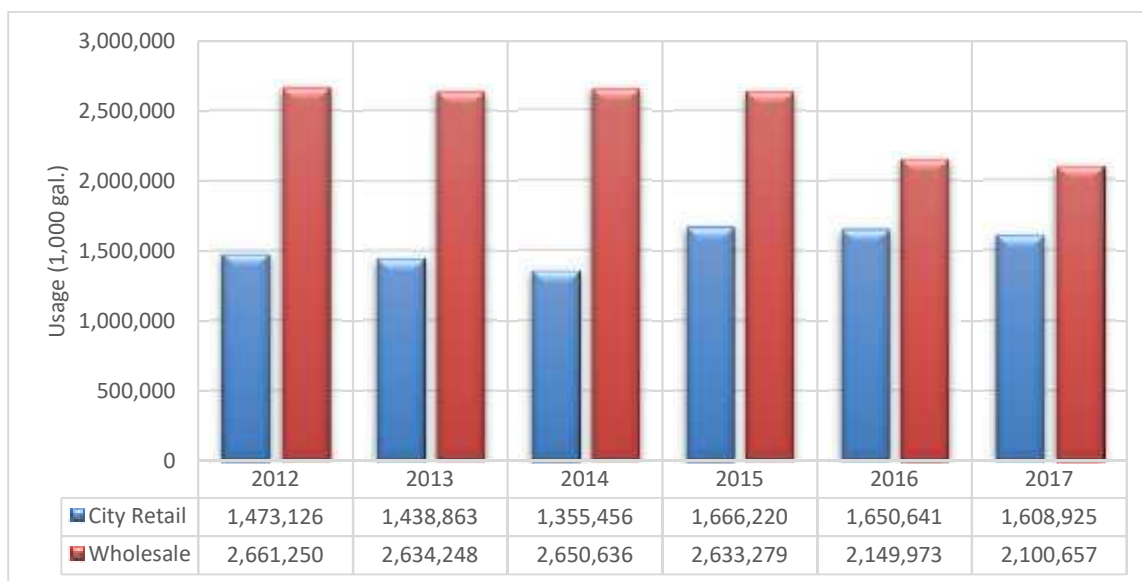
(d) The flat rate for Residences shall be based on the rate for customers with metered water service and an average water usage applicable to Residences in the service area of the Harrisburg Facilities.

(e) The minimum rates shall be those minimum rates which are imposed within each of the Municipalities and the City, respectively.

3.2. Customer Growth

The retail wastewater rate revenue in future years was projected from estimates regarding future billed wastewater flows attributable to City and Suburban customers and anticipated future retail wastewater rates. The historical annual billed volume from City and Suburban customers from FY 2012 to FY 2017 is shown in Figure 3-1.

Figure 3-1. Historical Billed Wastewater Volume (1,000 gal.)



As shown in Figure 3-1, annual billed volume attributable to retail customers has been relatively flat since 2015, with a moderate increase from FY 2014 to FY 2015. This increase is likely attributable to CRW’s continued meter repair and replacement work, as older customer meters continue to be repaired or replaced with new and more accurate water meters. Based on recent historical trends and discussions with CRW regarding the retail customer base, no change in billed retail consumption year-to-year over the forecast period was assumed.

The billed volume for wholesale customers has been relatively flat between 2012 and 2015, but decreased from FY 2015 to FY 2016. This decrease is attributable to a change in the estimated amount of billed flow per equivalent residential unit (“ERU”) from wholesale customers in which billed water consumption is not available. An estimated amount of water consumption per ERU is assumed for these customers for billing purposes. Prior to the FY 2018 wholesale rate calculation, one ERU was assumed to be equal to 65,000 gallons of wastewater volume per year; however, this amount was adjusted to 45,000 gallons per year to be more consistent with a sample of recent historical water consumption data from City and Suburban customers. If the estimated gallons per ERU had remained at 65,000 gallons as part of the FY 2018 and FY 2019 wholesale rate calculations, billed flows attributable to suburban customers would have been approximately 2.7 billion and 2.6 billion, respectively. As a result, billable flows from wholesale customers used to project wholesale revenues in each year of the forecast period were assumed to be unchanged from their FY 2017 level, as reported by these customers for billing purposes during that fiscal year. Fiscal year 2017 is the most recent year in which complete billing data is available from wholesale customers and the information from this year is used as part of the wholesale rate calculation for FY 2019.

3.3. Fiscal Requirements and Policies

3.3.1. CASH RESERVES

3.3.1.1. Operating Cash Reserves

CRW has covenanted to maintain operating cash reserves according to the terms of its existing Trust Indenture with the Bank of New York Mellon Trust Company, dated May 1, 2017 (the “Wastewater Trust Indenture”)⁴ and elects to hold additional reserves, above the minimum level specified in the Wastewater Trust Indenture, as an internal fiscal policy target. The Wastewater Trust Indenture establishes an Operating Reserve Account, with its intended purpose being to make payments and transfers required under the Wastewater Trust Indenture in the event that revenues are insufficient to pay for operating expenses and debt service. The Wastewater Trust Indenture states that CRW shall maintain an amount in this account equal to at least 60 days (one sixth) of budgeted operating expenses for the current fiscal year. As of August 2018, the balance in this account was approximately \$2.1 million, which corresponds to approximately 68 days of cash.

CRW has also established a cash management target of maintaining a total cash reserve, including amounts in the Operating Reserve Account, at a minimum of 240 days of annual operating expenses. Therefore, an additional cash reserve level equal to 180 days of operating expenses was included as a minimum cash target for the system. This amount, combined with the funds held in the Operating Reserve Account, provides CRW with a 240-day cash reserve target. In recent years, CRW has maintained cash reserves in the Sewer Revenue Fund at a level well above the minimum 180-day cash reserve target. Specifically, as of the beginning of FY 2019, operating cash on-hand was projected to be approximately \$20.3 million, or 597 days of cash, which exclude amounts held in the Operating Reserve Account. Therefore, the beginning current cash level in FY 2019 is anticipated to significantly exceed CRW’s minimum cash reserve target.

⁴ Trust Indenture dated as of May 1, 2017, between CRW and the Bank of New York Mellon Trust Company, N.A.

3.3.2. DEBT SERVICE COVERAGE

Debt service coverage is the amount of net operating revenue (operating revenue less operating expenditures) available to fund annual principal and interest payments on outstanding debt. CRW sets its retail wastewater rates at a level sufficient to maintain debt service coverage above what is required by its Wastewater Trust Indenture. Currently, CRW's outstanding debt related to the wastewater system is comprised of PENNVEST Loans (from 2009, 2014, and 2017), and a Series 2017 Revenue and Revenue Refunding Bonds. In addition, during 2018, CRW has received a funding offer from PENNVEST for a loan related the Front Street pump station project. This loan is expected to close during FY 2019.

The required level of debt service coverage on outstanding debt is 1.20 times, as described in the Wastewater Trust Indenture summarized below.

“The Authority covenants (i) it has adopted and will charge, maintain and collect throughout its service area so long as any Bonds remain Outstanding and funds for their payment have not been provided, service rates, rents and other charges, which (after making due and reasonable allowances for prompt payment discounts, if any, contingencies and a margin of error in the estimates), shall generate Net Revenues (exclusive of Special Revenues, including connection and tapping fees, which shall not constitute Gross Revenues) which shall be sufficient in each Fiscal Year to provide funds to pay (a) an amount not less than 120% of the Debt Service Requirements with respect to its Outstanding Bonds and other Parity Obligations in such Fiscal Year, (b) any amount required to replenish the Debt Service Reserve Fund in full and (c) the amount due in such Fiscal Year on all Subordinated Debt. For purposes of this covenant, Net Revenues may be increased as a result of any transfers from the Rate Stabilization Fund to the Sewer Revenue Fund during such Fiscal Year.”

CRW has established a management target for debt service coverage that is more restrictive than the bond covenant. The target consists of maintaining debt service coverage at a level of 1.40 times or greater with respect to annual debt service payments associated with current and future outstanding senior lien debt of the system. Senior lien debt was assumed to include all Revenue Bond issues and PENNVEST loans, including the anticipated 2018 PENNVEST loan.

3.4. Wastewater Revenues and Expenses

3.4.1. REVENUES

CRW's wastewater revenues include revenues from wastewater rates assessed to City retail customers and Suburban municipalities, and from other miscellaneous revenues. Wastewater revenues projected from Suburban municipalities were based on the results of the cost of service evaluation described below. The projection of wastewater revenues from City retail customers was prepared by multiplying the anticipated billed flow by the projected volumetric wastewater rates.

Miscellaneous revenues are largely generated from penalties for late payment, contractor waste fees, electricity sales, sludge handling charges, pretreatment fees, and interest revenues. Historically, these miscellaneous revenues have contributed to approximately 5.0 to 10 percent of the revenues of the system. With the exception of interest income, these revenues were projected in future years based on their FY 2019 budgeted amounts. Interest income was calculated based on the average annual balance of available cash and an interest earnings rate of approximately 0.5 percent per year. A summary of the historical and projected wastewater system revenues is provided at the end of this section in Table 3-15.

3.4.2. EXPENSES

3.4.2.1. Operation and Maintenance Expenses

Wastewater system expenses include O&M expenses and capital expenditures. In general, O&M expenses were comprised of costs related to personnel, insurance, electricity, chemicals, parts and supplies, and general administrative costs. O&M expenses also include administrative costs attributable to the wastewater system, which were anticipated to total approximately \$3.3 million in FY 2019. Individual O&M expenses were classified as labor, benefits, insurance, electricity, chemicals, professional services, minor capital, or general, and were escalated in future years based on an appropriate cost escalation factor. The escalation factors for each of the expense classifications are provided in Table 3-2 and were developed based on discussions with CRW management. A summary of the historical and projected O&M expenses is provided at the end of this section in Table 3-15.

Table 3-2. O&M Cost Escalation Factors

Expense Category	Escalation Rate
Labor	3.5%
Benefits	6.0%
Insurance	3.0%
Electricity	3.0%
Chemicals	4.0%
Professional Services	5.0%
Minor Capital/Equipment	3.0%
General	2.8%

3.4.2.2. Capital Expenditures

The projection of wastewater system capital expenditures was based on a schedule of future capital project costs as provided by CRW in its 2018 CEAR for the wastewater system, which was adjusted by CRW management to include other capital projects not included in the CEAR report. The annual capital project costs relating to collection, conveyance, pump stations, treatment plant, and long-term control plan (“LTCP”) planning and engineering, as well as other miscellaneous capital project costs anticipated to be incurred in over the forecast period are summarized in Table 3-3. The capital plan beyond FY 2019 is subject to change as CRW continues to negotiate its LTCP with the EPA.

Table 3-3. FY 2019 Wastewater System Capital Plan

Project Type	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Collection	\$8,574,174	\$7,442,400	\$4,611,516	\$4,749,861	\$5,985,084
Conveyance	6,443,195	17,341,855	0	530,450	2,185,454
Pump Stations	6,814,814	6,218,366	0	0	0
Treatment Plant	7,370,500	6,200,000	16,634,500	0	0
Long-Term Control Plan	850,000	850,000	343,608	353,916	364,534
Miscellaneous	1,130,450	1,130,450	1,164,364	1,199,294	1,235,273
Total	\$31,183,133	\$39,183,071	\$22,753,988	\$6,833,522	\$9,770,345

Note: Capital project costs shown in this table were estimated in 2018 dollars and escalated at a rate of 3.0 percent per year in future years for financial planning purposes.

3.5. Capital Project Funding

The financial plan that was prepared assumed funding of wastewater capital project costs with a mix of cash, existing bond proceeds, and new debt. Cash to fund capital projects was assumed to come from current revenues and reserves held in the Revenue Fund. No cash was assumed to come from the Operating Reserve Account. This financial plan scenario was prepared based on discussions with CRW management and CRW’s municipal bond advisor, Public Resource Advisory Group, Inc., and was prepared for the purposes of this rate study only. The financial assumptions employed should be discussed with CRW’s registered municipal advisor prior to CRW taking any action and the scenario assumptions should not be considered specific municipal securities advice.

A summary of the capital project funding plan is shown in Figure 3-2. Revenue Fund reserves were assumed to fund only about \$3.4 million, or roughly 3.1 percent, of the total capital spend over the forecast period. In addition, new Revenue Bond debt was assumed to be issued to fund project costs in each year of the forecast period. Over the forecast period, cash was assumed to be used to fund roughly 22.5 percent of the capital project costs, existing bond proceeds were assumed to fund around 7.9 percent, and a new PENNVEST loan and new Revenue Bond debt was assumed to be used to fund the remaining 69.6 percent. New Revenue Bond debt was assumed to hold a senior claim to the net revenues of the water system and was assumed with level annual debt service payments, an annual interest rate of 5.0 percent, a repayment term of 30 years, issuance costs of 1.5 percent, and a debt service reserve equal to one year’s debt service, funded with issue proceeds. In addition, a full year of debt service was assumed in the year in which the debt was anticipated to be issued.

Figure 3-2. Capital Project Funding Sources



3.6. Suburban Wholesale Wastewater Rate Calculation

3.6.1. COST CATEGORIZATION

The FY 2019 rate revenue requirement was allocated to Treatment, Conveyance, Collection, and City-Only cost categories in order to calculate the Suburban wholesale rates for FY 2019. The costs included in these categories are discussed below:

-) Treatment – Costs are related to wastewater treatment and are shared by all users of the system.

-) Conveyance – Costs are related to the use of conveyance facilities and are shared by all users of the system, except customers whose wastewater flow is conveyed through the Steelton conveyance system.
-) Collection – Costs are related to the City’s collection system and only apply to City customers.
-) City-Only – Costs are related to system costs or revenues associated with City customers and are not associated with other users of the system.

In addition, administrative costs were allocated among the four categories listed above based on the type and nature of the administrative expense. Billing and collections-related administrative expenses were allocated to City-only customers. Other administrative expenses were allocated based on the proportion of non-administrative costs allocated to each category.

The capital rate revenue requirement in FY 2019 included costs attributable to existing debt service, new debt service, and cash-funded capital. Capital projects that were planned to be completed during the upcoming fiscal year included the following:

-) Projects related to anaerobic digester roof repairs, cogeneration improvements, and primary clarifier improvements. These projects were allocated to the “Treatment” category.
-) Projects related to Front Street pump station upgrades, Paxton Creek interceptor repairs, and Arsenal Boulevard sewer improvements. These projects were allocated to the “Conveyance” cost category.
-) Projects related to collection system MS4 rehabilitation, multi-modal CCTV investigation, and green stormwater infrastructure. These projects were allocated to the “Collection” cost category.
-) Projects related to wet weather services, other miscellaneous projects, and vehicle and equipment purchases were allocated one third each to the “Treatment”, “Conveyance”, and “Collection” cost categories.

A summary of the resulting rate revenue requirement categorizations for FY 2019 is provided in Table 3-4. The O&M and capital rate revenue requirements represent annual O&M and capital costs less their respective miscellaneous revenue offsets. The total amount offset by miscellaneous revenue was approximately \$807,000, which was largely comprised of revenues received related to sludge handling charges, electric sales, contractor waste fees, and pretreatment fees.

Table 3-4. Summary of Cost Categorization Results

Description	Treatment	Conveyance	Collection	City-Only	Total
O&M Revenue Requirement	\$5,814,885	\$2,252,644	\$2,458,811	\$877,291	\$11,403,631
Allocation %	51.0%	19.8%	21.6%	7.7%	100.0%
Capital Revenue Requirement	\$4,885,847	\$2,031,529	2,431,090	\$0	\$9,348,466
Allocation %	52.3%	21.7%	26.0%	0.0%	100.0%
Total	\$10,700,732	\$4,284,173	\$4,889,901	\$877,291	\$20,752,097

3.6.2. COST ALLOCATION

The categorized costs were allocated to City and Suburban customers based on each customer’s proportionate usage of the system. A summary of the wastewater flows attributable to City customers and to each of the Suburban customers is shown in Table 3-5.

Table 3-5. Customer Units of Service

Municipality	Non-Metered Consumption ERU's ¹	Non-Metered Consumption (1,000 gal.)	Metered Consumption (1,000 gal.)	Total Consumption (1,000 gal.)	Extraneous WW Flow (1,000 gal.) ²	Total WW Volume (1,000 gal.)
City of Harrisburg	0	0	1,608,925	1,608,925	1,699,719	3,308,644
Penbrook Borough	1,333	59,985	8,600	68,585	72,455	141,040
Paxtang Borough	665	29,925	5,546	35,471	37,473	72,944
Swatara Township-via Harrisburg	0	0	381,393	381,393	402,916	784,309
Swatara Township-via Steelton	0	0	69,205	69,205	73,110	142,315
Lower Paxton Township	12,964	583,380	190,217	773,597	817,252	1,590,849
Susquehanna Township	11,061	497,723	148,205	645,927	682,378	1,328,305
Steelton Borough	0	0	126,478	126,478	133,616	260,094
Total	26,023	1,171,013	2,538,569	3,709,582	3,918,918	7,628,500

¹One ERU was assumed to be equal to 45,000 gallons of consumption per year.

²Calculated as the difference between total annual wastewater flow volume received at the AWTF in FY 2017, less billed volume for FY 2017. Extraneous flow volumes were allocated among customer classes based on their proportionate billed volume amounts.

As shown in Table 3-5, an estimate of the amount of consumption per equivalent residential unit (“ERU”) was made and used as a proxy of flow for the proportion of each wholesale municipality’s customer base where metered consumption was not available. As shown in Table 3-6, the five-year average of consumption per residential account from FY 2013 to FY 2017 for CRW residential customers was approximately 48,900 gallons per year, which is comparable to the assumption of 45,000 gallons per year for one ERU that was assumed.

Table 3-6. Historical CRW Water Consumption per Residential Account

Fiscal Year	Billed Consumption (1,000 gal.)	Number of Customers	Annual Billed Water Consumption per Customer (1,000 gal.)
2013	829,976	18,456	45.0
2014	766,620	18,440	41.6
2015	987,569	18,728	52.7
2016	987,559	18,682	52.9
2017	964,886	18,357	52.6
5-Year Historical Average			48.9

Source: Historical billing and customer data provided by CRW.

The units of service that were used to allocate costs were based on metered and billed water consumption. This implicitly assumes that inflow and infiltration (“I&I”) flow volumes are proportional to the billed water consumption amounts. As a result, I&I costs were also implicitly distributed proportionally to billed flows. As CRW obtains additional conveyance and collection flow data, the distribution of I&I flow volumes between City retail and Suburban wholesale customers should be revisited.

The units of service were distributed to the four cost categories based on each customer’s use of the wastewater system. This is shown in Table 3-7. In addition, the unit cost of service was calculated by dividing the categorized costs by the units of service applicable to each cost category. The unit cost of service for O&M and capital costs is shown in Table 3-8.

Table 3-7. Allocation of Units of Service to Cost Driver Categories

Municipality	Treatment	Conveyance	Collection	City-Only
City of Harrisburg	100%	100%	100%	100%
Penbrook Borough	100%	100%	0%	0%
Paxtang Borough	100%	100%	0%	0%
Swatara Township-via Harrisburg	100%	100%	0%	0%
Swatara Township-via Steelton	100%	0%	0%	0%
Lower Paxton Township	100%	100%	0%	0%
Susquehanna Township	100%	100%	0%	0%
Steelton Borough	100%	0%	0%	0%

Table 3-8. Unit Cost of Service

Description	Treatment	Conveyance	Collection	City-Only
Units of Service (1,000 gal.)	3,709,582	3,513,898	1,608,925	1,608,925
Operating Revenue Requirement	\$5,814,885	\$2,252,644	\$2,458,811	\$877,291
Capital Revenue Requirement	\$4,885,847	\$2,031,529	\$2,431,090	\$0
Operating Unit Cost (\$/1,000 gal.)	\$1.57	\$0.64	\$1.53	\$0.55
Capital Unit Cost (\$/1,000 gal.)	\$1.32	\$0.58	\$1.51	\$0.00

3.6.3. WHOLESALE RATE CALCULATION

The FY 2019 wholesale rates for Suburban customers were calculated using the unit cost of service for each cost category and the units of service associated with each customer type. Since the City does not provide collection service to Suburban municipalities, the Suburban wholesale rates exclude the unit cost for the Collection category. Similarly, a separate wholesale rate is shown for Steelton, since Steelton’s wastewater is conveyed to CRW’s AWTP through the Steelton conveyance system, which is owned, operated, and maintained by Steelton Borough. As such, the wholesale rate for Steelton includes CRW’s cost of treatment but excludes CRW’s cost for conveyance and collection. The FY 2019 calculated Suburban wholesale rates are shown in Table 3-9. Additional wholesale rate calculation details are provided in Appendix A of this report. In addition, there is a small amount of Suburban flow that is conveyed through CRW’s collection system. For this portion of flow, the Suburban municipalities should pay the unit collection rate of \$3.27 per 1,000 gallons that is shown in Table 3-9 (\$1.53 per 1,000 gallons for O&M, plus \$1.74 per 1,000 gallons for Capital), in addition to the calculated treatment and conveyance rates.

No adjustment was made to reflect an estimated true-up of the FY 2018 wholesale rates to both Suburban and Steelton customers, as it is anticipated that such a true-up will be completed once actual costs and billing data for FY 2018 is available.

Table 3-9. Calculated Wholesale Rates (FY 2019)

Description	City	Suburban	Steelton
O&M Rate:			
Treatment	\$1.57	\$1.57	\$1.57
Conveyance	\$0.64	\$0.64	\$0.00
Collection	\$1.53	\$0.00	\$0.00
City-Only	<u>\$0.55</u>	<u>\$0.00</u>	<u>\$0.00</u>
Total O&M Rate per 1,000 gal.	\$4.28	\$2.21	\$1.57
Capital Charge (Lease Rental Rates):			
Treatment	\$1.32	\$1.51	\$1.51
Conveyance	\$0.58	\$0.66	\$0.00
Collection	\$1.51	\$0.00	\$0.00
City-Only	\$0.00	\$0.00	\$0.00
Other	<u>-\$0.04</u>	<u>\$0.00</u>	<u>\$0.00</u>
Total Charge per 1,000 gal.	\$3.37	\$2.18	\$1.51
Total Rate per 1,000 gal.	\$7.65	\$4.39	\$3.08
Existing Rate per 1,000 gal.	\$6.99	\$4.33	\$2.89
Percent Change	9.5%	1.3%	6.6%

¹Includes Penbrook and Paxtang Borough, Swatara, Lower Paxton, and Susquehanna Township.

²Steelton Borough and a portion of Swatara Township do not share in conveyance system costs.

³Reflects a 15 percent adjustment to the unit costs per Section 2b of Schedule A of the Intermunicipal Agreement.

⁴Use of cash reserves and other adjustments.

3.7. Wastewater System Rate Revenue Requirements

A summary of the rate revenue requirements for City customers is shown in Table 3-10. Rate revenue requirements include O&M expenses, debt service, minor capital outlays, and cash-funded capital project expenditures. Non-rate revenues were subtracted from these expenses in order to determine the annual retail rate revenue requirement. Wholesale revenue, which was estimated by multiplying the wholesale rates calculated in Section 3.6 by the projected amount of Suburban customer wastewater flow in future years, was included in the calculation in Table 3-10 (Line 9) and serves to offset the City's rate revenue requirements. When positive, the Sources and Uses of Funds amounts (Line 12) represent the use of cash from current revenues to fund capital project costs, with the accumulation of cash to be carried over into future years. When negative, these amounts represent the use of cash from current revenues and cash on-hand to fund capital project costs.

As shown in Table 3-10 (Line 18), a rate increase in City retail rate revenue is anticipated to be needed each year, from FY 2019 through FY 2023, to fund the annual costs of the system and to meet fiscal policy targets related to cash reserves and debt service coverage. The rate revenue increases are projected to be 9.5 percent in FY 2019 and FY 2020, 11.5 percent in FY 2021 and FY 2022, and 7.0 percent in FY 2023.

Table 3-10. FY 2019 Wastewater Rate Revenue Requirement

Line No.	Description	Fiscal Year Ending December 31				
		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
O&M Expenses and Transfers						
1	Operating and Maintenance Expenses	\$ 12,260,638	\$ 12,649,482	\$ 13,082,364	\$ 13,531,607	\$ 13,997,907
2	Minor Capital	291,100	299,833	308,828	318,093	327,636
3	Transfer to Operating Reserve Account	-	73,646	76,418	79,307	82,319
4	Total O&M and Transfers Out	\$ 12,551,738	\$ 13,022,961	\$ 13,467,610	\$ 13,929,007	\$ 14,407,861
Capital Expenditures						
5	Debt Service	\$ 4,905,466	\$ 8,439,890	\$ 9,692,319	\$ 9,821,167	\$ 10,130,763
6	Cash Funded Capital	4,500,000	4,500,000	4,892,500	5,304,500	5,463,635
7	Total Capital Expenditures	\$ 9,405,466	\$ 12,939,890	\$ 14,584,819	\$ 15,125,667	\$ 15,594,398
8	Total O&M and Capital	\$ 21,957,204	\$ 25,962,852	\$ 28,052,428	\$ 29,054,674	\$ 30,002,259
Less: Non-Rate Revenues						
9	Wholesale Revenue	\$ (8,962,368)	\$ (11,517,489)	\$ (12,555,977)	\$ (11,110,498)	\$ (11,730,643)
10	Miscellaneous Revenue	(1,112,000)	(1,112,000)	(1,112,000)	(1,112,000)	(1,112,000)
11	Interest Revenue	(93,107)	(90,280)	(87,461)	(83,535)	(79,367)
12	Sources and Uses of Funds	(423,861)	(797,458)	(420,119)	(1,275,929)	(524,447)
13	Total Non-Rate Revenues	\$(10,591,336)	\$(13,517,226)	\$(14,175,556)	\$(13,581,962)	\$(13,446,457)
14	Rate Revenue Requirement	\$ 11,365,868	\$ 12,445,625	\$ 13,876,872	\$ 15,472,713	\$ 16,555,802
Adjustment for Revenue from Other Sources						
15	O&M Expenses	\$ 2,441,263	\$ 360,193	\$ (230,828)	\$ 1,679,974	\$ 1,542,851
16	Capital Expenditures	8,924,605	12,085,432	14,107,700	13,792,738	15,012,951
17	Rate Revenue Requirement	\$ 11,365,868	\$ 12,445,625	\$ 13,876,872	\$ 15,472,713	\$ 16,555,802
18	Proposed Retail Wastewater Rate Adjustment	9.5%	9.5%	11.5%	11.5%	7.0%

3.8. Proposed Retail and Wholesale Wastewater Rates

3.8.1. EXISTING RATE STRUCTURE

The calculated and proposed City retail and Suburban wholesale wastewater rates for FY 2019 through FY 2023 are shown in Table 3-11. The wholesale wastewater rates projected for FY 2020 through FY 2023 were based on projected O&M costs, debt service, and capital project expenditures in these years, as well as FY 2017 billing data, as no growth or decline in billed volume for wholesale customers was assumed in future years.

Table 3-11. Proposed Retail and Wholesale Wastewater Rates

Retail Volumetric Rate (1,000 gal.)						
Component	Existing FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Utilization	\$6.08	\$6.65	\$7.29	\$8.13	\$9.06	\$9.70
Maintenance	\$0.91	\$1.00	\$1.09	\$1.22	\$1.36	\$1.45
Total	\$6.99	\$7.65	\$8.38	\$9.35	\$10.42	\$11.15

Wholesale Volumetric Rate (1,000 gal.)						
Municipality	Existing FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
All, except Steelton	\$4.33	\$4.39	\$5.73	\$6.14	\$5.48	\$5.80
Steelton	\$2.89	\$3.08	\$3.11	\$4.36	\$3.43	\$3.46

3.8.2. ALTERNATIVE RATE STRUCTURE

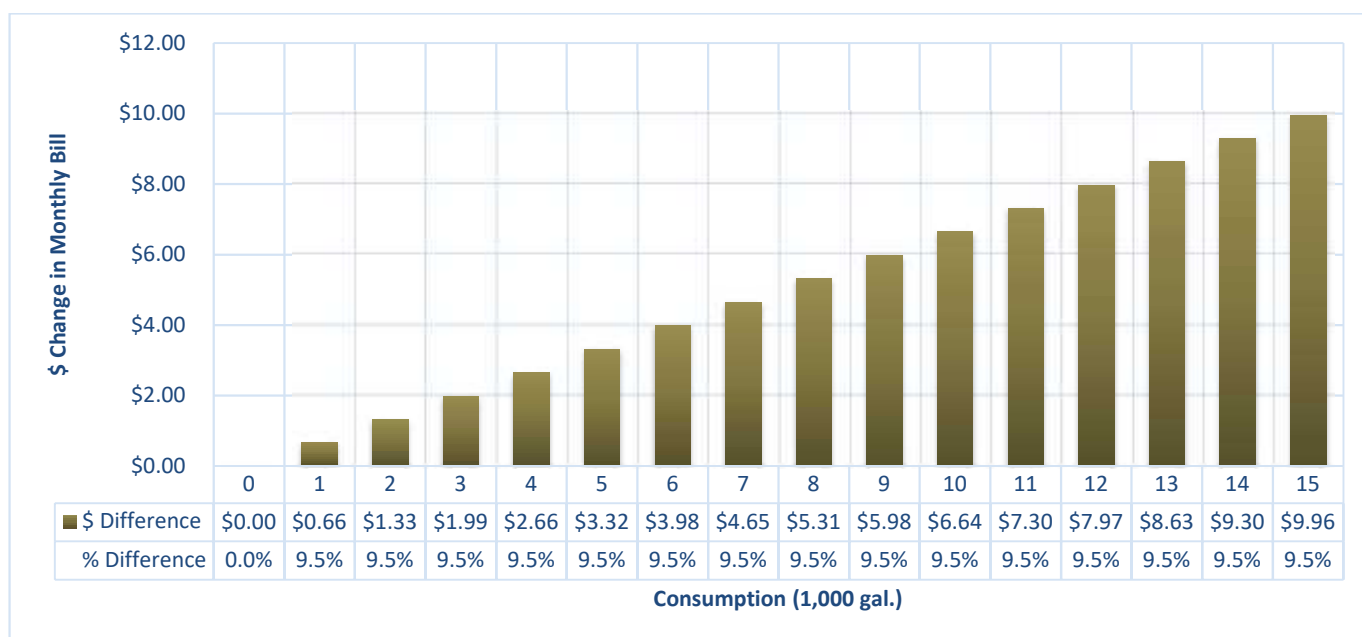
As CRW continues to plan and implement its City Beautiful H2O program, as well as address its aging infrastructure issues, there will be continued need to raise wastewater rates, which in turn will raise the cost of wastewater service and increase affordability concerns for some customers. CRW could consider modifying its wastewater rate structure in the future to address affordability concerns while equitably recovering these added costs from customers. For example, the portion of the City Beautiful H2O program that addresses wet weather issues could be recovered with a separate wastewater charge, stormwater fee, or a combination of the two. A separate wastewater charge or stormwater fee that recovers costs from customers based on impervious area, rather than billed water consumption, could lower the burden on residential customers by recovering more wet weather costs from non-residential customers that typically have larger impervious areas. CRW is currently evaluating the potential for implementing a separate stormwater fee to recover certain stormwater-related costs separate from the wastewater rate structure.

As another alternative to the current rate structure, CRW could consider adding a fixed charge to recover a portion of the capital costs of the system on a fixed revenue basis. Some wastewater utilities recover a portion of the cost of treating I&I from a fixed charge and a portion from a volume charge to reflect that the number of connections in the wastewater system reflects the size of the system and the greater potential for infiltration through poor joints and cracked pipes, and the inflow through roof and foundation drains. In addition, some wastewater utilities recover a portion of annual debt service with a fixed charge to better match fixed costs with a fixed revenue stream, though introducing a fixed charge to the wastewater rate structure could exacerbate affordability issues in the future. However, establishing a fixed charge that is tiered by customer usage or meter size could help to alleviate some of the affordability concerns.

3.9. Retail Customer Bill Impacts

Anticipated customer bill impacts associated with the calculated FY 2019 retail wastewater rates for City customers are provided in Figure 3-3. This figure shows the anticipated bill impacts across a range of consumption for a residential customer with a 5/8-inch water meter. As shown in Figure 3-3, a residential customer with billed flow of between 4,000-5,000 gallons per month would experience an increase in their wastewater bill of \$2.66 to \$3.32, or 9.5 percent per month, as compared to the existing (FY 2018) retail wastewater rates. In addition, note that the dollar increase in the monthly bill amount becomes larger as the level of consumption rises. However, the percentage increase to a customer's bill remains the same across all levels of consumption, at 9.5 percent.

Figure 3-3. Retail Residential (5/8”) Wastewater Bill Impact (FY 2019)



3.10. Wastewater System Cash Flow Projection

A cash flow forecast for the wastewater system is shown in Table 3-12. As shown in the forecast, unrestricted cash is anticipated to be maintained at a level of at least 180 days of O&M expenses, and the cash balance in the Operating Reserve Account is anticipated to be maintained at a level equal to at least 60 days of operating expenses. Therefore, in total, it is anticipated that CRW will maintain unrestricted cash reserves of at least 240 days of O&M expenses over the forecast period. The projected debt service coverage levels are also shown in Table 3-12. Debt service coverage levels are anticipated to be at least 1.40 times the debt service of annual senior lien debt in each year over the forecast period.

Table 3-12. Wastewater System Cash Flow Projection

Line No.	Description	Actual FY 2017	Budget FY 2018	Projected FY 2018	Budgeted FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Revenues									
1	Sales to City Customers	\$ 9,477,056	\$ 9,958,515	\$10,379,788	\$11,365,868	\$12,445,625	\$13,876,872	\$15,472,713	\$16,555,802
2	Sales to Public Authorities	8,696,513	9,025,935	9,033,085	8,962,368	11,517,489	12,555,977	11,110,498	11,730,643
3	Penalties	347,698	275,000	277,356	275,000	275,000	275,000	275,000	275,000
4	Sludge Handling	28,368	20,000	53,606	60,000	60,000	60,000	60,000	60,000
5	Electricity Sales	49,773	50,000	68,755	50,000	50,000	50,000	50,000	50,000
6	Interest Income	137,945	60,673	196,188	93,107	90,280	87,461	83,535	79,367
7	Interest Income - DSRF	-	-	-	57,000	57,000	57,000	57,000	57,000
8	Other Revenue	394,134	345,500	692,438	670,000	670,000	670,000	670,000	670,000
9	Total Revenues	\$19,131,486	\$19,735,624	\$20,701,216	\$21,533,343	\$25,165,394	\$27,632,310	\$27,778,745	\$29,477,813
Operating Expenses									
Personnel:									
10	Management	\$ 609,064	\$ 711,398	\$ 709,527	\$ 835,477	\$ 870,348	\$ 903,619	\$ 938,317	\$ 974,512
11	Treatment	1,377,940	1,516,824	1,402,883	1,551,775	1,617,428	1,680,376	1,746,077	1,814,668
12	Maintenance	577,335	601,861	599,759	633,995	661,182	687,375	714,734	743,319
13	Field Maintenance	1,014,882	1,375,338	1,180,193	1,323,043	1,379,381	1,433,522	1,490,053	1,549,091
14	Other	141,003	216,782	268,000	268,000	284,080	301,125	319,192	338,344
Operations:									
15	Management	\$ 538,962	\$ 624,913	\$ 563,819	\$ 551,277	\$ 567,462	\$ 584,122	\$ 601,272	\$ 618,926
16	Treatment	2,253,821	2,077,357	2,185,093	2,266,425	2,339,011	2,414,017	2,491,527	2,571,629
17	Maintenance	151,616	179,300	147,288	162,700	167,256	171,939	176,753	181,702
18	Field Maintenance	131,063	193,558	217,926	266,642	275,284	284,218	293,455	303,004
19	Other	703,770	706,375	428,460	447,200	423,316	443,588	464,850	487,148
Other Operating Expenses:									
20	CRW Admin Fund Expense	\$ 2,778,426	\$ 3,127,864	\$ 2,917,991	\$ 3,301,104	\$ 3,393,535	\$ 3,488,554	\$ 3,586,233	\$ 3,686,648
21	Shared Services	488,247	692,083	572,707	650,000	668,200	686,910	706,143	725,915
22	Total Operating Expenses	\$10,766,129	\$12,023,653	\$11,193,646	\$12,257,638	\$12,646,482	\$13,079,364	\$13,528,607	\$13,994,907
Other Expenses									
23	Transfers to Operating Reserve	\$ -	\$ -	\$ -	\$ -	\$ 73,646	\$ 76,418	\$ 79,307	\$ 82,319
24	Minor Capital Outlay	246,539	284,100	299,493	291,100	299,833	308,828	318,093	327,636
25	CRW Bank and Trustee Fees	25,118	3,500	3,000	3,000	3,000	3,000	3,000	3,000
Debt Service									
Existing Debt Service									
26	1998 PENNVEST Loan	\$ 73,201	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
27	2009 PENNVEST Loan	114,120	114,120	114,120	114,120	114,120	114,120	114,120	114,120
28	2014 PENNVEST Loan	1,104,275	1,186,527	1,186,527	1,186,527	1,186,527	1,186,527	1,208,649	1,210,660
29	2017 PENNVEST Loan	-	285,103	9,854	64,166	197,427	197,427	197,427	197,427
30	Series 2014 Rev Bonds, Series B	918,357	-	-	-	-	-	-	-
31	Series 2017 Rev and Ref Bonds	340,583	2,851,050	2,851,050	2,845,050	2,851,450	2,848,950	2,848,250	2,853,250
New Debt Service									
32	Revenue Bonds	\$ -	\$ 499,830	\$ -	\$ 627,436	\$ 3,064,231	\$ 4,319,159	\$ 4,426,586	\$ 4,729,171
33	2018 PENNVEST Loan	-	-	-	68,167	1,026,136	1,026,136	1,026,136	1,026,136
34	Total Debt Service	\$ 2,550,535	\$ 4,936,629	\$ 4,161,551	\$ 4,905,466	\$ 8,439,890	\$ 9,692,319	\$ 9,821,167	\$10,130,763
35	Capital Projects Funded with Cash	\$ 4,000,000	\$ 4,000,000	\$ 4,611,029	\$ 4,500,000	\$ 4,500,000	\$ 4,892,500	\$ 5,304,500	\$ 5,463,635
36	Total Revenue Requirements	\$17,588,322	\$21,247,882	\$20,268,719	\$21,957,204	\$25,962,852	\$28,052,428	\$29,054,674	\$30,002,259
37	Revenues Over (Under) Expenditures	\$ 1,543,164	\$ (1,512,258)	\$ 432,497	\$ (423,861)	\$ (797,458)	\$ (420,119)	\$ (1,275,929)	\$ (524,447)
38	Beginning Balance				\$20,321,408	\$19,897,547	\$19,100,089	\$18,679,970	\$17,404,041
39	Revenues Over (Under) Expenditures				(423,861)	(797,458)	(420,119)	(1,275,929)	(524,447)
40	Ending Balance¹				\$19,897,547	\$19,100,089	\$18,679,970	\$17,404,041	\$16,879,594
41	Ending Balance - Days O&M				584	544	514	463	434
42	Target Reserve Balance (180 days O&M)				\$ 6,130,319	\$ 6,324,741	\$ 6,541,182	\$ 6,765,804	\$ 6,998,953
43	Projected City Rate Increase				9.5%	9.5%	11.5%	11.5%	7.0%
44	DSC (Senior debt, 1.40x DS target)				1.81	1.43	1.45	1.40	1.48
45	DSC (All debt, 1.15x DS target)				1.81	1.43	1.45	1.40	1.48
46	Capital Projects - Cash Funded				\$ 4,500,000	\$ 4,500,000	\$ 4,892,500	\$ 5,304,500	\$ 5,463,635
47	Capital Projects - Funded with Series 2017 Bonds				8,664,194	-	-	-	-
48	Capital Projects - Funded with 2018 PENNVEST Loan				9,088,592	-	-	-	-
49	Capital Projects - Funded with New Revenue Bonds				8,930,347	34,683,071	17,861,488	1,529,022	4,306,710
50	Capital Projects - Total				\$31,183,133	\$39,183,071	\$22,753,988	\$ 6,833,522	\$ 9,770,345

¹Excludes cash held in the Operating Reserve Account, as well as any existing bond or loan proceeds.

4. Residential Bill Comparison

CRW’s proposed water and wastewater rates were compared to the rates currently in effect for other utilities within the region by calculating and comparing estimated water and wastewater bills for residential customers. In addition to CRW, the following utilities were included in the comparison of estimated bills:

-) City of Allentown, PA
-) City of Bethlehem, PA
-) City of Lancaster, PA
-) Lower Paxton Township, PA
-) Paxtang Borough, PA
-) Penbrook Borough, PA
-) Pennsylvania American Water
-) Steelton Borough, PA
-) Susquehanna Township, PA
-) Swatara Township, PA

Monthly bills were estimated for residential customers based on an assumed amount of water consumption, wastewater flow, and meter size. Therefore, to calculate the estimated monthly bills, a 5/8-inch meter and 4,500 gallons (6.02 hundred cubic feet) of water consumption and wastewater flow were assumed.

4.1. Water Bill Comparison

The comparison of estimated residential monthly water bills is shown in Figure 4-1. CRW’s existing (FY 2018) water rates, as well as its proposed FY 2019 water rates, were included in each comparison. As shown in the figure, CRW’s estimated monthly bill under existing (FY 2018) and proposed FY 2019 rates were less than the estimated monthly bills of six of the other communities surveyed. Note that the estimated monthly water bill for residential customers was assumed to be the same for Lower Paxton, Paxtang, Penbrook, Susquehanna, and Swatara, as water service is provided by SUEZ Water in these communities.⁵

Figure 4-1. Estimated Monthly Residential Water Bill Comparison

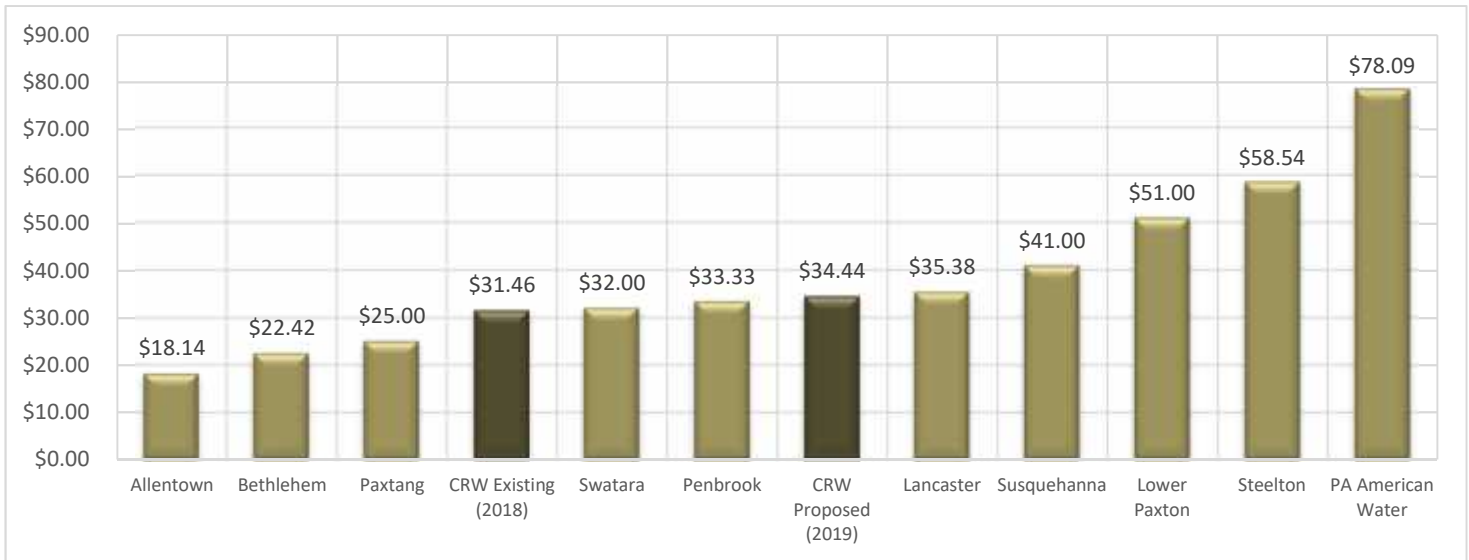


⁵ SUEZ Water bills are based on proposed rates as of November 2018.

4.2. Wastewater Bill Comparison

The comparison of estimated monthly wastewater bills is shown by customer type in Figure 4-2. As shown in the figure, CRW’s estimated monthly residential wastewater bill under its existing retail wastewater rates was less than seven of the other communities surveyed, while its estimated monthly bill under the proposed FY 2019 rates was less than five of the other communities surveyed. As discussed previously, CRW provides wholesale treatment service to Steelton and a portion of Swatara. Therefore, their estimated monthly bill amounts include CRW’s wholesale treatment rate, as well as the local collection and conveyance costs in these communities. In addition, CRW provides wholesale treatment and conveyance service to Lower Paxton, Paxtang, Penbrook, Susquehanna, and a portion of Swatara. Therefore, their estimated monthly bill amounts include CRW’s wholesale rates for treatment and conveyance service, as well as the local collection costs in these communities.

Figure 4-2. Estimated Monthly Residential Wastewater Bill Comparison



5. Conclusions and Recommendations

The following are the conclusions and recommendations of this rate study.

5.1. Water System

- J A water rate revenue increase of 2.0 percent is recommended in FY 2019. This increase was applied proportionally to all rate components to calculate the proposed FY 2019 rates; however, implementing higher fixed charges is a trend in the industry in order to improve revenue stability and respond to trends of declining water consumption.
- J Under the proposed FY 2019 water rates, the Ready to Serve Charge for a customer with a 5/8” meter would increase from \$7.47 to \$7.62 per month, and the volume charge would increase from \$9.46 per 1,000 gallons to \$9.65 per 1,000 gallons at the beginning of fiscal year FY 2019. This rate structure is expected to generate approximately 30 percent of rate revenues from the Ready to Serve Charge and approximately 70 percent from the volume rate.
- J The recommended water rate increase in FY 2019 would raise the typical residential bill by \$1.01 per month, from \$50.04 to \$51.05 assuming consumption of 4,500 gallons per month. This increase, if adopted, corresponds to a water rate increase of 2.0 percent for the typical residential customer. Water rate increases of 2.0 percent in FY 2020 and 3.5 percent in FY 2021, FY 2022, and FY 2023 are anticipated to cover projected costs and to meet fiscal requirements and targets in these years.
- J Based on the results of the rate comparison, CRW’s proposed FY 2019 water rates are comparable to the other communities included in the comparison. For example, the monthly residential water bill based on proposed FY 2019 rates for a customer using 4,500 gallons per month was calculated to be \$51.05 per month, which was less than six of the other communities surveyed.

5.2. Wastewater System

- J A retail wastewater rate revenue increase of 9.5 percent is recommended in FY 2019. This increase was applied proportionally to the sewer utilization charge and the sewer maintenance charge (i.e., the retail volumetric rate) and results in the same percent increase for retail water customers.
- J CRW is currently considering establishing a separate wet weather stormwater fee to recover the cost of managing sewer wet weather flows from customers proportionally based on a customer’s impervious area. A separate wastewater charge or stormwater fee that recovers costs from customers based on impervious area, rather than billed water consumption, could lower the burden on residential customers by recovering more wet weather costs from non-residential customers that typically have larger impervious areas. Furthermore, CRW could consider adding a fixed charge to the City retail wastewater rate structure to recover a portion of the capital costs of the system on a fixed revenue basis. Some wastewater utilities recover a portion of the cost of treating inflow and infiltration from a fixed charge and a portion from a volume charge to reflect that the number of connections in the wastewater system reflects the size of the system and the greater potential for infiltration through poor joints and cracked pipes, and the inflow through roof and foundation drains. In addition, some wastewater utilities recover a portion of annual debt service with a fixed charge to better match fixed costs with a fixed revenue stream.

- J The recommended retail wastewater increase in FY 2019 would raise the typical residential bill by \$2.98 per month, from \$31.46 to \$34.44 assuming 4,500 gallons of discharged wastewater per month. A retail rate revenue increase of 9.5 percent is projected in FY 2020, while increases of 11.5 percent, 11.5 percent, and 7.0 percent are projected in FY 2021, FY 2022, and FY 2023, respectively, to cover projected costs and to meet fiscal requirements and targets in these years.
- J The wastewater cost of service evaluation results indicated that the unit cost of providing wastewater and conveyance service to Suburban wholesale customers will increase from \$4.33 per 1,000 gallons in FY 2018 to \$4.39 per 1,000 gallons in FY 2019, and the unit cost of providing wastewater service to Steelton will increase from \$2.89 per 1,000 gallons to \$3.08 per 1,000 gallons in FY 2019.
- J While no true-up provision is included in the IMA between CRW and the Suburban communities, a true-up calculation applicable to the FY 2018 wholesale rates is expected to be performed during FY 2019 with actual costs and billing data from FY 2018. If the true-up determines that CRW has received an overpayment from wholesale customers in FY 2018, this amount is anticipated to be transferred by CRW to each suburban customer in FY 2019.
- J The units of service for Suburban wastewater customers with non-metered consumption was assumed to be 45,000 gallons per year. This change was made as part of the wholesale rate calculation for FY 2018 based on a sample of water billing data provided by a consultant to the Suburban customers. Decreasing the amount of wastewater volume associated with one ERU from 65,000 to 45,000 gallons increases the wholesale rates; however, with this adjustment, the amount paid per ERU by Suburban customers to CRW over the course of the fiscal year is lower, as the billed volume per ERU is reduced from 65,000 to 45,000 gallons per year.
- J Based on the results of the rate comparison, CRW's retail wastewater rates are comparable to the other utilities included in the survey. For example, the monthly residential bill based on proposed FY 2019 retail rates for customers discharging 4,500 gallons per month was calculated to be \$34.44, which is less than five of the other utilities surveyed.

APPENDIX A:

Wholesale Wastewater Rate Calculation Details

Capital Region Water
Wholesale Rate Calculation
Operating Expense Allocation

Table A -1

Line	Description	FY 2019 Budgeted Cost	Alloc Ref	Allocation %						Allocation \$					
				Treatment	Conveyance	Collection	Admin	City Only	Total	Treatment	Conveyance	Collection	Admin	City Only	Total
	<u>Management:</u>														
1	IT Computer Software	44,200		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	44,200	-	44,200
2	IT Computer Hardware	32,550		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	32,550	-	32,550
3	Mgmt Salaries & Wages	566,938	1	46.5%	24.1%	29.5%	0.0%	0.0%	100.0%	263,377	136,493	167,068	-	-	566,938
4	Mgmt Overtime Pay	-	1	46.5%	24.1%	29.5%	0.0%	0.0%	100.0%	-	-	-	-	-	-
5	Mgmt Payroll Taxes	43,371	1	46.5%	24.1%	29.5%	0.0%	0.0%	100.0%	20,148	10,442	12,781	-	-	43,371
6	Mgmt Health Benefits	164,404	1	46.5%	24.1%	29.5%	0.0%	0.0%	100.0%	76,376	39,581	48,447	-	-	164,404
7	Mgmt Life/Disab Insurance	4,177	1	46.5%	24.1%	29.5%	0.0%	0.0%	100.0%	1,940	1,006	1,231	-	-	4,177
8	Mgmt Pension Contribution	28,914	1	46.5%	24.1%	29.5%	0.0%	0.0%	100.0%	13,432	6,961	8,521	-	-	28,914
9	Mgmt Workers Comp Ins Prem	25,405	1	46.5%	24.1%	29.5%	0.0%	0.0%	100.0%	11,802	6,116	7,486	-	-	25,405
10	Mgmt Unemployment Comp	2,268	1	46.5%	24.1%	29.5%	0.0%	0.0%	100.0%	1,054	546	668	-	-	2,268
11	Ww Misc EE Benefits	-	1	46.5%	24.1%	29.5%	0.0%	0.0%	100.0%	-	-	-	-	-	-
12	Mgmt Conferences & Training	7,750	5	51.5%	20.9%	27.6%	0.0%	0.0%	100.0%	3,989	1,618	2,143	-	-	7,750
13	Mgmt Travel and Mileage	800		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	800	-	800
14	Mgmt Lodging	-		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	-	-	-
15	Mgmt Train/Conf Meals	-		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	-	-	-
16	Mgmt Memberships and Dues	2,000		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	2,000	-	2,000
17	Mgmt Tuition	7,500	5	51.5%	20.9%	27.6%	0.0%	0.0%	100.0%	3,860	1,566	2,074	-	-	7,500
18	Mgmt Office Supplies	2,500		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	2,500	-	2,500
19	Mgmt Off Equip - Lease/Mtc	3,600		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	3,600	-	3,600
20	Mgmt Telephone & Internet	24,000		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	24,000	-	24,000
21	Mgmt Printing	-		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	-	-	-
22	Mgmt Postage	-		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	-	-	-
23	Mgmt Meals - Internal	2,000		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	2,000	-	2,000
24	Mgmt Uniforms	26,850	1	46.5%	24.1%	29.5%	0.0%	0.0%	100.0%	12,473	6,464	7,912	-	-	26,850
25	Mgmt Personal Safety	1,000	1	46.5%	24.1%	29.5%	0.0%	0.0%	100.0%	465	241	295	-	-	1,000
26	Mgmt Advertising	-		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	-	-	-
27	Mgmt Software License Fees	-		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	-	-	-
28	Ww Mgmt Misc Supplies/Expenses	1,000		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	1,000	-	1,000
29	Document Management	4,000		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	4,000	-	4,000
30	Mgmt Auto Insurance	30,906	13	22.9%	26.0%	51.1%	0.0%	0.0%	100.0%	7,071	8,028	15,807	-	-	30,906
31	Mgmt Commercial Prop Ins	150,125		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	150,125	-	150,125
32	Mgmt Crime Insurance	1,428		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	1,428	-	1,428
33	Mgmt Flood Insurance	-		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	-	-	-
34	Mgmt General Liab Ins	79,040		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	79,040	-	79,040
35	Mgmt Pollution Liab Ins	33,031		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	33,031	-	33,031

Capital Region Water
Wholesale Rate Calculation
Operating Expense Allocation

Table A -1

Line	Description	FY 2019 Budgeted Cost	Alloc Ref	Allocation %					Allocation \$						
				Treatment	Conveyance	Collection	Admin	City Only	Total	Treatment	Conveyance	Collection	Admin	City Only	Total
	<u>Management:</u>														
36	Mgmt Umbrella Liab Ins	59,997		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	59,997	-	59,997
37	Deductible/Retention/Claims	20,000		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	20,000	-	20,000
38	Mgmt Vehicle Service Contr	-	13	22.9%	26.0%	51.1%	0.0%	0.0%	100.0%	-	-	-	-	-	-
39	Mgmt Permits	7,000		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	7,000	-	-	-	-	7,000
40	Mgmt Other Contr Maint	-		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	-	-	-
41	Mgmt Misc Contr Serv	-		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	-	-	-
42	Mgmt Computer Software	-		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	-	-	-
43	Mgmt Office Equipment	5,000		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	5,000	-	5,000
44	Mgmt Office Furniture	5,000		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	5,000	-	5,000
	<u>Treatment:</u>														
45	Trmt Salaries & Wages	882,703	2	91.0%	9.0%	0.0%	0.0%	0.0%	100.0%	803,554	79,149	-	-	-	882,703
46	Trmt Overtime Pay	137,413	2	91.0%	9.0%	0.0%	0.0%	0.0%	100.0%	125,092	12,321	-	-	-	137,413
47	Trmt Payroll Taxes	78,039	2	91.0%	9.0%	0.0%	0.0%	0.0%	100.0%	71,042	6,997	-	-	-	78,039
48	Trmt Health Benefits	349,359	2	91.0%	9.0%	0.0%	0.0%	0.0%	100.0%	318,033	31,326	-	-	-	349,359
49	Trmt Life/Disab Insurance	1,704	2	91.0%	9.0%	0.0%	0.0%	0.0%	100.0%	1,551	153	-	-	-	1,704
50	Trmt Pension Contribution	52,026	2	91.0%	9.0%	0.0%	0.0%	0.0%	100.0%	47,361	4,665	-	-	-	52,026
51	Trmt Workers Comp Ins Prem	45,711	2	91.0%	9.0%	0.0%	0.0%	0.0%	100.0%	41,612	4,099	-	-	-	45,711
52	Trmt Unemployment Comp	4,820	2	91.0%	9.0%	0.0%	0.0%	0.0%	100.0%	4,388	432	-	-	-	4,820
53	Ww Trmt Memberships and Dues	-		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	-	-	-	-	-	-
54	Trmt Misc Supplies/Expenses	2,000		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	2,000	-	-	-	-	2,000
55	Ww Trmt Rental Equipment	-		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	-	-	-	-	-	-
56	Trmt Medical/Laboratory	65,000		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	65,000	-	-	-	-	65,000
57	Trmt Chemicals	316,791		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	316,791	-	-	-	-	316,791
58	Trmt Water	171,740		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	171,740	-	-	-	-	171,740
59	Trmt Electricity	773,121		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	773,121	-	-	-	-	773,121
60	Trmt Heat	28,000		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	28,000	-	-	-	-	28,000
61	Trmt Refuse	725,193		90.0%	5.0%	5.0%	0.0%	0.0%	100.0%	652,674	36,260	36,260	-	-	725,193
62	Trmt Equipment Repr/Mntce	-		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	-	-	-	-	-	-
63	Trmt Custodial	9,580		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	9,580	-	-	-	-	9,580
64	Trmt Oth Contracted Mntce	175,000		90.0%	10.0%	0.0%	0.0%	0.0%	100.0%	157,500	17,500	-	-	-	175,000
65	Trmt Service Contracts	-		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	-	-	-	-	-	-
66	Trmt Nutrient Credits	-		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	-	-	-	-	-	-

Capital Region Water
Wholesale Rate Calculation
Operating Expense Allocation

Table A -1

Line	Description	FY 2019 Budgeted Cost	Alloc Ref	Allocation %						Allocation \$					
				Treatment	Conveyance	Collection	Admin	City Only	Total	Treatment	Conveyance	Collection	Admin	City Only	Total
	<u>Maintenance:</u>														
67	Mntc Salaries & Wages	388,744	3	75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	291,558	97,186	-	-	-	388,744
68	Mntc Overtime Pay	14,501	3	75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	10,876	3,625	-	-	-	14,501
69	Mntc Payroll Taxes	30,848	3	75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	23,136	7,712	-	-	-	30,848
70	Mntc Health Benefits	164,404	3	75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	123,303	41,101	-	-	-	164,404
71	Mntc Life/Disab Insurance	686	3	75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	515	172	-	-	-	686
72	Mntc Pension Contribution	20,566	3	75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	15,425	5,142	-	-	-	20,566
73	Mntc Workers Comp Ins Prem	11,978	3	75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	8,984	2,995	-	-	-	11,978
74	Mntc Unemployment Comp	2,268	3	75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	1,701	567	-	-	-	2,268
75	Mntc Personal Safety	4,500	3	75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	3,375	1,125	-	-	-	4,500
76	Mntc Misc Supplies/Expenses	12,300		80.0%	20.0%	0.0%	0.0%	0.0%	100.0%	9,840	2,460	-	-	-	12,300
77	Mntc Rental Equipment	5,000		80.0%	20.0%	0.0%	0.0%	0.0%	100.0%	4,000	1,000	-	-	-	5,000
78	Mntc Tools and Hardware	6,500		80.0%	20.0%	0.0%	0.0%	0.0%	100.0%	5,200	1,300	-	-	-	6,500
79	Mntc Mechanical Equip Part	175,000		85.0%	15.0%	0.0%	0.0%	0.0%	100.0%	148,750	26,250	-	-	-	175,000
80	Mntc Motor Fuels & Lubric	65,000		60.0%	30.0%	10.0%	0.0%	0.0%	100.0%	39,000	19,500	6,500	-	-	65,000
81	Mntc Tires and Batteries	2,500		60.0%	30.0%	10.0%	0.0%	0.0%	100.0%	1,500	750	250	-	-	2,500
82	Mntc Vehicle Parts & Supp	19,000	15	28.3%	27.2%	44.4%	0.0%	0.0%	100.0%	5,382	5,176	8,442	-	-	19,000
83	Mntc Snow Control	3,000		70.0%	30.0%	0.0%	0.0%	0.0%	100.0%	2,100	900	-	-	-	3,000
84	Mntc Asphalt	-		60.0%	40.0%	0.0%	0.0%	0.0%	100.0%	-	-	-	-	-	-
85	Mntc Pipe Connections	2,400		80.0%	20.0%	0.0%	0.0%	0.0%	100.0%	1,920	480	-	-	-	2,400
86	Mntc Util Plant Fuels/Lub	30,000		80.0%	20.0%	0.0%	0.0%	0.0%	100.0%	24,000	6,000	-	-	-	30,000
87	Ww Mntc Other Contr Maint	-		60.0%	40.0%	0.0%	0.0%	0.0%	100.0%	-	-	-	-	-	-
88	Mntc Misc Contr Serv	-		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	-	-	-	-	-	-
89	Mntc Operations Equipment	12,500		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	12,500	-	-	-	-	12,500
	<u>Field Maintenance:</u>														
90	FMnt Salaries & Wages	737,470	4	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	-	221,241	516,229	-	-	737,470
91	FMnt Overtime Pay	118,818	4	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	-	35,645	83,173	-	-	118,818
92	FMnt Payroll Taxes	65,506	4	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	-	19,652	45,854	-	-	65,506
93	FMnt Health Benefits	328,808	4	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	-	98,642	230,166	-	-	328,808
94	FMnt Life/Disab Insurance	1,454	4	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	-	436	1,018	-	-	1,454
95	FMnt Pension Contribution	43,671	4	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	-	13,101	30,570	-	-	43,671
96	FMnt Workers Comp Ins Prem	22,780	4	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	-	6,834	15,946	-	-	22,780
97	FMnt Unemployment Comp	4,536	4	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	-	1,361	3,175	-	-	4,536
98	FMnt Telephone & Internet	9,000	4	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	-	2,700	6,300	-	-	9,000
99	FMnt Personal Safety	9,000	4	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	-	2,700	6,300	-	-	9,000

Capital Region Water
Wholesale Rate Calculation
Operating Expense Allocation

Table A -1

Line	Description	FY 2019 Budgeted Cost	Alloc Ref	Allocation %					Allocation \$						
				Treatment	Conveyance	Collection	Admin	City Only	Total	Treatment	Conveyance	Collection	Admin	City Only	Total
<u>Field Maintenance:</u>															
100	FMnt Rental Equipment	7,500		0.0%	70.0%	30.0%	0.0%	0.0%	100.0%	-	5,250	2,250	-	-	7,500
101	Fmnt Chemicals	34,000		20.0%	60.0%	20.0%	0.0%	0.0%	100.0%	6,800	20,400	6,800	-	-	34,000
102	FMtc Water	24,000		0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	-	24,000	-	-	-	24,000
103	FMnt Electricity	120,142	14	0.0%	95.3%	4.7%	0.0%	0.0%	100.0%	-	114,495	5,647	-	-	120,142
104	FMnt Tools and Hardware	9,000		0.0%	50.0%	50.0%	0.0%	0.0%	100.0%	-	4,500	4,500	-	-	9,000
105	FMnt Vehicle Parts & Supp	50,000	15	28.3%	27.2%	44.4%	0.0%	0.0%	100.0%	14,163	13,622	22,215	-	-	50,000
106	FMtc Shared Services	650,000	8	0.0%	50.0%	50.0%	0.0%	0.0%	100.0%	-	325,000	325,000	-	-	650,000
107	Ww FMnt Other Contr Maint	4,000		0.0%	70.0%	30.0%	0.0%	0.0%	100.0%	-	2,800	1,200	-	-	4,000
108	FMnt Water Meter Mtce Asses	116,100		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	116,100	116,100
<u>Other Expenses:</u>															
109	Legal Services	155,000		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	155,000	-	155,000
110	Ww Audit and Accounting Fees	5,200		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	5,200	-	5,200
111	Financial Advisor Fees	15,000		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	15,000	-	15,000
112	Engineering Services	157,500	16	33.3%	33.3%	33.4%	0.0%	0.0%	100.0%	52,448	52,448	52,605	-	-	157,500
113	Rate Study Consultant	63,000		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	63,000	-	63,000
114	Diversity Program Services	27,500		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	27,500	-	27,500
115	Title Services	12,000		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	12,000	-	12,000
116	Ww Fines and Penalties	-		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	-	-	-
117	Community Outreach	12,000		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	12,000	12,000
118	Ww AWTF Improv Open House	-		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	-	-
119	OPEB Retirement Benefits	268,000	7	51.5%	20.9%	27.6%	0.0%	0.0%	100.0%	137,944	55,962	74,094	-	-	268,000
120	Trustee/Bank Fees	3,000		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	3,000	3,000
121	Contingency	-		53.6%	17.9%	19.0%	8.1%	1.4%	100.0%	-	-	-	-	-	-
122	Transfer to Operating Reserve Account	-		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	-	-
<u>Incremental LTCP O&M:</u>															
123	Incremental LTCP O&M - Year 1	-		0.0%	0.0%	100.0%	0.0%	0.0%	100.0%	-	-	-	-	-	-
<u>CRW Administrative Fund Expenses:</u>															
124	Adm Salaries & Wages	1,305,865		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	1,305,865	-	1,305,865
125	-Salaries & Wages (Billing & Collection)	356,029		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	356,029	356,029
126	Adm Payroll Taxes	99,899		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	99,899	-	99,899
127	-Payroll Taxes (Billing & Collection)	27,236		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	27,236	27,236

Capital Region Water
Wholesale Rate Calculation
Operating Expense Allocation

Table A -1

Line	Description	FY 2019 Budgeted Cost	Alloc Ref	Allocation %						Allocation \$					
				Treatment	Conveyance	Collection	Admin	City Only	Total	Treatment	Conveyance	Collection	Admin	City Only	Total
	<u>CRW Administrative Fund Expenses:</u>														
128	Adm Health Benefits	392,369		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	392,369	-	392,369
129	<i>-Health Benefits (Billing & Collection)</i>	106,975		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	106,975	106,975
130	Adm Life/Disability Insurance	8,703		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	8,703	-	8,703
131	<i>-Life/Disability Insurance (Billing & Collection)</i>	2,373		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	2,373	2,373
132	Adm Pension Contribution	66,599		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	66,599	-	66,599
133	<i>-Pension Contribution (Billing & Collection)</i>	18,157		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	18,157	18,157
134	Adm Workers Comp Insurance	5,628		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	5,628	-	5,628
135	<i>-Workers Comp Insurance (Billing & Collection)</i>	1,534		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	1,534	1,534
136	Adm Unemployment Comp	5,118		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	5,118	-	5,118
137	<i>-Unemployment Comp (Billing & Collection)</i>	1,395		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	1,395	1,395
138	Adm Employment Test	1,621		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	1,621	-	1,621
139	Adm Recruitment	15,317		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	15,317	-	15,317
140	Adm Misc EE Benefits	7,658		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	7,658	-	7,658
141	Adm OPEB Obligation	-		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	-	-	-
142	Adm Conferences & Training	8,930		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	8,930	-	8,930
143	Adm Tuition	13,250		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	13,250	-	13,250
144	Adm Travel and Mileage	3,127		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	3,127	-	3,127
145	Adm Lodging	8,225		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	8,225	-	8,225
146	Adm Train/Conf Meals	1,031		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	1,031	-	1,031
147	Adm Memberships and Dues	5,211		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	5,211	-	5,211
148	Adm Office Supplies	14,296		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	14,296	-	14,296
149	Adm Office Equip - Lease/Mtnc	7,658		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	7,658	-	7,658
150	Adm Telephone & Internet	31,093		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	31,093	-	31,093
151	Adm Subscriptions	1,021		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	1,021	-	1,021
152	Adm Postage	2,553		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	2,553	-	2,553
153	Adm Meals - Internal	5,106		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	5,106	-	5,106
154	Adm Mileage	761		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	761	-	761
155	Adm HR/Payroll Services Fees	16,083		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	16,083	-	16,083
156	Adm Bank Fees	77		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	77	-	77
157	Adm Misc Supplies/Expense	766		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	766	-	766
158	Adm Document Management	2,553		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	2,553	-	2,553
159	Adm Office Lease	105,718		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	105,718	-	105,718
160	Adm Parking Rentals	43,398		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	43,398	-	43,398
161	Adm Advertising & Public Notic	1,021		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	1,021	1,021
162	Adm Community Outreach	10,211		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	10,211	10,211
163	Adm Printing	-		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	-	-	-
164	Adm Public Officials Insurance	12,478		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	12,478	-	12,478

Capital Region Water
Wholesale Rate Calculation
Operating Expense Allocation

Table A -1

Line	Description	FY 2019 Budgeted Cost	Alloc Ref	Allocation %					Allocation \$						
				Treatment	Conveyance	Collection	Admin	City Only	Total	Treatment	Conveyance	Collection	Admin	City Only	Total
<u>CRW Administrative Fund Expenses:</u>															
165	Adm Travel Accident Insurance	-		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	-	-	-
166	Adm Employee Dishonesty Bond	-		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	-	-	-
167	Adm Cyber Liability Insurance	7,319		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	7,319	-	7,319
168	Adm Motor Fuels & Lubricants	766		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	766	-	766
169	IT Computer Software	31,246		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	31,246	-	31,246
170	IT Computer Hardware	7,965		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	7,965	-	7,965
171	IT Support Contracts	13,743		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	13,743	-	13,743
172	IT Support Services	11,488		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	11,488	-	11,488
173	Adm Legal Services - General	127,641		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	127,641	-	127,641
174	Adm Legal Services - Other	20,423		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	20,423	-	20,423
175	Adm Audit/Accounting Fees	52,466		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	52,466	-	52,466
176	Adm Financial Advisor Fees	15,317		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	15,317	-	15,317
177	Adm Office Equipment	1,021		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	1,021	-	1,021
178	Adm Office Furniture	5,106		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	5,106	-	5,106
179	CSC Conferences & Training	255		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	255	255
180	CSC Uniforms	817		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	817	817
181	CSC Personal Safety	766		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	766	766
182	CSC Electricity	1,225		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	1,225	1,225
183	CSC Heat	613		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	613	613
184	CSC Vehicle Parts and Supp	1,276		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	1,276	1,276
185	CSC Custodial	4,218		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	4,218	4,218
186	Adm Treasury Legal Fees	30,634		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	30,634	30,634
187	Adm Treasury Mailing Services	73,373		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	73,373	73,373
188	Adm Treasury Lockbox Fees	66,915		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	66,915	66,915
189	Adm Treasury Merchant Fees	37,602		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	37,602	37,602
190	Adm Treasury Security	3,419		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	3,419	3,419
191	Adm Treasury Billing Software	35,260		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	35,260	35,260
192	Contingency	20,423		0.0%	0.0%	76.2%	23.8%	0.0%	100.0%	-	-	15,559	4,864	-	20,423
193	Adm Capital Equipment	12,764		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	-	-	-	12,764	-	12,764
194	Total Operating Expenses	\$ 12,551,738								\$ 4,956,444	\$ 1,656,193	\$ 1,774,484	\$ 3,252,210	\$ 912,407	\$ 12,551,738

Capital Region Water
Wholesale Rate Calculation
Operating Expense Allocation

Table A -1

Line	Description	FY 2019 Budgeted Cost	Alloc Ref	Allocation %					Allocation \$						
				Treatment	Conveyance	Collection	Admin	City Only	Total	Treatment	Conveyance	Collection	Admin	City Only	Total
	<u>Allocation of Administrative Expenses:</u>														
195	Total Operating Expenses	\$ 12,551,738								\$ 4,956,444	\$ 1,656,193	\$ 1,774,484	\$ 3,252,210	\$ 912,407	\$ 12,551,738
196	Less: Administrative Expenses	(3,252,210)								-	-	-	(3,252,210)	-	(3,252,210)
197	Less: Electric Expenses	(893,263)								(773,121)	(114,495)	(5,647)	-	-	(893,263)
198	Adjusted Operating Expenses	\$ 8,406,265								\$ 4,183,323	\$ 1,541,698	\$ 1,768,838	\$ -	\$ 912,407	\$ 8,406,265
199	Percentage Allocation									49.8%	18.3%	21.0%	0.0%	10.9%	100.0%
200	Adjusted Operating Expenses									\$ 6,574,885	\$ 2,252,644	\$ 2,458,811	\$ -	\$ 1,265,398	\$ 12,551,738
	<u>Less: Non-Rate Revenues</u>														
201	Ww Penalties	\$ 275,000		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	\$ -	\$ -	\$ -	\$ -	\$ 275,000	\$ 275,000
202	Ww Miscellaneous Revenue	-		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	-	-
203	Ww Lien Recovery	10,000		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	10,000	10,000
204	Bankruptcy Recovery	-		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	-	-
205	WW Renewable Energy Credits	-		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	-	-
206	Ww Customer Refunds	-		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	-	-
207	Ww Misc Operation Sales	-		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	-	-
208	Ww Sludge Handling Charges	60,000		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	60,000	-	-	-	-	60,000
209	Ww Sale of Electric	50,000		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	50,000	-	-	-	-	50,000
210	Ww Contractor Waste Fees	600,000		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	600,000	-	-	-	-	600,000
211	Ww Pretreatment fees	50,000		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	50,000	-	-	-	-	50,000
212	Maintenance Charge	-		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	-	-
213	Ww Planning Module Fees	10,000		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	10,000	10,000
214	Ww Contr Waste Hauling Fees	-		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	-	-	-	-	-	-
215	Street Cuts	-		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	-	-
216	Interest Earnings (Model)	93,107		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	-	-	-	-	93,107	93,107
217	Total Non-Rate Revenues	\$ 1,148,107								\$ 760,000	\$ -	\$ -	\$ -	\$ 388,107	\$ 1,148,107
218	Net Adjusted Operating Expenses	\$ 11,403,631								\$ 5,814,885	\$ 2,252,644	\$ 2,458,811	\$ -	\$ 877,291	\$ 11,403,631
219	Percentage Allocation									51.0%	19.8%	21.6%	0.0%	7.7%	100.0%

Capital Region Water
Wholesale Rate Calculation
Capital Cost Allocation

Table A-2

Line	Description	FY 2019 Budgeted Cost	Alloc Ref	Allocation %						Allocation \$					
				Treatment	Conveyance	Collection	Admin	City Only	Total	Treatment	Conveyance	Collection	Admin	City Only	Total
1	Existing Debt Service	\$ 4,209,863	9	76.5%	11.1%	12.3%	0.0%	0.0%	100.0%	\$ 3,222,552	\$ 468,401	\$ 518,910	\$ -	\$ -	\$ 4,209,863
2	New Debt Service - Revenue Bonds	627,436	11	33.2%	29.3%	37.5%	0.0%	0.0%	100.0%	208,089	184,084	235,263	-	-	627,436
3	New Debt Service - PennVest	68,167	12	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	-	68,167	-	-	-	68,167
4	Cash Funded Capital Projects	4,500,000	10	33.2%	29.3%	37.5%	0.0%	0.0%	100.0%	1,492,425	1,320,260	1,687,314	-	-	4,500,000
5	Total Capital Expenditures	\$ 9,405,466								\$ 4,923,066	\$ 2,040,913	\$ 2,441,487	\$ -	\$ -	\$ 9,405,466
	Less: Non-Rate Revenues														
6	Sale of Scrap	\$ -		0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
7	Interest Earnings - DSRF	\$ 57,000		65.3%	16.5%	18.2%	0.0%	0.0%	100.0%	37,219	9,384	10,396	-	-	57,000
8	Net Capital Expenditures	\$ 9,348,466								\$ 4,885,847	\$ 2,031,529	\$ 2,431,090	\$ -	\$ -	\$ 9,348,466
9	Percentage Allocation									52.3%	21.7%	26.0%	0.0%	0.0%	100.0%

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Line	Alloc Ref	Description	FY 2019 Budgeted Cost	Allocation %						Basis
				Treatment	Conveyance	Collection	Admin	City Only	Total	
<u>Management Division Personnel</u>										
1		Plant Superintendent (JR)	\$ 105,000	60.0%	20.0%	20.0%	0.0%	0.0%	100.0%	Updated per Plant Superintendent for FY 2019.
2		Pretreatment Coordinator (RS)	59,884	60.0%	20.0%	20.0%	0.0%	0.0%	100.0%	
3		Operations Supervisor (RH)	69,628	85.0%	15.0%	0.0%	0.0%	0.0%	100.0%	
4		Facility Maintenance Supervisor (JB)	78,795	75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	
5		Field Operations Supervisor (KF)	71,772	10.0%	20.0%	70.0%	0.0%	0.0%	100.0%	
6		Administrative Assistant II (BR)	47,228	75.0%	15.0%	10.0%	0.0%	0.0%	100.0%	
7		Environmental Compliance Inspector (TBD)	60,000	0.0%	50.0%	50.0%	0.0%	0.0%	100.0%	
8		Field Maintenance Supervisor (TBD)	66,950	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	
9		Total:	\$ 559,257							
10	1	Management Personnel Allocation		46.5%	24.1%	29.5%	0.0%	0.0%	100.0%	
<u>Treatment Division Personnel</u>										
11		Lab Technician I (BH)	\$ 47,228	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	Updated per Plant Superintendent for FY 2019.
12		Lab Technician II (SS)	50,321	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	
13		Laborer I (TBD)	37,483	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%	
14		Operator I (6)	342,185	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%	
15		Operator II (CS)	58,162	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%	
16		Operator IV (6)	408,621	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%	
17		Total:	\$ 944,000							
18	2	Treatment Division Personnel Allocation		91.0%	9.0%	0.0%	0.0%	0.0%	100.0%	
<u>Maintenance Division Personnel</u>										
19		Electrician III (MM)	\$ 53,600	75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	Updated per Plant Superintendent for FY 2019.
20		Laborer I (2)	78,209	75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	
21		Maintenance Worker I (JGN)	47,757	75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	
22		Maintenance Worker IV (4)	223,679	75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	
23		Total:	\$ 403,245							
24	3	Maintenance Division Personnel Allocation		75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	

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Line	Alloc Ref	Description	FY 2019 Budgeted Cost	Allocation %						Basis
				Treatment	Conveyance	Collection	Admin	City Only	Total	
		<u>Field Maintenance Division</u>								
25		Field Maintenance Worker I - O (3)	\$ 142,506	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Updated per Plant Superintendent for FY 2019.
26		Field Maintenance Worker II - O (3)	190,797	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	
27		Field Maintenance Worker III - O (TB)	51,486	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	
28		Field Maintenance Worker IV - O (SR)	72,928	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	
29		Field Maintenance Worker I - M (6)	290,834	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	
30		Field Maintenance Worker II - M (SS)	48,421	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	
31		Field Maintenance Worker IV - M (DM)	58,432	0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	
32		Total:	\$ 855,404							
33	4	Field Maintenance Division Personnel Allocation		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	
34	5	All Staff / Uniform Allocation		51.5%	20.9%	27.6%	0.0%	0.0%	100.0%	Estimated based on most up-to-date staff allocations.
35	6	Insurance Allocation		0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	All non automobile related insurance fully allocated to Administration.
36	7	OPEB Allocation		51.5%	20.9%	27.6%	0.0%	0.0%	100.0%	Based on allocation of all direct labor, including Administration / Management.
37	8	Department of Public Works - Sweep Cleaning		0.0%	50.0%	50.0%	0.0%	0.0%	100.0%	Costs related to street sweeping services.
		<u>Existing Debt Service Allocation</u>								
38		2009 PENNVEST Loan	114,120	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	Projects financed related to improvements and replacements to wastewater treatment facility.
39		2014 PENNVEST Loan	1,186,527	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	Projects financed related to improvements and replacements to wastewater treatment facility.
40		2017 Revenue Bonds (New Money) - 30 Year	1,194,100	31.0%	37.5%	31.5%	0.0%	0.0%	100.0%	Based on overall allocation of capital projects completed in FY 2017 and to be completed in FY 2018.

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Line	Alloc Ref	Description	FY 2019 Budgeted Cost	Allocation %						Basis
				Treatment	Conveyance	Collection	Admin	City Only	Total	
		<u>Existing Debt Service Allocation</u>								
41		2017 Revenue Refunding Bonds - 30 Year	1,650,950	90.1%	1.3%	8.7%	0.0%	0.0%	100.0%	Proceeds used to refund the Series 2014B Revenue Bonds.
42		2017 PENNVEST Loan	64,166	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	Projects financed related to AWTF.
43		Total:	\$ 4,209,863							
44	9	Existing Debt Service Allocation		76.5%	11.1%	12.3%	0.0%	0.0%	100.0%	
45		Projects Funded with Cash	\$ 4,500,000	33.2%	29.3%	37.5%	0.0%	0.0%	100.0%	
46	10	PayGo Expense Allocation		33.2%	29.3%	37.5%	0.0%	0.0%	100.0%	
47		New Revenue Bonds	\$ 2,845,050	33.2%	29.3%	37.5%	0.0%	0.0%	100.0%	
48	11	New Revenue Bonds Allocation		33.2%	29.3%	37.5%	0.0%	0.0%	100.0%	
49		New PennVest Loan	\$ 68,167	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	Projects financed related to Front Street PS.
50	12	New PennVest Loan Allocation		0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	
		<u>Road Vehicles</u>								
51		G-30 - Escape Sedan - 4 x 4		46.5%	24.1%	29.5%	0.0%	0.0%	100.0%	Used by Management Division. Based on overall Management Division allocation.
52		G-31 - Escape Sedan - 4 x 4		46.5%	24.1%	29.5%	0.0%	0.0%	100.0%	Used by Management Division. Based on overall Management Division allocation.
53		G-01 - Taurus Station Wagon		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	Lab vehicle. Based on allocation of lab employees.
54		G-16 - Dump Truck		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	Belt filter press dump. Full allocation to Treatment.
55		G-18 - Dump Truck		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	Belt filter press dump. Full allocation to Treatment.

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Line	Alloc Ref	Description	FY 2019 Budgeted Cost	Allocation %						Basis
				Treatment	Conveyance	Collection	Admin	City Only	Total	
		<u>Road Vehicles</u>								
56		G-38 - Pickup Truck		85.0%	15.0%	0.0%	0.0%	0.0%	100.0%	Operations vehicle. Based on allocation of Operations Supervisor and Operators.
57		G-03 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
58		G-04 - Van with CCTV Equipment		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
59		G-06 - Vactor Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
60		G-13 - Flusher Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
61		G-14 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
62		G-15 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
63		G-17 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
64		G-20 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
65		G-24 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
66		G-39 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
67		G-46 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
68		G-47 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
69		G-54 - Vacuum Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.

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Line	Alloc Ref	Description	FY 2019 Budgeted Cost	Allocation %						Basis
				Treatment	Conveyance	Collection	Admin	City Only	Total	
		<u>Road Vehicles</u>								
70		G-55 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
71		V-39 - Vactor Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
72		G-08 - Crane Truck		75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	Facility maintenance vehicle. Based on overall Maintenance Division allocation.
73		G-19 - Pickup Truck		75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	Facility maintenance vehicle. Based on overall Maintenance Division allocation.
74		G-45 - Cargo Van		75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	Facility maintenance vehicle. Based on overall Maintenance Division allocation.
75		G-48 - Pickup Truck		75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	Facility maintenance vehicle. Based on overall Maintenance Division allocation.
76		G-32 - Dump Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
77		G-33 - Utility Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
78		G-39 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
79		G-41 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
80		G-42 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
81		G-43 - Dump Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
82		G-52 - Dump Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
83		G-59 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.

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Line	Alloc Ref	Description	FY 2019 Budgeted Cost	Allocation %						Basis
				Treatment	Conveyance	Collection	Admin	City Only	Total	
		<u>Road Vehicles</u>								
84		G-60 - Dump Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
85	13	Total Road Vehicle Insurance Allocation		22.9%	26.0%	51.1%	0.0%	0.0%	100.0%	
86	14	Sewer Field Maintenance - Electricity		0.0%	95.3%	4.7%	0.0%	0.0%	100.0%	Based on proportional use of electricity at the Spring Creek, Front Street, and Market Street pump stations in 2016.
		<u>Full Vehicle Listing</u>								
87		G-30 - Escape Sedan - 4 x 4		46.5%	24.1%	29.5%	0.0%	0.0%	100.0%	Used by Management Division. Based on overall Management Division allocation.
88		G-31 - Escape Sedan - 4 x 4		46.5%	24.1%	29.5%	0.0%	0.0%	100.0%	Used by Management Division. Based on overall Management Division allocation.
89		G-01 - Taurus Station Wagon		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	Lab vehicle. Based on allocation of lab employees.
90		G-16 - Dump Truck		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	Belt filter press dump. Full allocation to Treatment.
91		G-18 - Dump Truck		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	Belt filter press dump. Full allocation to Treatment.
92		G-38 - Pickup Truck		85.0%	15.0%	0.0%	0.0%	0.0%	100.0%	Operations vehicle. Based on allocation of Operations Supervisor and Operators.
93		G-03 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
94		G-04 - Van with CCTV Equipment		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
95		G-06 - Vactor Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
96		G-13 - Flusher Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.

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Line	Alloc Ref	Description	FY 2019 Budgeted Cost	Allocation %						Basis
				Treatment	Conveyance	Collection	Admin	City Only	Total	
		<u>Full Vehicle Listing</u>								
97		G-14 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
98		G-15 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
99		G-17 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
100		G-20 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
101		G-24 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
102		G-39 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
103		G-46 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
104		G-47 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
105		G-54 - Vacuum Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
106		G-55 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
107		V-39 - Vector Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.
108		G-08 - Crane Truck		75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	Facility maintenance vehicle. Based on overall Maintenance Division allocation.
109		G-19 - Pickup Truck		75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	Facility maintenance vehicle. Based on overall Maintenance Division allocation.
110		G-45 - Cargo Van		75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	Facility maintenance vehicle. Based on overall Maintenance Division allocation.

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Line	Alloc Ref	Description	FY 2019 Budgeted Cost	Allocation %						Basis
				Treatment	Conveyance	Collection	Admin	City Only	Total	
		<u>Full Vehicle Listing</u>								
111		G-48 - Pickup Truck		75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	Facility maintenance vehicle. Based on overall Maintenance Division allocation.
112		G-32 - Dump Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
113		G-33 - Utility Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
114		G-39 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
115		G-41 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
116		G-42 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
117		G-43 - Dump Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
118		G-52 - Dump Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
119		G-59 - Pickup Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
120		G-60 - Dump Truck		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
121		G-27 - Utility Cart		85.0%	15.0%	0.0%	0.0%	0.0%	100.0%	Operations vehicle. Based on allocation of Operations Supervisor and Operators.
122		G-57 - Dump Trailer		85.0%	15.0%	0.0%	0.0%	0.0%	100.0%	Operations vehicle. Based on allocation of Operations Supervisor and Operators.
123		G-58 - Dump Trailer		85.0%	15.0%	0.0%	0.0%	0.0%	100.0%	Operations vehicle. Based on allocation of Operations Supervisor and Operators.
124		G-44 - Hydro Excavator		0.0%	95.3%	4.7%	0.0%	0.0%	100.0%	Field operations vehicle. Based on overall Field Maintenance Division allocation.

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Line	Alloc Ref	Description	FY 2019 Budgeted Cost	Allocation %						Basis
				Treatment	Conveyance	Collection	Admin	City Only	Total	
		<u>Full Vehicle Listing</u>								
125		G-26 - Utility Cart		75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	Facility maintenance vehicle. Based on overall Maintenance Division allocation.
126		G-28 - Mower / Tractor		75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	Facility maintenance vehicle. Based on overall Maintenance Division allocation.
127		G-34 - Mower / Tractor		75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	Facility maintenance vehicle. Based on overall Maintenance Division allocation.
128		G-35 - Mower / Tractor		75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	Facility maintenance vehicle. Based on overall Maintenance Division allocation.
129		G-37 - Mower / Tractor		75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	Facility maintenance vehicle. Based on overall Maintenance Division allocation.
130		G-50 - Forklift		75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	Facility maintenance vehicle. Based on overall Maintenance Division allocation.
131		G-53 - Forklift		75.0%	25.0%	0.0%	0.0%	0.0%	100.0%	Facility maintenance vehicle. Based on overall Maintenance Division allocation.
132		G-11 - Excavator		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
133		G-21 - Black Top Roller		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
134		G-23 - Trailer		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
135		G-25 - Air Compressor		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
136		G-29 - Backhoe		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
137		G-40 - Skid Steer Loader		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
138		G-49 - Wheel Loader		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.

Capital Region Water										
Wholesale Rate Calculation										
Allocation References										
Table A-3										
Line	Alloc Ref	Description	FY 2019 Budgeted Cost	Allocation %						Basis
				Treatment	Conveyance	Collection	Admin	City Only	Total	
		<u>Full Vehicle Listing</u>								
139		G-51 - Tar Buggy Trailer		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
140		G-61 - Backhoe		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
141		G-62 - Signboard Trailer		0.0%	30.0%	70.0%	0.0%	0.0%	100.0%	Field maintenance vehicle. Based on overall Field Maintenance Division allocation.
142	15	Full Vehicle Allocation		28.3%	27.2%	44.4%	0.0%	0.0%	100.0%	
		<u>Engineering Services Projects</u>								
143		Asset Management Program Development	\$ 47,500	33.3%	33.3%	33.4%	0.0%	0.0%	100.0%	Updated in 2018 per CRW.
144		CMMS (Cityworks) Professional Services	35,000	33.3%	33.3%	33.4%	0.0%	0.0%	100.0%	Updated in 2018 per CRW.
145		GIS Program Professional Services	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Updated in 2018 per CRW.
146		Energy Management Optimization Studies	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Updated in 2018 per CRW.
147		Development Review Professional Services	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Updated in 2018 per CRW.
148		GSI Design Services	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Updated in 2018 per CRW.
149		Total:	\$ 82,500							
150	16	Engineering Services Allocation		33.3%	33.3%	33.4%	0.0%	0.0%	100.0%	

Capital Region Water							
Wholesale Rate Calculation							
Allocation of Capital Projects							
Table A-4							
FY2019							
Project	FY2019 Expenditure	Treatment	Conveyance	Collection	Administration	Other	Total
Headworks Screen Design/Con	\$ -	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Anaerobic Digester Roof Rep	6,040,500	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Cogeneration Improvements St	750,000	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Primary Clarifier Improveme	580,000	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Front St Pump Sta Design/Co	-	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
Collection System MS4 Reha	3,234,623	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Paxton Creek Interceptor Re	5,590,700	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
Interceptor Rehabilitation	-	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
Biosolids Master Plan	-	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Asylum Run Interceptor Improv/	-	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
Arsenal Boulevard Sewer Improv	852,495	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
Other Multi-Modal CCTV Investi	165,000	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
GSI Design	750,000	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Wet Weather Services	850,000	33.3%	33.3%	33.4%	0.0%	0.0%	100.0%
Cryogenic Oxygen DistilProjects	-	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
3rd Street Multimodal GSI	316,075	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
2018 City Parks GSI	510,775	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Summit Terrace Neighbhd GSI	546,113	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Camp Curtin Big Grn Bk GSI	-	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
MulDer Square GSI	20,000	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
2018 South Allison Hill GSI	1,057,575	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
2nd/7th Strts Multimoda GSI	1,443,450	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Pax Crk TMDL Joint PRP MS4	430,563	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Pump Rebuilds	145,000	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
HVAC Renovation	-	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
2018 Building Renovations	150,000	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Facility Signage	15,000	33.3%	33.3%	33.4%	0.0%	0.0%	100.0%

Capital Region Water							
Wholesale Rate Calculation							
Allocation of Capital Projects							
Table A-4							
FY2019							
Project	FY2019 Expenditure	Treatment	Conveyance	Collection	Administration	Other	Total
Vehicular Equipment	423,000	33.3%	33.3%	33.4%	0.0%	0.0%	100.0%
Operations Equipment	357,450	33.3%	33.3%	33.4%	0.0%	0.0%	100.0%
Collection System Rehab	100,000	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
IT Hardware	40,000	33.3%	33.3%	33.4%	0.0%	0.0%	100.0%
Total	\$ 24,368,319						
Allocation of Projects to be Funded with Cash or New Revenue Bonds (\$)		\$ 8,081,755	\$ 7,149,450	\$ 9,137,114	\$ -	\$ -	\$ 24,368,319
Allocation of Projects to be Funded with Cash or New Revenue Bonds (%)		33.2%	29.3%	37.5%	0.0%	0.0%	100.0%

Capital Region Water Wholesale Rate Calculation Units of Service (FY2017)									
Table A-5									
			Residential Non-Metered Flow	Commercial Non-Metered Flow	Residential Metered Flow	Commercial Metered Flow	Industrial Metered Flow	Public Metered Flow	Total Flow
Customer Class	Residential EDUs ¹	Commercial EDUs	(1,000 gallons)	(1,000 gallons)	(1,000 gallons)	(1,000 gallons)	(1,000 gallons)	(1,000 gallons)	(1,000 gallons)
City of Harrisburg	-	-	-	-	772,552	526,781	225,136	84,456	1,608,925
Penbrook Borough	1,333	-	59,985	-	-	8,600	-	-	68,585
Paxtang Borough	665	-	29,925	-	-	5,546	-	-	35,471
Swatara Township - via Harrisburg	-	-	-	-	381,393	-	-	-	381,393
Swatara Township - via Steelton	-	-	-	-	69,205	-	-	-	69,205
Lower Paxton Township	12,964	-	583,380	-	-	190,217	-	-	773,597
Susquehanna Township	11,061	-	497,723	-	-	148,205	-	-	645,927
Steelton Borough	-	-	-	-	117,014	9,464	-	-	126,478
Total	26,023	-	1,171,013	-	1,340,164	888,813	225,136	84,456	3,709,582

¹One EDU was assumed to equal 45,000 gallons of residential non-metered consumption per year.

Capital Region Water Wholesale Rate Calculation Unit Cost of Service					
Table A-6					
FY 2019					
Description	Treatment	Conveyance	Collection	Admin.	City Only
Units of Service (1,000 gallons)	3,709,582	3,513,898	1,608,925	-	1,608,925
Operating Revenue Requirement	\$ 5,814,885	\$ 2,252,644	\$ 2,458,811	\$ -	\$ 877,291
Capital Revenue Requirement	\$ 4,885,847	\$ 2,031,529	\$ 2,431,090	\$ -	\$ -
Operating Unit Cost (\$/1,000 gallons)	\$1.568	\$0.641	\$1.528	\$0.000	\$0.545
Capital Unit Cost (\$/1,000 gallons)	\$1.317	\$0.578	\$1.511	\$0.000	\$0.000

Capital Region Water			
Wholesale Rate Calculation			
Retail and Wholesale Rates			
Table A-7			
FY 2019			
Description	City	Suburban	Steelton
O&M Rate			
Treatment	\$1.57	\$1.57	\$1.57
Conveyance	\$0.64	\$0.64	\$0.00
Collection	\$1.53	\$0.00	\$0.00
City-Only	<u>\$0.55</u>	<u>\$0.00</u>	<u>\$0.00</u>
Total (\$/1,000 gal.)	\$4.28	\$2.21	\$1.57
Capital Charge (Lease Rental Rates)			
Treatment	\$1.32	\$1.51	\$1.51
Conveyance	\$0.58	\$0.66	\$0.00
Collection	\$1.51	\$0.00	\$0.00
City-Only	\$0.00	\$0.00	\$0.00
Other	<u>(\$0.04)</u>	<u>\$0.00</u>	<u>\$0.00</u>
Total (\$/1,000 gal.)	\$3.37	\$2.18	\$1.51
Total Rate (\$/1,000 gal.)	\$7.65	\$4.39	\$3.08
Less: Prior Year True-Up	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>
Adjusted Total Rate (\$/1,000 gal.)	\$7.65	\$4.39	\$3.08
Existing Total Rate (\$/1,000 gal.)	<u>\$6.99</u>	<u>\$4.33</u>	<u>\$2.89</u>
Percent Increase / Decrease	9.5%	1.3%	6.6%