2024 RATES AND FEES STUDY UPDATE

VOLUME 1 OF 2

2025-2029 RATES

Prepared by Castle Rock Water
Business Solutions Team

Final Report

September 2024

Table of Contents

Executive Summary

On an annual basis, Castle Rock Water (CRW) conducts a comprehensive rates and fees study for water, water resources, wastewater, and stormwater funds.

Project Purpose

The purpose of the rates and fees study is to calculate the cost-of-service (COS) based rates for each enterprise fund that meet CRW's financial goals while being defensible and promoting water conservation. The annual rates and fees study update ensures that any changes in revenue requirements are accounted for based on changes in customer characteristics and both operational and capital costs.

Financial Management Plan

Starting in 2015, CRW prepared a Financial Management Plan (FMP) which has since been updated on an annual basis as part of this study. The FMP was completed to assist CRW in achieving the following goals:

1. To minimize future rates at or below the 2013 Hybrid Model levels
2. To minimize debt carrying costs at or below industry standards
3. To minimize risk by balancing fixed and variable revenues with expenses as appropriate
4. To keep costs at or under budget for capital and operational budgets each year by fund and to continuously strive towards more efficient operations
5. To keep our rates and fees competitive with surrounding communities
6. To keep adequate reserves and maintain fund balances between minimums and maximums
7. To keep our rates and fees affordable within various national affordability indices
8. To develop regional partnerships to provide economies of scale to reduce total costs of infrastructure to our customers
9. To be an industry leader in the application of financial management benchmarking ourselves against others locally and nationally

Cost-of Service Analysis

Revenue Requirements

A long term financial plan is prepared to project the revenues required for each of CRW's four enterprise funds. The long-term financial plan allows the integration of debt, accumulation/use of reserves, and other assumptions to forecast funding of CRW's water system operations and maintenance (O&M) expenses and capital improvements for each respective enterprise. For each enterprise fund, the financial plan calculates the annual service charge revenue requirements. The projection period developed for each enterprise financial plan was driven by the length of the capital improvement program (CIP) and ends in 2065.

Although the projection period extends to 2065, revenue requirements and capital improvement programs are presented in this report for the five-year planning period 2025 through 2029 for all four enterprise funds. The estimated 2025 total revenue requirements from rates are shown below.

2025 Total Revenue Requirements from Rates	
Water	$21.4 Million
Water Resources	$15.0 Million
Wastewater	$12.4 Million
Stormwater	$4.3 Million

Rates and Fees Analysis

CRW updated COS rates for the water and wastewater enterprises, and monthly service charges for the water resources and stormwater enterprises, to meet the annual service charge revenue requirements. The rates and fees meet CRW's financial objectives while being defensible. The CRW's rates and fees goals as described in the FMP include:

- Keep the rates and fees competitive with surrounding communities
- Ensure rates and fees for water and water resources are lower than the projected rates in the 2013 hybrid financial plan
- Keep the rates and fees affordable within various national affordability indices

CRW's rates are based on the cost of providing services and CRW's comprehensive review of current customer characteristics. A summary of the customer characteristics analysis is presented in Appendix C.

2024 Adopted Rates vs 2025 Proposed Rates by Fund

CRW's adopted rates for 2024 versus proposed rates for 2025 are listed in Tables 1 through 5. Given the financial plan and COS updates, CRW is proposing a 5.0% increase in both the monthly fixed and volumetric rates for water, an 8.0% increase in the water resources monthly fixed rate and a 5.0% increase in the stormwater monthly fixed rate and a 0.5% increase in both the monthly fixed and volumetric rates for wastewater. Each account pays a fixed monthly water service charge, water resources charge and wastewater charge based on their individual meter size. CRW's water rate structure includes both the fixed monthly service charge by meter size and a volumetric charge based on tiered usage calculated using a water budget rate structure. Volumetric rates are stated per 1,000 gallons (Kgal).

Table 1 Water Fund 2024 Adopted vs 2025 Proposed Monthly Service Charges		
Meter Size	**2024 Adopted Monthly Charges**	**2025 Proposed Monthly Charges**
3/5" x ¾"	$10.42	$10.94
5/8" x ¾"	$10.42	$10.94
¾"	$10.42	$10.94
1"	$14.99	$15.74
1.5"	$20.51	$21.54
2"	$28.39	$29.81
3"	$45.62	$47.90
4"	$102.79	$107.93
6"	$160.82	$168.86
Bulk Hydrant	$20.51	$21.54
Bulk Station	$10.42	$10.94

Tiered Rate Structure

The volumetric water budget rate structure consists of three increasing tiered rates:

- Tier 1 = AWMC or Average Winter Monthly Consumption = Base COS rate (Typically considered indoor use)
- Tier 2 = Outdoor Usage = Base plus extra capacity rates by customer class (Typically considered outdoor use)
- Tier 3 = Excess use rate to recover the remaining revenue requirements

Residential accounts are subject to a water conservation surcharge for usage greater than 40 Kgal per month. This surcharge is intended to send a conservation price signal to customers with excessive usage. The revenue collected from this tier is then used to fund conservation rebate programs.

For the volumetric rates shown in Table 2 below, rates by tier are increased by the proposed 5% increase.

Table 2 Water Fund 2025 Proposed Volumetric Rates by Tier			
Irrigation Season (April 1 through October 31 Consumption)			
Customer Class	**Tier 1 (AWMC)**	**Tier 2 (Outdoor)**	**Tier 3 (Excess)**
Residential	$3.23	$6.58	$9.82
Multi-Family	$3.23	N/A	$4.24
Multi-Family w/Irrigation	$3.23	$5.59	$8.35
Commercial	$3.23	N/A	$4.53
Commercial w/Irrigation	$3.23	$5.65	$8.45
Irrigation	N/A	$9.01	$13.50
Winter Season (November 1 through March 31 Consumption)			
Customer Class	**Tier 1 (AWMC)**	**Tier 2 (Outdoor)**	**Tier 3 (Excess)**
Residential	$3.23	N/A	$6.58
Multi-Family	$3.23	N/A	$4.24
Multi-Family w/Irrigation	$3.23	N/A	$5.59
Commercial	$3.23	N/A	$4.53
Commercial w/Irrigation	$3.23	N/A	$5.65
Irrigation	N/A	N/A	$13.50
Bulk Water Customers			
Bulk Hydrant	$9.01	N/A	N/A
Bulk Station	$11.26	N/A	N/A

An additional surcharge of $9.82 is added for any water usage over 40,000 gallons.

Table 3 Water Resources Fund 2024 Adopted vs 2025 Proposed Monthly Service Charges		
Meter Size	**2024 Adopted Monthly Service Charges**	**2025 Proposed Monthly Service Charges**
3/5” x ¾”	$31.12	$33.61
5/8” x ¾”	$31.12	$33.61
¾”	$31.12	$33.61
1”	$117.97	$127.41
1.5”	$223.18	$241.03
2”	$373.21	$403.07
3”	$700.96	$757.04
4”	$1,788.20	$1,931.26
6”	$2,891.63	$3,122.96
Bulk Hydrant	$223.18	$241.03
Bulk Station	$31.12	$33.61

Table 4 Wastewater Fund 2024 Adopted vs 2025 Proposed Monthly Service Charges and Volumetric Rate		
Meter Size	**2024 Adopted Monthly Service Charges**	**2025 Proposed Monthly Service Charges**
3/5” x ¾”	$8.57	$8.61
5/8” x ¾”	$8.57	$8.61
¾”	$8.57	$8.61
1”	$13.64	$13.71
1.5”	$19.78	$19.88
2”	$28.53	$28.67
3”	$47.66	$47.90
4”	$111.11	$111.67
6”	$175.53	$176.41
Volumetric Rate – All Applicable Customers, Per Kgal	$6.07	$6.10

Table 5 Stormwater Fund 2024 Adopted vs 2025 Proposed Monthly Service Charge		
	2024 Adopted Monthly Service Charge	**2025 Proposed Monthly Service Charge**
All Customers, per Single Family Equivalent (SFE)	$7.97	$8.37
SFE Assignment		
Customer Class	**Impervious Sq. Ft.**	**SFE**
Single Family Attached & Detached Customers	3,255	1
Non-Single Family (Multi-Family & Commercial Customers)	Parcel size times 80% imperviousness divided by 3,255 impervious sq. ft. per SFE = # of SFE's	

Proposed Rates for 2025 Through 2029

Rates for the five-year study period (2025-2029) were projected using the cost of service model results for water and wastewater as well as the percentage rate revenue increases projected by the financial plan models for all four funds. Table 6 represents proposed rate revenue changes for 2025 through 2029.

Table 6 Proposed Rate Revenue Percentage Increases 2025-2029				
Year	**Water**	**Water Resources**	**Wastewater**	**Stormwater**
2025	5.0%	8.0%	0.5%	5.0%
2026	5.0%	8.0%	0.5%	5.0%
2027	5.0%	8.0%	0.5%	5.0%
2028	5.0%	8.0%	0.5%	5.0%
2029	5.0%	8.0%	0.5%	5.0%

Long-Term Financial Planning

Background

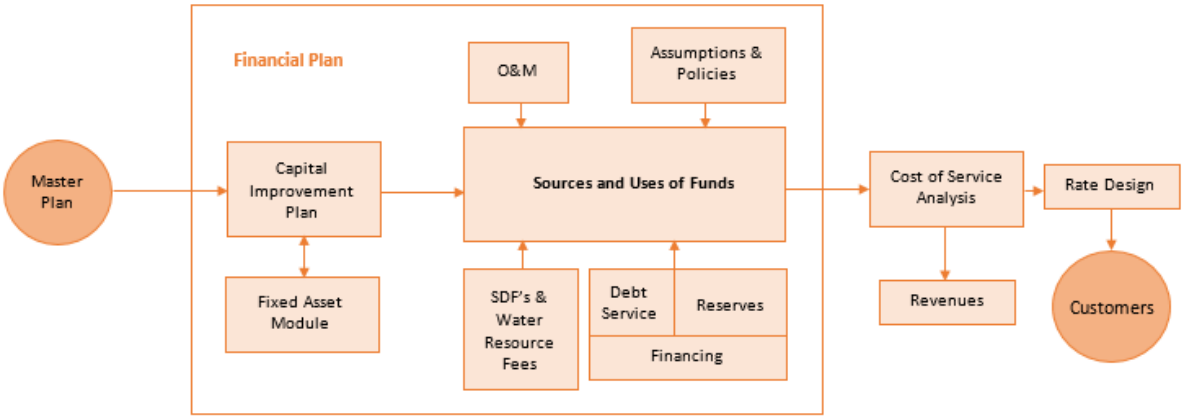
Castle Rock Water engaged Stantec Consulting Services, Inc. (Stantec) to assist in updating the comprehensive utility-specific financial plans that examine revenues, expenditures, debt service requirements, cash flows, reserve requirements, fund balances and capital project costs for the study period. The financial plan is used as the basis for projecting utility specific revenue requirements for the water, water resources, wastewater, and stormwater funds. Assumptions used in the development of the long term financial plans play a critical role in the results of this study. A full understanding of the modeling assumptions is therefore vitally important in qualifying study results. The following sections discuss both the planning assumptions and methods for calculating revenue requirements for the purpose of the study.

Financial Planning Overview

The main function of the financial plan is to balance the sources and uses of funds. Sources of funds include revenues from water sales (or water resources charges, wastewater charges, stormwater charges), miscellaneous fee revenue, interest/investment earnings, use of cash reserves, debt proceeds and contributions (including grants, developer contributions, etc.). Uses of funds include expenditures for operating expenses, repairs and replacements, debt service, increases in reserves and cash-financed capital expenditures. CRW has an explicit financial goal to minimize risk by balancing fixed and variable revenues with expenses as appropriate. By identifying the planned uses of funds, CRW developed financial plans to balance the sources of funds while minimizing the impact on rates to the greatest extent possible.

The financial plan is a forward looking model, meaning that all values reported are for future periods. For the purposes of this study, the first year in the model is fiscal year 2025. CRW's fiscal year is January 1, 2025 to December 31, 2025. The model includes projections of sources and uses of funds throughout the study period. Figure 1 provides a visual overview of the financial planning process followed by CRW and reviewed by Stantec. In addition to forecast assumptions, historical revenues and expenses, existing and planned debt service, and the current CIP serve as the basis for revenue requirement projections. Each step of the financial planning process is described individually in greater detail in the following sections.

Figure 1: Financial Planning Flowchart



Capital Improvements

Capital improvements are the planned investments in capital projects specific to each fund that are projected for the term of the corresponding utility's financial plan. Capital includes physical assets and infrastructure with a useful life greater than one year that meet all of CRW's established capitalization policy criteria. CRW also established a measurable goal to keep costs at or under budget for capital budgets each year by enterprise fund. Detailed CIPs were developed by CRW Engineers.

Operating Expenditures

Operating expenditures are planned annually as part of the operating budget. The majority of operating costs are fixed as opposed to variable, meaning that increases or decreases in usage will have little effect on the total costs of operations. Similar to capital expenses, CRW also aims to keep costs at or under budget for operational budgets each year by fund and continuously strives towards more efficient operations.

Other Capital Funding Costs

Planned capital expenditures include monies needed to fund the major infrastructure projects for each fund through the study period. Capital funding costs are cash expenditures that the respective fund will need to make in order to fund capital projects. These expenditures include the annual costs of debt service (principal and interest payments), the cost of cash-financing a given portion of the projects' costs and the cost of funding repair and replacement reserves. The capital funding costs presented in this report include the impacts of the 3,500 acre-feet (AF) Hybrid renewable water supply option which Town Council approved in October 2012 and the additional 1,000 AF of renewable WISE water supply approved by Town Council in July of 2018.

Revenue Requirements

Revenue requirements define the total amount of income CRW must earn in order to operate on a day-to-day basis, conduct any necessary repairs and respond to the needs of growth in the system. Two major requirements are measured as revenue requirements:

1. The Total Revenue Requirements
2. The Revenues Required from Rates (Service Charge Revenue Requirements)

The revenue requirements of each enterprise fund include O&M costs, cash-financed capital improvements, debt service payments and funding of operations, catastrophic failure, and capital reserves. The water fund requires additional funding of rate revenue stabilization reserves.

Calibration of Financial Plan

There are five major tools one can utilize in optimizing the financial plan to meet revenue requirements while remaining aligned with CRW policies and objectives. These include:

1. Additional Income from Rate Revenue Increases
2. Proceeds from New Debt Issuance
3. Contributions from System Development Fees
4. The Use of Reserve Funds
5. Inter-Fund Loans

Assumptions Shared Across Funds

Some of the assumptions and inputs used in the development of the long term financial plans are shared across all four enterprise funds.

Table 7 represents projected system growth for each of the four enterprise funds. These assumptions were developed using projections given from the Town's Development Services Department which are updated each year.

Table 7 Projected New Permits and Percentage Growth by Fund								
	Water Fund		Water Resources Fund		Wastewater Fund		Stormwater Fund	
Year	New Permits	Percentage Growth	New Permits	Percentage Growth	New Permits	Percentage Growth	New SFEs	Percentage Growth
2025	524	2%	524	2%	516	2%	632	1%
2026	544	2%	544	2%	526	2%	845	2%
2027	538	2%	538	2%	523	2%	781	2%
2028	538	2%	538	2%	523	2%	781	2%
2029	538	2%	538	2%	523	2%	781	2%

The escalation factors used in this study are defined in Appendix B.

Water Fund

The water fund financial plan projects the water fund's sources and uses of funds from 2025-2065. The water fund financial model developed for this study contains four sub-funds:

- Operating Reserve
- Capital Reserve
- Catastrophic Failure Reserve
- Rate Revenue Stabilization Reserve

Sources of Funds

Sources of funds include all cash inflows to the water fund. These include service charge revenues, miscellaneous income, contributed cash-capital, and interest earnings. The assumptions for specific sources of funding are provided below. Detailed definitions are given in Appendix B.

- System Growth – Table 7 represents projected system growth by fund.
- Rate Revenue Increases – Rate revenues are projected to increase each year based on Town growth and usage from 2025-2029.
- System Development Fee (SDF) Revenues – SDFs are projected to increase each year based on growth in the Town as well as projected increases from the SDF models. These are shown in more detail in Volume 2.
- Revenue Bonds – No new debt is planned in the five-year study period.

- Inter-Fund Loans – Inter-fund loans through 2029 from wastewater totaling $13.9 million will be taken to support water CIP.
- Other Revenues – For the study period, the water fund other revenues are presented in Table 8 below and include the following categories:
    - Charges for Service/Fees include revenues from bulk hydrant backflow inspections, bulk hydrant meter calibration, bulk hydrant permit fees, meter repair tests and fees, bulk water sales, water service transfer charges, etc.
    - Contributions and Donations include revenues from developer contributions.
    - Fines and Forfeitures include disconnection notice fees, late charges, lien administrative fees, lien filing fees, NSF charges and disconnection/reconnection of service fees.
    - Intergovernmental Agreement (IGA) Revenues include revenues received from various IGAs.
    - Miscellaneous Revenues include proceeds from sale of assets, reimbursements, sale of recycled materials, tower leases, water leases and vending machine commission.
    - Interest Earnings is the net revenue impact of earnings or losses on our investments.

Table 8
Water Fund
Other Revenues

Other Revenues	FY2025	FY2026	FY2027	FY2028	FY2029
Charges for Service/Fees	$999,632	$1,034,632	$1,034,632	$1,034,632	$1,034,632
Contributions and Donations	$0	$0	$0	$0	$0
Fines and Forfeitures	$320,300	$320,300	$320,300	$320,300	$320,300
IGA Revenues	$300,700	$150,700	$150,700	$150,700	$155,221
Miscellaneous Revenues	$248,987	$251,889	$257,982	$261,060	$261,189
Interest Earnings	$359,143	$223,292	$79,157	$79,299	$83,998
Total	**$2,228,762**	**$1,980,813**	**$1,842,771**	**$1,845,991**	**$1,855,340**

- Fund Balances – The water fund is projected to have a reserve fund balance of approximately $7.2 million at the beginning of 2025, not including capital reserve funds. Each reserve has a minimum fund balance requirement to help mitigate financial risk, which is in line with the FMP goal to keep adequate reserves and maintain fund balances between minimums and maximums. The requirements by sub-funds are:
    - Operating Reserve – 60 days of O&M; increasing from approximately $2.8 to $3.2 million throughout the study period.
    - Capital Reserve – Reserves vary year to year based on timing of CIP. The average capital reserve during the study period is $1.3 million.

- Catastrophic Failure Reserve – Approximately 1% of original fixed asset value, averaging $2.7 million throughout the study period.
- Rate Revenue Stabilization Reserve – Based upon 10% of metered water sales; averaging approximately $2.0 million in the study period. The 10% is consistent with the variance in rainfall from year to year.

The financial plan calls for maintaining the fund balance requirements presented above while subsequently using the net available capital reserve fund balance to offset short-term capital needs. The goal is to balance the need for rate increases and, if necessary, additional debt.

Uses of Funds

Uses of funds include all expenditures, either operating or capital and any reserve requirement or increase in fund balance CRW plans to achieve. The major assumptions for uses of funds are as follows. Detailed definitions for each are located in Appendix B.

- Operating Expenses – For the water fund most operating costs are fixed; meaning not varying based on the volume of water sold; with the exception of energy, treatment chemicals and certain other supplies, which vary with production.
- Personnel Services – CRW reviews full time equivalent (FTE) needs each year to determine how many new FTEs are projected over the budget period and includes these into the expense projections. The total projected FTEs for all four enterprise funds for the five-year period is three new FTEs.
- Supplies – The supplies for the water fund are expected to remain consistent over the five-year study period at about $2.1 million a year.
- Energy Costs – Over the five-year study period these are expected to increase at an average rate of approximately 3%.
- Capital Improvements – Total water system capital improvement costs from 2025-2029 are expected to be $65.6 million in today's dollars. Only improvements and replacements that provide benefits to existing customers are included in revenue requirements. Improvements to serve growth are funded from SDFs.
- Inter-Fund Loans – The water fund will receive an inter-fund loan of $4.8 million in 2024. It is anticipated that the water fund will receive additional inter-fund loans from the wastewater fund totaling $13.9 million the five-year study period. Payments on all inter-fund loans total approximately $11.0 million during the study period.
- Transfers Out – These include the costs for the vehicle replacement fund which is transferred to the fleet department for about $3.0 million over the five-year period.
- Fund Balances – When fund balances are drawn down from initial balances, the use of those funds is a source of funding to cover water fund expenses. When it is building the fund balance it is a use of funds as cash is added to the water operating fund. These are projected to be kept at an acceptable level of working capital, which is a minimum of 60 days O&M in the operating reserve. This also conforms to the FMP goal to keep adequate reserves and maintain fund balances between minimums and maximums.
- Debt Service – The water fund currently has one outstanding revenue bond issues (2015). The 2015 bond issue was a refinancing of 2006 bonds. The water fund debt

service amounts average $688 thousand between 2025 and the final payments in 2026. Total average debt service between 2025 and 2029 is $275 thousand.

- Debt Service Coverage – The debt service coverage ratio in the model is set to 1.2 times the total annual debt service amount, which is about $827 thousand. This is a bond covenant requirement.

Service Charge Revenue Requirements

The portion of annual system revenue requirements to be recovered through rates depends on a utility's financing policy and its other sources of income. To determine the amount of service charge revenue the water enterprise must generate annually, the total revenue requirements must be reduced by non-rate or other system revenues. Other system revenues are defined as all revenues except those derived from water rates. Table 9 represents the water fund service charge revenue requirements for 2025-2029.

Table 9
Water Fund
Service Charge Revenue Requirements

Revenue Requirements	FY2025	FY2026	FY2027	FY2028	FY2029
Operating and Maintenance	$16,956,994	$17,672,776	$18,315,813	$18,884,054	$19,330,657
Debt Service	$689,000	$687,750	$0	$0	$0
Transfers Out	$1,774,482	$1,969,036	$2,267,826	$4,228,972	$4,417,280
Cash Funded Capital	$6,252,033	$7,591,165	$10,354,935	$7,790,072	$8,740,142
Minor Capital Outlay	$0	$0	$0	$0	$0
Required Reserves/(Use of Reserves)	($2,015,878)	($2,410,833)	$3,240,657	$3,299,495	($2,136,244)
Total Revenue Requirements	**$23,656,631**	**$25,509,893**	**$34,179,231**	**$34,202,593**	**$30,351,835**
Non-Rate Revenues	($2,228,762)	($1,980,813)	($1,842,771)	($1,845,991)	($1,855,340)
Transfers In	$0	($500,000)	($7,600,000)	($5,800,000)	$0
Revenues Required from Rates	**$21,427,869**	**$23,029,080**	**$24,736,460**	**$26,556,602**	**$28,496,495**

Water Resources Fund

The water resources fund financial plan projects the fund's sources and uses of funds from fiscal year 2025 through 2065. As noted previously, the results presented for the water resources fund include the impacts of the renewable water supply plan for the 3,500 AF Hybrid proposal authorized by Town Council in October 2012 and the 1,000 AF WISE renewable supply approved by Town Council in July of 2018. The water resources fund financial model developed in this study has three sub-funds:

- Operating Reserve
- Capital Reserve
- Catastrophic Failure Reserve

The major assumptions for specific sources of funding are provided below.

Sources of Funds

The sources of funds include all cash inflows to the operating funds. These include service charge revenues, miscellaneous income, contributed cash-capital, and interest earnings. The major assumptions for specific sources of funding are provided below and detailed definitions are given in Appendix B.

- System Growth – Table 7 represents the projected system growth for water resources.
- Rate Revenue Increases – There is an 8.0% increase proposed for 2025. Additionally, annual rate increases of 8.0% are projected for 2026-2029.
- SDF Revenues – Please see Volume 2 for current projections.
- Revenue Bonds – During the 2025-2029 study period, approximately $55 million in new debt may be required in 2025.
- Inter-Fund Loans – There were no loans payable to the water resources fund.
- Other Revenues – For the study period the water resources fund other revenues are presented in Table 10 below.
    - Charges for Service/Fees include irrigation permit fees, sod exemption fees and landscaper registration fees.
    - Fines and Forfeitures include lien administrative revenue, water surcharge and water violation revenues.
    - Miscellaneous Revenues include capital leases, water rights leases, reimbursements, miscellaneous revenues and vending machine commission.
    - Interest Earnings is the net revenue impact of earnings or losses on our investments.

Table 10 Water Resources Fund Other Revenues					
Other Revenues	**FY2025**	**FY2026**	**FY2027**	**FY2028**	**FY2029**
Charges for Service/Fees	$60,000	$60,000	$60,000	$60,000	$60,000
Fines and Forfeitures	$187,985	$187,985	$187,985	$187,985	$187,985
Miscellaneous Revenues	$2,704,588	$704,588	$704,588	$704,588	$704,588
Interest Earnings	$1,219,795	$600,694	$147,926	$97,941	$57,248
Total	**$4,172,368**	**$1,553,267**	**$1,100,499**	**$1,050,514**	**$1,009,821**

- Fund Balances – The water resources fund is projected to have a reserve of approximately $5.8 million at the beginning of 2025, not including capital reserve funds. Each of the sub-funds in the water resources financial plan has a minimum balance requirement to help mitigate financial risk, which is in line with the FMP goal to keep adequate reserves and maintain fund balances between minimums and maximums. The requirements by sub-fund are:
    - Operating Reserve – 60 days of O&M; increasing from approximately $2.3 million to $2.9 million in the study period.
    - Capital Reserve – Obligated reserves vary from year to year; depending on the CIP. The fund maintains a minimum unobligated reserve of $500,000 throughout the study period.
    - Catastrophic Failure Reserve – Approximately 2% of original fixed asset value averaging about $3.5 million in the study period.

The financial plan calls for maintaining the balances above and using net available capital reserve fund balance to offset short-term capital needs.

Uses of Funds

Uses of funds include all the same components as listed above in the water fund. The major assumptions for uses of funds are shown below. For detailed definitions see Appendix B.

- Operating Costs – For the water resources fund most operating costs are fixed.
- Personnel Services – CRW reviews FTE needs each year to determine how many new FTEs are projected over the budget period and includes these in the expense projections. The total projected FTEs for all four enterprise funds for the five-year period is three new FTEs.
- Supplies – For the water resources fund supplies are projected to be approximately $897 thousand per year over the five-year study period.
- Capital Improvements – Total water resources system capital improvement costs from 2025-2029 are expected to be $148.7 million in today's dollars. Only improvements or

replacements that provide benefits to existing customers are included in revenue requirements. Improvements to serve growth are funded from SDFs.

- Inter-Fund Loans – The fund does not have an inter-fund loan balance at this time.
- Fund Balances – For the study, it is assumed that the fund balances will not drop below the requirements presented in the above section.
- Debt Service – The water resources fund currently has two outstanding revenue bond issues (2016 and 2022). The 2016 revenue bonds refunded the 2008 Certificates of Participation (COPs). Additional borrowing of $55 million may be needed in 2025. The debt service, including current and anticipated debt, amounts to an average of $9.4 million per year from 2025 to 2029.
- Debt Service Coverage – The debt service coverage ratio in the model is set to 1.2 times the total annual debt service amount, which is about $9.3 million.

Service Charge Revenue Requirements

Table 11 represents the water resources fund service charge revenue requirements for the study period 2025 through 2029.

Table 11
Water Resources Fund
Service Charge Revenue Requirements

Revenue Requirements	FY2025	FY2026	FY2027	FY2028	FY2029
Operating and Maintenance	$13,655,571	$14,897,183	$15,832,645	$17,104,252	$17,348,077
Debt Service	$7,718,050	$9,788,910	$9,814,710	$9,855,710	$9,875,460
Transfers Out	$53,847	$56,143	$6,933	$6,933	$6,933
Cash Funded Capital	$22,417,532	$13,795,507	$5,125,600	$5,129,200	$329,200
Minor Capital Outlay	$0	$0	$0	$0	$0
Required Reserves/(Use of Reserves)	($19,881,558)	($14,469,377)	($5,526,493)	($5,091,927)	$1,505,484
Total Revenue Requirements	**$23,963,442**	**$24,068,366**	**$25,253,395**	**$27,004,168**	**$29,065,154**
Non-Rate Revenues	($8,803,198)	($7,426,613)	($6,989,325)	($6,963,940)	($6,935,097)
Transfers In	($186,389)	($187,374)	($1,88,373)	($189,389)	($190,418)
Revenues Required from Rates	**$14,973,855**	**$16,454,379**	**$18,075,697**	**$19,850,839**	**$21,939,639**

Wastewater Fund

The wastewater fund financial plan projects the fund's source and uses of funds from 2025 through 2065. The three sub-funds include:

- Operating Reserve
- Capital Reserve
- Catastrophic Failure Reserve

Sources of Funds

The sources of funds include all cash inflows to the operating funds. These include service charge revenues, miscellaneous income, contributed cash-capital, and interest earnings. The major assumptions for specific sources of funding are provided below and detailed definitions are given in Appendix B.

- System Growth – Table 7 represents the projected system growth for wastewater.
- Rate Revenue Increases – There is a 0.5% increase proposed for 2025. Additionally, annual rate increases of 0.5% are projected for 2026-2029.
- SDF Revenues – Please see Volume 2 for current projections.
- Inter-Fund Loans – There are currently no loans payable to the fund. During the study period, approximately $11.1 million in payments will be received from the anticipated inter-fund loans to water and stormwater.
- Revenue Bonds – During 2025-2029 no new debt options are being reviewed.
- Other Revenues - For the study period, the wastewater fund other revenues are presented in Table 12 below.
    - Contributions and Donations include expected developer contributions.
    - Fines and Forfeitures include lien administrative revenue.
    - Miscellaneous Revenues include reimbursements, vending machine commissions and other miscellaneous revenues.
    - Interest Earnings is the net revenue impact of earnings or losses on our investments.

Table 12
Wastewater Fund
Other Revenues

Other Revenues	FY2025	FY2026	FY2027	FY2028	FY2029
Contributions and Donations	$29,510	$29,510	$29,510	$29,510	$29,510
Fines and Forfeitures	$25	$25	$25	$25	$25
Miscellaneous Revenues	$1,600	$1,600	$1,600	$1,600	$1,600
Interest Earnings	$537,919	$454,322	$238,585	$180,052	$179,441
Total	**$569,054**	**$485,457**	**$269,720**	**$211,187**	**$210,576**

- Fund Balances – The wastewater fund was projected to have a reserve of approximately $4.1 million at the beginning of 2025, not including capital reserve funds. Each of the sub-funds in the financial plan have a minimum balance requirement to help mitigate financial risk, which is in line with the FMP goal to keep adequate reserves and maintain fund balances between minimums and maximums. The requirements by sub-fund are:
    - Operating Reserve – 60 days of O&M; averaging $1.9 million in the study period.
    - Capital Reserve – Obligated reserves vary from year to year; depending on the CIP. The fund maintains a minimum unobligated reserve of $1.0 million throughout the study period.
    - Catastrophic Failure Reserve – Approximately 2% of original fixed asset value averaging about $2.3 million in the study period.

The financial plan calls for maintaining these balances above and using net available capital reserve fund balance to offset short-term capital needs.

Uses of Funds

Uses of funds include all the same components as listed above in the water fund. The major assumptions for uses of funds are shown below. For detailed definitions see Appendix B.

- Operating Costs – For the wastewater fund most operating costs are fixed.
- Personnel Services – CRW reviews FTE needs each year to determine how many new FTEs are projected over the budget period and includes these into the expense projections. The total projected FTEs for all enterprise funds for the five-year period is three new FTEs.
- Energy Costs – Over the five-year study period these are expected to increase at an average rate of approximately 3%.
- Capital Improvements – Total wastewater system capital improvement costs from 2025-2029 are expected to be $36.0 million in today's dollars. Only improvements or replacements that provide benefits to existing customers are included in revenue requirements. Improvements to serve growth are funded from SDFs.
- Transfers Out – These include the costs for the vehicle replacement fund which is transferred to the fleet department as well as inter-fund loans to water and stormwater and is about $18.8 million over the five-year study period.
- Fund Balances – For the study, it is assumed that the fund balances will not drop below the requirements presented in the above section.
- Debt Service – The fund does not have existing debt service and the financial plan does not assume new debt issues.

Service Charge Revenue Requirements

Table 13 represents the wastewater fund service charge revenue requirements for the study period 2025 through 2029.

Table 13
Wastewater Fund
Service Charge Revenue Requirements

Revenue Requirements	FY2025	FY2026	FY2027	FY2028	FY2029
Operating and Maintenance	$10,604,110	$11,105,766	$11,630,813	$12,185,132	$12,737,353
Debt Service	$0	$0	$0	$0	$0
Transfers Out	$142,122	$671,753	$7,782,211	$5,982,211	$4,188,375
Cash Funded Capital	$0	$0	$0	$0	$0
Minor Capital Outlay	$0	$0	$0	$0	$0
Required Reserves/(Use of Reserves)	$3,423,206	$2,680,681	($4,566,397)	($1,063,422)	$779,008
Total Revenue Requirements	**$14,169,438**	**$14,458,200**	**$14,846,627**	**$17,103,921**	**$17,704,736**
Non-Rate Revenues	($546,234)	($462,637)	($246,900)	($188,367)	($187,756)
Transfers In	($1,250,524)	($1,258,024)	($1,494,246)	($3,439,027)	($3,666,283)
Revenues Required from Rates	**$12,372,680**	**$12,737,539**	**$13,105,481**	**$13,476,527**	**$13,850,698**

Stormwater Fund

The stormwater fund financial plan projects the fund's source and uses of funds from 2025 through 2065. The three sub-funds include:

- Operating Reserve
- Capital Reserve
- Catastrophic Failure Reserve

Sources of Funds

The sources of funds include all cash inflows to the operating funds. These include service charge revenues, miscellaneous income, contributed cash-capital, and interest earnings. The major assumptions for specific sources of funding are provided below and definitions are given in Appendix B.

- System Growth – Table 7 represents the projected system growth for stormwater.
- Rate Revenue Increases – There is a 5.0% increase proposed for 2025. A 5.0% increase is also projected for 2026-2029.
- System Development Fee (SDF) Revenues - Please see Volume 2 for current projections.
- Revenue Bonds – During 2025-2029 no new debt options are being reviewed.
- Inter-Fund Loans – An inter-fund loan of $4.0 million from the wastewater fund is projected in 2029.
- Other Revenues – For the study period, the stormwater fund other revenues are presented in Table 14 below.
    - DESC/GESC (now called TESC) Fees include TESC inspection fees and TESC plan check fees and re-inspection fees.
    - Developer Contributions include contributions from developers.
    - Fines and Forfeitures include the lien administrative revenue.
    - Miscellaneous Revenues include vending machine commissions, reimbursements and other miscellaneous revenues.
    - Interest Earnings is the net revenue impact of earnings or losses on our investments.

Table 14
Stormwater Fund
Other Revenues

Other Revenues	FY2025	FY2026	FY2027	FY2028	FY2029
TESC Fees	$264,253	$264,253	$264,253	$264,253	$267,091
Developer Contributions	$1,149,593	$2,315	$2,315	$538,315	$3,164,815
Fines and Forfeitures	$25	$25	$25	$25	$25
Miscellaneous Revenues	$170,086	$89,606	$89,606	$89,606	$89,606
Interest Earnings	$127,493	$89,477	$22,261	$19,954	$22,477
Total	**$1,711,450**	**$445,676**	**$378,460**	**$912,153**	**$3,544,014**

- Fund Balances – The stormwater fund was projected to have a reserve of approximately $1.8 million at the beginning of 2025, not including capital reserve funds. Each of the sub-funds in the financial plan have a minimum balance requirement to help mitigate financial risk, which is in line with the FMP goal to keep adequate reserves and maintain fund balances between minimums and maximums. The requirements by sub-fund are:
    - Operating Reserve – 60 days of O&M; averaging approximately $0.6 million in the study period.
    - Capital Reserve – Obligated reserves vary from year to year; depending on the CIP.
    - Catastrophic Failure Reserve – Approximately 1% of original fixed asset value averaging about $1.2 million in the study period.

The financial plan calls for maintaining these balances above and using net available capital reserve fund balance to offset short-term capital needs.

Uses of Funds

Uses of funds include all the same components as listed above in the water fund. The major assumptions for uses of funds are shown below. For detailed definitions see Appendix B.

- Operating Costs – For the stormwater fund most operating costs are fixed.
- Personnel Services – CRW reviews FTE needs each year to determine how many new FTEs are projected over the budget period and includes these in the expense projections. The total projected FTEs for all four enterprise funds for the five-year period is three new FTEs.
- Supplies – The supplies for the stormwater fund are expected to remain consistent over the five-year study period at about $114 thousand per year.
- Energy Costs – Over the 5-year study period these are expected to increase at a rate of 3%.
- Capital Improvements – Total stormwater system capital improvement costs from 2025-2029 are expected to be $15.8 million in today's dollars. Only improvements or replacements that provide benefits to existing customers are included in revenue requirements. Improvements to serve growth are funded from SDFs.
- Transfers Out – These include the costs for the vehicle replacement fund which is transferred to the fleet department and is about $822 thousand over the five-year study period.
- Inter-Fund Loans – There is an anticipated inter-fund loan of $4 million from wastewater in 2029.
- Fund Balances – For the study, it is assumed that the fund balances will not drop below the requirements presented in the above section.
- Debt Service – The 10-year debt repayment of the 2019 loan will average $1.2 million a year during the study period.

Service Charge Revenue Requirements

Table 15 represents the stormwater fund service charge revenue requirements for the study period 2025 through 2029.

Table 15 Stormwater Fund Service Charge Revenue Requirements					
Other Revenues	**FY2025**	**FY2026**	**FY2027**	**FY2028**	**FY2029**
Operating and Maintenance	$3,752,723	$3,902,072	$4,068,830	$4,227,695	$4,381,269
Debt Service	$1,157,200	$1,167,424	$1,182,072	$1,181,048	$1,189,640
Transfers Out	$141,836	$152,452	$174,525	$174,525	$178,596
Cash Funded Capital	$1,173,899	$1,778,650	$848,243	$1,001,593	$3,008,250
Minor Capital Outlay	$0	$0	$0	$0	$0
Required Reserves/(Use of Reserves)	($169,522)	($1,916,116)	($943,732)	($388,889)	$423,275
Total Revenue Requirements	**$6,056,136**	**$5,084,483**	**$5,329,938**	**$6,195,972**	**$9,181,030**
Non-Rate Revenues	($1,711,450)	($445,676)	($378,460)	($912,153)	($3,544,014)
Transfers In	$0	$0	$0	$0	$0
Revenues Required from Rates	**$4,344,686**	**$4,638,807**	**$4,951,478**	**$5,283,819**	**$5,637,016**

Water and Wastewater Cost-of-Service Analysis

Introduction

Part of the study includes updating the water and wastewater cost-of-service (COS) analysis to implement the rate revenue requirements determined in the financial plans. The results of the COS analysis are monthly service charges and volumetric rates by customer class that equitably distribute the ongoing water and wastewater costs across customer classes.

Cost-of-Service Methodology

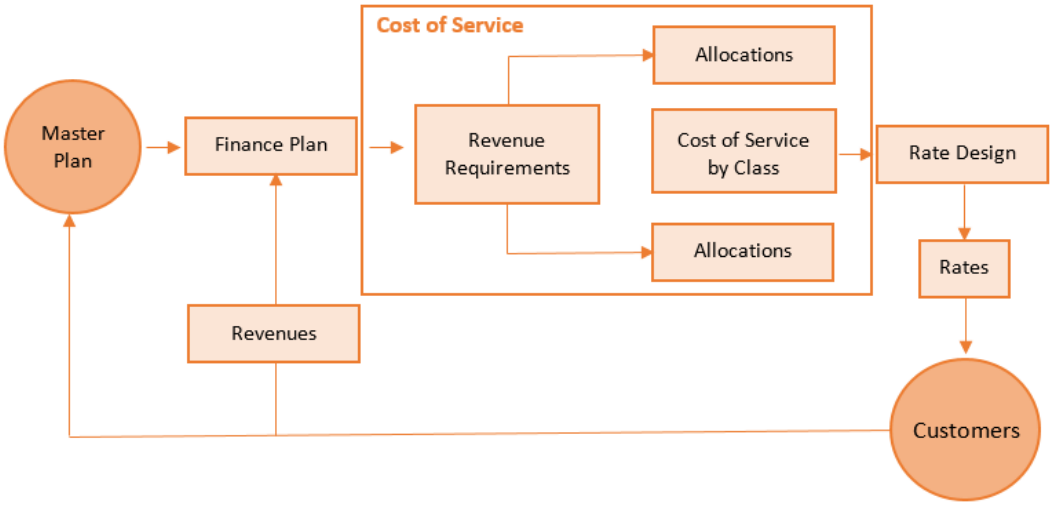
The basic philosophy behind a COS methodology is that utilities should be self-sustaining enterprises that are adequately financed with rates that are based on sound engineering and economic principles. In addition, rates should be equitable and proportionate to the costs of providing service to a given type of customer. The guidelines of water ratemaking are established by the American Water Works Association (AWWA) in the Manual M1. The

guidelines for wastewater ratemaking are established by the Water Environment Federation (WEF) in the Manual of Practice No. 27.

Figure 2 illustrates the flow of information involved in developing COS rates. More specifically, the steps required to develop COS rates include:

- Determination of the systems' annual revenue requirements (i.e., costs)
- Determination of service charge revenue requirements
- Analysis of customer demands and characteristics
- Allocation of service charge revenue requirements by type of customer class
- Design of rates

Figure 2: Cost-of-Service Process



The COS process utilizes information generated in the financial plan, as discussed above in the water and wastewater sections. The CIP is a particularly critical component of the financial plan because the way in which the utility plans to meet its capital costs has major implications on the level of rates that customers pay. One key function of the financial plan is to give management a tool to evaluate the impact of the costs of capital projects on service charges, debt, fund balances, etc. A major result of the financial plan is the annual service charge revenue requirements: the amount of revenue the utility must earn from the assessment of water and wastewater rates in order to meet all of its financial needs and obligations. The COS analysis allocates service charge revenue requirements among CRW's customer classes to determine the cost of service by class.

The financial plan attempts to balance cash sources and uses through 2065; however, the COS analysis focuses on the water and wastewater system revenue requirements for a single test year with two projected years. The main goal was to determine rates for recommendation in 2025. Revenue requirements for 2025 through 2029 were obtained from the financial plans developed for CRW.

The steps of the COS process are as follows.

Determination of Annual System Revenue Requirements

Revenue requirements are total operating and capital costs of the system for a single year to be recovered from all available revenue sources. Under a cash-need approach followed by most governmental-type entities, total revenue requirements typically equal:

- O&M Expenses
- Debt Service
- Cash-Funded Capital Expenditures
- Transfers to Reserves

Determination of Service Charge Revenue Requirements

The portion of annual system revenue requirements to be recovered through rates depends on a utility's financing policy and its other sources of income. To determine the amount of revenue that rates must generate annually, the total revenue requirements must be reduced by non-rate revenue or other system revenue. Other system revenues are defined as all revenues except those derived from water and wastewater rates.

Analysis of Flows and Usage Characteristics

Analyzing annual consumption and flows in the system and other usage characteristics begins with a review of the individual customer classes. CRW currently provides water services to seven customer classes:

- Residential
- Multifamily (with irrigation)
- Multifamily Indoor Use Only
- Commercial (with irrigation)
- Commercial Indoor Use Only
- Irrigation
- Bulk Water

CRW currently provides wastewater to five customer classes:

- Residential
- Multifamily (with irrigation)
- Multifamily Indoor Use Only
- Commercial (with irrigation)
- Commercial Indoor Use Only

The commercial class includes such customers as schools, churches and the non-irrigation accounts. The irrigation class includes all irrigation-only accounts.

To equitably allocate the service charge revenue requirements of the system, an analysis of each customer class' consumption and flow characteristics is necessary. Characteristics such as annual and monthly consumption in millions of gallons, AWMC, average summer monthly consumption and the number of customers by meter size and customer class are analyzed.

Customer Characteristics

CRW's customer characteristics that are analyzed in the study include the following for the water system. These are defined in Appendix B and analyzed further in the Customer Characteristics Analysis in Appendix C.

- Base Water Demand
- Maximum Day Extra Capacity
- Maximum Hour Extra Capacity
- Meters and Services
- Number of Customers

For wastewater the analyzed customer characteristics are shown below and are defined in Appendix B and analyzed further in the Customer Characteristics Analysis in Appendix C.

- Flow Demand
- Meters and Services
- Number of Customers

The percentage of each customer class' share of each characteristic above forms the basis for allocating costs of service to each customer class.

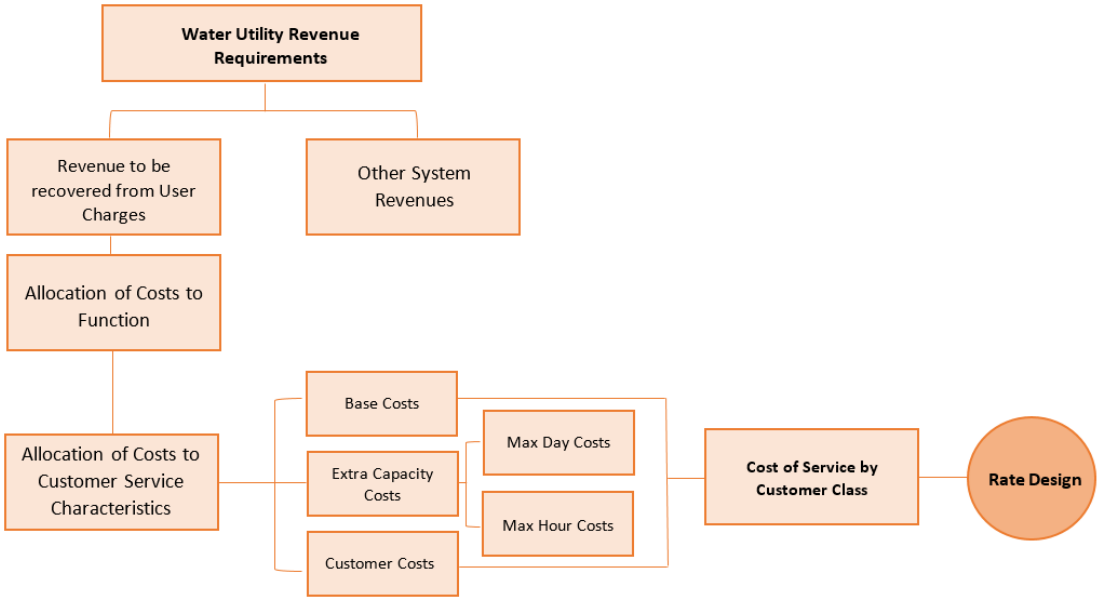
Allocation Costs to Customer Classes

Equitably allocating the water and wastewater systems' service charge revenue requirements to the customer classes involves a multi-step process. Beginning with the O&M costs, the following steps were completed:

- Allocate costs to functions (called unit process in the wastewater system)
- Allocate costs by functions to customer characteristics
- Allocate costs to customer classes based on each class' proportion of the customer characteristics

Figure 3 illustrates how the separate cost allocation steps fit into the overall process of setting rates for the water system.

Figure 3: Rate Setting Process



Allocation of Costs to Functions

A water or wastewater utility's O&M expenditures may be reported according to a chart of accounts that identifies the system functions. Alternatively, the expenses may follow the divisions of the utility such as management, distribution, storage, treatment, billing, etc. The functions need to be identified and costs separated accordingly. The first cost allocation step determines the percentage of each O&M line item to be allocated to one or more of the system's functions. Functionalizing costs in this manner enhances the accuracy and equity of the system cost allocation to the customer classes. The O&M expenditures for the water system were allocated to the following system functions based on fixed asset allocations and direction from CRW Staff:

- Source of Supply
- Treatment
- Pumping
- Transmission
- Distribution
- Storage
- Buildings/Improvements
- Administration
- Tools/Equipment
- Power and Chemicals
- Meters and Services
- Customers and Accounts

The O&M expenditures for the wastewater system were allocated to the following unit processes based on fixed asset allocations and direction from CRW Staff:

- Treatment by Others
- Collection
- Interceptor
- Lift Station
- Administration
- Customer and Accounts
- Meters and Services

Allocation of Costs to Customer Characteristics

The assignment of costs to customer characteristics varies with the allocation methodology used. In the method of COS allocation used, costs are typically assigned to the following customer characteristics for water, which are defined in Appendix B and analyzed further in the Customer Characteristics Analysis in Appendix C.

- Base
- Maximum Day Extra Capacity
- Maximum Hour Extra Capacity
- Customer
- Meter and Services

In the method of cost allocation followed, costs are typically assigned to the following characteristics for wastewater, which are also defined in Appendix B and analyzed further in the Customer Characteristics Analysis in Appendix C.

- Flow
- Number of Customers
- Demand

Distribution of Costs to Customer Classes

The projections of customer class consumption and their respective usage characteristics are calculated in this step. Each class listed above in the report for water and wastewater contributes a different proportion of total annual usage.

For the water utility, base costs are allocated to each class in proportion to its total annual consumption. Costs related to max day and max hour extra capacity are allocated to each class in proportion to the class' estimated peaking factors of each class' extra capacity demands relative to the total extra capacity demands. Peaking factors by class were determined by analyzing monthly consumption data and system peaking factors.

Customer costs typically are allocated based on the proportion of the number of customers of each class. Meters and service costs are allocated according to the proportion of equivalent meters.

For the wastewater utility, flow costs are allocated to each class in proportion to total annual usage (calculated using the AWMC). Costs related to flow are allocated to each class in proportion to the class' estimated flow based on typical domestic flow.

Customer costs are allocated based on the proportion of customers; meters and services costs are allocated according to the proportion of equivalent meters. The proportion of equivalent meters by customer class is also used to allocate demand costs.

Capital Costs

Under the cash basis approach to calculating revenue requirements, capital costs consist of non-debt funded capital expenditures (capital outlays), debt service and transfers to reserve funds. It is important to note that capital costs for improvements to serve new growth are not included in these costs. Unlike O&M costs where each line item is allocated to the water system functions, capital costs under this approach are allocated to customer classes based on the allocation of fixed assets net of accumulated depreciation and contributions. To generate capital cost allocation percentages used under the cash basis approach, each fixed asset line item is allocated according to the following four steps:

1. Allocate net fixed assets used to serve customers to functions (called unit processes in the wastewater fund).
2. Allocate assets by functions to customer characteristics.
3. Allocate assets to customer classes based on each class' proportion of the customer characteristics.
4. Distribute the capital costs to each class of customers based on each class' proportionate use of the allocated assets.

Rate Design Development and Rate Calculation

The last step in the COS analysis is the actual design of the water and wastewater rate structures and calculation of the rates by customer class. Several types of rate structures have been used historically and are currently in use throughout the industry. The most important concern is to ensure the rate structure recovers the cost of service and meets CRW's objectives identified by the community.

Water Cost-of-Service Analysis Results

The steps described above to conduct the water COS analysis were followed. The results presented in this section summarize the cost of service for each of the water system's customer classes for 2025.

Estimated Water System Revenue Requirements

The first two steps of the analysis determine the revenue requirements and service charge revenue requirements or revenues to be recovered from the calculated water rates. Based on the O&M and capital budget and financial planning assumptions, Table 16 represents the water fund revenue requirements for 2025.

Table 16
Water Fund
2025 Revenue Requirements

Description	2025
O&M Expenses:	
Admin	$2,181,867
Capital Projects	$1,852,050
Customer Billing	$374,347
Meter Services	$1,670,150
Meters Retrofit / AMI	$0
Engineering	$574,831
Mapping	$108,040
Field Services	$1,819,680
Facility Maintenance	$1,098,712
Water Plant Operations	$6,045,615
SCADA	$865,782
Reg. & Water Compliance	$365,919
Transfers Out	$1,774,482
Subtotal O&M	**$18,731,476**
Less: Transfers	($1,774,482)
Less: Minor Capital	$0
Total O&M	**$16,956,994**
Capital Expenses	
Transfer to Capital Fund	($241,396)
Debt Service	$689,000
Cash Funded Capital	$6,252,033
Minor Capital Outlay	$0
Subtotal Capital	**$6,699,637**
Total Revenue Requirements	**$23,656,631**
Less: O&M Related Non-Rate Revenue	($999,632)
Less: Capital Related Non-Rate Revenue	($1,229,130)
Less: Transfers In	$0
Service Charge Revenue Requirement	**$21,427,869**

After subtracting non-rate revenues and calculating the service charge revenue requirements for 2025 the amount to recover is approximately $21.4 million.

Customer characteristics are estimated for 2025 based on consumption for the most recent twelve months ending December 2023 from CRW's billing records, peaking factors calculated by CRW, plus the projected minimum additional flow by customer class. Minimum additional flow per class is calculated based on a representative customer's annualized AWMC multiplied by projected growth. Table 17 summarizes the projected customer characteristics that calculate the equivalent meters used for the study as well as the consumption patterns used. Table 18 shows the percentages allocated to each customer characteristic from the COS model that is projected for 2025 for each customer class.

Table 17
Water Fund
Customer Characteristics by Customer Class (2025 Projected)

Customer Class	Base Consumption (Kgal)	Max Day Extra Capacity (MGD)	Max Hour Extra Capacity (MGD)	Customers	Equivalent Meter
Residential	1,854,997	5.84	16.47	25,457	25,521
Multifamily w/ Irrigation	79,202	0.20	0.62	112	1,006
Commercial w/ Irrigation	122,168	0.32	0.98	283	1,585
Bulk	68,379	0.22	0.62	59	59
Irrigation	295,548	1.88	4.02	635	4,082
Multifamily Indoor Use Only	160,807	0.11	0.84	425	2,475
Commercial Indoor Use Only	181,449	0.18	1.01	440	2,868
Total	**2,762,549**	**8.77**	**24.56**	**27,411**	**37,597**

Table 18 Water Fund Customer Characteristics (2025 Projected)					
Customer Class	**Base**	**Max Day**	**Max Hour**	**Customer**	**Meter**
Residential	67.15%	66.67%	67.03%	92.87%	67.88%
Multifamily w/ Irrigation	2.87%	2.23%	2.53%	0.41%	2.68%
Commercial w/ Irrigation	4.42%	3.70%	4.01%	1.03%	4.22%
Bulk	2.48%	2.56%	2.52%	0.22%	0.16%
Irrigation	10.70%	21.43%	16.38%	2.32%	10.86%
Multifamily Indoor Use Only	5.82%	1.31%	3.41%	1.55%	6.58%
Commercial Indoor Use Only	6.57%	2.10%	4.13%	1.61%	7.63%
Total	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

The service charge revenue requirements reported in Table 16 of $21.4 million are allocated first among functions, then to customer characteristics and finally to each customer class based on the percentages presented in Table 18 above. These results are the cost of service by customer characteristics and class shown in Table 19 below.

Table 19 Water Fund Water Cost of Service by Customer Class (2025 Projected)						
Customer Class	**Base**	**Max Day**	**Max Hour**	**Customer**	**Meter**	**Total**
Residential	$5,553,164	$2,793,406	$1,388,579	$4,921,305	$1,084,325	$15,740,778
Multifamily w/ Irrigation	$237,101	$93,341	$52,334	$21,652	$42,762	$447,190
Commercial w/ Irrigation	$365,725	$155,175	$82,983	$54,709	$67,354	$725,946
Bulk	$204,701	$107,448	$52,134	$11,406	$2,507	$378,195
Irrigation	$884,758	$897,859	$339,364	$122,757	$173,419	$2,418,158
Multifamily Indoor Use Only	$481,396	$54,748	$70,590	$82,160	$105,163	$794,058
Commercial Indoor Use Only	$543,189	$87,912	$85,520	$85,060	$121,864	$923,545
Total	**$8,270,034**	**$4,189,889**	**$2,071,503**	**$5,299,049**	**$1,597,394**	**$21,427,869**

Wastewater Cost-of-Service Analysis Results

This section represents the cost of service by customer class for the wastewater system.

Estimated Wastewater System Revenue Requirements

Test year revenue requirements and service charge revenue requirements, or revenues to be recovered from the calculated wastewater rates, are presented in Table 20. The study projects that the wastewater system needs to recover about $12.4 million from customers in 2025.

Table 20
Wastewater Fund
2025 Revenue Requirements

Description	2025
O&M Expenses	
Admin	$1,153,602
Capital Projects	$1,101,694
Customer Billing	$341,377
Engineering	$388,671
Mapping	$95,351
Field Services	$1,666,500
Facility Maintenance	$585,080
Plant Operations	$4,898,218
SCADA	$373,617
Transfers Out	$142,122
Subtotal O&M	**$10,746,232**
Less: Transfers	($142,122)
Less: Minor Capital	$0
Total O&M	**$10,604,110**
Capital Expenses	
Transfer to Capital Fund	$3,565,328
Debt Service	$0
Cash Funded Capital	$0
Minor Capital Outlay	$0
Subtotal Capital	**$3,565,328**
Total Revenue Requirements	**$14,169,438**
Less: O&M Related Non-Rate Revenue	$0
Less: Capital Related Non-Rate Revenue	($546,234)
Less: Transfers In	($1,250,524)
Service Charge Revenue Requirement	**$12,372,680**

Customer characteristics are estimated for 2025 based on January 2023 to December 2023 data from CRW's billing records and assumed residential strength factors plus the projected minimum additional flow by customer class for wastewater customers. The 2024 cost of service model does not currently incorporate differences between waste strength (i.e. BOD and TSS); therefore, no differences in concentrations are used. Minimum additional flow per class is calculated based on a representative customer's annualized AWMC and projected growth. Table 21 summarizes the projected customer characteristics that calculate the equivalent meters used for the study as well as the consumption patterns used. Table 22 shows the percentages allocated to each customer characteristic from the COS model that is projected for 2025 for each customer class.

Table 21
Wastewater Fund
Customer Characteristics by Customer Class (2025 Projected)

Customer Class	Flow (Kgal)	BOD (Pounds)	TSS (Pounds)	# of Customers	Equivalent Meter
Residential	1,107,032	3,519,747	3,806,131	24,979	25,040
Commercial w/ Irrigation	71,549	227,486	245,995	276	1,557
Commercial Indoor Use Only	149,232	474,474	513,079	422	2,663
Multifamily w/ Irrigation	53,950	171,531	185,488	112	1,006
Multifamily Indoor Use Only	147,229	468,107	506,194	425	2,475
Total	**1,528,992**	**4,861,345**	**5,256,888**	**26,214**	**32,742**

Table 22
Wastewater Fund
Customer Characteristics (2025 Projected)

Customer Class	Flow (Kgal)	BOD (Pounds)	TSS (Pounds)	Customers	Equivalent Meter
Residential	72.40%	72.40%	72.40%	95.29%	76.48%
Commercial w/ Irrigation	4.68%	4.68%	4.68%	1.05%	4.76%
Commercial Indoor Use Only	9.76%	9.76%	9.76%	1.61%	8.13%
Multifamily w/ Irrigation	3.53%	3.53%	3.53%	0.43%	3.07%
Multifamily Indoor Use Only	9.63%	9.63%	9.63%	1.62%	7.56%
Total	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

The service charge revenue requirements reported in Table 20 of $12.4 million are allocated first among functions, then to customer characteristics and finally to each customer class based on the percentages presented in Table 22 above. These results are the cost of service by customer characteristics and class shown in Table 23 below.

Table 23
Wastewater Fund
Cost of Service by Customer Class (2025 Projected)

Customer Class	Flow (Kgal)	BOD (Pounds)	TSS (Pounds)	Customers	Total
Residential	$5,966,286	$627	$349	$3,936,301	$9,903,563
Commercial w/ Irrigation	$385,609	$41	$23	$43,493	$429,166
Commercial Indoor Use Only	$804,276	$85	$47	$66,501	$870,908
Multifamily w/ Irrigation	$290,760	$31	$17	$17,649	$308,457
Multifamily Indoor Use Only	$793,483	$83	$46	$66,973	$860,586
Total	**$8,240,414**	**$867**	**$482**	**$4,130,917**	**$12,372,680**

Wastewater Monthly Service Charge

An important rate design feature that directly affects the rate results is the policy decision to include 20 percent of annual capital costs in the monthly service charge. By doing this, revenue stability is increased and all customers are required to pay a portion of debt service and other capital expenses strictly on an equivalent water meter basis rather than on a wastewater volume basis. This also reduces the volumetric rate and recovers a portion of the PCWRA debt service costs from users who require more capacity in the wastewater system. The demand charge component on the monthly service charge recovers the 20 percent of annual wastewater system capital costs not including the capital costs needed to serve new growth.

Water meter size is closely related to the amount of water a customer can potentially use and therefore discharge into the wastewater system. Accounts with larger meter sizes potentially use more capacity in the system (potential demand). With this rate design feature, accounts with larger meters pay a higher proportionate share of the capital costs as part of the monthly service charge.

Rate Design

Introduction

Once the cost of service by class was determined, the water and wastewater COS based rates were developed based on the existing rate structure. The water rate structure is a water budget based rate structure based on tiered usage. The wastewater fund follows a uniform rate structure, with a monthly service charge that varies by meter size. This section presents the results of the rate development for water, water resources, wastewater, and stormwater enterprise funds.

Water System Rates

Water Budget Based Rate Structure

A water budget based rate structure identifies a monthly budgeted amount of water by individual account that varies for each customer by AWMC for indoor use and landscaped area and historical evapotranspiration rates (ET). Irrigation requirements per square foot of landscaped area depend on ET for the area of Castle Rock and historical precipitation.

The irrigation season is defined as the months of March through October. Total inches of water allowed per square foot of landscaped area for the Town averages approximately 30 inches. The total water allowance is based on 80 percent of the 7-year average of historical ET for the year. This value is adequate because ET demands are based on the maximum requirements for bluegrass and creates the irrigation allowance.

For non-irrigation or winter months, an irrigation allowance is not included in an account's water budget. Instead, an account's historical average winter monthly consumption (AWMC) provides actual data on the account's winter water usage for the months of November through February.

Water Usage Thresholds

The water budget based rate structure consists of three consumption tiers. Table 24 represents the tier threshold by customer class for the irrigation and winter season.

Table 24 Water Fund Water Usage Thresholds			
Irrigation Season (April 1 through October 31 Consumption)			
Customer Class	**Tier 1**	**Tier 2**	**Tier 3**
Residential	AWMC	Budget	Excess
Multifamily Indoor Use Only	AWMC	N/A	Excess
Multifamily	AWMC	Budget	Excess
Commercial Indoor Use Only	AWMC	N/A	Excess
Commercial	AWMC	Budget	Excess
Irrigation	N/A	Budget	Excess
Winter Season (November 1 through March 31 Consumption)			
Customer Class	**Tier 1**	**Tier 2**	**Tier 3**
Residential	AWMC	N/A	Excess
Multifamily Indoor Use Only	AWMC	N/A	Excess
Multifamily	AWMC	N/A	Excess
Commercial Indoor Use Only	AWMC	N/A	Excess
Commercial	AWMC	N/A	Excess
Irrigation	N/A	N/A	Excess

Explanations of the specific tiered rates follow. Bulk water accounts are not subject to a water budget based rate structure and are not discussed in this section.

Description of Thresholds

For residential, multifamily and commercial accounts with meters providing both indoor and outdoor irrigation water, the rate structure includes three usage tiers with increasing rates per tier billed in thousand gallons (Kgal).

Tier 1 includes all usage up to an individual account's AWMC. This represents the base amount of consumption an individual account requires for basic indoor use. Average AWMC for residential customers is 5,000 gallons per month. AWMC for multifamily and commercial accounts varies according to meter size and type of commercial account.

Tier 2, or irrigation budget, includes usage above an account's AWMC and includes its monthly irrigation allowance. The threshold will vary by month during the irrigation months. An account's landscaped area in square feet (up to a maximum of 7,000 square feet) and the monthly irrigation requirements (ET) will determine the monthly irrigation allowance.

Tier 3, or excess tier, includes all usage greater than an account's AWMC plus irrigation allowance during a month. The goal of this tier is to target users who may be using water inefficiently.

Tiered Rates

The actual rates calculated for consumption tiers in the water budget rate structure recommended here are tied to the results of the COS analysis. Each account pays a fixed monthly service charge and a volumetric charge. A monthly water resources charge per single family equivalent (SFEs, varying by meter) is added to an account's bill. The water resources charge is discussed below.

The water rate structure consists of three increasing tiered rates:

- Tier 1 – Base COS Rate
- Tier 2 – Base plus Extra Capacity Rates by Customer Class
- Tier 3 – Excess Use Rate to Recover CRW's Remaining Revenue Requirements

The rate per 1,000 gallons for Tier 1 equals the cost to CRW of providing one unit of water to its customers on an average use basis. It differs from the average COS rate because it does not include any peaking related costs. This rate is the same for all customer classes and provides an incentive for customers to maintain low water use.

The rate for Tier 2 was intended to represent the cost of providing base and peaking related water demands to CRW's customers. It includes the costs of maximum day and maximum hour costs of delivering water during the peak irrigation periods. This rate varies by customer class due to differences in peaking characteristics among the classes. Irrigation requirements cause peaking on the system; therefore, the water used within a customer's irrigation budget is charged at the peaking rate.

Finally, the rate for Tier 3 recovers revenues for usage above each customer's Tier 2 budget. The rate is higher than Tier 2 to encourage customers to stay within their Tier 2 budgets.

Residential accounts are subject to a water conservation surcharge for usage greater than 40,000 gallons per month. This surcharge intends to send a conservation price signal to customers with excessive usage. The water rates are shown in Tables 25 and 26 below.

Water Resources Monthly Service Charge

CRW currently assesses all water resources customers a fixed monthly service charge per SFE. Table 27 below shows the proposed 2025 fixed monthly service charge per SFE by meter size.

Stormwater Monthly Service Charge

This year's study update used assumptions established during the 2010 study and reviewed periodically for determining the stormwater monthly service charge. This year's study update used revised assumptions. For single family residential units, the percent imperviousness was determined based on the following assumptions:

1. Density of 3 units per acre from the water design criteria section of the Town of Castle Rock – Public Works Regulations – February 12, 1999
2. Typical two story homes
3. Average home size of 2,100 sq. ft. from Douglas County Assessor data

Using these assumptions and data from the Urban Drainage and Flood Control District (UDFCD) Criteria Manual, a single family residential account's percent imperviousness was estimated to be 33 percent.

The Town's Geographical Information System (GIS) data indicates the average lot size of a single family home in the Town is 9,864 sq. ft., Applying 33 percent imperviousness to this lot size results in an impervious area of 3,255 sq. ft. per SFE. The assumption of one SFE used in this study is 3,255 sq. ft.

The service charge is also calculated based on a percent imperviousness for non-residential accounts during this 2023 study update. The average percent imperviousness for multifamily and other non-residential properties was assumed to be 80 percent, unless otherwise indicated in CRW's billing system data based on an actual survey of the property. SFEs were calculated based on the percent imperviousness of each property multiplied by its parcel size.

Wastewater Monthly Service Charges

CRW currently charges wastewater customers a fixed monthly service charge that consists of a customer charge and a demand charge, plus a uniform volumetric rate for wastewater flow. An account's flow is estimated using its AWMC. The proposed 2025 wastewater rates consist of a monthly charge that includes the demand charge by meter size, plus a uniform volumetric rate for all customers as shown in Table 28 below.

Summary

CRW has completed the 2024 Rates and Fees Study update, including financial planning, COS rate studies and rate design. The purpose of the study is to provide an update for water, water resources, wastewater and stormwater fund rates designed to meet CRW policies and objectives during the years 2025 through 2029. The findings are based on a thorough review of the information provided.

Proposed Rates for 2025 by Enterprise Fund

Rates for the five-year study period (2025-2029) were projected using the percentage rate revenue increases projected by the financial plan. The 2025 proposed rates are shown in the following tables by enterprise fund.

Table 25
Water Fund
Proposed 2025 Monthly Service Charges

Meter Size	Monthly Charges
3/5" x ¾"	$10.94
5/8" x ¾"	$10.94
¾"	$10.94
1"	$15.74
1.5"	$21.54
2"	$29.81
3"	$47.90
4"	$107.93
6"	$168.86
Bulk Hydrant	$21.54
Bulk Station	$10.94

Table 26 Water Fund Proposed 2025 Volumetric Rates by Tier			
Irrigation Season (April 1 through October 31 Consumption)			
Customer Class	**Tier 1 (AWMC)**	**Tier 2 (Outdoor)**	**Tier 3 (Excess)**
Residential	$3.23	$6.58	$9.82
Multifamily Indoor Use Only	$3.23	N/A	$4.24
Multifamily	$3.23	$5.59	$8.35
Commercial Indoor Use Only	$3.23	N/A	$4.53
Commercial	$3.23	$5.65	$8.45
Irrigation	N/A	$9.01	$13.50
Winter Season (November 1 through March 31 Consumption)			
Customer Class	**Tier 1 (AWMC)**	**Tier 2 (Outdoor)**	**Tier 3 (Excess)**
Residential	$3.23	N/A	$6.58
Multifamily Indoor Use Only	$3.23	N/A	$4.24
Multifamily	$3.23	N/A	$5.59
Commercial Indoor Use Only	$3.23	N/A	$4.53
Commercial	$3.23	N/A	$5.65
Irrigation	N/A	N/A	$13.50
Bulk Water Customers			
Bulk Hydrant	$9.01	N/A	N/A
Bulk Station	$11.26	N/A	N/A

An additional surcharge of $9.82 is added for any water usage over 40,000 gallons.

Table 27 Water Resources Fund Proposed 2025 Monthly Service Charges	
Meter Size	**Monthly Charges**
3/5” x ¾”	$33.61
5/8” x ¾”	$33.61
¾”	$33.61
1”	$127.41
1.5”	$241.03
2”	$403.07
3”	$757.04
4”	$1,931.26
6”	$3,122.96
Bulk Hydrant	$241.03
Bulk Station	$33.61

Table 28 Wastewater Fund Proposed 2025 Monthly Service Charges and Volumetric Rate	
Meter Size	**Monthly Charges**
3/5” x ¾”	$8.61
5/8” x ¾”	$8.61
¾”	$8.61
1”	$13.71
1.5”	$19.88
2”	$28.67
3”	$47.90
4”	$111.67
6”	$176.41
Volumetric Rate - All Applicable Customers, Per Kgal	$6.10

Table 29 Stormwater Fund Proposed 2025 Monthly Service Charge		
Monthly Stormwater Fee		
All Customers, per SFE		$8.37
SFE Assignment		
Customer Class	**Impervious Sq. Ft.**	**SFE**
Single Family Attached & Detached	3,255	1
Non-Single Family (Multifamily & Commercial)	Parcel size time 80% imperviousness divided by 3,255 impervious sq. ft. per SFE = # of SFEs	

Recommendations

Please see Appendix D for study review letter from Stantec Consulting Services Inc.

For a copy of the supporting data analysis, please contact Castle Rock Water at 720-733-6000.

Appendix A

List of Acronyms

The following provides a list of acronyms used throughout the report and its meaning:

- AF: Acre Feet
- AWMC: Average Winter Monthly Consumption
- BOD: Biochemical Oxygen Demand
- CIP Capital Improvement Program
- COP: Certificates of Participation
- COS: Cost of Service
- ET: Evapotranspiration Rates
- FMP: Financial Management Plan
- FY: Fiscal Year
- GPM: Gallons Per Minute
- GIS: Geographical Information System
- Kgal: Thousand (1,000) Gallons
- O&M: Operations and Maintenance
- PCWRA: Plum Creek Water Reclamation Authority
- SDF: System Development Fee
- SFE: Single Family Equivalent
- Sq. Ft.: Square Feet
- TSS: Total Suspended Solids

Appendix B

Definitions

The following are definitions used in this study:

- 2013 Hybrid Model – The water resources strategic plan set in 2013 as to how rates would be projected in order to achieve the long term water goals for CRW.
- System Growth – The projected growth within the Town that is used to project the increased number of SFEs per year for each fund.
- Escalation Factors – As part of the projections of O&M costs for the study period, CRW has provided a 5-year O&M budget. CRW's budget planning documents are used for the O&M projections within the 5-year budget period. After this period, costs were escalated at 1.55 percent, which is the best estimate based on the average Engineering News Record (ENR) index for the Denver area.
- Rate Revenue Increases – System revenues are derived primarily from service charges or rates. Revenue is a function of price and the current financial plans calculate the increases needed.
- System Development Fee (SDF) Revenues – SDFs are one time charges to new connections to the system that are intended to recover investments in capacity to serve new customers. SDF revenue is directly related to the SFE and growth assumptions. SDF revenues are used to fund the growth related CIP and are presented in Volume 2.
- Revenue Bonds – Current and projected debt for the funds.
- Inter-Fund Loans – Loans borrowed between funds and paid back with interest.
- Other Revenues – This source of funds includes non-rate related revenues, miscellaneous revenues, fines, leases, intergovernmental agreements and interest earning.
- Fund Balances – The balances needed to be kept in different reserves for each fund. There are minimums per fund. These can include the operating fund, the capital reserve fund, the catastrophic failure reserve fund, and the rate revenue stabilization reserve fund.
- Operating Expenses – Represents the basic costs of operating the system. Projection of O&M expenses varies depending on the degree of fixed versus variable costs for each budgeted line item. Most of the costs are fixed and do not escalate with increased demand on the system. Meanwhile, variable costs escalate both with increased system use and the expected inflation rate. CRW staff have made a reasonable effort to separate the two for projection purposes. O&M expenses during the rate period were provided by CRW. The goal is to keep costs at or under budget for capital and operational budgets each year by fund and to continuously strive towards more efficient operations.
- Personnel Services – These are one of the most important cost drivers in operating expenses. Additional staff needed over the next five years are included in the 5-year financial planning document.

- Energy Costs – These are a major component in plant operations and an important cost driver in variable operating expenses. Over the next 5 years, energy costs are expected to increase at a rate of 3%.
- Capital Improvements – Capital improvement projections are provided by year for the study. Capital improvement costs were provided by CRW for years 2024-2065. These are reviewed and updated annually.
- Debt Service – The debt service sub-fund currently carries debt service obligations of each fund. As stated in the FMP, CRW aims to minimize debt carrying costs at or below industry standards.
- Debt Service Coverage – Outstanding revenue bonds require operating revenues to be 1.2 times the total annual debt service amount.
- Base Water Demand - the average annual water consumption in thousand gallons for each customer class. This was obtained from the 2024 Customer Characteristics Analysis using the billing data for twelve months ending December 2023.
- Maximum Day and Maximum Hours Extra Capacity Demands - Water demands that exceed average levels of water usage by system customers. Maximum day and hour extra capacity demands are calculated by applying the class peaking factors to the base demand, which average 2.16 for peak day and 5.40 for peak hour.
- Meters and Services – the total number of equivalent meters. These are derived by applying the average actual usage meter equivalency schedule to the number of meters of each size by class.
- Number of Customers – equals the projected total number of customers by customer class.
- Flow Demand represents the quantity discharged from customers directly to the wastewater system. Since, wastewater discharge is not metered, wastewater flows are measured by the average winter monthly consumption (AWMC) of each customer. AWMC was provided by the 2024 Customer Characteristics Analysis, which summarized the billing data for January 2023 to December 2023.
- Pollutant Strength including BOD and TSS - represents total pounds of loadings expected from each customer class. Pounds of loadings by customer class are calculated assuming domestic strength concentrations and volume of flow for each customer class.
- Base Costs – These vary with water consumption under average demand conditions. They are the costs that would be incurred if water consumption occurred evenly from day to day and hour to hour, and the system did not require investment in additional capacity to meet peak requirements.
- Maximum Day and Maximum Hours Extra Capacity Costs (Extra Capacity Demands) – The costs incurred to meet water demands that exceed average levels of water usage by system customers. Extra capacity costs are incurred because of water usage variations and peak demands imposed on a water system. Such demands are directly related to customer water consumption characteristics and fire-flow demands. Extra capacity costs are typically divided into costs incurred to meet maximum day and maximum hour water demands of system customers.

- Customer Related Costs – Those costs incurred to serve customers, regardless of water demands or wastewater flows. Customer costs vary with the number of customers. Examples of these costs include administration and billing costs.
- Meter and Services Costs – These vary with the size of the meter and/or service used to serve the customer. Examples of meter and service costs include meter replacement and maintenance costs.
- Flow Costs – These vary with the hydraulic flow of sanitary sewage. The relative strength of sewage does not affect flow costs. Typically, flow costs include the cost of operating lift stations and the capital costs for assets that are designed based on hydraulic flow requirements.
- Pollutant Strength Costs – Include BOD and TSS, represent costs incurred to treat wastewater of various qualities. As the wastewater treatment processes are the responsibility of PCWRA and the wastewater fund does not charge for strength characteristics, the single unit process allocated to the strength characteristics is Treatment by Others.
- Demand Related Costs – Those capital related costs that are to be recovered on an equivalent water meter basis. In this COS analysis, 20 percent of the wastewater system's capital costs are recovered in this manner. The demand related cost represents a portion of the cost of capacity in PCWRA's system.

Appendix C

Customer Characteristics Analysis

Appendix D

Stantec Consulting Services Inc. Study Review Letter