



STAFF REPORT

To: Honorable Mayor and Members of Town Council

From: Mark Marlowe, P.E., Director of Castle Rock Water
Anne Glassman, Business Solutions Manager

Title: 2020 Rates and Fees Discussion/Direction

Executive Summary

A primary goal of the annual rates and fees study is to evaluate the long-term financial plan for Castle Rock Water (CRW) to ensure that future rates and fees will cover the future costs of service.

Table 1 summarizes the recommended 2020 rates from this year's study (2019 study) compared to the 2019 adopted rates and projected 2020 rates from last year's study (2018 Study) for a typical single-family equivalent (SFE).

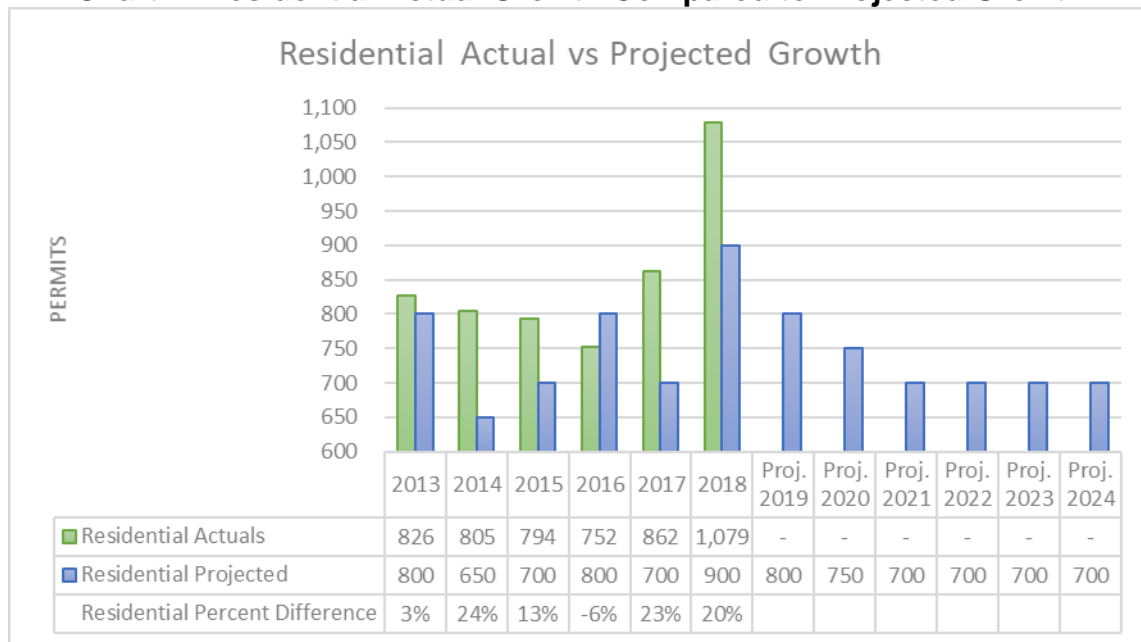
Table 1: Summary of Recommended Residential Rates

	2019 Adopted Rates	"2019 Study" Proposed 2020 Rates	\$ Change	% Change	"2018 Study" Proposed 2020 Rates
Water, Fixed	\$9.54	\$9.54	\$0.00	0.0%	\$9.83
Water, Tier 1, Volumetric	\$2.82	\$2.82	\$0.00	0.0%	\$2.90
Water, Tier 2, Volumetric	\$5.74	\$5.74	\$0.00	0.0%	\$5.91
Water, Tier 3, Volumetric	\$8.56	\$8.56	\$0.00	0.0%	\$8.82
Water, Surcharge, Volumetric	\$8.56	\$8.56	\$0.00	0.0%	\$8.82
Water Resources, Fixed	\$26.15	\$26.15	\$0.00	0.0%	\$26.93
Wastewater, Fixed	\$9.30	\$9.02	(\$0.28)	(3.0%)	\$9.58
Wastewater, Volumetric	\$6.59	\$6.39	(\$0.20)	(3.0%)	\$6.79
Stormwater, Fixed	\$7.12	\$7.12	\$0.00	0.0%	\$7.33
Total Fixed	\$52.11	\$51.83	(\$0.28)	(0.5%)	\$53.67

Key assumptions for growth projections, customer characteristics, capital improvement plans and revenue and expenditure forecasts that impact the recommended rates in Table 1 are summarized here with information that is more detailed provided in the discussion sections of the memo.

Growth projections have been set at levels from 2020-2024 ranging from 12% to 18% below the actual average seen over the last six years in an effort to continue to be conservative with revenue forecasts for SDFs (see Chart 1).

Chart 1: Residential Actual Growth Compared to Projected Growth



Note: Actual Average 2013 to 2018: 853 Residential Permits

There were no major changes to customer characteristics affecting this year's recommendations. With respect to capital plans, major changes to the plan for this study year by enterprise are summarized below.

Water Fund:

- Removed Advanced Metering Infrastructure (AMI) of \$5.9M.
- Added \$16.5M for new deep ground water wells.
- Increased costs by \$1M for well rehab.
- Increased long-term costs for rehab/replacement of waterlines and related infrastructure by \$2.9M through the five-year planning period.

Water Resources Fund:

- Added Cherry Creek water rights and related infrastructure of \$11.7M and reduced Box Elder water rights by the value of an equivalent amount of Box Elder water rights (\$6.9M).
- Pulled \$11.3M forward into the 5 year plan for Castle Rock Reservoir #2.
- Pulled \$3.7M forward into the 5 year plan for Castle Rock Reservoir #1 improvements.
- Box Elder infrastructure moved from 2027-2030 back to 2030-2033.

Stormwater Fund:

- Changed the timing and anticipated costs of several projects including Hangman's Gulch, Parkview Tributary, Industrial Tributary and Douglas Lane Tributary.

- Increased short-term costs based on more accurate updated master plan to help maintain and develop tributaries and other stormwater projects by a value of \$6.5M in the five year window.

Wastewater Fund:

- Increased sewer line rehab and replacement to \$2.4M a year starting in 2021, for an increase of \$7.1M over the five year period.

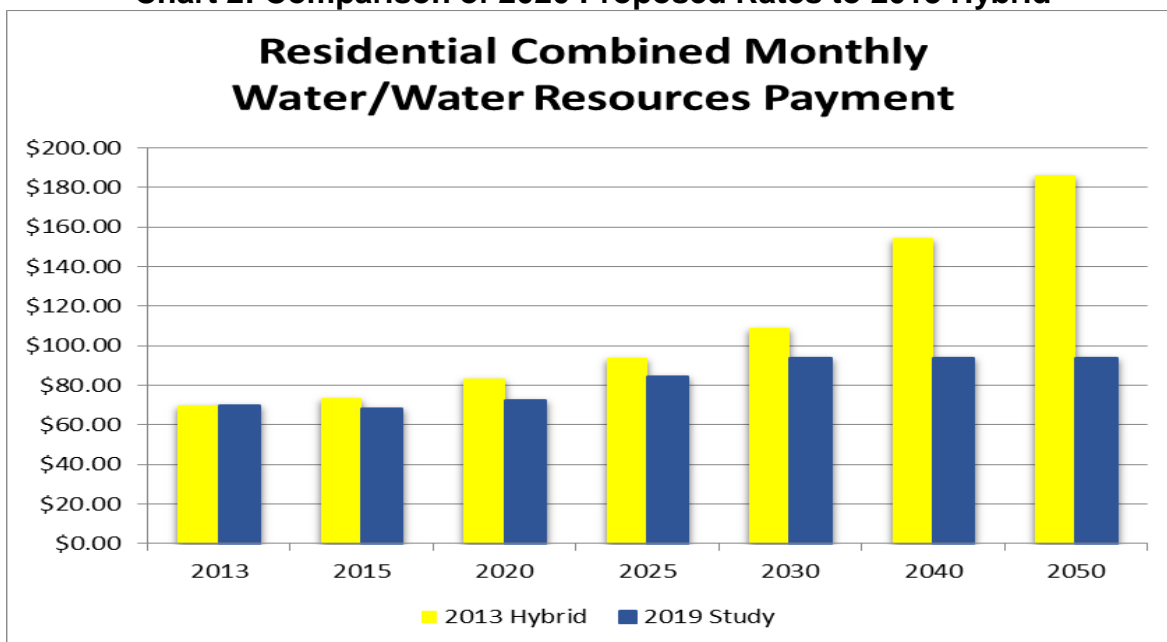
The primary issues affecting revenue and expenditure forecasts are as follows:

- 1) Changes to the staffing plan include the addition of two FTEs over the previous year's plan in 2020 and four additional FTEs over the previous plan in 2021. Total proposed FTEs for 2020 are six including three plant operators, two distribution operators and one engineering project manager.
- 2) Increased WISE water purchases associated with WISE water acquired in 2019.

Assuming the recommended rates are approved, the rates will continue to be lower than projected when compared to the 2013 hybrid (Box Elder / WISE alternate source of supply projects) long-term renewable water plan approved by Council in 2013 as shown in Chart 2 below. These results have been achieved by keeping operating expenditures and needed capital investments under budget, successful implementation of regional partnerships and creative approaches to optimize Castle Rock Water's financial plan. Going forward, the results of the "2019 Study" predict the need for modest increases of around 3.0 to 3.5 percent in the water, water resources and stormwater funds in 2021 to 2024.

The small rate decrease recommended for 2020 makes Castle Rock even more competitive with other surrounding South Metro water providers (benchmarking comparisons in Chart 5).

Chart 2: Comparison of 2020 Proposed Rates to 2013 Hybrid



Castle Rock Water also evaluated the impact of changing some of these key assumptions to give Council options to consider. The various options evaluated are summarized in Table 2. The table shows the projected impact on rates and fees over the five year planning window for each enterprise and for each option. CRW can evaluate endless options, but tried to limit the options to business decisions that would have a significant impact on rates and fees.

Table 2: Rate Change Recommendations and Options by Enterprise Fund

Water Fund									
Options	Details	2020	2021	2022	2023	2024	SDF % Increase	SDF \$ Increase	Total Proposed SDF
Recommendation	No AMI, Liberty Village Tank in 2020, Take Interfund Loan	0.00%	3.00%	3.50%	3.50%	3.50%	3.0%	\$107	\$3,664
Option #1	Include AMI Back into Base Case	3.00%	3.00%	3.50%	3.50%	4.00%	3.0%	\$107	\$3,664
Option #2	Take out the Admin Building from Recommendation	0.00%	2.00%	3.00%	3.00%	3.00%	3.0%	\$107	\$3,664
Option #3	Remove two Field Services FTEs and 1 Project Manager FTE	0.00%	3.00%	3.00%	3.00%	3.00%	3.0%	\$107	\$3,664
Option #4	Remove \$8M in Rehab and Replacement Costs	0.00%	0.00%	0.00%	2.00%	2.00%	3.0%	\$107	\$3,664

Water Resources Fund									
Options	Details	2020	2021	2022	2023	2024	SDF % Increase	SDF \$ Increase	Total Proposed SDF
Recommendation	4,500 A.F. of imported water to serve 135,000, includes 287 A.F. Cherry Creek, 2,213 A.F. Box Elder	0.00%	3.00%	3.00%	3.00%	3.00%	3.50%	\$592	\$17,623
Option #1	5,023 A.F. of imported water to serve 150,000, includes 287 A.F. Cherry Creek, 2,736 A.F. Box Elder	3.00%	4.00%	4.00%	4.50%	4.50%	3.50%	\$592	\$17,623
Option #2	4,092 A.F. of imported water to serve 122,000, includes 287 A.F. Cherry Creek, 1,805 A.F. of Box Elder	0.00%	2.00%	3.00%	3.00%	3.00%	3.50%	\$592	\$17,623
Option #3	3,805 A.F. of imported water to serve 105,000	0.00%	0.00%	3.00%	3.00%	3.00%	3.50%	\$592	\$17,623

Wastewater Fund									
Options	Details	2020	2021	2022	2023	2024	SDF % Increase	SDF \$ Increase	Total Proposed SDF
Recommendation	All In Budget and CIP	-3.00%	0.00%	0.00%	0.00%	0.00%	0.00%	\$0	\$4,023

Stormwater Fund												
Options	Details	2020	2021	2022	2023	2024	SDF % Increase (PC)	SDF \$ Increase (PC)	Total Proposed SDF (PC)	SDF % Increase (CC)	SDF \$ Increase (CC)	Total Proposed SDF (CC)
Recommendation	Original CIP with \$10M Bond Over 10 Year Period	0.00%	0.00%	0.00%	3.00%	3.00%	3.00%	\$40	\$1,357	3.00%	\$25	\$868
Option #1	CIP Adjusted from Original	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	\$40	\$1,357	3.00%	\$25	\$868
Option #2	Original CIP with \$5M Bond Over 10 Year Period	3.00%	3.00%	3.00%	3.00%	3.50%	3.00%	\$40	\$1,357	3.00%	\$25	\$868

Table 3 provides context for the recommended rate action by providing the history of rate action over the last five years as well as a comparison to the Consumer Price Index (CPI) and the Engineering News Record (ENR) construction cost index (CCI).

Table 3: 5 Year Rate Increase History, CPI and ENR CCI

Rate Increase History					
Fund	2015	2016	2017	2018	2019
Water	0%	0%	0%	0%	0%
Water Resources	3%	3%	3%	0%	3%
Stormwater	3%	0%	4%	0%	0%
Wastewater	0%	0%	0%	0%	0%
Consumer Price Index (CPI) History					
	2014	2015	2016	2017	2018
CCI	2.8%	1.2%	2.8%	3.4%	2.7%
Engineering News Record Construction Cost Index (ENR CCI) History					
	2014	2015	2016	2017	2018
ENR	2.1%	2.3%	2.5%	3.3%	3.2%

(1) Captured in volumetric water rates.

Table 4 summarizes the proposed SDFs for 2020 per SFE. The 2020 proposed system development fees are very similar to the projected 2013 Hybrid system development fees as shown in Chart 3 below.

Table 4: Summary of Recommended System Development Fees (SDFs)

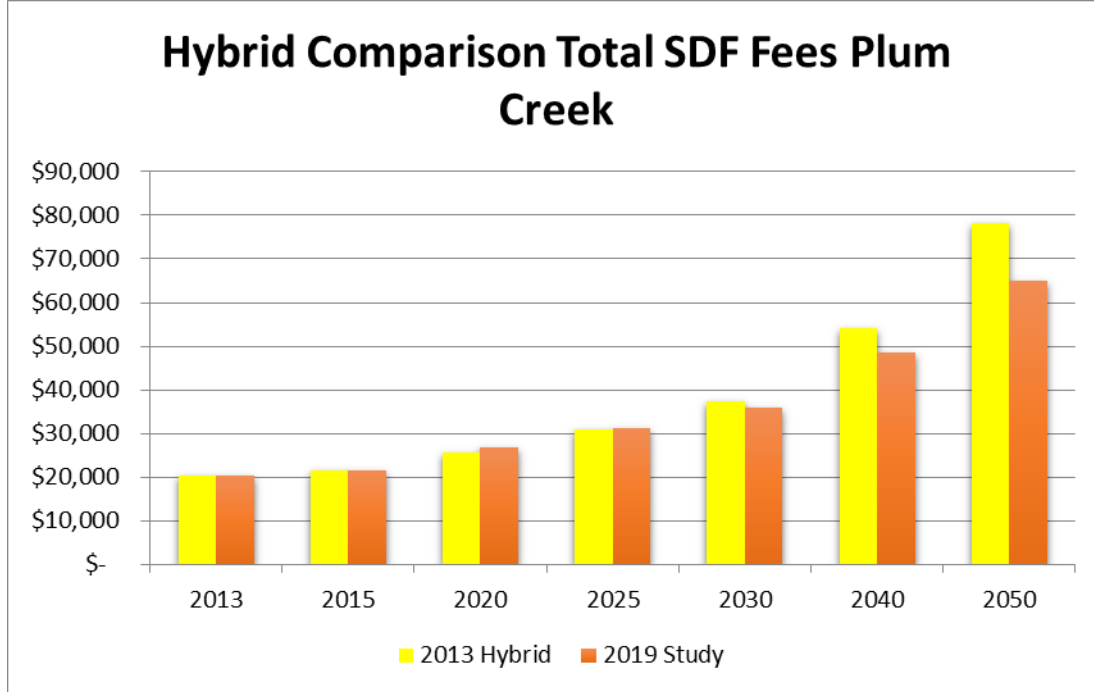
	2019 Adopted SDFs	"2019 Study" Proposed 2020 SDFs	\$ Change	% Change	"2018 Study" Proposed 2020 SDFs
Water	\$3,557	\$3,664	\$107	3.0%	\$3,664
Water Resources	\$17,031	\$17,623	\$592	3.5%	\$17,542
Wastewater	\$4,023	\$4,023	\$0	0.0%	\$4,144
Stormwater, Plum Creek	\$1,317	\$1,357	\$40	3.0%	\$1,357
TOTAL Plum Creek	\$25,928	\$26,667	\$739	2.9%	\$26,707
Stormwater, Cherry Creek	\$843	\$868	\$25	3.0%	\$868
TOTAL Cherry Creek	\$25,454	\$26,178	\$724	2.8%	\$26,218

For SDFs related to new development, Castle Rock Water recommends an increase of \$739 per single-family equivalent (SFE), about a 2.9 percent increase depending on the basin. This recommendation is consistent with Town Council's policy on system development fees that growth pays for growth.

Three factors are driving the recommended increases in SDFs. First, updates to the WRSMP indicate build out entitlements and future population projections have increased from 105,000 to as much as 153,000 when you include extraterritorial commitments and annexations under consideration. To keep pace with this population increase, additional renewable water projects are needed. Additional infrastructure is also required to meet the increased peak demands from a larger customer base. Next, the pace of growth has exceeded projections as show in Chart 1. This drives the need

to build projects to meet annual water supply needs sooner creating the need to generate more revenue sooner. It also requires building peak demand capacity sooner than expected. For example, recent growth has driven the need for additional water SDFs for new wells. Finally, project costs continue to rise year over year as shown in the ENR CCI.

Chart 3: Comparison of 2020 Proposed System Development Fees to 2013 Hybrid



The proposed SDF changes keep Castle Rock competitive with other surrounding South Metro water providers who also need to fund investments in long-term renewable water supply as shown in Table 5 below:

Table 5: Comparison of System Development Fees (SDFs) – Plum Creek Basin

Community	2019 Adopted Fees w/CRW 2020 Proposed
Denver Water	\$ 7,710.00
Colorado Springs Utilities	\$ 8,401.00
City of Loveland	\$ 9,117.00
City of Fort Lupton	\$ 9,655.00
Centennial Water and Sanitation District (5 units/acre)	\$ 14,901.00
Meridian Service Metropolitan District	\$ 16,000.00
City of Greeley	\$ 16,500.00
City of Fountain (Fountain Creek Basin area) ¹⁴	\$ 19,449.00
Centennial Water and Sanitation District (3 units/acre)	\$ 19,709.00
City of Fort Collins ^{5, 6, 7}	\$ 21,772.85
City of Fountain (Jimmy Camp Creek Basin area) ¹⁴	\$ 23,314.00
Cottonwood Water and Sanitation District	\$ 24,073.00
Castle Rock Water	\$ 26,667.00
Parker Water and Sanitation District	\$ 29,470.00
Thornton Water	\$ 30,632.00
Thornton Water (within Big Dry Creek Basin Area)	\$ 31,290.00
Stonegate Village Metropolitan District	\$ 31,350.34
City of Brighton (Metro Wastewater Reclamation District area) ¹⁵	\$ 33,113.00
City of Brighton (South Beebe Draw Metro District area) ¹⁵	\$ 33,568.00
Arapahoe County Water and Wastewater Authority	\$ 35,610.00
East Cherry Creek Valley Water and Sanitation District (West Toll Gate Creek Storm Drainage Basin)	\$ 36,740.00
East Cherry Creek Valley Water and Sanitation District (Piney Creek Storm Drainage Basin)	\$ 36,790.00
East Cherry Creek Valley Water and Sanitation District (No Name Creek Storm Drainage Basin)	\$ 38,690.00
Castle Pines North Metropolitan District	\$ 41,242.00
Roxborough Water and Sanitation District	\$ 41,524.00
Pinery Water and Sanitation District	\$ 41,571.00
Sterling Ranch CAB	\$ 42,700.00

Staff recommends moving forward with these proposed rates and fees, finalizing the “2019 Study” report and all of the associated data, bringing the appropriate ordinances to Town Council for approval on September 3, 2019, and September 17, 2019 and incorporating the proposed rates and fees into the 2020 proposed budget. Concurrent with the preparation of the proposed rates and fees for 2020, staff has updated the Financial Management Plan (FMP), to ensure the study is consistent with the goals of the FMP, which are:

- To minimize future rates at or below the 2013 Hybrid Model levels. *This has been successful with past results and future rate increases projected at or below the 2013 Hybrid as shown in Chart 2 above.*
- To minimize debt carrying costs at or below industry standards. *CRW continues to stay in the top 25% in the industry.*
- To minimize risk by keeping fixed versus variable revenues and expenses equal to or matching where possible. *CRW focuses on ensuring that the combination of*

fixed and variable revenues can cover 100% of the expenses needed to operate the individual enterprise funds as well as minimize future cash flow risk and maintain adequate reserves for future capital needs. CRW is meeting those goals as shown in Chart 10 below.

- *To keep costs at or under budget for capital and operational budgets each year by fund and to continuously strive towards more efficient operations. As shown in Table 6 below, CRW is keeping costs under budget.*
- *To keep our rates and fees competitive with surrounding communities. CRW rates and fees compare somewhere in the middle of the benchmarking as seen in the rates comparisons in Charts 5-7 and the system development fees in Chart 8.*
- *To keep adequate reserves and maintain fund balances between minimums and maximums. CRW continues to maintain adequate reserve balances in all funds for operating, catastrophic event, rate revenue stabilization and capital reserve.*
- *To keep rates and fees affordable within various national affordability indices. This year CRW had Stantec's help in looking at two new affordability methods created by Teodoro. The first of these shown below in Figure 1 is the Affordability at the 20th Income Percentile (AR20). This method measures the affordability of the average water and wastewater bill to the 20th percentile income. This indicates that of the monthly disposal income for this group, 4.57% is spent on essential water and wastewater usage for CRW. The average for large cities is 11.4%, which puts CRW well below average, a positive result.*

The second method, shown in Figure 2 below is the Basic Household Water and Sewer Cost Expressed in Terms of Hours of Labor at Minimum Wage (HM). This metric shows the number of hours required for one to work at minimum wage to pay the monthly water bill. For CRW this has come in at 8.36 hours. The average for large cities is at 9.0, which puts CRW slightly below average, again a positive result.

Figure 1: Affordability at the 20th Income Percentile (AR20)

Affordability At The 20th Income Percentile (AR ₂₀)			
		Source	
People Per Household	4	Journal AWWA January 2018 (values from Teodoro article)	
Essential Water Volume*	50	Journal AWWA January 2018 (values from Teodoro article)	
Typical Monthly Household Essential Volume	6,000		
Water Monthly Consumption			
Tier 1	4,300		
Tier 2	1,700		
Water 3/4" Residential Base Charge	\$ 9.54		
Wastewater Monthly Consumption			
Tier 1	4,300		
Wastewater 3/4" Residential Base Charge	\$ 9.02		
Monthly Household Cost Of Essential Water Services	\$ 31.42	FY 2020 CRW Water Rates	
Monthly Household Cost Of Essential Wastewater Services**	\$ 36.51	FY 2020 CRW Wastewater Rates	
Monthly Household Cost Of Essential Renewable Water Services	\$ 17.52	FY 2020 CRW Renewal Water Rates	
Monthly Household Cost Of Essential Stormwater Services	\$ 7.33	FY 2020 CRW Stormwater Rates	
Total Cost of Essential Water and Sewer Services	\$ 92.79		
Annual Household Income (20th Percentile)***	\$ 50,466	American FactFinder: American Community Survey (Castle Rock Town)	
Annual Essential Household Expenses****	\$ 26,120	Consumer Expenditure Survey - Table 3133 West Region	
Annual Disposable Income	\$ 24,346		
Monthly Disposable Income	\$ 2,029		
AR ₂₀	4.57%	Teodoro Study average of 11.4% for 25 largest US cities.	

* Essential water volume in gallons per capita per day based upon *Measuring Household Affordability for Water and Sewer Utilities*, M.P. Teodoro, Journal AWWA, January 2018, 110:1.

** Wastewater services charged based on average winter monthly consumption of 4,300 gallons.

*** "This focus on the 20th percentile household aligns the analysis of water and sewer affordability with mainstream assessments of welfare economics, which typically identify the 20th percentile as the lower boundary of the middle class." - Teodoro

**** Does not include water and sewer services. Reflects expenses at an income level between \$50,000 and \$69,999 in the western region.

Figure 2: Basic Household Water and Sewer Cost Expressed in Terms of Hours of Labor at Minimum Wage (HM).

Basic Household Water And Sewer Cost Expressed In Terms Of Hours Of Labor At Minimum Wage (HM)			
		Source	
People Per Household	4	Journal AWWA January 2018 (values from Teodoro article)	
Essential Water Volume*	50	Journal AWWA January 2018 (values from Teodoro article)	
Typical Monthly Household Essential Volume	6,000		
Monthly Household Cost Of Essential Water Services	\$ 31.42	FY 2020 CRW Water Rates	
Monthly Household Cost Of Essential Wastewater Services**	\$ 36.51	FY 2020 CRW Wastewater Rates	
Monthly Household Cost Of Essential Renewable Water Services	\$ 17.52	FY 2020 CRW Renewal Water Rates	
Monthly Household Cost Of Essential Stormwater Services	\$ 7.33	FY 2020 CRW Stormwater Rates	
Total Cost of Essential Water and Sewer Services	\$ 92.79		
Minimum Wage	\$ 11.10	http://www.ncsl.org/research/labor-and-employment/state-minimum-wage-chart.aspx#Table	
HM	8.36	Teodoro Study average of 9.0 for 25 largest US cities.	

* Essential water volume in gallons per capita per day based upon *Measuring Household Affordability for Water and Sewer Utilities*, M.P. Teodoro, Journal AWWA, January 2018, 110:1.

- To develop regional partnerships to provide economies of scale to reduce total costs of infrastructure to our customers. *CRW has formed many partnerships with individual water providers like Dominion and Parker and regional organizations such as South Metro Water Supply Authority, WISE Authority, PCWRA, Chatfield Watershed Authority and Cherry Creek Basin Water Quality Authority, just to name a few.*
- To be an industry leader in the application of financial management benchmarking ourselves against others locally and nationally. *Castle Rock Water has thirty different key performance objectives and indicators (KPIs) with measurable outcomes. Many of which are benchmarked against other water providers nationally, regionally and locally. More information and results for these KPIs are available in our strategic plan.*

Discussion

For common understanding, "rates" refers to the collective monthly fixed charges and volumetric rates billed to existing customers. "System Development Fees" is a general term used for Water, Water Resources and Wastewater System Development Fees

(SDFs) and Stormwater Development Impact Fees (DIFs). Water, Water Resources and Wastewater SDFs are calculated and assessed at the time of permitting for the right to access existing system capacity or for payment of a proportionate share of the capital cost required for new capacity to meet the potential demand the new customer is expected to place on the system. SDFs ensure that growth pays for the cost of growth. Also paid at the time of permitting, Stormwater DIFs are a proportionate share of the cost to add stormwater capital facilities to manage the runoff created by the impervious surfaces of new construction in the Plum Creek or Cherry Creek Basin.

For the third year in a row, Castle Rock Water has engaged Stantec Consulting Services, Inc. to assist with preparation of the Study. To reduce costs, Castle Rock Water staff continue to prepare the Customer Characteristics Analysis in-house as well as maintain the inputs/outputs to the System Development Fees models, Financial Rate Models, and the Cost of Service Models. This helps staff to understand the rates and fees implications of updated financial plans. It also provides Castle Rock Water Commission, Town Council and the community information regarding the potential rate changes that may be necessary over the five-year planning window.

The “2019 Study”

The steps for completing this year’s study, as in previous studies, are grounded in industry standards for cost-of-service ratemaking as summarized in the American Water Works Association’s AWWA Manual M1. As in prior years, work products include the following:

1. Growth Forecast
2. Customer Characteristics Analysis
3. Capital Improvement Projects Forecast Updates
4. Revenue and Expenditures Forecast Updates (in conjunction with budgeting)
5. Rates & Fees Modeling
6. Cost of Service Modeling
7. Community Engagement

Table 6 outlines the comparison of the 2019 Budget and 2019 YE Estimates to the 2020 proposed budget. The decrease in intergovernmental revenue is due in part to the IGA for the Dominion Wheeling agreement ending in 2019. The decrease in other revenues is a result of Dominion paying some of the costs for wells in 2019. Transfers In and Transfers Out reflects a \$3.8M inter-fund loan from wastewater to water to fund short-term capital projects.

Table 6: 2019-2020 Budget Comparison

Account Type	Category	2019 Budget	2019 YE Estimates	2020 Budget	2019 YE Estimates to 2020 Budget % Change
Revenues	Charges for Service	\$37,120,885	\$39,443,455	\$41,656,475	6%
	Contributions & Donations	\$31,825	\$281,825	\$281,825	0%
	Fines & Forfeitures	\$423,950	\$436,200	\$447,450	3%
	Intergovernmental Revenue	\$2,650,000	\$2,656,698	\$350,000	(87%)
	Investment Earnings	\$807,854	\$1,131,932	\$463,842	(59%)
	Licenses & Permits	\$0	\$12,715	\$12,000	(6%)
	Other Revenue	\$6,422,987	\$6,483,137	\$2,340,826	(64%)
	System Development Fees	\$22,104,591	\$22,760,602	\$25,149,530	10%
	Transfers In	\$2,239,962	\$2,544,357	\$6,268,640	146%
Total Revenues		\$71,802,054	\$75,750,921	\$76,970,588	2%
Expenses	Capital	\$118,522,365	\$98,577,831	\$42,290,389	(57%)
	Debt & Financing	\$5,789,500	\$5,789,500	\$5,794,725	0%
	Personnel	\$8,820,449	\$8,732,929	\$9,684,004	11%
	Services & Other	\$20,395,324	\$17,509,104	\$19,869,737	13%
	Supplies	\$2,361,464	\$2,366,277	\$2,681,842	13%
	Transfers Out	\$3,033,699	\$3,242,272	\$6,829,114	111%
Total Expenses		\$158,922,801	\$136,217,913	\$87,149,811	(36%)

(1) 2019 YE Estimates includes \$16M for the PCWRA expansion. Per accounting standards, this amount is booked in services and other, but for purposes of this comparison, it is shown in capital.

To frame the context within which the “2019 Study” was conducted Table 7 provides a synopsis of key changes from last year’s study (the 2018 Study).

Table 7: Five Year Planning Period 2020-2024

Category	2019 R&F Study	2018 R&F Study	Change	% Change
New Customers	3,688	3,681	7	0.19%
Rate Revenue	\$229,138,671	\$212,226,342	\$16,912,329	7.4%
System Development Fees Revenue (SDFs)	\$122,348,432	\$115,093,859	\$7,254,573	5.9%
Non-Rate Revenue	\$2,237,250	\$2,318,332	(\$81,082)	(3.6%)
Capital Plans ⁽¹⁾	\$147,550,551	\$124,536,508	\$23,014,043	15.6%
Personnel	\$56,107,140	\$54,124,653	\$1,982,487	3.5%
Electricity	\$18,865,279	\$19,165,633	\$(300,354)	(1.6%)
Operations & Maintenance (w/o electricity & Personnel)	\$100,317,326	\$81,551,506	\$18,765,820	18.7%

(1) Much of the Capital Plan consists of preliminary estimates that are refined each year as better information becomes available particularly within the long-term water projects.

Actual growth in 2018 was strong with a continuation into 2019. Growth in 2020 and beyond is difficult to predict. If growth falls short of current forecasts, revenues in 2020 and beyond could fall short of requirements without additional rate action. The estimated difference in growth related funds, if we were to return to 2012 growth rates, could be over \$54 million during the five-year study period. Additional information on the impact of key changes in the “2019 Study” are in the following sections.

Fund Balances

Savings in actual costs and the timing of spending on capital costs verses budgets each year have helped to increase fund balances throughout the years. This allows for some drawdown of fund balances to cover large capital costs in the near term without having a negative impact on the long-term financial plan.

New Customers

New customers provide revenues through system development fees to fund growth-related capital projects and the monthly revenues to fund the remaining costs as an existing rate customer. The Town's latest growth forecast continues the 2018 momentum in development. So far, 2019 is matching expectations with 628 (as of June 2019) new customer meter sets year to date compared to 538 as of June 2018.

The forecast used for 2020 through 2024 is about the same as the numbers seen in the 2018 study. Achieving this growth forecast provides an opportunity to pursue economies of scale and reduce upward pressure on both rates and fees. If growth falls short of this forecast, revenues are at risk with the severity and service delivery impacts dependent upon the depth of the shortfall.

Rate Revenue

These revenues are subject to two primary drivers, weather and national, state and local pressure to conserve water or at least use it more efficiently. For the 5-year planning period, CRW is forecasting a 7.4% increase in rate revenue for this study over the previous study. Growth projections as well as the anticipated rate increases needed to keep moving forward with the projected plans contribute to this percentage increase. As always, Castle Rock Water is aware of the need to be cautious when projecting rate revenues due to the unpredictability of weather, conservation efforts and sustainable growth.

Non-Rate Revenues

Non-rate revenues are generated through charges and fees for miscellaneous or ancillary services not accessed or used by the broader customer base. These special charges should recover the actual cost of service delivery consistent with cost-of-service principles and Town financial policies. Recovering costs directly from customers that access those services also enhances equity. These charges can also help manage demand for those services as well as address customer behavior patterns. Special charges include late charges, disconnection charges, service transfer charges and administrative related fees, just to name a few. Proposed special charges are shown in Table 8 below.

Castle Rock Water is proposing two new charges for 2020. The first one recovers growth related costs for connecting new water lines, "Waterline Connection Fee" of \$200 per line. The second recovers costs for residential landscape and irrigation inspections which include soil inspections, "Residential Landscape and Irrigation Inspection" of \$35 for the initial inspection and \$35 for each subsequent re-inspection. Non-rate revenue projections in the "2019 Study" reflect significant improvements in customer account management, meter infrastructure maintenance, and accounts receivable collections.

Table 8: Special Charges

Special Charge (Fee)	Cost of Service	Adopted 2019 Fee Amounts	Proposed 2020 Fee Amounts	Benchmark Range	Benchmark Average
Returned Check Charge (NSF)	\$29.88	\$30.00	\$30.00	\$15.00-\$75.00	\$28.80
Sewer ¾" Residential (New Customer)	\$35.66	\$36.00	\$36.00	Not Available	Not Available
Transfers of Service	\$35.42	\$40.00	\$40.00	\$12.00-\$100.00	\$38.00
Bulk Water Read Fee - Phone	\$11.42	\$12.00	\$12.00	Not Available	Not Available
Bulk Water Read Fee - On Site	\$64.59	\$60.00	\$65.00	Not Available	Not Available
Bulk Hydrant Meter & Backflow Inspection	\$73.09	\$54.00	\$75.00	\$50.00-\$55.00	\$52.50
Bulk Hydrant Calibration Fee	\$147.35	\$125.00	\$150.00	\$75.00-\$350.00	\$212.50
Bulk Hydrant Meter Deposit	\$2,276.96	\$2,300.00	\$2,300.00	\$750-\$5,000	\$1,908.93
Delinquency Disconnection/Reconnection	\$45.29	\$45.00	\$45.00	\$15.00-\$300.00	\$81.18
Customer Requested Service Disconnection/Reconnection	\$77.02	\$60.00	\$75.00	\$20.00-\$100.00	\$60.16
Meter Set Inspection/Re-inspection	\$46.95	\$50.00	\$50.00	\$25.00-\$225.00	\$76.67
Landscape Contractor Registration	\$50.81	\$65.00	\$65.00	Not Available	Not Available
Waterline Connection Fee	\$190.45	\$0.00	\$200.00	Not Available	Not Available
Residential Landscape & Irrigation Inspection	\$35.34	\$0.00	\$35.00	Not Available	Not Available

Capital Improvement Projects (CIP)

Costs for renewal and rehabilitation of existing infrastructure, infrastructure additions driven by the renewable water program and an updated growth forecast are incorporated into the study.

Personnel

The 2020 budget includes six new full time equivalents (FTEs). These include three water plant operators, two field services FTEs and an engineering project manager. The Study reflects updated personnel cost allocations across the four enterprises to capture cost-of-service impacts on personnel resources, as well as Town-wide changes to the pay and benefits plans. The study also reflects the staffing needs for the rest of the study period from 2021-2024 based upon growth forecasts within the Town and the personnel needed to maintain customer service levels.

Electricity

The third largest operating cost, electricity, reflects full operation of the Plum Creek Water Purification Facility and other treatment plants, alluvial and groundwater well operations and pumping associated with water and wastewater service. Castle Rock Water has implemented an energy management and system optimization plan to maximize the efficiency of electrical usage.

Operations & Maintenance

Cost projections include operating and maintenance costs for CRW. These costs are mostly steady over the five-year planning period. To ensure only costs needed are included in the budget, line item details are required. With the construction of new wells, PCWRA expansion, PCWPF expansion and other various projects being completed operating costs increase each year as our infrastructure and assets grow.

Proposed Rates and Fees for 2020 through 2024

Based on impacts of the revised capital plan and projected system growth by fund as well as the other key changes, the “2019 Study” has resulted in projected required rate revenue increases as shown in Table 9 below.

Table 9: Rate Required Revenue Increases by Enterprise – “2019 Study”

	2020	2021	2022	2023	2024
Water Fund	0.0%	3.0%	3.5%	3.5%	3.5%
Water Resources	0.0%	3.0%	3.0%	3.0%	3.0%
Stormwater	0.0%	0.0%	0.0%	3.0%	3.0%
Wastewater	(3.0%)	0.0%	0.0%	0.0%	0.0%

Note: The current model indicates rate increases may not be required if O&M costs stay flat.

After careful planning and review of operating costs and capital plans in this year’s study, the overall impact to the rates will be a slight decrease for 2020. Projected rate required revenue for the funds in the 2020 to 2024 planning period is consistent with the financial planning done when the Town adopted the hybrid approach to renewable water. However, rates must ramp up slowly over time in order to ensure we can fund the large capital needs associated with these projects over the next 10 years.

For the “2019 Study”, a small decrease in the total typical annual residential utility bill will occur relative to the 2019 adopted rates due to a proposed 3% decrease in wastewater for 2020. Table 10 summarizes the impact on a typical annual utility bill.

**Table 10: 2020 Rate Adjustment Recommendations and
Total Typical Annual Utility Bills**

Customer Class	2019 Actual Typical Annual Bill	“2019 Study” Proposed 2020 Typical Annual Bill	\$ Change	% Change	“2018 Study” Proposed 2020 Typical Annual Bill
Residential ¾” Meter	\$1,355.27	\$1,368.11	(\$12.84)	(0.9%)	\$1,409.15
Commercial Indoor ¾” Meter	\$1,994.66	\$2,009.87	(\$15.21)	(0.8%)	\$2,070.17
Commercial Indoor 1½ ” Meter	\$9,117.03	\$9,219.65	(\$102.62)	(1.1%)	\$9,496.24
Commercial w/Irrigation ¾” Meter	\$2,551.56	\$2,566.77	(\$15.21)	(0.6%)	\$2,643.78
Commercial w/Irrigation 2” Meter	\$15,052.87	\$15,185.00	(\$132.14)	(0.9%)	\$15,640.55
Multi-family Indoor ¾” Meter	\$1,056.57	\$1,069.41	(\$12.84)	(1.2%)	\$1,101.49
Multi-family w/Irrigation 1½” Meter	\$11,112.87	\$11,239.21	(\$126.35)	(1.1%)	\$11,576.39
Irrigation ¾” Meter	\$2,130.74	\$2,130.74	\$0.00	0.0%	\$2,194.66
Irrigation 2” Meter	\$15,506.90	\$15,506.90	\$0.00	0.0%	\$15,972.11

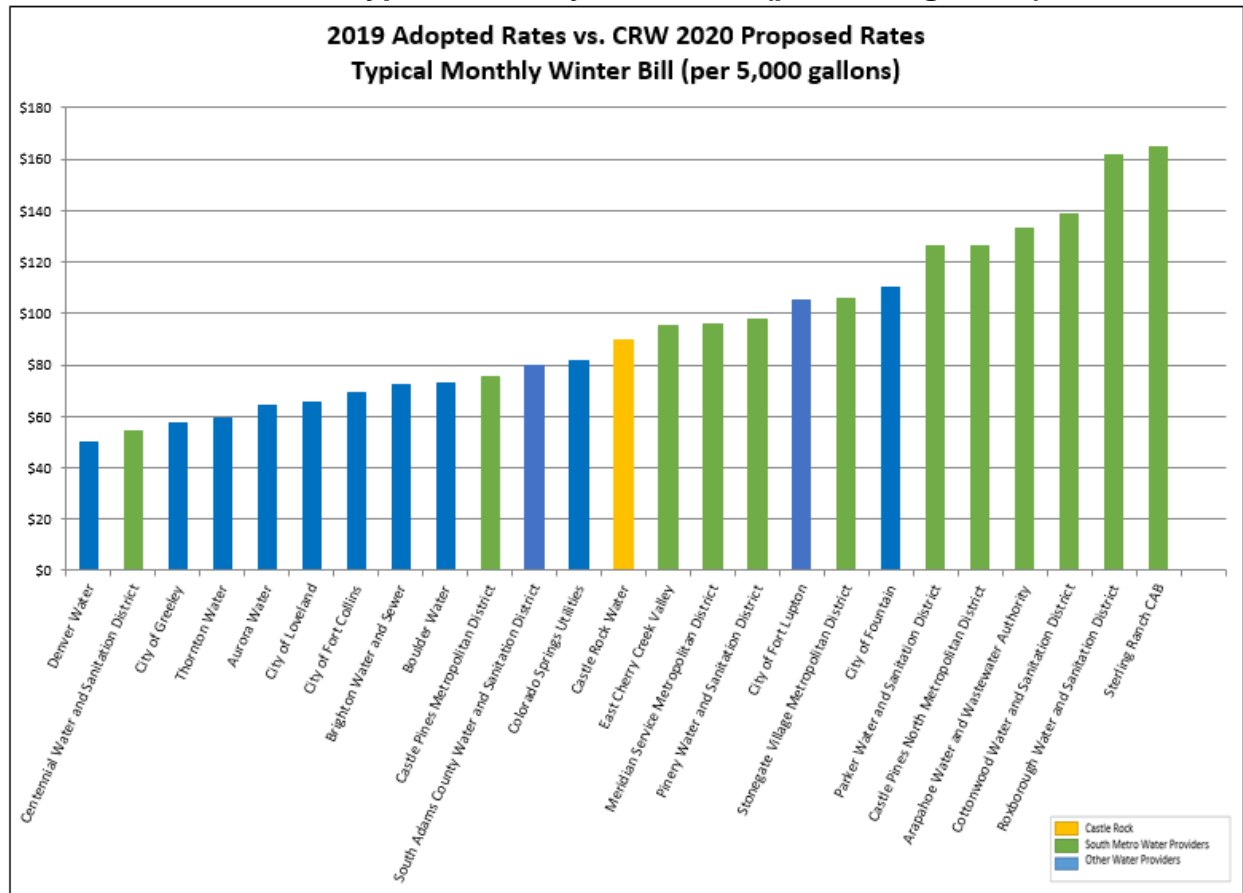
As a part of the presentation of the proposed rates and fees for 2020, Castle Rock Water compared the 2020 proposed rates and fees with other similar water providers in the South Metro area. Many of the water providers do not provide stormwater services,

so we show these separately for accurate comparison purposes. The benchmarking comparisons include all fees related to water, water resources, and wastewater services. These fees have different names across the various water providers including for example water and sewer service fixed and volumetric fees, water resource fees, renewable water fees, capital improvement fees, sewer system replacement fund fees, and groundwater protection fees.

Staff compared rates to other South Metro water providers for a typical winter usage of 5,000 gallons and a typical summer usage of 15,000 gallons. While we did compare the proposed rates and fees to other providers in Colorado, these comparisons are not apples to apples comparisons due to the local challenges faced by South Metro water providers. In summary, the South Metro water providers are generally currently operating on deep groundwater and are in the midst of building renewable surface water systems. A number of the systems have implemented monthly fees similar to Castle Rock's water resources fee including Castle Pines Metro, Meridian, Pinery, Stonegate, East Cherry Creek and Roxborough. Others have incorporated these fees into their standard water rates or utilized tax mill levies.

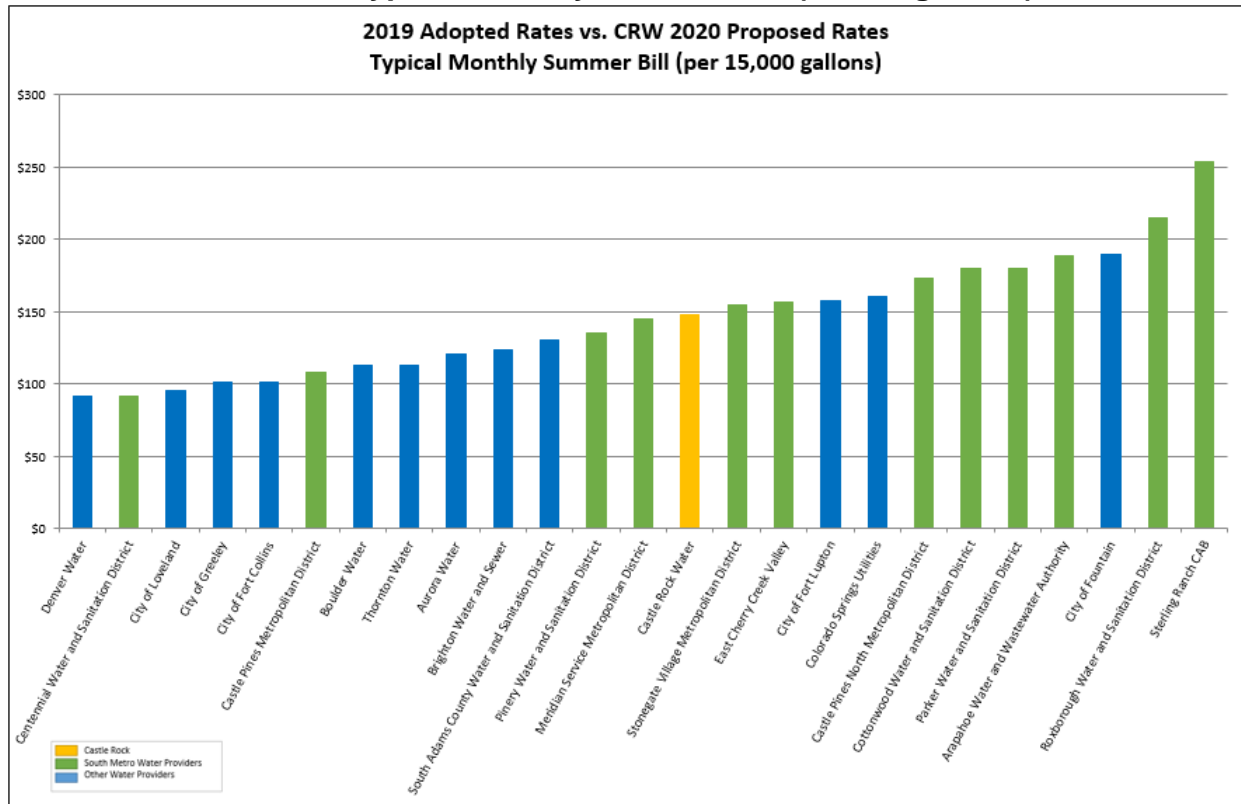
The comparison results to other South Metro water providers are shown in Charts 5 and 6 below. As indicated above, it is important to note that a number of the South Metro water providers have their revenues supplemented by tax mill levies to help with renewable water investments. The charts below show the approximate impact this has on the cost of service for a typical residential customer based on the average median price of a home in Douglas County of \$487,500 (<http://www.douglas.co.us/documents/douglas-county-demographics-summary.pdf>). This mill levy was distributed across twelve equal payments for comparison sake even though this will typically be paid in fewer installments. The results of this comparison indicate that Castle Rock's rates and fees are comparable to other area providers. Once 2020 rate and fees are available for the other area providers, CRW will update these charts and ensure they are available on our website.

Chart 4: Typical Monthly Winter Bill (per 5,000 gallons)



**Includes tax mill levy based on median home price distributed equally over 12 months.*

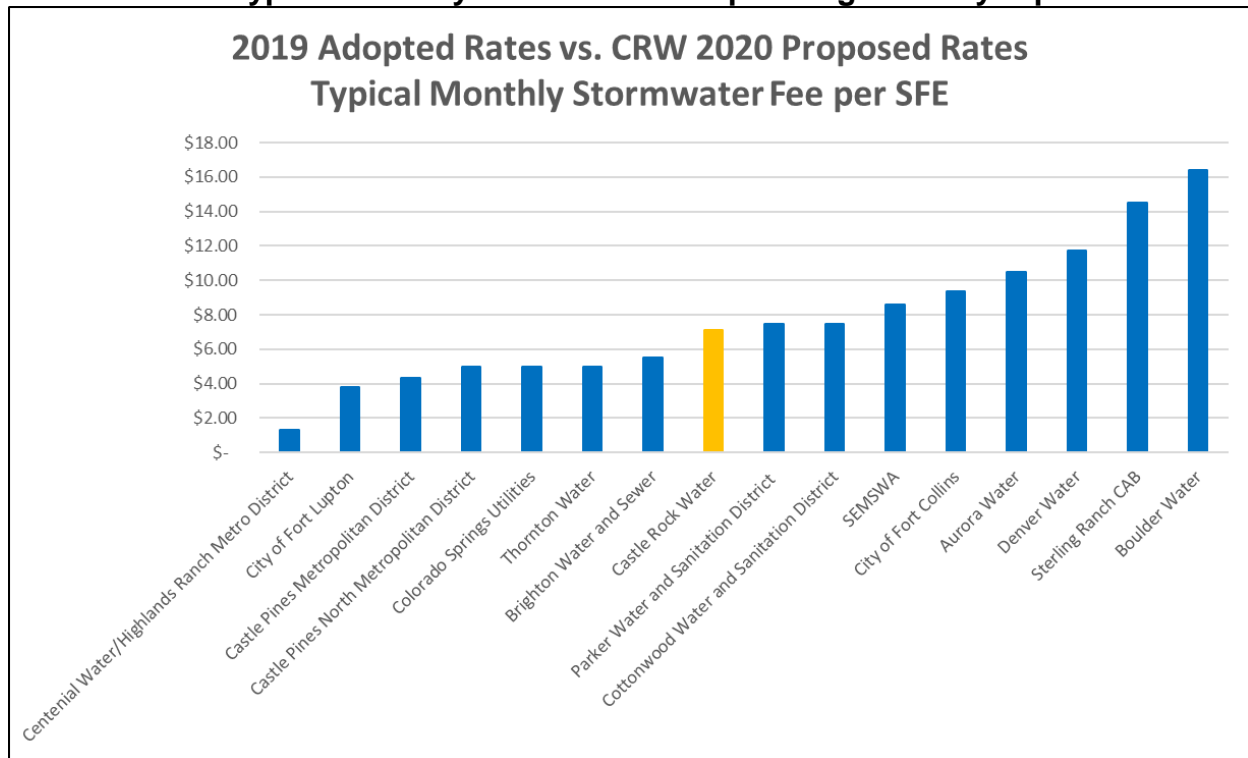
Chart 5: Typical Monthly Summer Bill (15,000 gallons)



**Includes tax mill levy based on median home price distributed equally over 12 months.*

Similar comparisons for stormwater fees are in Chart 6 below. While this is not a comprehensive list of all providers, it shows some of the key stormwater providers in our area. The data indicates that Castle Rock's proposed fees are consistent with many of the other local providers. It is important to note that some jurisdictions handle stormwater through general taxes instead of having a stormwater utility. The results of the comparisons are as follows:

Chart 6: Typical Monthly Stormwater Fee per Single Family Equivalent



Note: SEMSWA, stands for Southeast Metro Stormwater Authority and includes East Cherry Creek Valley Water and Sanitation District, Arapahoe County Water and Wastewater Authority, and Inverness. The rate shown for Parker Water and Sanitation District is through the Town of Parker and is the 2019 rate.

Table 11 summarizes proposed fixed charges for 2020 from this year's study.

Table 11: Single Family Residential Fixed Charges

	2019 Actual Typical Bill	"2019 Study" Proposed 2020 Typical Bill	\$ Change	% Change	"2018 Study" Proposed 2020 Typical Bill
Water	\$9.54	\$9.54	\$0.00	0.0%	\$9.83
Water Resources	\$26.15	\$26.15	\$0.00	0.0%	\$26.93
Wastewater	\$9.30	\$9.02	(\$0.28)	(3.0%)	\$9.58
Stormwater	\$7.12	\$7.12	\$0.00	0.0%	\$7.33
TOTAL	\$52.11	\$51.83	(\$0.28)	(0.5%)	\$53.67

System Development Fees

System development fees (SDFs) are a function of year-end 2018 fixed assets, 2019 year-end estimates of capital improvement project costs, 2020 through 2055 capital improvement project plans, and system capacity (for water, water resources, and wastewater) and developable acres for stormwater.

Growth forecasts and increases to the capital plans in the "2019 Study" indicate that total system development fees for a typical single-family equivalent will need to increase from the 2019 adopted fees. The "2019 Study" indicates fees will need to increase in

2020. The recommended increase this year is 2.9% percent as shown in Table 12. While the fee models indicate a much larger increase could be applied, the financial plan and fund balances over time show that these fees can be increased slowly over time to meet the long term needs.

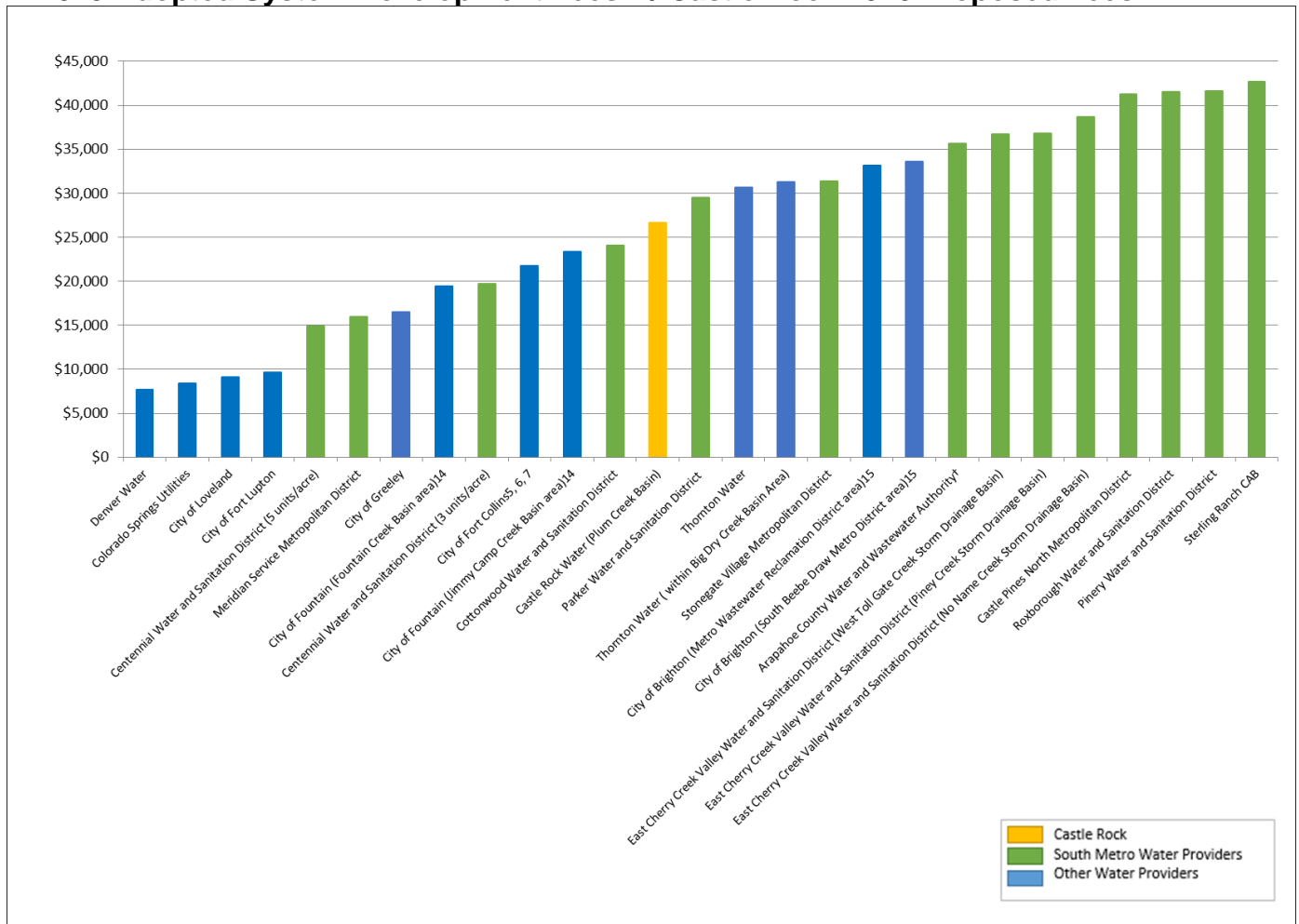
Table 12: Single Family Equivalent System Development Fee Comparison

PLUM CREEK BASIN					
	2019 Actual Fees	“2019 Study” Proposed 2020 Fees	\$ Increase (Decrease)	% Change	“2018 Study” Proposed 2020 Fees
Water	\$3,557	\$3,664	\$107	3.0%	\$3,664
Water Resources	\$17,031	\$17,542	\$592	3.5%	\$17,542
Wastewater	\$4,023	\$4,023	\$0	0.0%	\$4,144
Stormwater	\$1,317	\$1,357	\$40	3.0%	\$1,357
TOTAL	\$25,928	\$26,667	\$739	2.9%	\$26,707

CHERRY CREEK BASIN					
	2019 Actual Fees	“2019 Study” Proposed 2020 Fees	\$ Change	% Change	“2018 Study” Proposed 2020 Fees
Water	\$3,557	\$3,664	\$107	3.0%	\$3,664
Water Resources	\$17,031	\$17,542	\$592	3.5%	\$17,542
Wastewater	\$4,023	\$4,023	\$0	0.0%	\$4,144
Stormwater	\$843	\$868	\$25	3.0%	\$868
TOTAL	\$25,454	\$26,178	\$724	2.8%	\$26,218

As part of the review of proposed fees, Castle Rock Water reviewed system development fees compared to other providers in our area and Colorado. Stormwater development impact fees were not included in the evaluation since many providers do not provide this service. System development fees include water and sewer tap fees, water development fees, outfall development fees (for reservoirs), metro sewer charges, construction water charges, renewable water fees, and water resource fees. See results of the benchmarking comparisons for SDFs in the following chart.

Chart 7: SDF Rate Comparison with Surrounding Communities
2019 Adopted System Development Fees w/ Castle Rock 2020 Proposed Fees

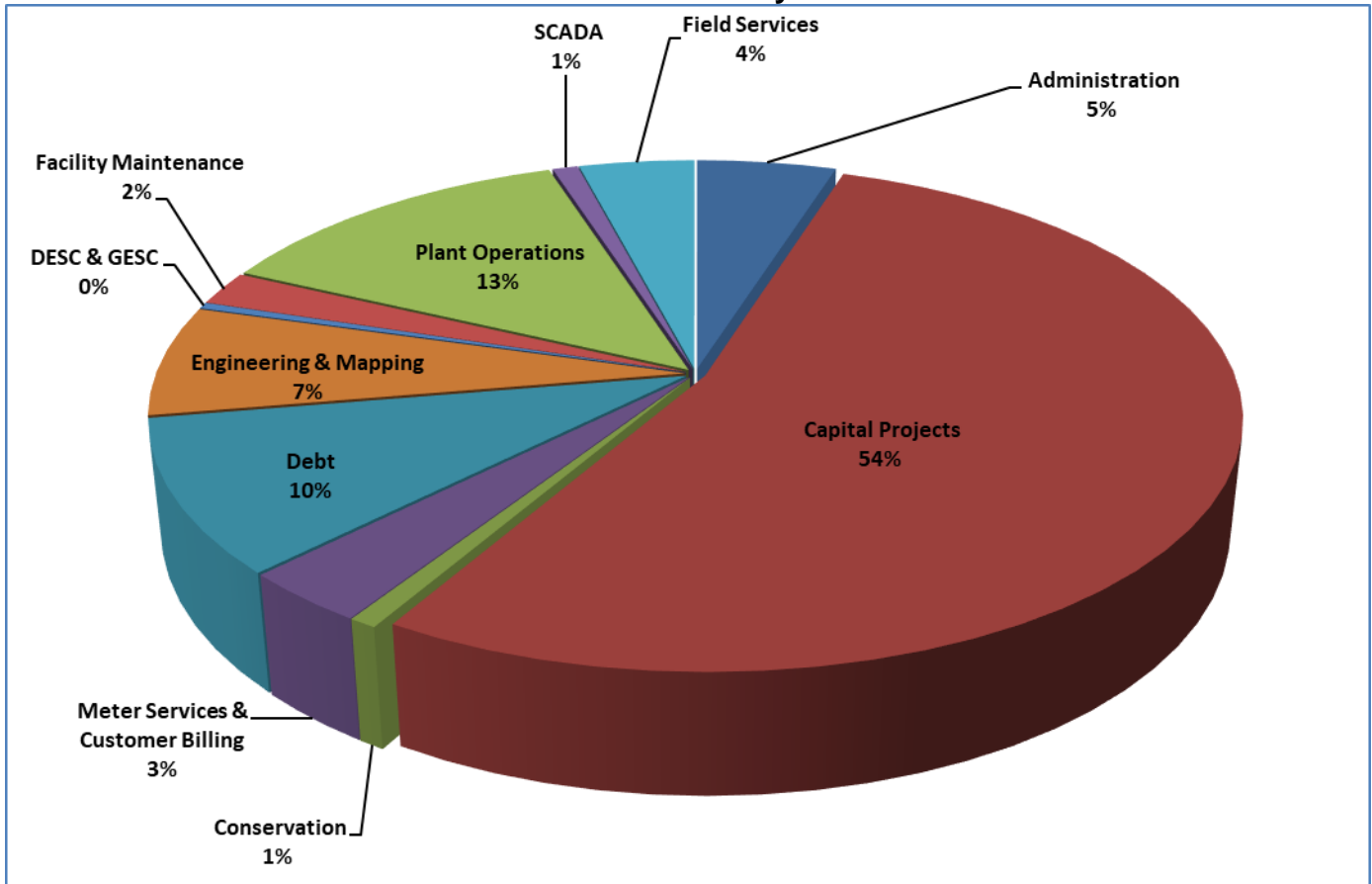


**The Parker Water SDF includes a \$5,000 Water Resource's Toll, for a ¾" meter, in the above calculation, which may not apply to all customers.*

Utilization of Rates and Fees

Chart 9 depicts Castle Rock Water year-end 2018 actuals from a water services functional perspective. Administration includes centralized services provided by other town departments.

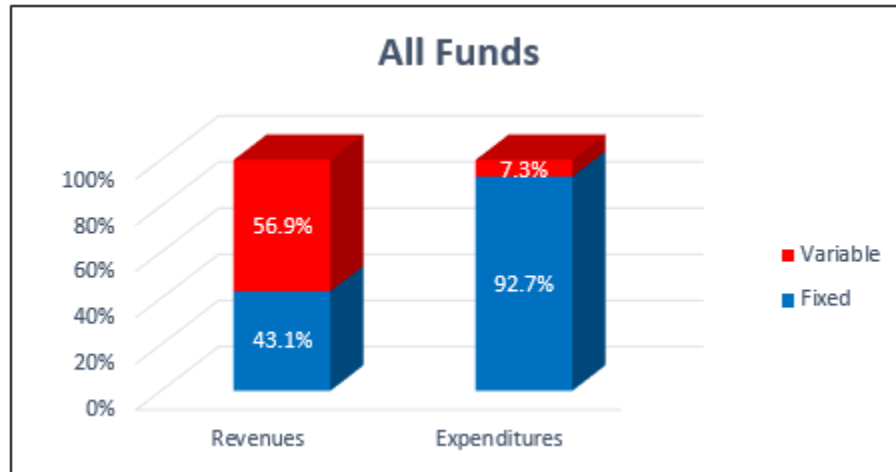
Chart 8: 2018 Costs by Function



It is clear that the Capital Project Plan is a very significant portion of the rates and fees needed for operation of the funds. The infrastructure intensive nature of the business results in significant fixed costs. Castle Rock Water wants to continue to implement a strategy, to the extent possible within our cost-of-service model, which matches fixed revenues with fixed costs to ensure revenue stability thereby minimizing the potential for future rate shocks. This strategy also takes into account the need to incentivize water conservation and efficiency through variables for water use.

Chart 10 shows the breakdown between fixed and variable revenues and expenses for the fiscal year ending 2018. The split between fixed and variable revenues are equal with the largest variable revenue being metered water sales. The majority of expenditures for CRW are fixed in nature with the largest being personnel costs.

Chart 9: Fixed Versus Variable Revenues & Expenditures



Bulk Water Program

Castle Rock Water provides customers with two options for bulk water. For the larger users typically (5,000+ gallons a day) a bulk water hydrant meter and permit are an option. These are typically development projects needing bulk water for dust control, grading, etc. The second option is access to the bulk water station. This is for the smaller users, typically less than 5,000 gallons a day, however there is not a minimum requirement.

Monthly consumption averages for bulk hydrant customers put a similar demand and usage on the system as a 1.5" meter. Therefore, the monthly service charges for water and water resources are the same for this customer class as other 1.5" meter customers. Table 13 shows no proposed changes to the bulk hydrant rates except for an increase in the water volumetric rate to match that of the maximum Tier 2 irrigation rate. Since all of this water is used outdoor but within the Town limits, it is appropriate to charge this customer class the highest outdoor irrigation rate.

Table 13: Bulk Hydrant Rate Comparison

	Adopted 2019 Rates	Proposed 2020 Rates	\$ Change	Benchmark Range	Benchmark Average
Monthly Water Fixed Service Charge	\$18.78	\$18.78	\$0.00	Not Available	Not Available
Water Volumetric Rate (per 1,000 gallons)	\$5.07	\$7.86	\$2.79	Not Available	Not Available
Monthly Renewable Water Fixed Service Charge	\$187.50	\$187.50	\$0.00	Not Available	Not Available
Monthly Permit Fee	\$300.00	\$300.00	\$0.00	\$0-\$325.00	\$170.88
Refundable Deposit	\$2,300.00	\$2,300.00	\$0.00	\$750.00-\$5,000.00	\$1,951.56

Monthly consumption averages for bulk station customers put a similar demand and usage on the system as a ¾" meter. Therefore, the monthly service charges for water and water resources are the same for this customer class as other ¾" customers. Even though bulk station applicants are asked where the water will be used, there is no guarantee that they are not taking the water out of Castle Rock and the basin. To account for this, bulk station customers are charged 125% of the maximum outdoor Tier

2 irrigation rate. The 125% is in line with what CRW is allowed to charge for extra territorial agreements according to code.

Table 14 shows a proposed change to the bulk station for 2020 which brings the volumetric rate back up to 125% of the maximum outdoor irrigation rate as this adjustment was accidentally not implemented in 2019.

Table 14: Bulk Station Rate Comparison

	Adopted 2019 Rates	Proposed 2020 Rates	\$ Change	Benchmark Range	Benchmark Average
Monthly Water Fixed Service Charge	\$9.54	\$9.54	\$0.00	Not Available	Not Available
Water Volumetric Rate (per 1,000 gallons)	\$9.48	\$9.82	\$0.34	Not Available	Not Available
Monthly Renewable Water Fixed Service Charge	\$26.15	\$26.15	\$0.00	Not Available	Not Available
Refundable Deposit	\$150.00	\$150.00	\$0.00	Not Available	Not Available

Schedule

The current schedule for the 2019 Rates and Fees Study targets the following milestones.

- July 24 – Castle Rock Water Commission update/discussion
- August 20 – Town Council discussion/direction
- August 28 – Castle Rock Water Commission recommendation
- September 3 – Town Council Rates and Fees recommendation, 1st Reading
- September 17 – Town Council Rates and Fees recommendation, 2nd Reading
- January 2020 – Rates and Fees Implementation

Staff Recommendation

Based on the “2019 Study” staff recommends the following changes to the 2020 rates and system development fees for a single-family equivalent.

Water Fund

1. Fixed Monthly Charge – 0% Increase
2. Volumetric Rates – 0% Increase
3. System Development Fee – 3.0% increase

Water Resources Fund

1. Fixed Monthly Charge – 0% Increase
2. System Development Fee – 3.5% increase

Stormwater Fund

1. Fixed Monthly Charge – 0% Increase
2. Development Impact Fee – 3.0% Increase Plum Creek Basin and 3.0% Increase Cherry Creek Basin

Wastewater Fund

1. Fixed Monthly Charge – 3% Decrease
2. Volumetric Rate – 3% Decrease
3. System Development Fee – no change

Staff recommends moving forward with these recommended rates and fees, finalizing the “2019 Study” report and all of the associated data, and bringing the appropriate ordinances to Town Council for approval in accordance with the proposed schedule.