PARKVILLE WATER DISTRICT

WATER RATE STUDY

DECEMBER 2017

RPI Consulting LLC

Durango, Colorado

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SUMMARY OF FINDINGS

The Parkville Waster District (District) in Leadville, Colorado, recognizes the importance of maintaining an up to date and fiscally sound water operation. In order to accomplish this, the water rates must cover the long-term costs of operations and maintenance, capital improvements, and long-term debt, in an equitable and justifiable manner. This study analyzes the existing rate structure's capacity to accomplish these objectives in light of future capital improvements required to update and maintain the district's infrastructure.

BASE RATE THRESHOLD – The base rate usage threshold for residential accounts in the tiered rate structure is 4,000-gallons and accurately reflects the residential usage patterns. The tiered rate structure has six usage thresholds for commercial accounts, each with a separate base rate. The commercial thresholds do not accurately reflect monthly consumption. Approximately 70% of commercial accounts have a ¾-inch tap size and are treated as residential accounts for billing purposes, paying $37.50 per month for a 4,000-gallon threshold. Over 50% of commercially-designated accounts use less than the threshold per billing cycle; 17% each month use over 20,000-gallons each month. This means that the remaining 31% of commercial accounts use between 4 and 20,000-gallons but are billed differently, depending on their tap sizes. Furthermore, although the District meters water usage, the rate structure remains based on tap sizes as a remnant of the non-metered system's billing. The rate structure can not only be updated using the metered usage data, but can also be simplified as well. The tiered rate structure for residential and commercial accounts is shown in Figure 1.

Figure 1—Tiered base rates & gallon thresholds

Tap size	Gallon thresholds	Rates
RESIDENTIAL		
3/4-inch	4,000	$37.50
COMMERCIAL	4,000	$37.50
3/4-inch		
1-inch	5,000	$65.75
1 ½-inch	10,000	$126.90
2-inch	16,000	$201.75
3-inch	32,000	$406.75
4-inch	70,000	$892.85

Source: Parkville Water District website

A simplified structure should be adopted in which two base rates are assessed, one for those customers with the ¾-inch tap size and one for those with tap sizes above 1-inch.

OPERATIONS AND MAINTENANCE BASE RATE COMPONENT –Between 2014 and 2016, the average cost to produce a single gallon of water was $0.00709 or $7.09 per 1,000-gallons. The cost to produce 4,000-gallons of water was $28.36. The projected operations and maintenance base rate for the planning period (2018-2022) is $0.00722 or $7.22 per 1,000-gallons and $28.88 per 4,000-gallons consumed.

DEBT SERVICE BASE RATE COMPONENT— The District debt totaled $1.35 million as of late 2017. The average annual debt payment between 2018 and 2022 is $96,676. The per 1,000-gallon cost is $0.64.

CAPITAL IMPROVEMENT BASE RATE COMPONENT – The District spent an average of $500,000 annually in capital improvements from 2013 to 2016, or $3.66 per 1,000-gallons consumed. The per 1,000-gallon cost for capital improvements will decrease in the suggested rate revision proposed herein, to $3.12. This is despite an increase in planned average annual capital improvement expenditures to $650,500 and results from the rate structure simplification, as well as a capital financing plan for the $1.4 million in expenditures planned for 2020.

OVERAGE CHARGE BASE RATE COMPONENT – A total of 42 potential usage levels and corresponding fee variations exist under the tiered rate schedule, making it complex and difficult to manage and maintain. This structure places a burden on commercial accounts who pay a substantially higher per 1,000-gallon rate compared to residential users. Charging a single overage charge for lower average monthly consumers and a single rate to higher average monthly consumers as proposed in the consumption based rate model will address the complexity and reduce the inequity inherent in the tiered rate system. See Appendix A for the tiered rate structure.

STANDBY FEES – Standby fees in the District present a challenging budget situation in which many accounts with a standby status go unpaid for consecutive months. This study recommends eliminating standby fees.

PROPOSED RATE REVISION – The proposed rate revision synthesizes the study's findings into a simplified, predictable, and equitable consumption-based model in which two rate tiers and two overage charges are adopted. The base rate is comprised of the cost of operations and maintenance per 1,000-gallons delivered, the cost of future capital improvements per 1,000-gallons delivered, and the cost of existing debt-service per 1,000-gallons delivered. The analysis shows that each 1,000-gallons of water costs $10.98 to produce. The full base rate is determined by multiplying this cost by the gallon threshold per account type. An overage charge is also calculated and charged for every 1,000-gallons of water an account consumes per month over its gallon threshold.

Base Rate Calculations

¾-inch residential & commercial accounts: $10.98 X 4,000 gallons = $43.92 base rate

1-4-inch commercial accounts: $10.98 X 5,000 gallons = $54.90

The ¾-inch residential and commercial should maintain the 4,000-gallon threshold. The threshold for 1-4-inch commercial accounts is 5,000. All water used over the designated thresholds is billed at $4.67 per 1,000-gallons for the residential/commercial users and $5.12 for the commercial-only users. The proposed revision is captured in Figure 2.

Figure 2—Proposed base rate revision, thresholds, and overage charge

Account type	Gallon threshold	Base rate	Overage charge
¾" Taps, Residential & Commercial	4,000	$43.92	$4.67
1-4" Taps, Commercial	5,000	$54.90	$5.12

Per 1,000-gallon cost for both residential and commercial users: $10.98

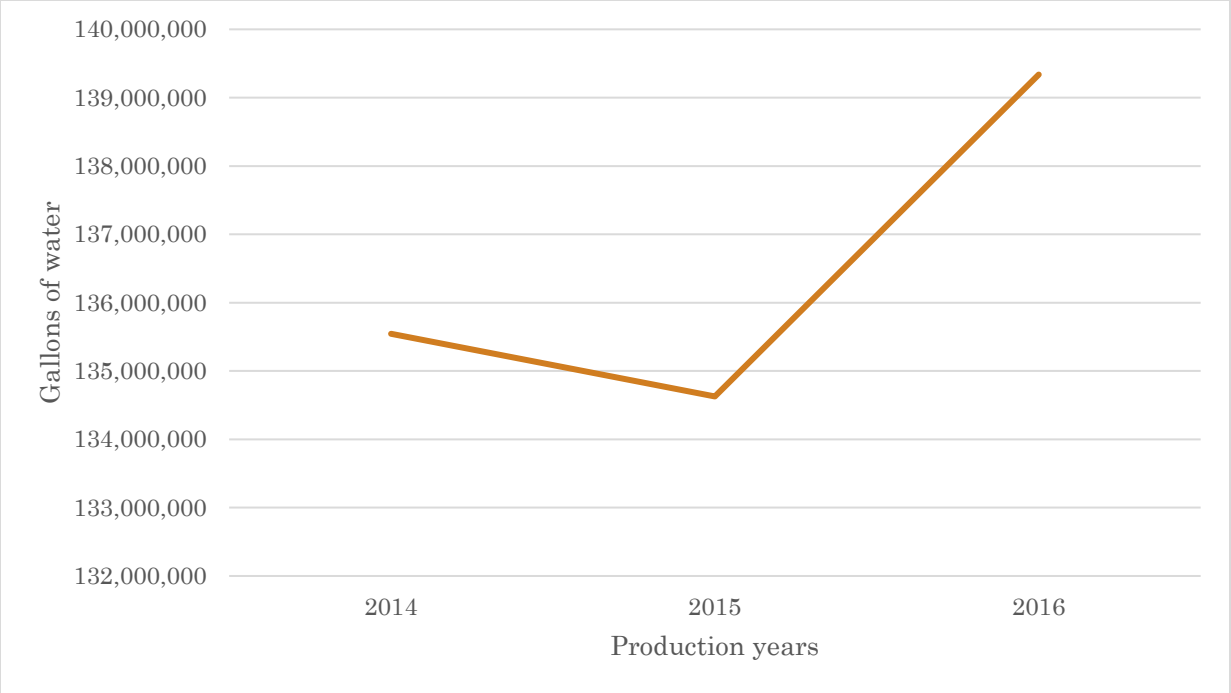
WATER RATE ANALYSIS

USAGE PATTERNS AND EXISTING FEE STRUCTURE

Historic billing and usage data provide the best starting point for a utility rate study. Between 2014 and 2016, the District provided water to between and 1,951 and 1,974 residential accounts, and 379 and 391 commercial accounts. In total, the District provided services to 2,365 accounts. From 2014 to 2016, total commercial accounts served increased by 12 and residential accounts increased by 23.

On average, the District delivered 136,502,919 gallons of water between 2014 and 2016 (see Figure 3). The total gallons delivered decreased in 2015 but recovered in 2016 with an increase of approximately 4 million gallons over 2014. The overall growth rate for water delivered during this time was 1.4%.

Figure 3—Annual water production, 2014-2016

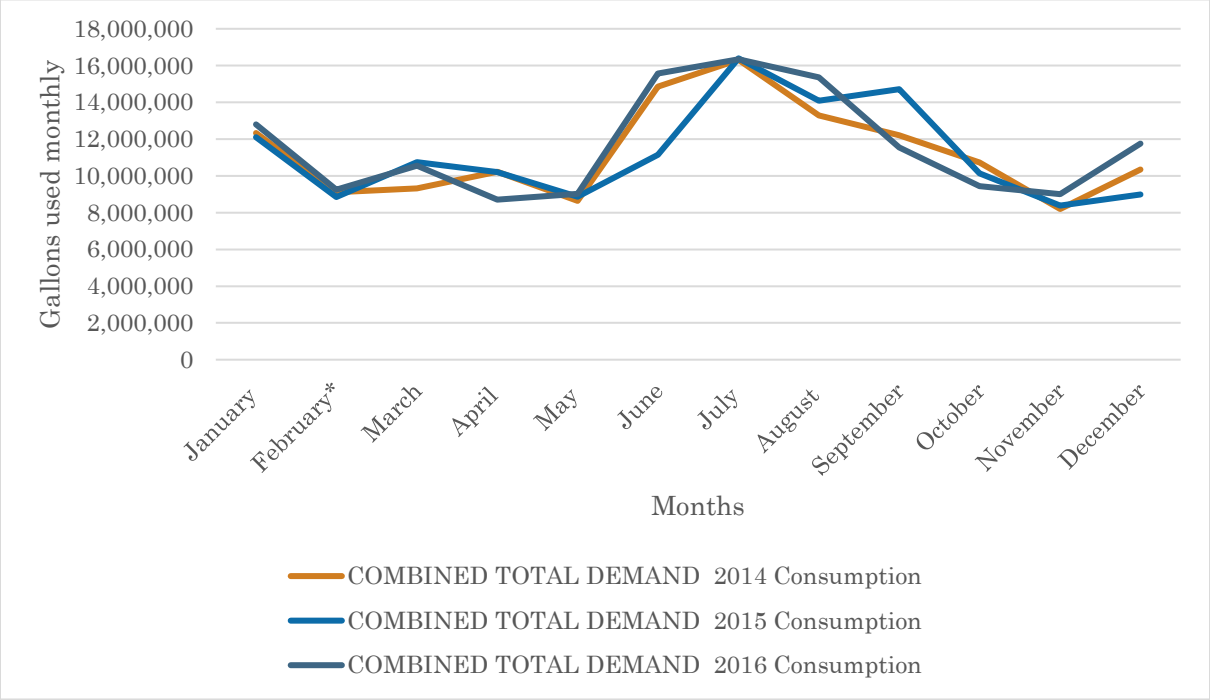


Source: 2014-2016 Parkville Water District Billing Data

The 2016 combined residential and commercial demand averaged 10,065,840 gallons throughout the winter months (October-May); in the summer months (June-September) the average demand increased to 14,702,835. Figure 4 shows the 2014 to 2016 combined

monthly demands in gallons. It also shows the seasonal increase in gallons demanded from June through September.

Figure 4—Combined monthly demands, 2014-2016

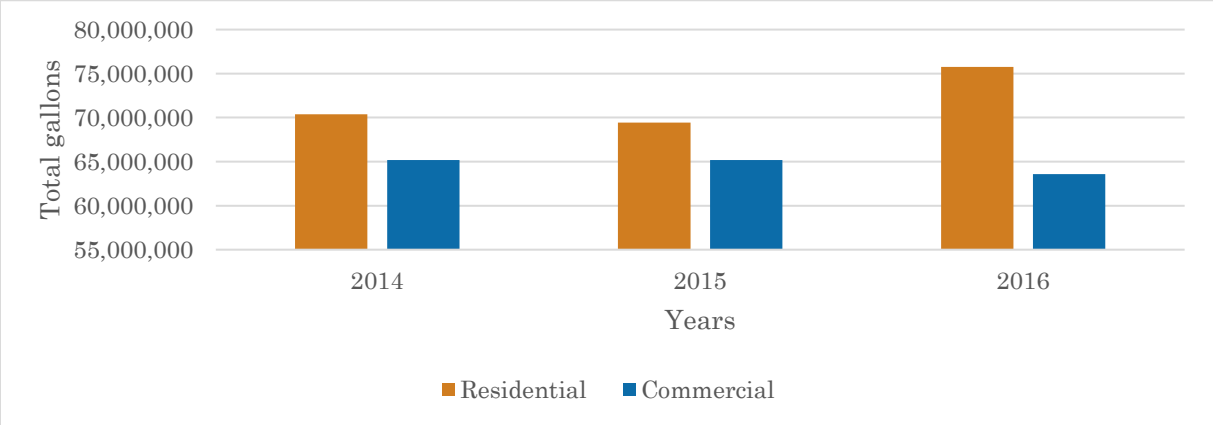


Source: 2014-2016 Parkville Water District Billing Data

RESIDENTIAL USE

Residential accounts make up 83% of all accounts. The residential demand exceeded commercial demand in all three years between 2014 and 2016 (see Figure 5).

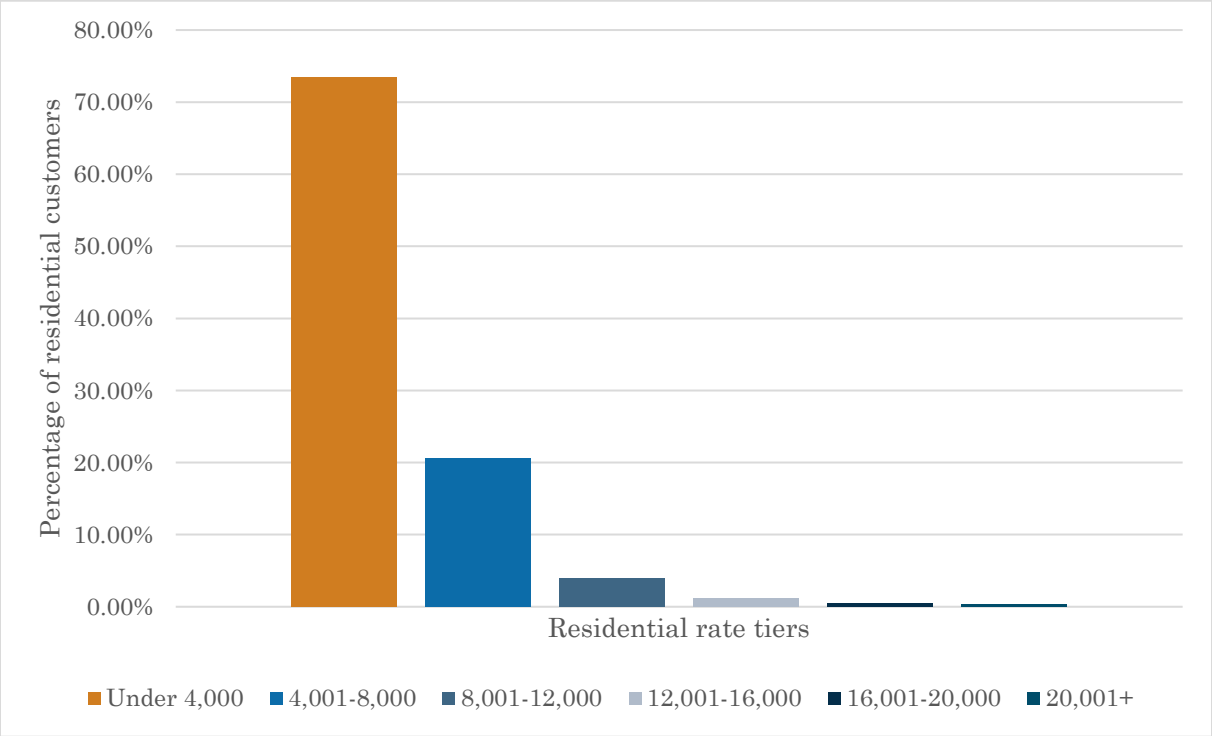
Figure 5—Annual total demand: residential and commercial accounts, 2014-2016



Source: 2014-2016 Parkville Water District Billing Data

According to the 2014-2016 billing and usage data from the District, 73% of residential customers used less than 4,000-gallons per billing period. Twenty-percent of customers' demand falls in Tier 2 as referenced in Appendix A, or between 4,001 and 8,000-gallons per cycle. The remaining 7% use over 8,000-gallons and are billed in tiers 3 and beyond, accordingly (see Figure 6).

Figure 6—Monthly residential demand by rate tiers



Source: 2014-2016 Parkville Water District Billing Data

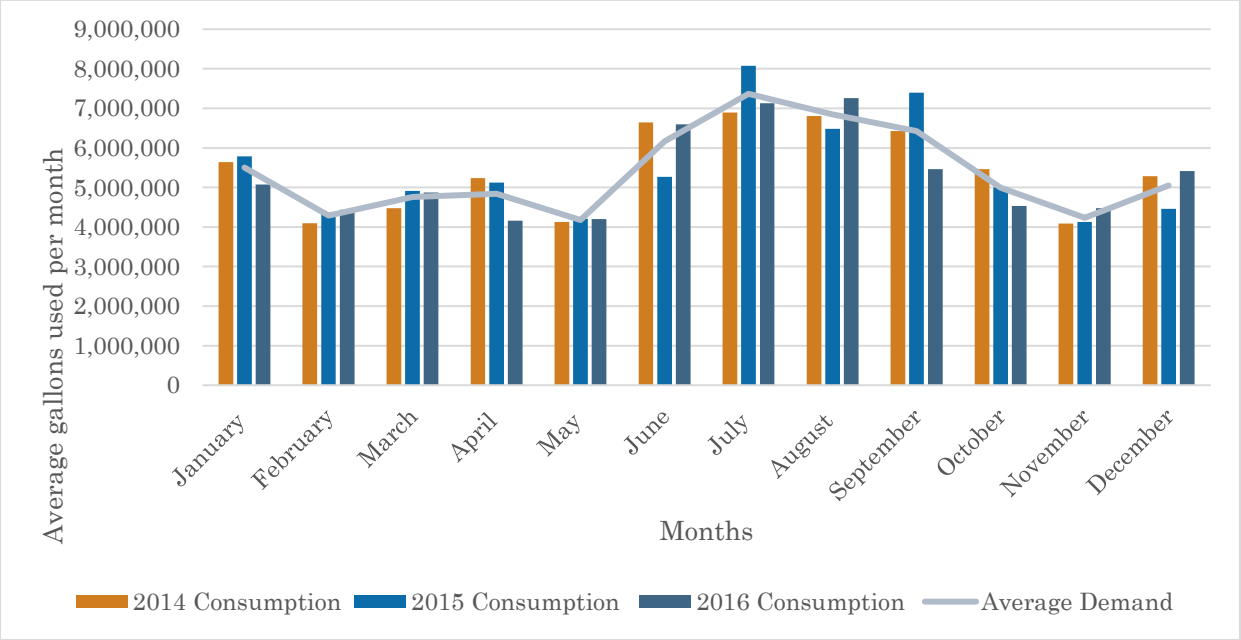
The average residential demand for water totaled 3,256-gallons in 2016. This was the lowest of the average monthly demand for residential customers between 2014 to 2016. The average monthly residential demand in 2014 was 3,435-gallons and 3,754 in 2015.

The current 4,000-gallon threshold for residential accounts accurately reflects historical usage. Maintaining the threshold at this level in the recommended rate structure revision will minimize the impact of a rate change to this customer group.

COMMERCIAL USE

The commercial monthly average use between 2014 and 2016 is shown in Figure 7. In 2016, the lowest monthly average totaled 10,589 gallons. The highest monthly average totaled 18,475 gallons in August of the same year. These averages for all commercial accounts are inflated by those users with the highest monthly demands. Therefore, the average monthly commercial use does not capture the actual average monthly use of the majority commercial accounts.

Figure 7—Average monthly commercial usage, 2014-2016



Source: 2014-2016 Parkville Water District Billing Data

Approximately 70% of commercial accounts are the same tap size (3/4-inch) as all residential accounts and are treated as residential accounts for billing purposes. The ¾--inch tap size commercial accounts also share the residential base rate of $37.50 and the 4,000-gallon threshold. Over half the commercially designated accounts use less than the 4,000-gallon threshold per billing period while 17% of commercial accounts use over 20,000 gallons each month. The remaining 31% of commercial accounts use between 4,000 and 20,000 gallons, but are billed differently, depending on the tap size (Appendix A references the tiered billing structure). Figure 8 shows the total commercial accounts by tap sizes as a percentage of all commercial accounts.

Figure 8—Percentage of commercial accounts by tap size

Tap size	% of total
¾-inch	69%
1-inch	12%
1.5-inch	6%
2-inch	8%
3-inch	4%
4-inch	1%
TOTAL	100%

Source: 2014-2016 Parkville Water District Billing Data

EXISTING FEE STRUCTURE INEQUITIES

Residential and commercial accounts are charged inconsistently and inequitably through the current rate structure on a per 1,000-gallon basis. Figure 1 is modified below into Figure 9, showing the per 1,000-gallon cost for each base rate. Under the current rate structure, commercial users with 1-inch taps are charged 40% more than accounts with ¾-inch taps; however, all water is metered, so different charges are unnecessary. Accounts with a tap size between 1 ½-inches and 4-inches are charged less than the 1-inch tap accounts. Two-inch accounts pay 35% more; three-inch accounts pay 35.5% more; and four-inch accounts pay 36% more.

Figure 9—Cost per 1,000 gallons across existing rate structure

Tap size	Gallon thresholds	Rates	Cost per 1,000 gallons
RESIDENTIAL			
3/4-inch	4,000	$37.50	$9.38
COMMERCIAL	4,000	$37.50	$9.38
3/4-inch			
1-inch	5,000	$65.75	$13.15
1 ½-inch	10,000	$126.90	$12.69
2-inch	16,000	$201.75	$12.61
3-inch	32,000	$406.75	$12.71
4-inch	70,000	$892.85	$12.76

The base rate for all accounts should result in equal distribution of the burden to offset the costs of providing service.

CONSUMPTION-BASED, BASE RATE COMPONENTS

The base rate should be comprised at a minimum of components that fund the cost of daily operations and maintenance, future capital improvement needs, and existing debt. The following section details the calculation of each component.

OPERATIONS AND MAINTENANCE BASE RATE COMPONENT

The operations and maintenance rate component is $7.22 per 1,000-gallons; this figure is calculated by averaging the 2014-2016 cost of production per 1,000-gallons (see Figure 10). The annual cost of operations and maintenance, shown in the second column is divided by the gallons delivered per year, which is shown in the third column. The totals are displayed in the fourth row which shows the final average cost per 1,000-gallons is $.00722 or $7.22. The operations and maintenance expenditures in the future cash flow projection also rely on this number.

Figure 10—Historical and future water production, 1.4% annual growth rate

Production year	Operations & maintenance cost	Gallons delivered	Cost per gallon
2014	$950,527	135,543,425	$.00701
2015	$982,281	134,627,271	$.00730
2016	$1,023,586	139,338,061	$.00735
Average			$.00722

Source: 2014-2016 Parkville Water District Production Data

CAPITAL IMPROVEMENTS BASE RATE COMPONENT

The District plans to spend a total of $3,207,000 to maintain and upgrade the water infrastructure over the next five years. Figure 11 provides the estimated annual cost derived from the Capital Improvement Plan (Appendix B). Originally, the District slated the Iowa Gulch Treatment Plant at a roughly estimated cost of $5 million into planning year 2022. This plant is not factored into this capital improvement base rate component given the limited planning conducted for the plant to date, at the consultant's recommendation. The District should review and revise the water rates and cash flow projections once it has a firmer estimation of the treatment plant's actual expenditures.

Figure 11—2018-2022 Planned capital improvement plan expenditures

Year	Total Expenditure
2018	$752,000
2019	$750,000
2020	$1,455,000
2021	$250,000
2022	$*
TOTAL	$3,207,000

Source: Parkville Water District, Capital Improvement Plan

* Place holder for the Iowa Gulch Treatment Plant costs

The 2020 planned improvements total $1.455 million and include the $1.2 million expenditure for the additional filter at the Evans Plant. The capital improvement base rate component assumes the District will offset a portion of these costs through a combination of securing grants and/or financing the project.

The planned average annual expenditures for capital improvements is $650,500 each year. If the water filter project is financed for 30-years at a 4% interest rate, the annual payments will approximate $ 68,747.76. Financing the project for this time reduces the average annual capital improvement costs to $462,649. Figure 12 shows the calculation for the capital improvement base rate component, based on these assumptions. The calculation is completed by dividing the average annual capital expenditure ($462,649) shown in column one by the average annual gallons delivered, shown in column two. The base rate component is $3.12 per 1,000-gallons, shown in column three.

Figure 12—Capital improvement base rate component calculation

Average annual capital expenditure	Average annual gallons delivered	Capital improvement base rate component
$462,649	148,452,932	$3.12/1,000-gallons

The District will need to review and revise the capital improvement base rate component as well as the capital improvement plan if it is unable to finance the water filter for the Evans plant.

DEBT SERVICE BASE RATE COMPONENT

The annual average debt service through 2022 was $95,696 as of year-end 2017. The debt service requirements for the base rate are shown in Figure 13.

Figure 13—Existing debt service, 2018-2022

Project title	Original loan amount	Annual Payment	Debt retirement date
Canterbury Tunnel Repair (CWCB Loan), 2012	$1,026,371	$59,355	2042
Solar Panels (First National Bank of Hugo), 2015	$145,070	$32,308	2020
Evans Reservoir Bypass Flume Replacement (CWCB Loan), 2016	$181,800	$20,186	2027
Average annual debt payment (2018-2022)		$95,696	

Source: 2014-2016 Parkville Water District Annual Audits

The debt service base rate component is calculated by dividing the average cost of debt over the planning period by the projected gallons to be delivered for the same time (see Figure 14). The debt service base rate component is $0.64/1,000-gallons.

Figure 14—Capital improvement base rate component calculation

Average annual debt payment	Average annual gallons delivered	Debt service base rate component
$95,696	148,452,932	$0.64/1,000-gallons

REVISED BASE RATE, GALLON THRESHOLDS, AND OVERAGE CHARGES

The revised comprehensive base rate per 1,000-gallons is $10.98 (see Figure 15). This rate encompasses each of the components required at the District to deliver water. The new base rate for account types is calculated by multiplying the per 1,000-gallon cost by the gallons included in a threshold.

Figure 15—Revised comprehensive base rate for all accounts

Base rate component	Base rate total
Operations and maintenance	$7.22
Capital improvement	$3.12
Debt service	$0.64
Total base rate	$10.98

The current gallon threshold for residential and commercial accounts with a ¾-inch tap size is 4,000 gallons. This threshold accurately captures the majority of monthly usage and should be retained from the tiered rate structure. However, the commercial rate structure should be simplified. The majority of commercial accounts use under 4,000-gallons of water per billing cycle. The 4,000-gallon threshold for commercial accounts does not take into consideration the 17% of commercial accounts using over 20,000-gallons per month. Raising the commercial threshold to 5,000-gallons for commercial accounts with a tap size of 1-inch or greater will help the District strike a balance in the commercial usage, implement a more equitable rate system, and recuperate the needed revenue to continue providing services. The recommended rate structure is shown in Figure 16.

Figure 16—Proposed base rate revision, thresholds, and overage charge

Account type	Gallon threshold	Base rate	Overage charge
¾” Taps, Residential & Commercial	4,000	$43.92	$4.67
1-4” Taps, Commercial	5,000	$54.90	$5.12
Per 1,000-gallon cost for both residential and commercial users: $10.98			

OVERAGE CHARGES

The suggested threshold for residential accounts is 4,000-gallons. The commercial threshold is 5,000-gallons. Accounts using more than the allotted threshold in gallons are charged an overage rate for every 1,000-gallons consumed over the threshold. The overage rate is calculated based on the total overage gallons delivered each billing cycle for residential and commercial users, separately, between 2014 and 2016 (see Figure 17).

Figure 17—¾-inch residential and commercial users' overage rate calculation

Block	# Accounts	Sum product
4,001-8,000 gal	398	$1,791.00
8,001-12,000 gal	85	$403.74
12,001-16,000 gal	23	$122.50
16,001-20,000 gal	9	$49.96
20,000 gal +	36	$206.04
Total	551	$2,573.24

Source: 2014-2016 Parkville Water District Billing Information and Rate Structure

The overage rate calculation relies on a weighted average in which the total sum product as shown in the fourth column is divided by the total average accounts using over 4,000-gallons, as shown in the third column.

Calculation

$2,573.24 / 551 = $4.67 per 1,000-gallons

The overage charge for commercial users with tap sizes over 1-inch is calculated the same (see Figure 18).

Figure 18—1-4-inch tap size (commercial) overage rate calculation

Block	# Accounts	Sum product
4,001-8,000 gal	62	$279.00
8,001-12,000 gal	37	$175.75
12,001-16,000 gal	42	$220.50
16,001-20,000 gal	11	$60.50
20,000 gal +	66	$379.50
Total	218	$1,115.25

Source: 2014-2016 Parkville Water District Billing Information and Rate Structure

Calculation

$1,115.25 / 218 = $5.12 per 1,000-gallons

STANDBY FEES

Standby fees should be eliminated in the consumption-based rate restructure as another mechanism for reducing the inequities of the current system. While standby accounts still require administrative actions, they do not contribute to maintaining or improving the existing infrastructure. These challenges are further magnified when customers whose accounts are on standby fail to pay the monthly bill. Active accounts also subsidize the standby accounts' contributions to capital improvements. Adopting a predictable and accurate budget is a challenge under these circumstances; it is recommended to eliminate standby fees in order to establish a more equitable rate structure for all District customers.

CONSUMPTION BASED RATE STRUCTURE AND IMPLICATIONS

The combined base rate is $43.92 for the residential and commercial users with the ¾-inch taps and $54.90 for commercial users with tap sizes over 1-inch (see Figure 19).

Figure 19 – Consumption based rate restructure components

	Rate Components
Operations and maintenance	$7.22
Capital improvements	$3.12
Debt service	$0.64
Total base rate per 1,000 gallons	**$10.98**
¾-inch res/comm accounts (4,000 gallons)	$43.92
1-4-inch commercial accounts (5,000 gallons)	$54.90
¾-inch res/comm accounts overage	$4.67
1-4-inch commercial accounts overage	$5.12

The proposed rate structure has significant implications for customers as a result of leveling the inequity inherently built in the tiered rate system. The implication of the rate revision for most commercial accounts with tap sizes over 1-inch is a reduction in their monthly bill. These changes range from a decrease of nearly 14% to 57% and are available for review in Appendix C. Most customers with the ¾-inch tap size will experience a rate increase; those whose use fell into brackets 4 and 5 will experience a decrease. For instance, the base rate for customers whose use was less than 4,000-gallons will experience a 17.12% rate increase. The rate implications vary due to the inequities embedded in the existing tiered structure and are shown in Figure 20. In this figure, a midline example of gallons is used to display the difference between the current rate and the new rate. Customers whose use falls into brackets 4 and 5 will see a rate decrease in this simplified, consumption-based rate structure.

Figure 20—Implications of rate change on existing ¾-inch tap customers

Bracket	Current Rate	New Rate	Difference
Base	$37.50	$43.92	17.12%
Bracket 1 (4,001-8,000 gal.) @ $4.50/1,000; ex: 6,000 gallons	$46.50	$53.26	14.53%
Bracket 2 (8,0001-12,000 gal.) @ $4.75/1,000; ex: 10,000 gallons	$66.00	$71.93	8.98%
	$90.00	$90.60	0.67%

Bracket 3 (12,001-16,000 gal.) @ $5.25/1000; ex: 14,000 gallons			
Bracket 4 (16,001-20,000 gal.), @ $5.50/1000; ex: 18,000 gallons	$114.50	$109.27	-4.56%
Bracket 5 (20,001+ gal.) @ $5.75/1000); ex: 50,000 gallons	$302.00	$258.65	-14.35

CASHFLOW ANALYSIS

Adopting a consumption-based rate model should generate $1,963,094 in revenue in 2018 and a total of $10 million throughout the planning period (2018-2022). These projections assume the rate of growth in the number of accounts remains relatively constant. A modest surplus is expected between 2018 and 2019. The cash flow projection is attached in Appendix D.

The largest capital improvement expenditures in the plan occur between 2018 and 2020. These expenditures drop significantly in price in 2021; as a result, the expected revenues significantly increase. Production year 2022 is modeled without the capital expenditures included for the new treatment plant in order to allow the District more time to accurately estimate the costs. Revenues actually generated during 2021 and later should be used to offset the costs of this plant.

Revisiting Rates and Future Studies

Capital planning and rates studies should be conducted every three to five years to ensure the projects on the capital improvement plan are being completed and the rates are adequate to pay for operations and maintenance and future capital needs. Revisiting this rate structure in 2020 will provide the District with sufficient time to produce the legitimate cost estimates for the new plant in order to incorporate them into the rate structure with sufficient time needed to make other changes if necessary, in anticipation of the large project.

APPENDICES

APPENDIX A: TIERED RATE STRUCTURE

Base Rates

¾ Inch Service Residential and Commercial: Monthly charge includes Base rate + Volume Charge

Base Rate- $37.50 (includes first 4000 gallons)

Volume Charge (for usage over base rate allowance):
Block 1- 4,001 gallons-8000 gallons- $4.50 per thousand gallons
Block 2- 8,001 gallons- 12,000 gallons- $4.75 per thousand gallons
Block 3- 12,001 gallons- 16,000 gallons- $5.25 per thousand gallons
Block 4- 16,001 gallons- 20,000 gallons- $5.50 per thousand gallons
Block 5- 20,001 gallons and over- $5.75 per thousand gallons
All "Out of District" customers will pay 1-1/2 times in District Rate.

Commercial Rates 1-inch service and larger

Base Rates:
1-inch- Includes first 5000 gallons- $65.75
1 ½ inch- Includes first 10,000 gallons $126.90
2 inch- Includes first 16,000 gallons- $201.75
3 inch- Includes first 32,000 gallons- $406.75
4 inch- Includes first 70,000 gallons $892.85
All "Out of District" customers will pay 1-1/2 times in District Rate.

Overage Rates

Tap Size	Block 1	Block 2	Block 3	Block 4	Block 5
1 inch	5,001-12,000 gal.	12,001-20,000 gal.	20,001-30,000 gal.	30,001-42,000 gal.	Over 42,000 gal.
1 ½ inch	10,001-27,000 gal.	27,001-45,000 gal.	45,001-67,500 gal.	67,501-94,500 gal.	Over 94,500 gal.
2 inch	16,001-36,000 gal.	36,001-60,000 gal.	60,001-94,500 gal.	94,501-120,000 gal.	Over 120,000 gal.
3 inch	32,001-60,000 gal.	60,001-94,500 gal.	94,501-120,000 gal.	120,001-220,000 gal.	Over 220,000 gal.
4 inch	70,001-94,500 gal.	94,501-120,000 gal.	120,001-220,000 gal.	220,001-300,000 gal.	Over 300,000 gal.

APPENDIX B: CAPITAL IMPROVEMENT PLAN

Project	2018	2019	2020	2021	Future Years
Evans Reservoir Bypass Flume					
James/Maple/Elm Main & Services					
Emergency Generator at WTP	$92,000				
Clean Ark#3 Well etc.					
Update SCADA					
Clean /Inspect tanks			$5,000		
Repave Parking lot	$60,000				
Mtn Lake Outlet					
Garage at Shop	$50,000				
Service Truck					
Backhoe			$150,000		
Dredge Evans Res.				$150,000	
Evans #2 Outlet					$100,000
Emergency Generator Canterbury		$50,000			
Surge Protection Elkhorn					
Surge Protection Ark #1					
Surge Protection Ark #2					
Upgrade Evans WTP	$450,000				
Additional filter Evans Plant			$1,200,000		
Treatment Plant Iowa Gulch					$5,000,000
4 Hydrants/year	$30,000	$30,000	$30,000	$30,000	
1 Block main/year	$70,000	$70,000	$70,000	$70,000	
E. 11th booster		$30,000			
10" water main across Evergreen Dr.		$70,000			
Infiltration Gallery Rehab		$500,000			
Total	**$752,000**	**$750,000**	**$1,455,000**	**$250,000**	**$5,100,000**

APPENDIX C: CONSUMPTION BASED MODEL IMPLICATIONS ON COMMERCIAL ACCOUNTS

COMMERCIAL RATE IMPLICATIONS				
	Tiered Rate	**Consumption Rate**	**Difference**	***%Accounts***
1" Tap 5,000 base rate				12.07%
Bracket 1 (Base Rate)	$65.75	$54.90	-16.50%	
Bracket 2 (5,001-12,000 gallons, $4.50/1000) ex: 8,500 gallons	$81.50	$62.58	-23.22%	
Bracket 3 (12,001-20,000 gallons, $4.75/1000) ex: 16,000 gallons	$118.00	$100.94	-14.45%	
Bracket 4 (20,001-30,000 gallons, $5.25/1000) ex: 25,000 gallons	$170.75	$146.99	-13.92%	
Bracket 5 (30,001-42,000 gallons, $5.50/1000) ex: 36,000 gallons	$236.25	$203.26	-13.96%	
Bracket 6 (42,000+ gallons, $5.75/1000) ex: 50,000 gallons	$324.50	$274.88	-15.29%	
1.5" Tap 10,000 base rate				6.30%
Bracket 1 (Base Rate) ex: 10,000 gallons	$126.90	$80.48	-36.58%	
Bracket 2 (10,001-27,000 gallons, $4.50/1000) ex: 18,500 gallons	$165.15	$123.97	-24.94%	
Bracket 3 (27,001-45,000 gallons, $4.75/1000) ex: 36,000 gallons	$250.40	$213.49	-14.74%	
Bracket 4 (45,001-67,500 gallons, $5.25/1000) ex: 56,000 gallons	$368.40	$315.81	-14.28%	
Bracket 5 (67,501-94,500 gallons, $5.50/1000) ex: 75,000 gallons	$484.40	$413.01	-14.74%	
Bracket 6 (94,501+ gallons, $5.75/1000) ex: 100,000 gallons	$644.40	$540.91	-16.06%	
2" Tap 16,000 base rate				7.61%
Bracket 1 (Base Rate) ex: 16,000 gallons	$201.75	$111.18	-44.89%	
Bracket 2 (16,001-36,000 gallons, $4.50/1000) ex: 26,000 gallons	$246.75	$162.33	-34.21%	
Bracket 3 (36,001-60,000 gallons, $4.75/1000) ex: 50,000 gallons	$363.25	$285.11	-21.51%	

Bracket 4 (60,001-94,500 gallons, $5.25/1000) ex: 75,000 gallons	$511.50	$413.01	-19.26%	
Bracket 5 (94,501-120,000 gallons, $5.50/1000) ex: 100,000 gallons	$663.75	$540.91	-18.51%	
Bracket 6 (120,001+ gallons, $5.75/1000) ex: 150,000 gallons	$972.25	$796.70	-18.06%	
3" Tap 32,000 base rate				4.20%
Bracket 1 (Base Rate) ex: 32,000 gallons	$406.75	$193.03	-52.54%	
Bracket 2 (32,001-60,000 gallons, $4.50/1000) ex: 45,000 gallons	$465.25	$259.54	-44.22%	
Bracket 3 (60,001-94,500 gallons, $4.75/1000) ex: 75,000 gallons	$611.00	$413.01	-32.40%	
Bracket 4 (94,501-120,000 gallons, $5.25/1000) ex: 100,000 gallons	$763.75	$540.91	-29.18%	
Bracket 5 (120,000-220,000 gallons, $5.50/1000) ex: 175,000 gallons	$1,193.25	$924.59	-22.51%	
Bracket 6 (220,001+ gallons, $5.75/1000) ex: 300,000 gallons	$1,947.75	$1,564.07	-19.70%	
4" Tap 70,000 base rate				0.52%
Bracket 1 (Base Rate) ex: 70,000 gallons	$892.85	$387.43	-56.61%	
Bracket 2 (70,001-94,500 gallons, $4.50/1000) ex: 80,000 gallons	$937.85	$438.59	-53.23%	
Bracket 3 (94,501-120,000 gallons, $4.75/1000) ex: 100,000 gallons	$1,035.35	$540.91	-47.76%	
Bracket 4 (120,001-220,000 gallons, $5.25/1000) ex: 175,000 gallons	$1,444.10	$924.59	-35.97%	
Bracket 5 (220,001- 300,000 gallons, $5.50/1000) ex: 250,000 gallons	$1,882.85	$1,308.28	-30.52%	
Bracket 6 (300,001+ gallons, $5.75/1000) ex: 350,000 gallons	$2,502.85	$1,819.86	-27.29%	
* 3/4" commercial accounts change same as residential - refer to residential implications				

APPENDIX D: CASH FLOW IMPLICATIONS

CONSUMPTION BASED MODEL CASH FLOW IMPLICATIONS						
	2018	**2019**	**2020**	**2021**	**2022**	**2023**
Gallons to be produced	136,502,919	138,429,810	140,383,901	142,365,577	144,375,226	148,482,053
Annual Growth Rate		0.0141	0.0141	0.0141	0.0141	0.0141
Residential Base Rate Revenue	$1,040,420	$1,055,107	$1,070,001	$1,085,105	$1,100,422	$1,115,956
Residential Overage Revenue	$246,697	$250,179	$253,711	$257,292	$260,924	$264,607
Commercial Base Rate Revenue 3/4" in	$139,144	$141,108	$143,100	$145,120	$147,169	$149,246
Commercial 3/4" Overage Charges	$1,265	$1,283	$1,301	$1,319	$1,338	$1,357
Commercial Base Rate Revenue 1" +	$77,083	$78,171	$79,274	$80,393	$81,528	$82,678
Commercial Overage Charges	$392,486	$398,027	$403,645	$409,343	$415,121	$420,981
Non-Operating Revenues	$65,999	$65,999	$65,999	$65,999	$65,999	$65,999
TOTAL REVENUE	**$1,963,094**	**$1,989,874**	**$2,017,032**	**$2,044,573**	**$2,072,503**	**$2,100,825**
TOTAL EXPENDITURES	**$1,091,398**	**$1,126,970**	**$1,163,702**	**$1,201,632**	**$1,240,797**	**$1,410,647**
NET OPERATING REVENUE (LOSS)	**$871,697**	**$862,904**	**$853,329**	**$842,941**	**$831,706**	**$690,178**
Debt Service CWCB (2012)	$59,355	$59,355	$59,355	$59,355	$59,355	$59,355
Debt Service First National Bank Hugo (2015)	$32,309	$32,309	$32,309			
Debt Service CWCB (2016)	$20,186	$20,186	$20,186	$20,186	$20,186	$20,186
TOTAL CURRENT DEBT SERVICE	**$111,850**	**$111,850**	**$111,850**	**$79,541**	**$79,541**	**$79,541**
CAPITAL OUTLAYS	$752,000	$750,000	$1,455,000	$250,000	$0	$0
NET REVENUE (LOSS)	$7,846	$1,053	-$713,521	$513,400	$752,164	$610,637