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# Hildale-Colorado City Utility: Water Rate Analysis

7/10/2024

# What is RCAC?

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- Rural Community Assistance Corporation
- Federally funded to help rural communities like Hildale and Colorado City...
- ...stay in compliance with the rules and regulations and build system capacity

# Why do a Rate Study?

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- Stay solvent
- Often required for grants and loans
- Prepare for asset replacement
- Ensure system covers debt service
- Maintain system for future generations

# Consequences of not raising rates enough

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1. Increased reliance on loans
2. Reduction in reserves
3. Inability to pay bills
4. Inability to maintain system=Violations

# Board Responsibilities

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- Fiduciary responsibility to keep the system running...
- ..in the short run and the long run.
- Provide resources for staff to do their job.

# Guiding Principles of this Rate Study

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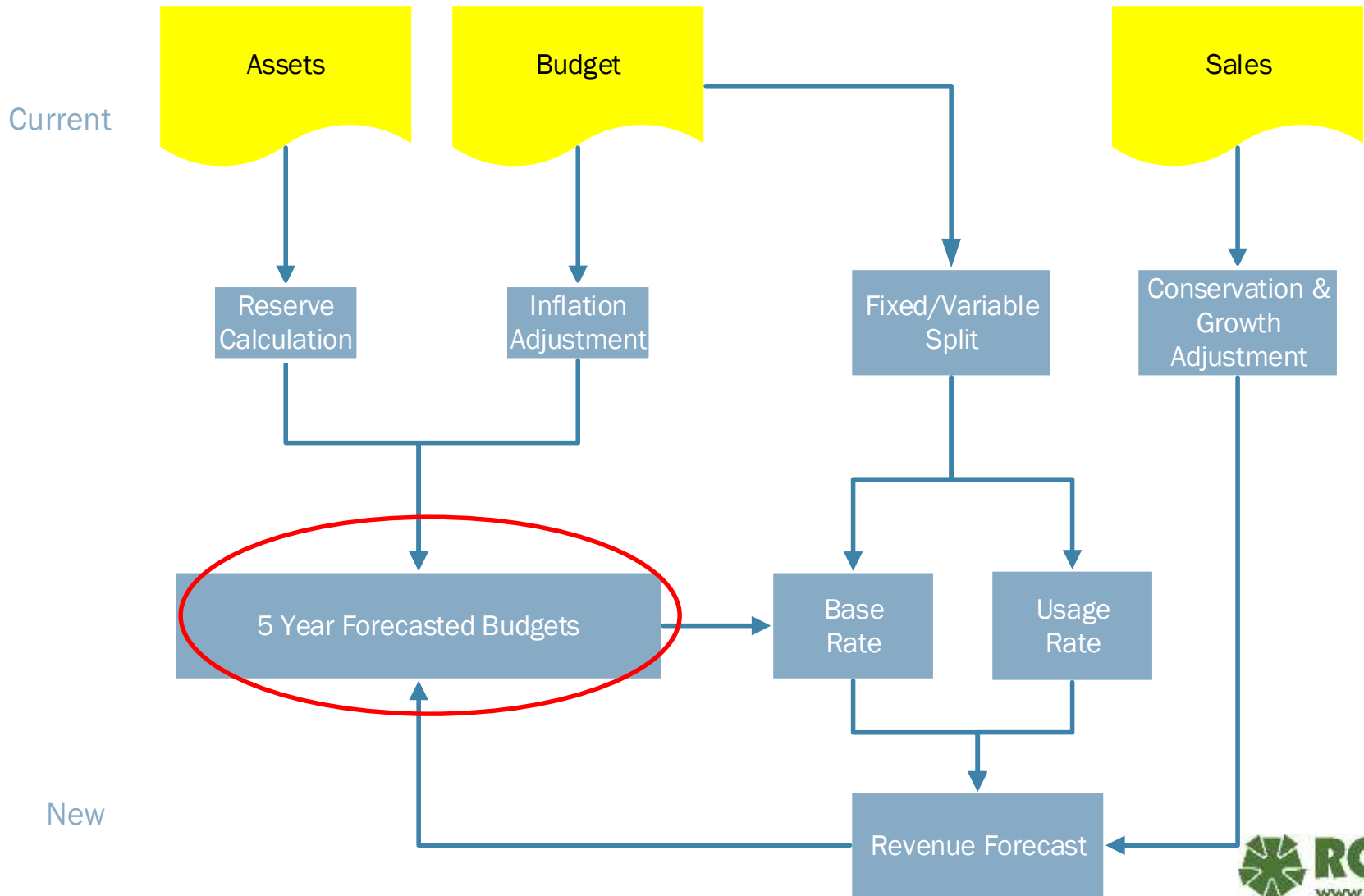
- Sustainable
- Equitable
- Justifiable

# Rate Model

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- AWWA Standards  
(American Water Works Association)
- Reviewed by staff and board members
- Staff requests direction from Board to proceed with final Rate Study documents

# Rate Setting with Water Meters





# Reserves


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Reserve	Target	Existing
Debt Reserve	\$14,758	\$0
Operating	\$174,360	\$174,360
Emergency	\$20,000	\$20,000
Capital Replacement	To be calculated	\$468,680
Future Capital Assets		\$300,000

- Total existing reserves available based on Water Fund Balance Sheet June 30, 2023
- \$1,167,138 in 81-11900 Cash-Combined Fund, less the \$204,098 in 81-21350 Customer Deposits

# Capital Replacement Program

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- Inventory of all assets
  - Exclude those that will not be replaced
- Those that will be replaced
  - When
  - How much it will cost
  - How to pay for it (cash, grant or loan)
-  Calculate how much we must set aside each year to have enough cash when needed

# Existing Asset Reserve

Quantity	Asset	Year Acquired	Unit Cost (Historic, Current or Future)	Cost Type (H, C, F)	% Belonging to Water	Estimated Remaining Life	Estimated Future Cost	Fund with Cash	Fund with Grant	Fund with Loan	Existing Reserves	Annual Reserve Required
<b>Replacement of Existing Capital Assets</b>												
	<b>Wells</b>				100%			0%	0%	100%	0	0
1	Well 4 - 140' 8" 190gpm	2021	200,000	H	100%	49	1,162,194	2%	40%	58%	1,845	357
1	Well 4B - 140' 6"	1985	200,000	C	100%	13	312,791	10%	40%	50%	8,565	1,641
5146	Jans Canyon Spring Transmission Line - 2"	2015	3	C	100%	68	160,153	25%	0%	75%	1,653	429
1	Maxwell Canyon Spring Collection - 4" 64gpm	1980	100,000	C	100%	58	735,428	5%	40%	55%	2,141	471
1	Maxwell Canyon Spring Box	1910	10,000	C	100%	20	19,898	100%	0%	0%	4,283	712
1	800k gallon tank	1998	1550000	C	100%	31	4,502,799	2%	40%	58%	13,276	2,163
1	600k gallon tank	1970	1150000	C	100%	15	1,926,651	2%	40%	58%	9,850	1,780
1	Elm Street Tank (Concrete) - 1MG	2000	1825000	C	100%	58	13,421,565	2%	40%	58%	15,632	3,442
1	Treatment Plant Building	1975	75000	C	100%	3	83,154	25%	0%	75%	8,030	4,201
3	Pressure Tanks (West Side) (Recoated in 2021)	2001	110000	C	100%	9	449,756	10%	40%	50%	14,133	3,279
3	Pressure Tanks (East Side) (Recoated in 2004)	1975	110,000	C	100%	15	552,865	5%	40%	55%	7,066	1,277
8	Treatment Plant Pumps (40hp)	2005	7,500	H	100%	3	106,347	25%	0%	75%	10,270	5,373

- On average, save \$127,240 a year for replacement of existing assets

# Funded Asset Replacement

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- Fencing, raw water transmission line, and 2 new wells at treatment plan
  - Assume \$1,780,000 to be completed in 2024
  - Assume 30 to 50-year lifespans
  - Save \$3,897 a year for future replacement

# Future Asset Reserve

Quantity	Asset	Year to be Purchased	Unit Cost (Current or Future)	Cost Type (C, F)	% Belonging to Water	Years to save	Estimated Future Cost	Fund with Cash	Fund with Grant	Fund with Loan	Existing Reserves	Annual Reserve Required
<b>Reserves for Additional Capital Assets</b>												
1	Fire Hydrants	2027	1,785,505	F	100%	3	1,785,505	2%	40%	58%	19,232	5,404
1	Trailhead Well 1	2027	1,700,000	F	100%	3	1,700,000	2%	40%	58%	18,311	5,145
1	Sandhill Tank and Jessop Ave Line	2028	5,236,534	F	100%	4	5,236,534	2%	40%	58%	54,429	12,283
1	Trailhead Well 2, Trailhead Tank (1MG), and Canyon S	2030	2,500,000	F	100%	6	2,500,000	2%	40%	58%	24,198	4,145
1	University Ave Line	2030	406,633	F	100%	6	406,633	5%	40%	55%	9,840	1,686
1	Water Canyon Wells	2032	4,999,729	F	100%	8	4,999,729	2%	40%	58%	45,065	6,542
1	Maxwell Canyon Well	2036	4,872,243	F	100%	12	4,872,243	2%	40%	58%	38,083	4,617
1	Annexation Trunklines	2040	3,930,543	F	100%	16	3,930,543	2%	40%	58%	26,642	2,978
1	New Annexation Area Tank - 1MG	2042	4,169,914	F	100%	18	4,169,914	2%	40%	58%	26,321	2,883
1	SCADA Upgrades	2025	250,000	F	100%	1	250,000	5%	40%	55%	7,229	5,271
1	Well #8 Enhancements	2025	500,000	F	100%	1	500,000	5%	40%	55%	14,458	10,542
1	Booster Station	2025	650,000	F	100%	1	650,000	2%	40%	58%	7,518	5,482
1	Other FY24 Projects (Well rehab, clear well tank, plant	2025	300,000	F	100%	1	300,000	5%	40%	55%	8,675	6,325
1	Backup Generator	2025	175,000	F	100%	1	175,000	10%	0%	90%	10,121	7,379
<b>Subtotal Reserves for Additional Capital Assets</b>							31,301,101	2%	40%	58%	300,000	80,681

- On average, save \$46,006 a year for initial costs of future assets
- \$80,681 in first year, decreasing to \$22,850 in later years

# Budget

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- Based on current budget with planned increases
- Adjustments for inflation
- Includes reserve requirements
- Includes other water revenue
  - Interest Income
  - Connection Fees
  - Planned Impact fees

# Budget Considerations

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## Expenses

- Equipment Supplies and Maintenance costs increase in base year from previous years (\$3,000 to \$50,000)
- Maintenance & Supply – System costs increase in base year from previous years (\$90,043 to \$177,700)
- Power costs increase in base year from previous years (\$135,000 to \$200,000)
- Laboratory costs are increasing due to additional sampling needs.
- System construction services expenses are increasing due to planned projects over the next 5 years.

## Revenue

- Sales Revenue is calculated from actual usage data, will vary based on proposals.
- Current revenue under existing rates and usage - \$955,016
- Additional revenue from new connections based on system growth.
- Interest income increased in base year from previous years (\$4,174 to \$22,000)
  - Increasing interest from PTIF rates

# Allocation of Existing Reserves

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- With many planned projects in the near future, it is recommended that HCC internally restrict \$300,000 of existing reserves for these planned projects
- This will temper the rate increase needed compared to raising funds needed for these projects only from sales revenue



# Fixed vs Variable Expenses

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## Fixed



- Do not change with the volume of water sold
- Examples
  - Insurance
  - Most personnel
  - Debt service
  - Future capital replacement and purchases
- 89%

## Variable

- Vary with the volume of water sold
- Examples
  - Electricity
  - Chemicals
- 11%

# Water Rate Components

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- Fixed Expenses
-  Base Rate
- Variable Expenses
-  Usage Charge

# Theoretical Base Rate

Meter Size in "	Decimal Size	Number of Meters	AWWA Safe Maximum Operating Cap. (GPM)	Max Demand (GPM)	% of Max Demand by Meter Size	Total Fixed Costs Allocated by Meter Size	Theoretical Base Rate by Meter Size per M
A	B	C	D	E= D * C	F= % of total	G= % * total	H=G/C/12
5/8"	0.625	0	20				
3/4"	0.750	845	30	25,350	59.38%	\$986,968	\$97.33
1"	1.000	118	50	5,900	13.82%	\$229,709	\$162.22
1.5"	1.500	28	100	2,800	6.56%	\$109,014	\$324.45
2"	2.000	34	160	5,440	12.74%	\$211,799	\$519.12
3"	3.000	10	320	3,200	7.50%	\$124,588	\$1,038.23
Total		1035		42,690	100.00%	\$1,662,078	

# Sales Forecast

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- Conservation Adjustment
  - Dependent on rate scenario
- Community Growth
  - 2% each year
- Conservation Factor
  - Variable, .5% to 3%
  - As usage rates increase, customers will likely conserve water

# No Change

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- Do Nothing
- Drawing on reserves to cover expenses
- **Not Recommended**

# With No Rate Changes

Results of the current rates	2024	2025	2026	2027	2028	5 Years
TOTAL EXPENSES	\$1,833,173	\$1,835,846	\$1,978,571	\$1,786,673	\$1,925,447	\$9,359,710
TOTAL REVENUE	\$1,098,305	\$1,129,748	\$1,177,372	\$1,257,188	\$1,273,192	\$5,935,805
NET LOSS OR GAIN: (Short/Over to Reserves)	-\$734,868	-\$706,098	-\$801,199	-\$529,484	-\$652,256	-\$3,423,905
NET CASH FLOW (Contribution to Reserves)	-\$451,261	-\$502,278	-\$613,544	-\$374,812	-\$506,870	-\$2,448,766
Affordability assuming MHI of \$62857 for residential meters.	1.15%	1.17%	1.18%	1.19%	1.21%	
Are you putting enough money in reserves?	No	No	No	No	No	
Positive Annual Cash Flow?	No	No	No	No	No	

# Alternatives to Consider

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- Originally, 3 possible scenarios were presented to HCC staff, of these, scenario 3 was determined to be best option.
- The next two scenarios are those that have already incorporated input from HCC staff. The other scenarios can be seen in the handout.

# Alternative 3.1

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- Smaller initial base rate increase, tighten tiers, increase usage rates
- Annual increases over five years
- Results in net gain over \$34,000 over five years
  - This is the amount saved above the recommended amount in the model



# New Rates – Alternative 3.1

Customer Class	Rate Structure	Base Rate	Usage Rates			
¾" Meter	Tiered Block	\$38.50	0 – 10,000	- \$1.75/1,000		
			10,001-30,000	- \$1.90/1,000		
			30,001+	- \$2.50/1,000		
1" Meter	Tiered Block	\$64.00	0 – 10,000	- \$1.75/1,000		
			10,001-30,000	- \$1.90/1,000		
			30,001+	- \$2.50/1,000		
1.5" Meter	Tiered Block	\$128.50	0 – 30,000	- \$2.50/1,000		
			30,001-80,000	- \$2.80/1,000		
			80,001+	- \$3.10/1,000		
2" Meter	Tiered Block	\$205.50	0 – 35,000	- \$2.50/1,000		
			35,001 – 90,000	- \$2.80/1,000		
			90,001-200,000	- \$3.50/1,000		
			200,001+	- \$4.50/1,000		
Hydrant Meter	Tiered Block	\$150.00	Any amount	- \$10.00/1,000		
Growth Factor of Rates			Year 2	Year 3	Year 4	Year 5
	Base		15.00%	5.00%	2.00%	2.00%
	Usage		10.00%	5.00%	2.00%	2.00%

# Impact of New Rates – Alt. 3.1

Growth Factor of Rates		Year 2	Year 3	Year 4	Year 5		
	Base	15.00%	5.00%	2.00%	2.00%		
	Usage	10.00%	5.00%	2.00%	2.00%		
<b>Results of the new rates</b>		<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>5 Years</b>
TOTAL EXPENSES		\$1,790,316	\$1,827,096	\$1,980,889	\$1,880,722	\$2,067,892	\$9,546,914
TOTAL REVENUE		\$1,594,343	\$1,795,937	\$1,950,394	\$2,085,999	\$2,154,398	\$9,581,072
NET LOSS OR GAIN: (Short/Over to Reserves)		-\$195,972	-\$31,158	-\$30,495	\$205,277	\$86,505	\$34,157
NET CASH FLOW (Contribution to Reserves)		\$44,777	\$162,515	\$158,082	\$350,155	\$219,101	\$934,630
Affordability assuming MHI of \$62857 for residential meters.		1.62%	1.83%	1.96%	2.03%	2.10%	
Are you putting enough money in reserves?	No	No	No	Yes	Yes		
Positive Annual Cash Flow?	Yes	Yes	Yes	Yes	Yes		

# Average Bill Increase – Alt 3.1

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Average Bill Every M by Meter Size									
Meter Size	Count	Meter Size	Current	Year 1	Year 2	Year 3	Year 4	Year 5	
0.750	845	3/4"	\$59.10	\$84.01	\$94.61	\$101.37	\$105.18	\$108.80	
1.000	118	1"	\$103.25	\$141.69	\$159.52	\$170.91	\$177.31	\$183.40	
1.500	28	1.5"	\$144.00	\$261.32	\$294.65	\$315.08	\$326.38	\$337.16	
2.000	34	2"	\$244.85	\$537.12	\$603.11	\$648.01	\$673.89	\$698.38	

## Alternative 3.2

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- Compared to 3.1, same base rates, additional usage tiers, more variance in usage rates
- Annual increases over five years
- Results in net gain over \$17,520 over five years

# New Rates – Alternative 3.2

Customer Class	Rate Structure	Base Rate	Usage Rates	
¾" Meter	Tiered Block	\$38.50	0 – 15,000	- \$1.50/1,000
			15,001-30,000	-\$1.85/1,000
			30,001-50,000	-\$2.00/1,000
			50,001+	-\$2.75/1,000
1" Meter	Tiered Block	\$64.00	0 – 10,000	- \$1.50/1,000
			10,001-45,000	-\$2.00/1,000
			45,001-100,000	-\$2.75/1,000
			100,001+	-\$3.50/1,000
1.5" Meter	Tiered Block	\$128.50	0 – 35,000	- \$1.50/1,000
			35,001-55,000	-\$2.00/1,000
			55,001-125,000	-\$2.75/1,000
			125,001+	-\$3.50/1,000
2" Meter	Tiered Block	\$205.50	0 – 55,000	- \$2.50/1,000
			55,001-90,000	-\$2.80/1,000
			90,001-200,000	-\$3.50/1,000
			200,001+	-\$5.50/1,000
Hydrant Meter	Tiered Block	\$150.00+\$200.00 Deposit	Any amount	-\$10.00/1,000

Growth Factor of Rates		Year 2	Year 3	Year 4	Year 5
	Base	18.00%	5.00%	2.00%	2.00%
	Usage	10.00%	5.00%	2.00%	2.00%

# Impact of New Rates – Alt. 3.2

Growth Factor of Rates		Year 2	Year 3	Year 4	Year 5		
	Base	18.00%	5.00%	2.00%	2.00%		
	Usage	10.00%	5.00%	2.00%	2.00%		
<b>Results of the new rates</b>		<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>5 Years</b>
TOTAL EXPENSES		\$1,790,316	\$1,827,096	\$1,980,889	\$1,880,722	\$2,067,892	\$9,546,914
TOTAL REVENUE		\$1,575,789	\$1,794,465	\$1,950,273	\$2,087,162	\$2,156,745	\$9,564,434
NET LOSS OR GAIN: (Short/Over to Reserves)		-\$214,527	-\$32,630	-\$30,616	\$206,440	\$88,853	\$17,520
NET CASH FLOW (Contribution to Reserves)		\$26,223	\$161,043	\$157,960	\$351,318	\$221,448	\$917,992
Affordability assuming MHI of \$62857 for residential meters.		1.56%	1.78%	1.91%	1.98%	2.05%	
Are you putting enough money in reserves?	No	No	No	Yes	Yes		
Positive Annual Cash Flow?	Yes	Yes	Yes	Yes	Yes		

# Average Bill Increase – Alt 3.2

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Average Bill Every M by Meter Size								
Meter Size	Count	Meter Size	Current	Year 1	Year 2	Year 3	Year 4	Year 5
0.750	845	3/4"	\$59.10	\$80.71	\$92.13	\$98.74	\$102.47	\$106.02
1.000	118	1"	\$103.25	\$148.35	\$168.86	\$181.38	\$188.58	\$195.42
1.500	28	1.5"	\$144.00	\$233.81	\$268.21	\$287.09	\$297.64	\$307.71
2.000	34	2"	\$244.85	\$573.11	\$649.15	\$698.46	\$727.19	\$754.33

# Alternative 3.3

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- Developed with HCC Utility Board on 3/7/24
- Changes from Alternative 3.2:
  - Increase first usage tier of 1” customers from 10k to 20k
  - Reduce 2<sup>nd</sup> year base rate increase to reduce customer burden (18% to 13%)
- Annual increases over five years
- Results in slight net loss of \$5,863 over five years



# New Rates – Alternative 3.3

Customer Class	Rate Structure	Base Rate	Usage Rates	
¾" Meter	Tiered Block	\$38.50	0 – 15,000	- \$1.50/1,000
			15,001-30,000	-\$1.85/1,000
			30,001-50,000	-\$2.00/1,000
			50,001+	-\$2.75/1,000
1" Meter	Tiered Block	\$64.00	0 – 20,000	- \$1.50/1,000
			10,001-45,000	-\$2.00/1,000
			45,001-100,000	-\$2.75/1,000
			100,001+	-\$3.50/1,000
1.5" Meter	Tiered Block	\$128.50	0 – 35,000	- \$1.50/1,000
			35,001-55,000	-\$2.00/1,000
			55,001-125,000	-\$2.75/1,000
			125,001+	-\$3.50/1,000
2" Meter	Tiered Block	\$205.50	0 – 55,000	- \$2.50/1,000
			55,001-90,000	-\$2.80/1,000
			90,001-200,000	-\$3.50/1,000
			200,001+	-\$5.50/1,000
Hydrant Meter	Tiered Block	\$150.00+\$200.00 Deposit	Any amount	-\$10.00/1,000

Growth Factor of Rates		Year 2	Year 3	Year 4	Year 5
	Base	13.00%	11.00%	2.00%	2.00%
	Usage	10.00%	5.00%	2.00%	2.00%

# Impact of New Rates – Alt. 3.3

Growth Factor of Rates		Year 2	Year 3	Year 4	Year 5		
	Base	13.00%	11.00%	2.00%	2.00%		
	Usage	10.00%	5.00%	2.00%	2.00%		
Results of the new rates		2024	2025	2026	2027	2028	5 Years
TOTAL EXPENSES		\$1,790,316	\$1,827,096	\$1,980,889	\$1,880,722	\$2,067,892	\$9,546,914
TOTAL REVENUE		\$1,572,058	\$1,759,114	\$1,955,451	\$2,092,392	\$2,162,037	\$9,541,051
NET LOSS OR GAIN: (Short/Over to Reserves)		-\$218,257	-\$67,982	-\$25,438	\$211,670	\$94,145	-\$5,863
NET CASH FLOW (Contribution to Reserves)		\$22,492	\$125,691	\$163,138	\$356,548	\$226,740	\$894,609
Affordability assuming MHI of \$62857 for residential meters.		1.56%	1.74%	1.92%	1.99%	2.06%	
Are you putting enough money in reserves?		No	No	No	Yes	Yes	
Positive Annual Cash Flow?		Yes	Yes	Yes	Yes	Yes	

# Average Bill Increase – Alt 3.3

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Average Bill Every M by Meter Size for the Water Rate 3/4" Class									
Meter Size	Count	Meter Size	Current	Year 1	Year 2	Year 3	Year 4	Year 5	
0.750	845	3/4"	\$59.10	\$80.71	\$90.20	\$99.33	\$103.07	\$106.63	
1.000	0	1"	\$103.25	\$145.71	\$162.75	\$179.26	\$186.38	\$193.14	
1.500	0	1.5"	\$144.00	\$233.81	\$261.79	\$289.05	\$299.64	\$309.75	
2.000	0	2"	\$244.85	\$573.11	\$638.87	\$701.60	\$730.40	\$757.60	

# Recommendations

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- Water rates for HCC need to increase substantially to cover the anticipated upcoming expenses, asset replacement, and O&M costs
- HCC can consider delaying capital projects, if possible, to reduce immediate customer burden
- Optimal funding packages should be sought on capital projects to reduce customer burden
- A delay in rate increases ultimately results in a greater rate increase later

# Future Considerations

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- Rates should be reviewed annually to ensure they are adequate in covering annual expenses
- A more thorough rate analysis should be done when additional debt is taken on and/or every five years