



# City of Box Elder, SD

## Water and Wastewater Utility Rates

09/05/2023



# Goals of Study

- Set both water and wastewater utilities up for financial success
- Review of water and wastewater rates & surcharges
- Update rate design for all user classes, if appropriate
- Simplify wastewater rate structure

# Steps to a Rate Study



# Water System

# Water System Profile

	Accounts 2022	Billed Gallons (Mgal) 2022
Residential - In	2,053	122.77
Residential - Out	339	21.18
Commercial - In	133	34.38
Commercial - Out	7	1.62
MHC	91	63.36
Antelope Ridge	1	39.03
<b>Total</b>	<b>2,624</b>	<b>282.34</b>

- Accounts have grown roughly 12% in total since previous study conducted in 2018
- Flow has grown roughly 23% in total since previous study conducted in 2018
- Assuming meters and flow will continue to grow 2.5% annually

# Water Utility Total Revenue Requirements

Revenue Requirements	Projected 2023	Projected 2024	Projected FY2025	Projected 2026	Projected 2027	Projected 2028
O&M	\$2,031,341	\$2,109,746	\$2,185,369	\$2,257,534	\$2,332,884	\$2,411,508
Capital: Debt Service P&I	\$364,500	\$731,706	\$733,851	\$735,996	\$735,996	\$735,996
Capital: Rate-Funded CIP	\$250,000	\$1,934,127	\$799,111	\$1,111,744	\$2,601,840	\$1,652,950
<b>Total</b>	<b>\$2,645,841</b>	<b>\$4,775,579</b>	<b>\$3,718,331</b>	<b>\$4,105,274</b>	<b>\$5,670,720</b>	<b>\$4,800,455</b>

- Assumptions include:
  - 5% increase in electricity;
  - 5% general inflation increase for 2024, 4% in 2025, and 3% thereafter;
  - 5% increase in labor

# Water Rate Recommendations

User and Tier	Current 2023 Rate		Proposed 2024 Rate	
Residential	Inside	Outside	Inside	Outside
Base (fixed monthly)	\$3.00	\$3.00	\$3.30 (+10%)	\$3.30 (+10%)
Tier 1	\$4.50	\$9.00	\$5.18 (+15%)	\$10.35 (+15%)
Tier 2	\$5.63	\$11.25	\$6.47 (+15%)	\$12.95 (+15%)
Tier 3	\$8.43	\$16.87	\$9.69 (+15%)	\$19.39 (+15%)
Tier 4	\$16.87	\$33.75	\$19.40 (+15%)	\$38.80 (+15%)
Commercial				
Base (fixed monthly)	\$3.00	\$3.00	\$3.30 (+10%)	\$3.30 (+10%)
Tier 1	\$4.50	\$9.00	\$5.18 (+15%)	\$10.35 (+15%)
Tier 2	\$5.40	\$10.80	\$6.21 (+15%)	\$12.42 (+15%)
Tier 3	\$8.10	\$16.20	\$9.32 (+15%)	\$18.63 (+15%)
Tier 4	\$12.15	\$24.29	\$13.97 (+15%)	\$27.95 (+15%)
MHC				
Base (fixed monthly)	\$5.00		\$5.50 (+10%)	
Tier 1	\$5.06 per kGal		\$8.30 per kGal (+64%)	
Antelope Ridge				
Base (fixed monthly)	\$2,373		\$2,610 (+10%)	
Tier 1	\$4.50		\$8.30 per kGal	
Tier 2	\$5.40			
Tier 3	\$8.10			
Tier 4	\$12.15			

Surcharges	Rate	Status
Well 10	\$4.55	Current
USDA	\$2.25	Current
Ghere	\$7.85	Current
DW-03	\$6.85	Current
DW-04	\$5.26	Current

# Water Bill Impacts

## Residential Monthly Bill

Usage (kgal)	2024 Baseline	2024 Recommended	% Increase	\$ Increase
1	\$34.26	\$35.24	+2.8%	+\$0.98
5	\$52.26	\$55.94	+7.0%	+\$3.68
15	\$114.21	\$127.18	+11.4%	+\$12.97

## Commercial Monthly Bill

Usage (kgal)	2024 Baseline	2024 Recommended	% Increase	\$ Increase
10	\$83.76	\$92.16	+10.0%	+\$8.40
15	\$110.76	\$123.21	+11.2%	+\$12.45

- Monthly bills include current and approved debt surcharges



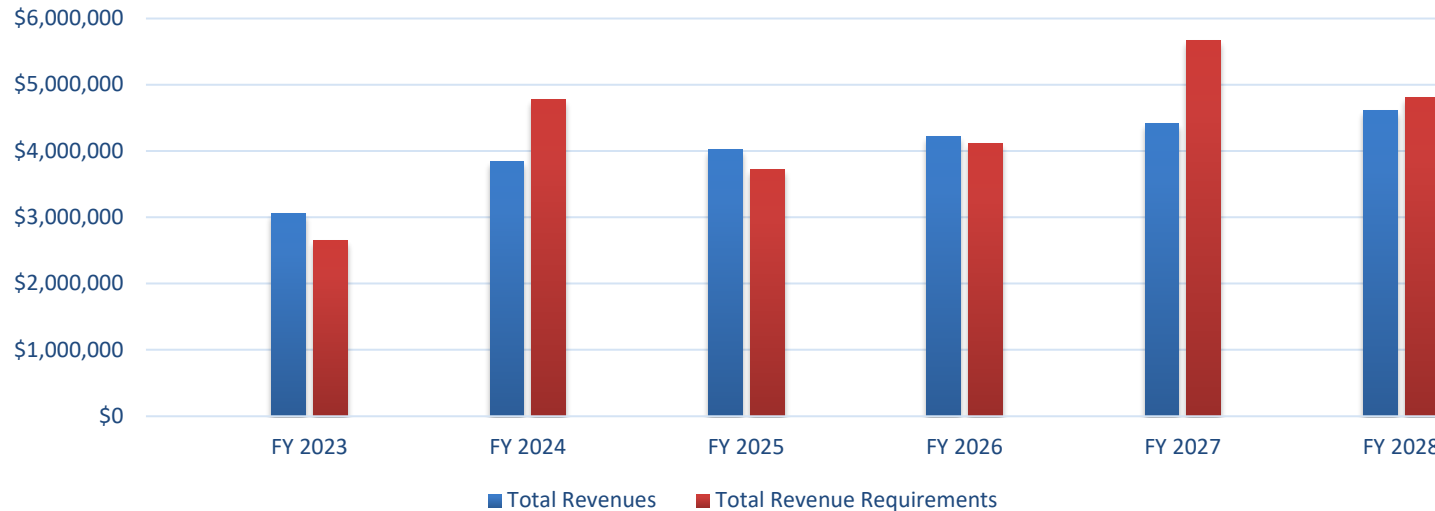
# Water Bill Impacts

## MHC and Antelope Ridge Total Annual Bill

User	Annual Usage (kgal)	Annual Bill using Current Rates	Annual Bill using Proposed Rates	% Increase	\$ Increase
MHC (single meter)	684	\$3,842	\$6,064	+57.8%	+\$2,222
Antelope Ridge	39,026	\$499,995	\$355,319	(-28.9%)	(\$144,676)

# Water Revenue Requirements

Total Revenues vs. Total Expenses



	2023 Projected	2024 Projected	2025 Projected	2026 Projected	2027 Projected	2028 Projected
<b>Revenue Requirements</b>	\$2,645,841	\$4,775,579	\$3,718,331	\$4,105,274	\$5,670,720	\$4,800,455
<b>Revenue</b>	\$3,060,543	\$3,837,773	\$4,022,636	\$4,220,166	\$4,421,089	\$4,614,647
<b>Surplus/Deficiency</b>	\$414,702	(\$937,806)	\$304,305	\$114,892	(\$1,249,632)	(\$185,808)

# Wastewater System

# Wastewater Meters and Flow

User Class	2022 Actual Meters	2022 Average Monthly Winter Consumption (gallons)
Residential Inside	1,953	8,046,360
Residential Outside	6	36,000
Commercial Inside	125	2,684,839
Commercial Outside	3	135,150
MHC	20	1,188,145
Antelope Ridge	1	2,962,000
<b>Total</b>	<b>2,108</b>	<b>15,232,802</b>

- Water consumption averages were used to estimate average winter use per account
- Assuming usage and meters will grow at 2.5%

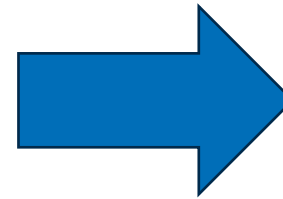
# Wastewater Total Revenue Requirements

Revenue Requirements	Projected 2023	Projected 2024	Projected FY2025	Projected 2026	Projected 2027	Projected 2028
O&M	\$1,989,795	\$2,083,017	\$2,166,283	\$2,237,924	\$2,312,235	\$2,389,322
Capital: Debt Service P&I	\$0	\$205,167	\$205,167	\$205,167	\$205,167	\$205,167
Capital: Rate-Funded CIP	\$344,793	\$710,273	\$506,479	\$521,673	\$537,324	\$524,108
<b>Total</b>	<b>\$2,334,587</b>	<b>\$2,998,457</b>	<b>\$2,877,929</b>	<b>\$2,964,764</b>	<b>\$3,054,726</b>	<b>\$3,118,597</b>

- Assumptions include:
  - 5% increase in electricity;
  - 5% general inflation increase for 2024, 4% in 2025, and 3% thereafter;
  - 5% increase in labor

# Wastewater Rate Recommendations

Tier	Current 2023 Rate
0-1,000 gallons	\$32.15
1,000-2,000 gallons	\$32.88
2,000-3,000 gallons	\$37.21
3,000-4,000 gallons	\$42.62
4,000-5,000 gallons	\$48.03
5,000-6,000 gallons	\$53.44
6,000-7,000 gallons	\$58.84
7,000-8,000 gallons	\$64.25
8,000-9,000 gallons	\$69.66
9,000-10,000 gallons	\$75.07
10,000-11,000 gallons	\$80.48
11,000-12,000 gallons	\$85.88
12,000-13,000 gallons	\$91.29
13,000-14,000 gallons	\$96.70
Above 14,000 gallons	\$5.41 per kGal



Proposed 2024 Rate Structure	2024 Rate
Base Fee	\$32.15
Volumetric fee per kgal	\$6.22

- Base fee remains the same for 2024
- Increase is to per volume charges
- Current surcharges remain the same
- Proposed surcharges implemented in 2024

# Revised Rate Schedule

Proposed 2024 Rate Structure	2024 Rate
Base Fee	\$32.15
Volumetric fee per kgal	\$6.22



Surcharges	Rate	Status
Major Repairs	\$1.75*	Current
Growth	\$0.10/kgal	Current
CW-02	\$2.60	Current
CW-03	\$3.60	Current

*\*Over 14 kgal is \$1.75/kgal*



Proposed 2024 Rate Structure	2024 Rate
Total Fixed Per Month	\$40.01
Volumetric fee per kgal	\$6.22

Residential volume is calculated based on winter average.  
 Recommend non-residential moved to all water usage

# Wastewater Bill Impacts

All Users

Usage (kgal)	Baseline 2024	Recommended 2024	% Increase	\$ Increase
1	\$41.44	\$46.93	13.2%	\$5.49
5	\$62.38	\$72.19	15.7%	\$9.81
15	\$120.96	\$138.89	14.8%	\$17.93
100	\$737.89	\$824.84	11.8%	\$86.95

Antelope Ridge  
Annual Bill Example

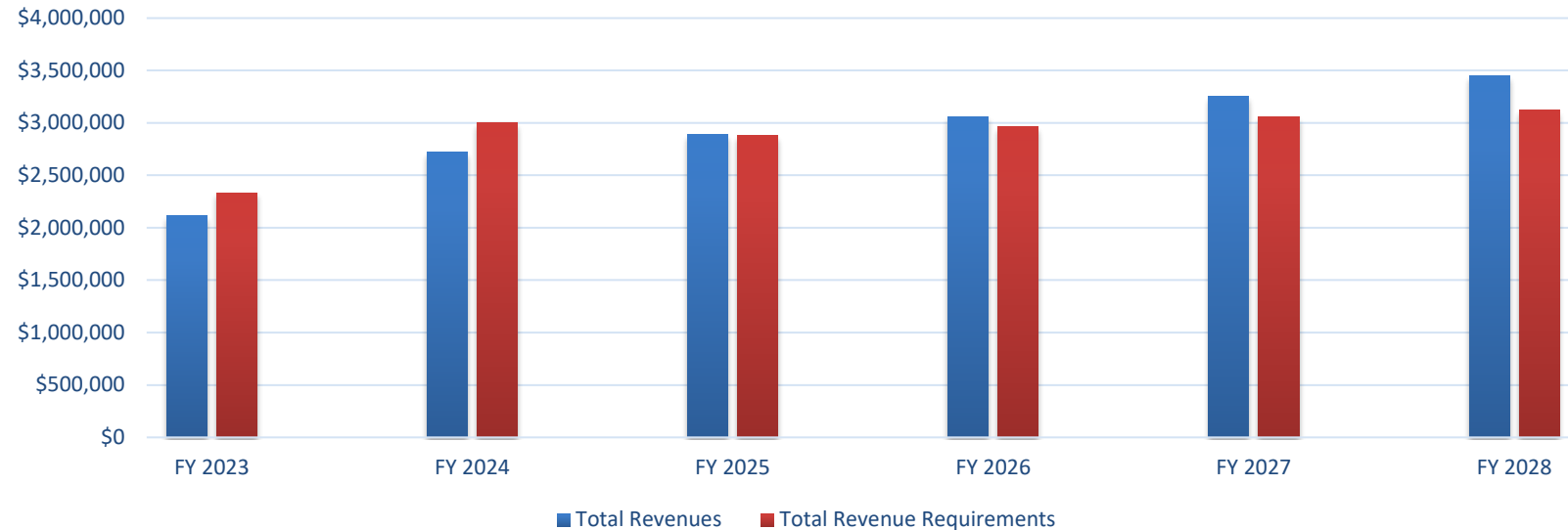
Usage (kgal)	Annual Bill using Current Rate	Annual Bill using Proposed Rates	% Increase	\$ Increase
3,200 (average winter use)	\$337,628	\$369,124*	+9.3%	\$31,496

- Monthly bills include current and proposed surcharges
- \*Assuming Antelope Ridge has 791 equivalent meters for fixed debt surcharges (same as water)



# Wastewater Revenue Requirements

Total Revenues vs. Total Expenses



	2023 Projected	2024 Projected	2025 Projected	2026 Projected	2027 Projected	2028 Projected
<b>Revenue Requirements</b>	\$2,334,587	\$2,998,457	\$2,877,929	\$2,964,764	\$3,054,726	\$3,118,597
<b>Revenue</b>	\$2,112,669	\$2,718,575	\$2,890,299	\$3,063,206	\$3,248,705	\$3,448,048
<b>Surplus/Deficiency</b>	(\$221,918)	(\$279,882)	\$12,370	\$98,442	\$193,979	\$329,451

**Thank you!**

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