



Governance Committee

Subject:	Utility Financial Modeling and Rate Design
Date:	September 12, 2023
Presenter:	Jennifer Koole, Manager
Department:	Utility Services

REPORT SUMMARY

The current utility funding model was reviewed against leading practices for utility rate setting. A financial model was developed that allowed for comparison of two rate approaches including individual systems-based rates and a blended rate approach. Based on the review and modeling work performed by Mooreview Management Consulting, there are three recommendations for Governance Committee to consider. These recommendations are:

- adopting a customer class approach to rate setting across the County based on water usage behaviours,
- improving transparency and consistency for fixed and variable portions of the utility rates by applying a consistent approach across the customer classes, and
- utilizing a blended rate approach for rate setting.

It is recommended that a second phase of rate design be undertaken prior to developing a long-term rate structure and strategy. This next phase would include a workshop with Council on priorities for rate setting objectives and a public engagement component.

ADMINISTRATION'S RECOMMENDATION

That Administration be directed to return to the Governance Committee no later than June 30, 2024, to present a long-term rate structure strategy based on the recommendations outlined in the Utility Financial Modelling and Rate Design report to Governance Committee at the September 12, 2023 meeting.

And

That Administration be directed to proceed with the next phase of utility rate design per the steps presented in Attachment E.

BACKGROUND

In March 2023, in conjunction with the Master Rates Bylaw Report, a resolution was made that before the tabling of the County's 2024 Operating Budget, Administration return to the September Governance Committee with a report on the County's Utility Financial model with recommendations for a Long-Term Rate Strategy that recognizes:

- Best practice approaches in rate setting;
- Long term capital obligations; and
- Unified rates vs. Individual system rates.

In response to this resolution, Mooreview Management Consulting was hired to develop a financial tool that allows the County to model two distinct rate scenarios: one for individual systems and the other for unified or blended rates. The model is based on leading practices (i.e., American Water and Wastewater Association -- AWWA) and considers options for Rocky View County specific customer classifications, projections of future funding requirements, customizable cost of service allocations, and applies a consistent approach across the utility systems in how alternative fixed and variable rate structures are determined.

The rate modeling and design work positions the County in developing its long-term financial plans as it allows for adjustments in the following rate impacting areas:

- Capital and asset management obligations (e.g., reserve contributions for asset replacement);
- The desired level of user-pay cost recovery (e.g., level of subsidization); and
- Other funding priorities and items influencing future costs/revenues such as predicted growth volumes, inflation rates, and alternative rate setting tactics like tiered rates and seasonality.

DISCUSSION

There are several reasons to explore a long-term rate setting structure. Some of the foremost reasons are to:

- Simplify a complicated rate schedule (current state) (Attachment A);
- Improve alignment with industry leading practices for rate setting objectives and methodology (AWWA) (Attachment B);
- Apply a consistent approach to rate setting;
- Increase transparency in rate setting for the fixed and variable rates;
- Categorize customers according to usage patterns in order to better enable future policy setting to address preferred behavioural changes (such as tiered rates for conservation);
- Reduce financial risks (e.g., consider ways to increase revenue predictability and fund future asset needs);
- Support long-term financial planning;
- Be deliberate about the reduction of tax subsidization; and
- Support a harmonized approach to utility management at the County.

In the work completed to date, three fundamental conclusions were derived to improve upon the County's current utility funding model. These are:

1. Specific and distinct customer classes are found in Rocky View County based on water consumption behaviour – high, medium, and low peaking residential customers, commercial customers, irrigation customers, and non-metered wastewater customers (Attachment C).
2. That a blended rate approach results in a positive rate impact for the majority of Rocky View County customers (Attachment D).
3. Consistent treatment of setting fixed vs. variable rates is critical for consistency and transparency.

Utility Financial Modeling and Rate Design

Two other rate setting approaches were analyzed. These were:

1. Setting rates based on individual utility systems costs and customer base categorization.
2. Following existing rate structures.

These alternatives are not recommended. The first option could result in significant rate increases for some customers if each system is required to fund its respective rate revenue requirements. The second option is not strategically aligned with considering the 'utilities as a whole', is not transparent or easily understood/explained, and creates challenges for future asset replacement cost inclusion.

It was also determined that further guidance and input is required for the next phase of rate design work. This includes obtaining direction on Council's priorities for financial, customer, and environmental objectives relative to utility rate setting and public engagement on the same. The intent of the next phase is to build on the work completed to date, allow for more Council and public input, and to align timing with the 2025-2027 budget process.

It is therefore recommended that the three initial fundamental conclusions be incorporated into future rate setting and that a second phase of rate design be undertaken for the long-term rate structure and strategy determination.

A proposed timeline and list of next steps is provided in Attachment E.

ALTERNATE DIRECTION

Administration does not have alternate direction for the Committee's consideration.

ATTACHMENTS

- Attachment A: Current Rocky View County utility rate schedule
- Attachment B: Leading Practice for rate setting objectives and methodology
- Attachment C: Proposed customer classes for utility rates
- Attachment D: Blended Rates vs impact to customers: analysis results
- Attachment E: Proposed timeline and next steps for next phase of utility rate design
- Attachment F: Presentation Slide Deck

Attachment A: Current Rocky View utility rate schedule

Community	Water		Wastewater	
	Fixed Rate \$	Usage Rate \$/m ³	Fixed Rate \$	Usage Rate \$/m ³
Blazer / Bears paw	\$33.45	0-60 m ³ : \$2.99 61+ m ³ : \$5.97 Lynx Ridge Commercial: \$0.227 Lynx Ridge Irrigation: \$1.01	\$31.09	\$1.88
Bragg Creek	\$25.00	\$3.022	\$25.00	\$7.581
Cochrane Lakes	\$70.00	0-30 m ³ : \$1.78 31-60 m ³ : \$2.98 61+ m ³ : \$4.17	\$70.00	0-60 m ³ : \$1.78 61+ m ³ : no charge
East Rocky View	Res: \$15.00 Non-Res: • 0-49 m ³ : \$20.00 • 50-499 m ³ : \$50.00 • 500+ m ³ : \$150.00	\$5.14	Res: \$30.00 Res Unmetered: \$68.02 Multi-Unit Res \$30.00 Non-Res: \$45.00	Res: \$2.795 Multi-Unit Res \$3.715 Non-Res: \$2.795
Elbow Valley / Pinebrook			\$83.26	NA
Langdon			Residential: \$68.05 Non-Residential: \$74.65 Res/Non-Res + Restaurant: \$183.81 Res/Non-Res Combined: \$91.90 Restaurant: \$102.12	NA

Attachment B: Leading Practice for rate setting objectives and methodology

<https://www.awwa.org/portals/0/files/publications/documents/m1ed7lookinside.pdf>

OBJECTIVES OF COST-BASED RATE-MAKING

Water rates developed using the methodologies discussed in this manual, when appropriately applied, are generally considered to be fair and equitable because these rate-setting methodologies result in cost-based rates that generate revenue from each class of customer in proportion to the cost to serve each class of customer. Water rates are considered fair and equitable when each customer class pays the costs allocated to the class and, consequently, cross-class subsidies are avoided.

While recovery of the full revenue requirement in a fair and equitable manner is a key objective of a utility using a cost-of-service rate-making process, it is often not the only objective. The following list contains the typical objectives in establishing cost-based rates (Bonbright, Danielsén, and Kamerschen 1988):

- Effectiveness in yielding total revenue requirements (full cost recovery)
- Revenue stability and predictability
- Stability and predictability of the rates themselves from unexpected or adverse changes
- Promotion of efficient resource use (conservation and efficient use)
- Fairness in the apportionment of total costs of service among the different ratepayers
- Avoidance of undue discrimination (subsidies) within the rates
- Dynamic efficiency in responding to changing supply-and-demand patterns
- Freedom from controversies as to proper interpretation of the rates
- Simple and easy to understand
- Simple to administer
- Legal and defensible

GENERALLY ACCEPTED RATE-SETTING METHODOLOGY

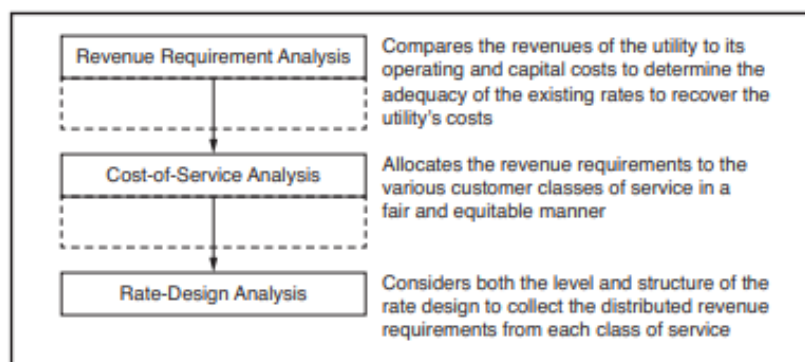
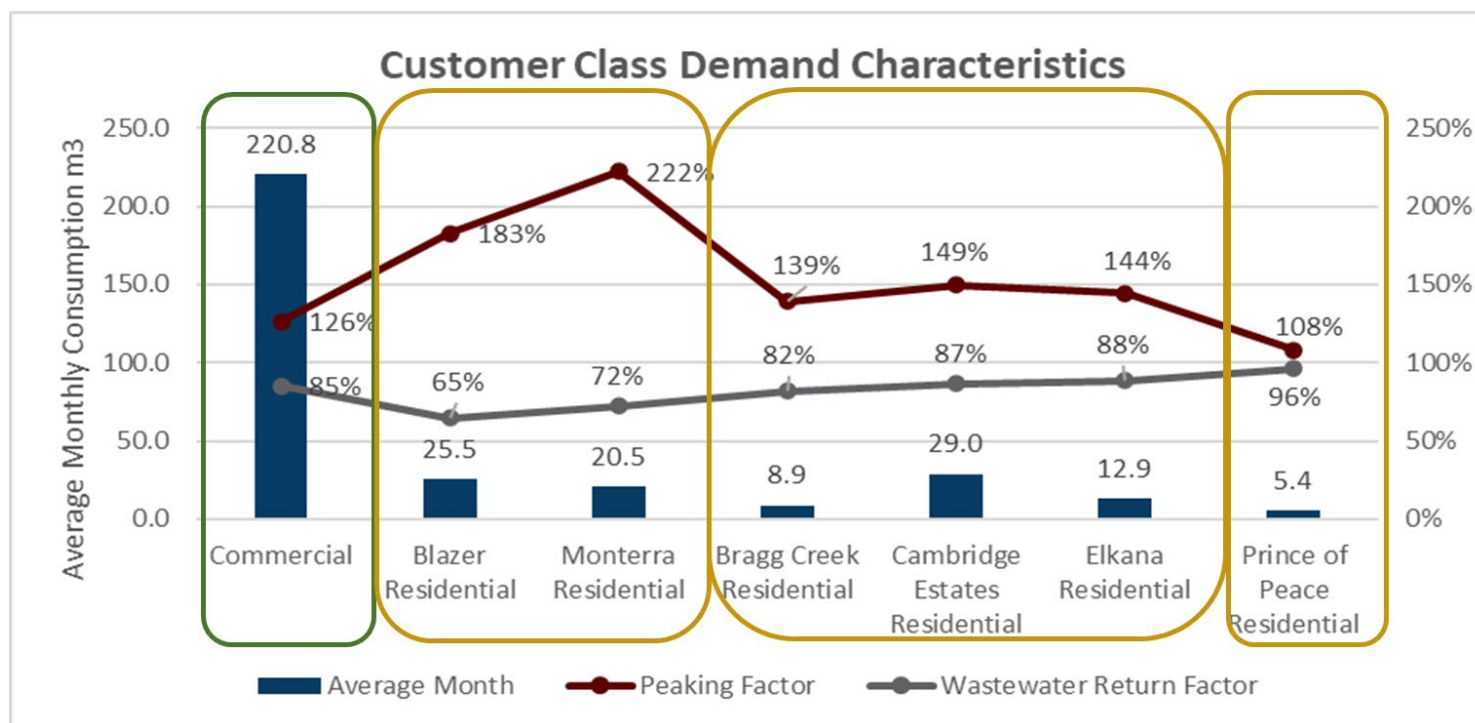


Figure I.1-1 Analytical steps of cost-based rate-making

Attachment C: Proposed customer classes for utility rates

For future rate setting, the following customer classes are proposed based on observable water usage behaviours with existing customers:

- Residential:
 - Low Peaking (Prince of Peace)
 - Medium Peaking (Cambridge Estates, Bragg Creek, Elkana)
 - High Peaking (Monterra, Bearspaw)
- Commercial
- Irrigation
- Non-Metered Customers: Wastewater only (Elbow Valley, Langdon)



Attachment D: Blended Rates vs impact to customers: analysis results

Customer	Est. Rate Impact (vs. 2023)*
Bragg Creek	
Cambridge Estates	
Prince of Peace	
Balzac Commercial	
Langdon	 
Elbow Valley / Pinebrook	
Blazer Residential	 
Blazer Irrigation*	
Cochrane Lakes	

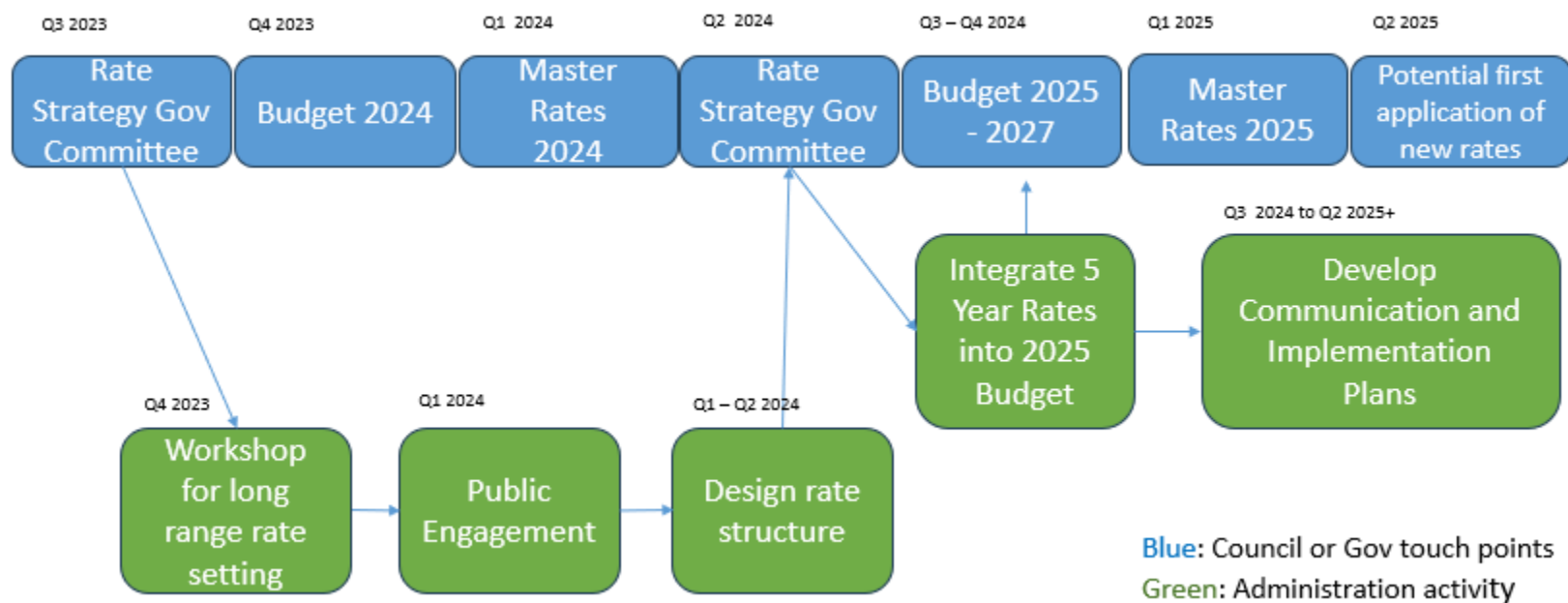
• Legend:

-  Negligible Impact
-  Small Impact
-  Reasonable Impact
-  Larger Impact
-  *Potentially, Very Large Impact

Since current rates $\neq$ cost of service, customer impacts can be greatly mitigated if the County switches to a Blended Rates Structure

* Assuming current rate revenue requirements

Attachment E: Proposed Next Steps and Timeline



Utility Financial Modeling and Rate Design

Governance Committee Meeting
September 12, 2023



Resolution

MOVED that before the tabling of the County's 2024 Operating Budget, Administration return to the September Governance Committee with a report on the County's Utility Financial model with recommendations for a Long-Term Rate Strategy that recognizes:

- Best practice approaches in rate setting;
- Long term capital obligations; and
- Unified rates vs. Individual system rates.



Agenda

Part 1: The County's Utility Funding Model

- Current State
- Context

Part 2: Recommendations for a Long-Term Rate Strategy

- Project Approach
- Project Analysis
 - Customer Classes
 - Fixed vs Variable Rates
- Rate Design
 - Blended vs System-by-System rates
 - Long-Term Rate Design considerations

• Part 3: Next Steps and Timeline

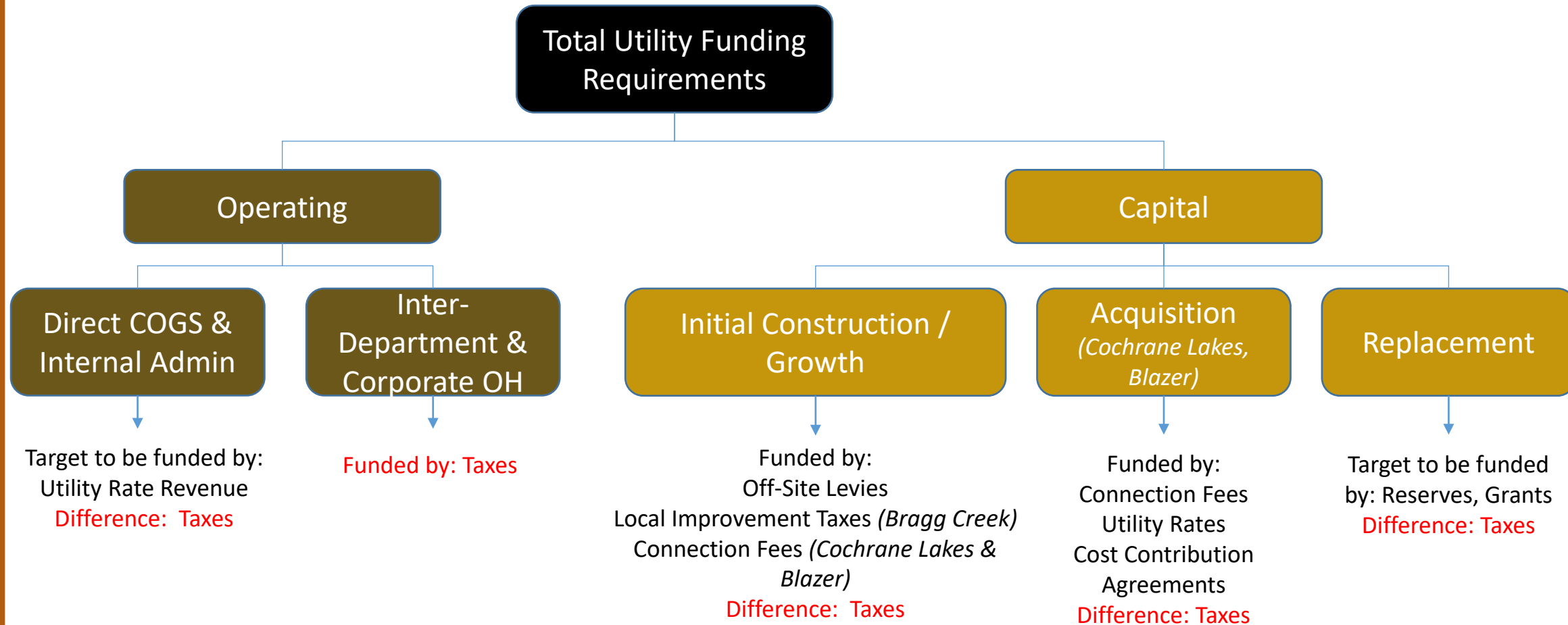


Part 1

The County's Utility Funding model



Current Funding Model



Historically, the utility systems' rate revenues have not met the current rate revenue requirements that have been met by taxes.

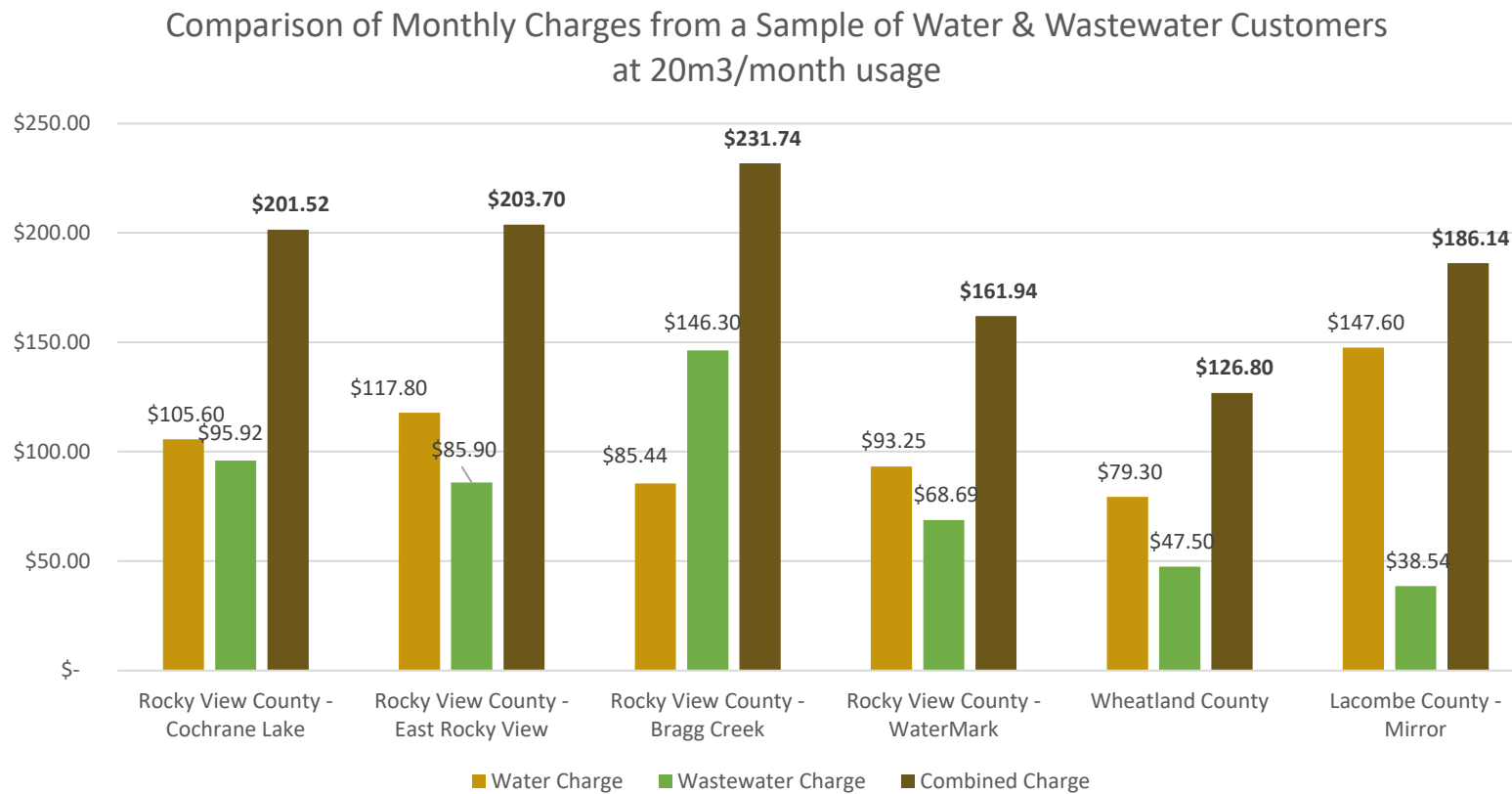


Context: Current Rates

Community	Water		Wastewater	
	Fixed Rate \$	Usage Rate \$/m ³	Fixed Rate \$	Usage Rate \$/m ³
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Context: Monthly Utility Bill Comparison



Rocky View County combined utility bills are generally higher than urban neighbours and other Counties

Primarily attributed to lower density and lower # of customers served per system vs capital-intensive investments



Part 1: Summary

- Opportunity to apply more leading practices into the utility funding model
- Current rate revenues do not cover rate revenue requirements and the differences are currently funded by taxes
- Inconsistent approach to rate setting for each system
- Current system rates are higher than most regional neighbours



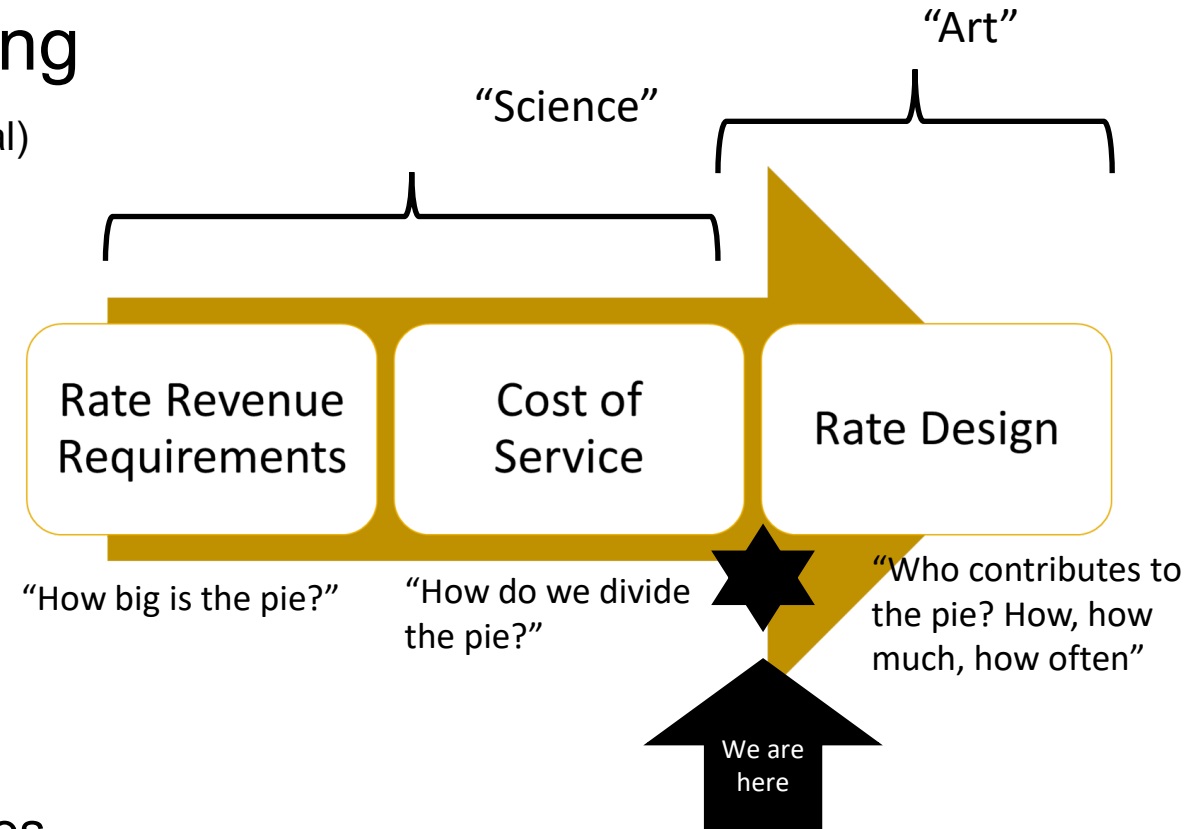
Part 2

Recommendations for a Long-Term Rate Strategy



Project Approach

- Review current state vs Leading practices approach (AWWA M1 Manual)
- Use leading practices to address business and risk factors including:
 - Asset Replacement
 - Operational Sustainability
 - Financial Sustainability
 - Customer Impact
 - Environmental Outcomes
 - Strategic Alignment to Council Priorities



Rate Revenue Requirements

- How big is the pie?
- Which items do the rates need to cover?
- Current state for the County

Current State	Additional Considerations
Direct Operating Costs	Indirect, interdepartmental supporting costs such as Utility Billing, Engineering
Direct Maintenance Costs	Other corporate overhead costs
Acquisition Debt Servicing	Asset replacement
Developer Cost Agreement Funding (Cochrane Lake)	



Rate Revenue Requirements: Scenarios

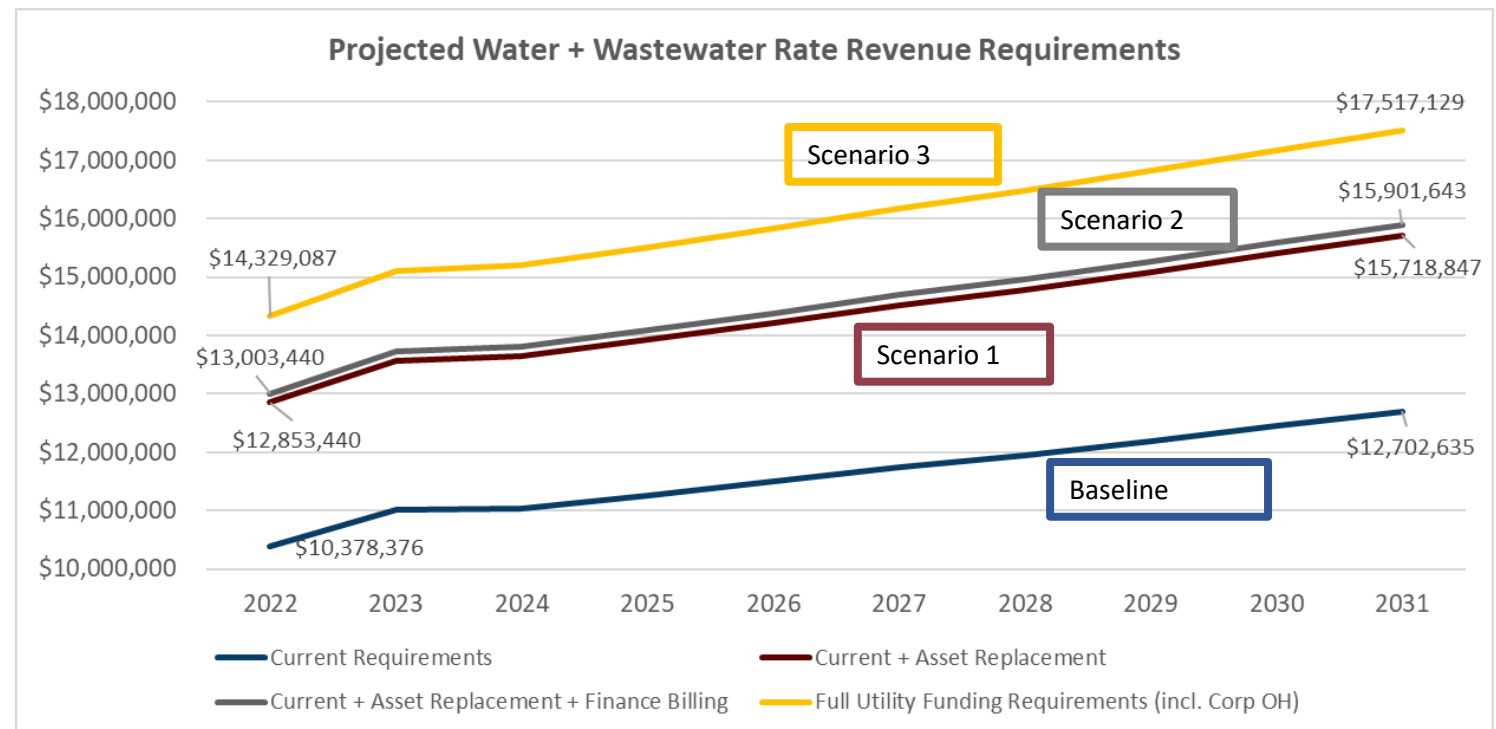
- Current Rate Revenue Requirements are approximately \$10.5 million
- Future Rate Requirements are projected to increase ~ 2.5% annually
 - Based on estimated fixed and variable costs, Alberta CPI forecasts, and customer growth assumptions

Baseline Scenario: Current Requirements

Scenario 1: Current Requirements + Average projected Asset Replacement costs requires ~ 25% additional funding

Scenario 2: Current Requirements + Asset replacement + Utility billing

Scenario 3: Current Requirements + Asset replacement + Utility billing + all supporting costs/Overhead



Target Rate Revenue Requirements: Opportunities

Current State

1. Rate Revenue Requirements:
 - Direct Operating Expenses
 - Acquisition Debt Servicing
2. Reserves:
 - Contributions only upon surplus
 - Per System basis
3. Ratemaking Approach:
 - System by system
 - Adjust by CPI or other approved percentage increase

Opportunities

1. Rate Revenue Requirements (*pending impacts*):
 - **Short-Mid Term:** Initiate Asset Replacement contributions and include Utility Billing expenses
 - **Longer-Term:** Key Interdepartmental / Corp. OH Expenses
2. Reserves:
 - Pro-active contributions with target levels
 - Flexibility in usage across systems
3. Ratemaking Approach:
 - Increase fairness across systems
 - Use cost of service & financial planning approach vs. **customer impact analysis**

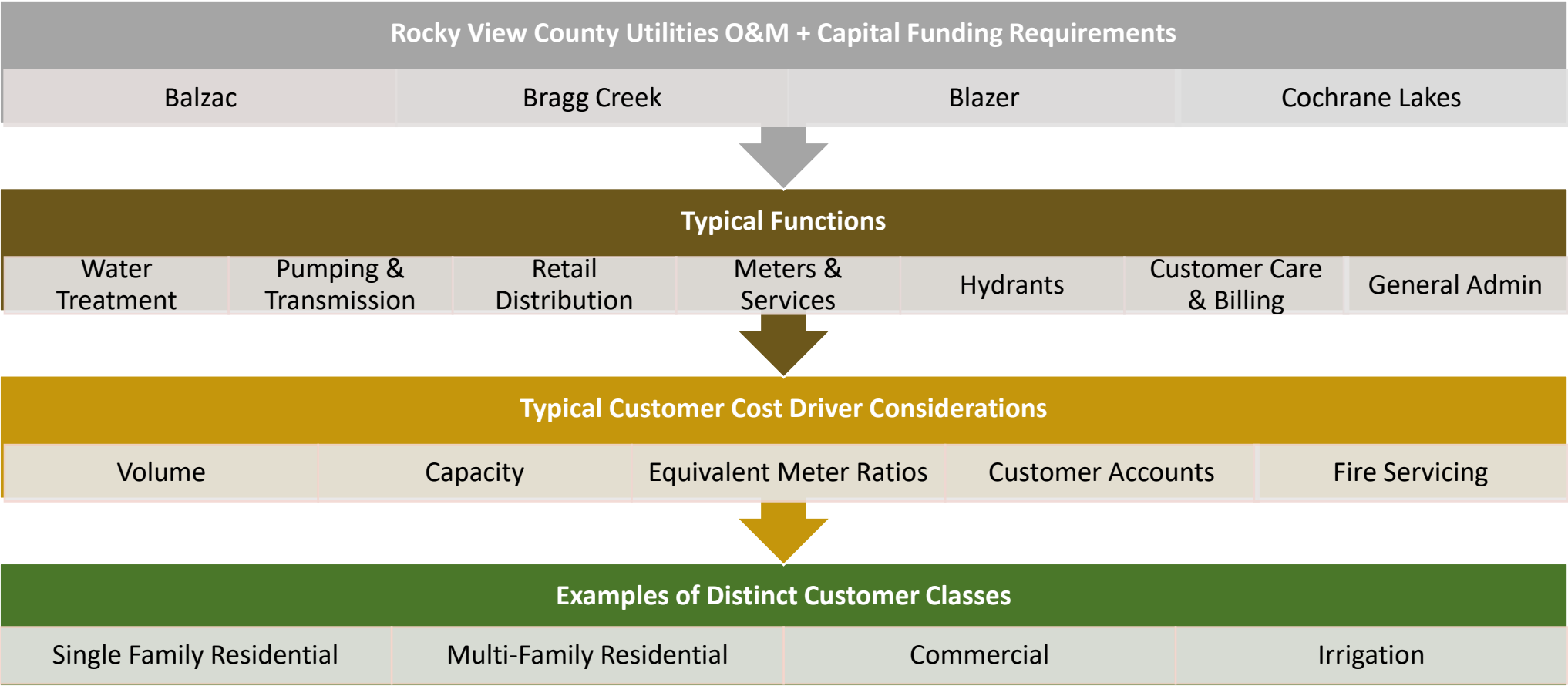


Cost of Service

- How do we divide the pie?
- What impacts the cost of service?
 - Type of Customers (e.g., industrial, residential, commercial)
 - Functions (e.g., treatment, distribution, pumping, billing, metres)
 - Cost Drivers (e.g., volume, max capacity, customer accounts)



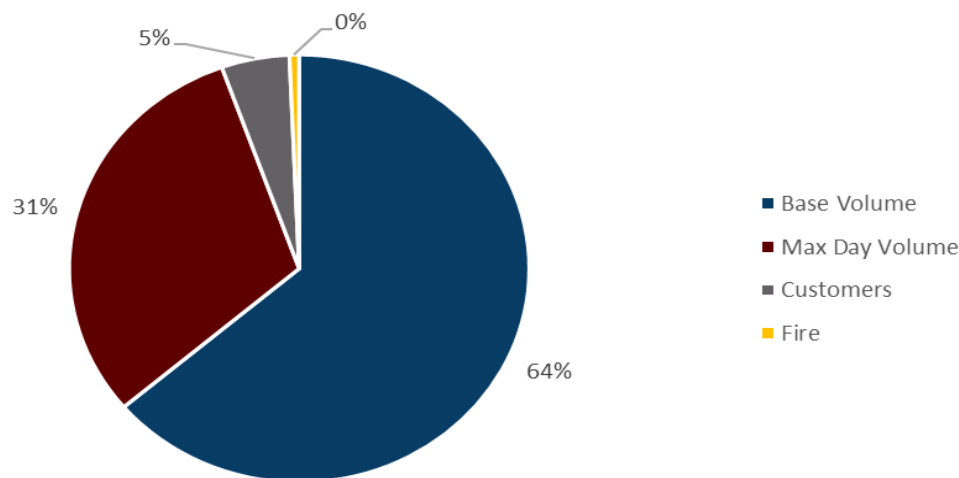
Project Analysis: Cost of Service Functions and Cost Drivers



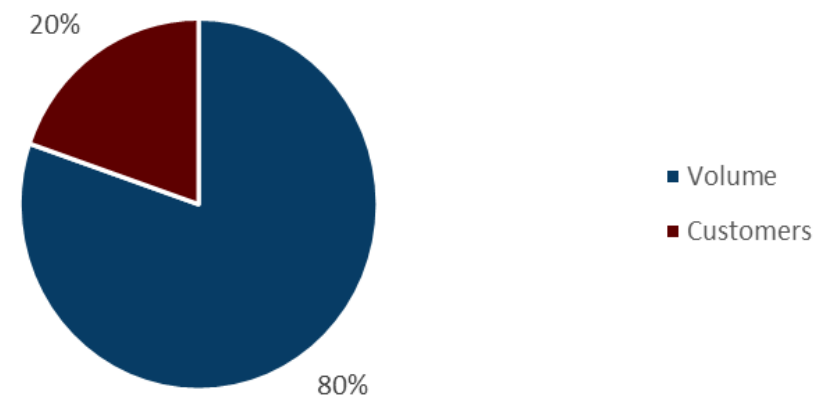
Project Analysis: Cost of Service by Cost Driver

- Costs are distributed per cost driver across customers based on their servicing demands
 - I.e., “how the pie is sliced for different customer classes”*

Summary 2024 Current Water Rate Revenue Requirements by Cost Driver

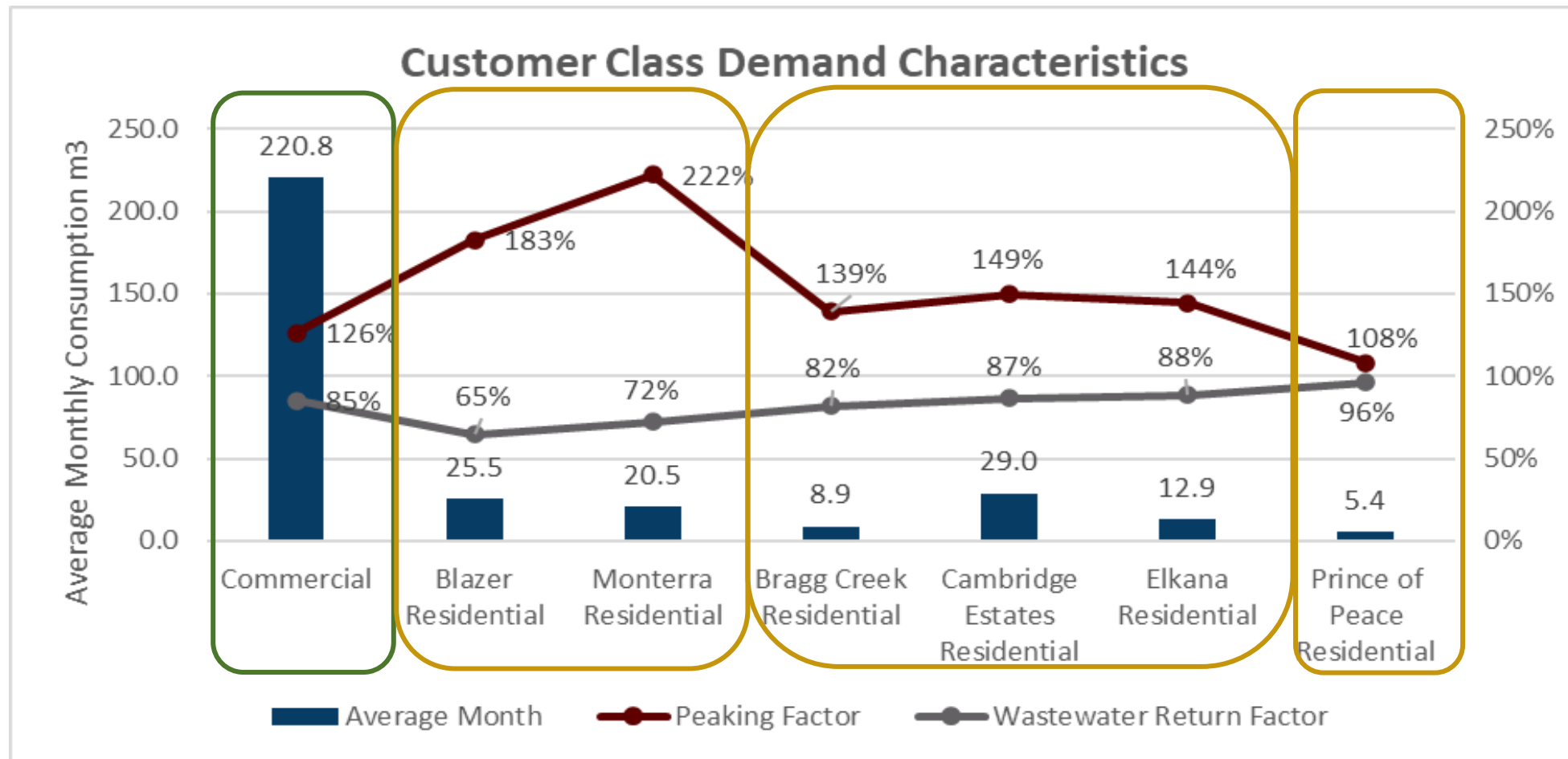


Summary 2024 Wastewater Rate Revenue Requirements by Cost Driver



Project Analysis: Type of Customer

- Customers can be grouped based on their peaking demands and percentage of billed water that is returned to the wastewater collection network



Customer Classes: Opportunities

Current State

Classes per Individual System

Bragg Creek

Balzac / East Rocky View:

- Residential
- Multi-Unit Residential (Wastewater Only)
- Commercial

Langdon Wastewater:

- 5 Dwelling Types (*unmetered*)

Elbow Valley / Pinebrook Wastewater

Blazer:

- Residential & Non-Residential
- 2 Irrigation

Cochrane Lakes

Opportunities

Apply Common Classes Across the County

Residential:

- Low Peaking (Prince of Peace)
- Medium Peaking (Cambridge Estates, Bragg Creek)
- High Peaking (Blazer, Cochrane Lakes)

Commercial

Irrigation

Wastewater Only (*limited by availability of customer water meters*):

- Langdon
- Elbow Valley / Pinebrook



Project Analysis: Summary

- Recommendations:
 - For future rate setting, adopt the following customer classes:
 - Residential:
 - Low Peaking (Prince of Peace)
 - Medium Peaking (Cambridge Estates, Bragg Creek, Elkana)
 - High Peaking (Monterra, Bearspaw)
 - Commercial
 - Irrigation
 - Non-Metered Wastewater (Elbow Valley, Langdon)



Project Analysis: Fixed vs. Variable Rates

- Per leading practices, the County can design fixed and variable rates to achieve a greater level of transparency, fairness, and ease of administration

Fixed Service Charge Considerations

- “SCIENCE”
 - Costs to Recover via Fixed Rate (*typically non-consumption based or can be allocated across customers on a per-account basis*)
- “ART”
 - Degree of Revenue Predictability
 - Customer Impact (*between low vs. high consumers per customer class*)
 - Meter Sizes, Firefighting Service Levels

Variable Charge Considerations

- “SCIENCE”
 - Costs to Recover via Variable Rate (*typically consumption based*)
- “ART”
 - Degree of User Pay Philosophy
 - Uniform vs. Inclining-Block vs. Declining Block Considerations per Customer Class
 - Seasonality
 - Wastewater Return Factor



Project Analysis: Fixed vs Variable Rates Summary

- Recommendations:
 - Design fixed rates to fund non-consumption costs plus additional considerations to meet revenue predictability objectives and mitigate undesired customer impacts
 - Design variable rates to fund consumption-related costs



Rate Design – Key Principles

“Art”

- Rate attributes: simplicity, understandability, public acceptability, feasibility of application and interpretation
- Effectiveness of yielding total rate revenue requirements
- Revenue stability
- Fairness and avoidance of undue discrimination
- Ability of customers to pay
- Ability to influence behaviour impacts (e.g., consumption)
- Affordability



Rate Design: Workshop Discussion items

Ratemaking Objectives

Financial



- Financial Sustainability
- Revenue Predictability
- Ease of Administration

Customer



- Rate Impact
- Rate Stability
- Customer Equity / User Pay Philosophy
- Ease of Understanding
- Economic Development

Environmental



- Conservation
- Watershed / Natural Resource Management
- Pollution
- Climate Change



Rate Design: Impact of Blended Rates Approach vs. Individual Systems

Customer	Est. Rate Impact (vs. 2023)*
Bragg Creek	
Cambridge Estates	
Prince of Peace	
Balzac Commercial	
Langdon	 
Elbow Valley / Pinebrook	
Blazer Residential	 
Blazer Irrigation*	
Cochrane Lakes	

- Legend:

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Since current rates $\neq$ cost of service, customer impacts can be greatly mitigated if the County switches to a Blended Rates Structure

* Assuming current rate revenue requirements



Rate Modeling & Design: Summary

- Recommendations from first phase of rate modeling and design:
 - Adopt a County-wide blended approach for the definition of customer classes, cost of service, and rates
 - Adopting the customer classes as shown
 - Apply a consistent design approach to the fixed and variable portions of the rates:
 - Variable portion to fund consumption-related costs.
 - Fixed rates to fund non-consumption related costs and consider other objectives like revenue predictability and mitigating customer impacts.



Rate Modeling & Design: Summary cont'd

- Recommendations for next phase of rate design:
 - Conduct a workshop to obtain Council priorities for rate design elements that align with organizational priorities relating to: financial, customer, environmental factors
 - Return to Governance Committee with a recommended rate structure, following public engagement
 - Develop an implementation plan for new rate structures including integration into the 2025 – 2027 budget process

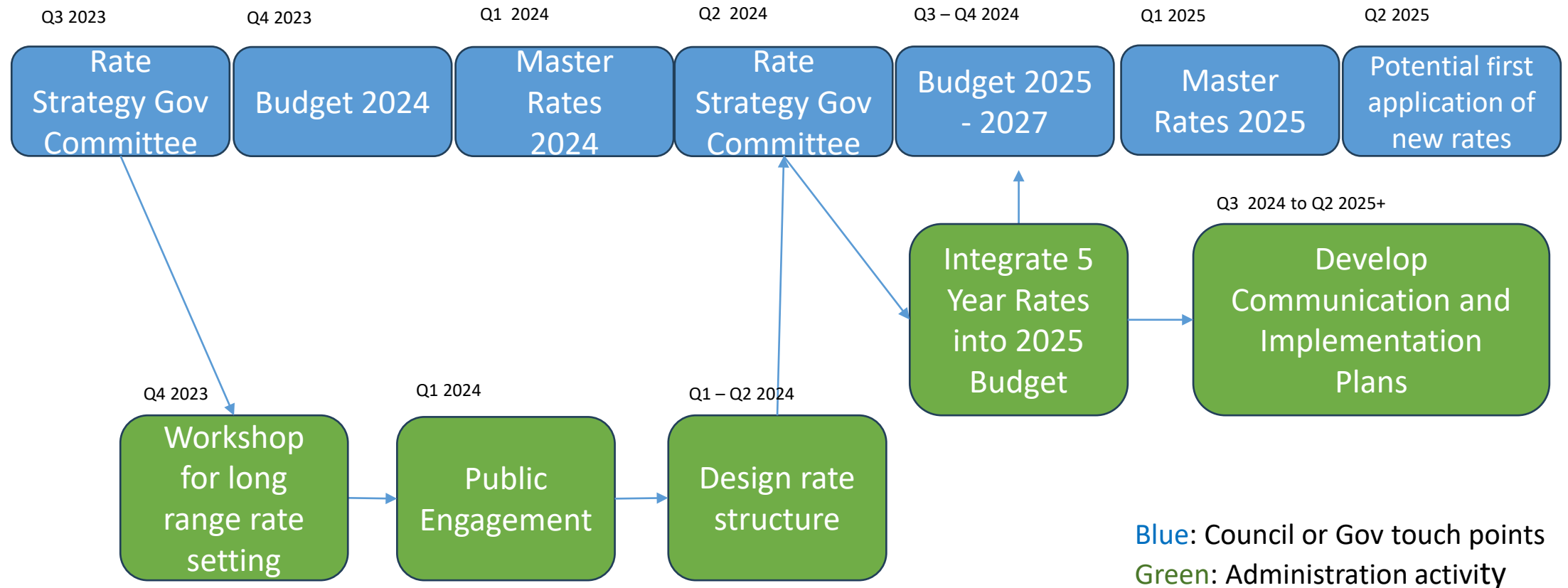


Part 3

Next Steps and Timeline



Proposed Next Steps



Motion

That Administration be directed to return to the Governance Committee no later than June 30, 2024, to present a long-term rate structure strategy based on the recommendations outlined in the Utility Financial Modelling and Rate Design report to Governance Committee at the September 12, 2023, meeting.

And

That Administration be directed to proceed with the next phase of utility rate design per the steps presented in Attachment E.

