MOOREVIEW
Management Consulting Inc.

Final Report

City of Edmonton

EPCOR Wastewater Services Performance Based Regulation (PBR) Application Analysis (April 2025 to December 2027)

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Final Version *(amendment #2)*

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1.0 Executive Summary

1.1 Project Overview

In June 2024, Mooreview Management Consulting Inc. (in partnership with senior consulting resources from Grant Thornton LLP) was engaged by the City of Edmonton (herein "City") for the review of the "EPCOR Wastewater Services Performance Based Regulation ("PBR") Application Analysis (April 2025 to December 2027)" (herein "PBR Application)[1] as filed by EPCOR Water Services Inc. (herein "EWSI"). This report summarizes the review's findings and recommendations and is intended for the use of the Administration of the City in evaluating the PBR Application.

1.2 Scope of Work

It is acknowledged that the current PBR terms are set to expire on March 31, 2025. To support the rates schedule for both Wastewater Treatment and Wastewater Collection for April 1, 2025, to December 31, 2027, EWSI submitted a rate application to the City on May 31, 2024. This was filed under the City's current performance-based regulation process which sets rates for Edmonton's inside-City Wastewater Treatment and Wastewater Collections customers. As part of this established regulatory process, the City requires an objective, independent assessment of EWSI's rate application.

It is acknowledged that EWSI received Wastewater Collection (provided by the Drainage Services business unit) from the City in 2017. This includes both the Sanitary Utility (which collects and pumps wastewater to the Gold Bar Wastewater Treatment Plant for treatment) and the Stormwater Utility, which manages stormwater received by the City. As such, the "Wastewater Collection" refers to both these utilities.

To this end, the City developed requirements for this project as per its terms of reference document[2]. Based on these requirements, a project approach was developed to focus on the key analytical tasks within the following areas of the PBR Application:

i. Cost of Service and Rate Design
ii. Cost of Capital
iii. Performance Measures

With this project structure established, the following general analysis, review, and activities were completed:

i. Initial review of EWSI's PBR application and documentation package;
ii. Identification, review, and confirmation of additional informational requests;
iii. Industry benchmarking;
iv. Assessment of historical performance, operational, customer, and financial results;
v. Assessment of projected rate revenue requirements, cost of service, and rates design, cost of capital, and performance measures; and
vi. Development of recommendations; and
vii. Development of draft report, final report. and presentation.

[1] EWSI, "2025-2027, Performance Based Regulation Application, Wastewater Services", May 31, 2024
[2] City of Edmonton, "Project Package: Consulting Services; EPCOR Drainage & Wastewater Performance Based Regulation (PBR) Application Analysis (April 2025 to March 2028)", April 30, 2024

1.3 Summary of Findings and Recommendations

Findings and recommendations have been provided both specific to EWSI's 2025-2027 PBR Application and the PBR process itself. For findings and recommendations specific to the 2025-2027 PBR, summaries per work stream are provided in Section 1.3.1. For recommendations for either the next PBR application in 2028 or to strengthen future PBR applications, summaries per work stream are provided in Section 1.3.2.

1.3.1 Findings and Recommendations for the 2025-2027 PBR Application

The following tables summarize our findings and recommendations for the 2025-2027 PBR application. These have been organized by the Cost of Service and Rates Design, Cost of Capital, and Performance Measures work streams.

Cost of Service and Rates Design

This section describes key findings and recommendations related to the forecast rate revenue requirements, cost of service methods, and rates design work stream:

#	PBR Topic	Findings	Recommendations for the 2025-2027 PBR Application
1	Direct Operating Cost Projections	A review of the projected direct operating costs increases from 2024D to 2027F was performed. Comparisons to the previous year's actual results were not possible given that EWSI only provided 2022 actual financial data. These explanations were found to be consistent with the noted increase in costs. *See Section 3.2 for details.*	N/A - recommendations provided in Table 4 for subsequent PBR applications
2	Capitalized Overhead Allocation Method	EWSI provided its capitalized overhead allocation model for review. It was found to allocate a portion of roles related to capital delivery (managers and senior managers of direct labor, capital finance, health and safety, supply chain, etc.). Costs for administrative overhead roles with only an indirect relationship to capital delivery were not included in these allocations. This aligns with Public Sector Accounting Board (PSAB) standards. *See Section 3.2.3 for details.*	N/A
3	EWS Shared Services Allocations	Total EWS Shared Services allocations are forecast to increase 16.1% across this term ($28.6M in 2024D to $33.2M in 2027F). Increases beyond inflation have been explained by EWSI. EWSI also provided its updated allocations model for review. The methodology has been	N/A - recommendations provided in Table 4 for subsequent PBR applications

#	PBR Topic	Findings	Recommendations for the 2025-2027 PBR Application
		updated to reflect the centralization of shared services across Water, Wastewater Treatment, and Wastewater Collection. It was found that the method used to allocate shared services is reasonable, wherein different cost drivers are selected for each type of shared service. An assessment for the selection of individual cost drivers was not in scope, however. *See Section 3.3.3 for details.*	
4	Corporate Shared Services Cost Allocations	Total Corporate Shared Services allocations are forecast to increase 23.2% across this term ($22.4M in 2024D to $27.6M in 2027F). Increases beyond inflation have been explained by EWSI. EWSI also provided its corporate cost allocations model for review. It uses the same allocation methods as used for the previous PBR term. *See Section 3.3.4 for details.*	N/A - recommendations provided in Table 4 for subsequent PBR applications
5	Depreciation Study	EWSI engaged a consultant from Alliance Consulting Group to perform a depreciation study. The results of the study included: • Development of additional, more detailed asset classes to establish a more accurate asset lifetime expectation; and • On average, a reduction of service lifetimes across both Wastewater Treatment and Wastewater Collection, thereby increasing depreciation expense. EWSI has proposed to use the new depreciation schedules per the result of the study for new assets in 2025 and beyond. As such, the implications of accepting this change set a significant precedent for future PBR terms. The depreciation study did not provide any benchmarking data from comparable wastewater or stormwater utilities across	i. Direct EWSI to conduct a benchmarking study comparing the results of the depreciation study to asset lifetimes used by comparable wastewater and stormwater utilities in Canada and the United States. This should be reviewed by the Utility Committee prior to its rates approval based on the proposed depreciation schedules. ii. Direct EWSI to calculate rates for the 2025-2027 PBR term using the existing asset lifetimes and depreciation schedules.

#	PBR Topic	Findings	Recommendations for the 2025-2027 PBR Application
		Canada and / or the United States. However, the provision of benchmarking data across comparable utilities is reasonable for the City's Utility Committee and regulator to review prior to it accepting the changes EWSI has proposed. *See Section 3.4.1 for details.*	
6	Capitalization of Software Costs	EWSI has proposed to capitalize its planned information technology investments in SaaS ($13.3 million across 2025-2027) instead of expensing them as operating costs. A capital business case was not prepared as EWSI deemed this total expenditure to be fifteen individual SaaS investments. Its decision to capitalize these investments is based on regulatory accounting practices instead of IFRS. EWSI reinforces this proposal based on a decision by the AUC in 2023 to approve EPCOR's proposed capitalization treatment of 2023-2025 cloud-based SaaS costs of $0.5M. Given the AUC decision and rationale provided by EWSI for this accounting method, this is found to be reasonable for the 2025-2027 PBR. *See Section 3.4.2 for details.*	i. Direct EWSI to document an appropriate business case for its targeted program of individual investments in SaaS across 2025-2027 given that the collective expenditure is well above established thresholds.
7	Capital Program Forecasts	A review of the 2025-2027 capital program levels and previous delivery performance was reviewed. The recent capital delivery efficiency of EWSI seems reasonable. Planning for capital expenditures for Wastewater Collection appears to reflect target capital efficiencies per its transfer from the City to EWSI. It is acknowledged that capital delivery is regularly reviewed as part of annual compliance reporting requirements to the Utility Committee. *See Section 3.4.3 for details.*	N/A

#	PBR Topic	Findings	Recommendations for the 2025-2027 PBR Application
8	New Stormwater Customers	It is understood that EWSI plans to introduce net-new stormwater-only customer accounts to its billing and revenue collections across the 2025-2027 PBR term. However, it is also understood that it is not yet known or estimated the number of net-new customers nor what revenue potential these net-new customers will contribute within the 2025-2027 PBR term. As such, there is a high potential that the Stormwater rates are likely slightly high for the 2025-2027 PBR term. *See Section 3.6.2 for details.*	N/A – see related discussion in Recommendation #15 Efficiency Factor in Table 3.
9	Cost of Service and Rates Design	EWSI engaged HDR to perform cost of service and rates design services for both Wastewater Treatment and Wastewater Collection. This included categorizing Wastewater Collection costs of service into its Sanitary vs. Stormwater Utility components. In reviewing these studies, they referenced examples of methods established by the Water Environment Federation[3] ("WEF"). From review of the methods employed, it appears it does follow cost allocation methods which are presented within the WEF guidance as possible considerations. Regarding EWSI's details within the studies, it was observed there are several areas of analytical limitations which are commonly addressed in such studies. EWSI has an opportunity to advance on these during its next cost of service study. *See Section 3.5 for details.*	N/A – recommendations provided in Table 4 for subsequent PBR applications
10	Consumption Forecast	EWSI has proposed the following average consumption per account trends per customer class across the 2025-2027 PBR term based on its historical consumption trends and subjective assumptions for future customer consumption characteristics:	i. Direct EWSI to detail the specific analysis that leads to their proposal to base 2025-2027 rates on the assumption that the average residential account consumption will decline by 1.3% annually, with

[3] Water Environment Federation, "Financing and Charges for Wastewater Systems", Manual of Practice No. 27, 2004

#	PBR Topic	Findings	Recommendations for the 2025-2027 PBR Application
		• Residential: decrease of 1.3% annually • Multi-Family: increase of 1.1% annually • Commercial: decrease of 0.4% annually The rationale for the projected trending for the residential class is not specifically calculated or stated either in the PBR application nor in information provided in its response to an information request. While it is acknowledged that newer communities feature greater water efficiency performance and that it may be reasonable to project a small annual decline for this class, the 1.3% annual decline assumption appears to place too much risk on customers for the resulting rate calculations, particularly when considering the average consumption per account since 2019 and the planned removal of the deferral account. *See Section 3.6 for details.*	specific responses to why this is reasonable given average consumption per account results since 2019. ii. If the 1.3% annual decline is not supported in a satisfactory manner from (i) above, direct EWSI to calculate a revised and reasonable trend estimate for 2025-2027. iii. Direct EWSI to calculate a revised and reasonable estimate for 2024 (upon which 2025-2027 forecasts are based). iv. Direct EWSI to calculate updated rates for the 2025-2027 PBR term using updated projected average consumption per residential account based on the above steps.
11	Billing Comparisons	EWSI provided projected monthly billing comparisons for its customers relative to other Canadian jurisdictions. From this analysis: • **Wastewater**: only Winnipeg is noted to have a higher projected residential monthly bill than Edmonton; and • **Stormwater**: Edmonton's residential monthly bill is projected to be larger than all others. *See Section 3.7 for details.*	N/A – recommendations provided in Table 4 for subsequent PBR applications

Table 1: Cost of Service and Rates Design Summary of Findings and Recommendations for the 2025-2027 PBR Application

Cost of Capital

This section describes key findings and recommendations related to the cost of capital work stream:

#	PBR Topic	Findings	Recommendations for the 2025-2027 PBR Application
12	Cost of Equity	EWSI engaged a cost of capital expert from ScottMadden to calculate a recommended return on equity. Based on this, EWSI's 2025-2027 Wastewater Services PBR is proposing an increase to their cost of equity from the 9.89% in the 2022-2024/2026 Performance Based Rate Application ("2021 PBR" or the "last PBR") of 0.91% arriving at a proposed cost of equity of 10.80% on the current application. It is noted that the proposed cost of common equity of 10.80% is being proposed for wastewater treatment. The cost of common equity for wastewater collection is being proposed to ramp up to 10.80% over a five-year period, from 5.50% in 2022 to the full 10.80% by 2026. The 10.80% proposed cost of equity implies a risk premium of 1.52% over the cost of equity included in the AUC's generic cost of capital. The risk premium of 1.52% implies that the risk premium over the AUC has increased since the 2021 PBR. EWSI has not considered the varying risk profiles of Water Services, Wastewater Treatment and Wastewater Collection. While it is agreed that some of EWSI's services have a higher level of risk than reflected in the AUC generic cost of capital, the risk is not consistent across all EWSI's services. *See Sections 4.4 and 4.5 for details.*	i. Direct EWSI to calculate the cost of equity for Water by removing the ECAPM methodology and to keep the spread above the AUC generic rate consistent with the 2021 PBR. It is concluded that an appropriate cost of equity for EWSI as a starting point is 10.67% to reflect the removal of the ECAPM methodology and to keep the spread above the AUC generic rate consistent with the 2021 PBR as there is no evidence that EWS's risk profile has changed. ii. Direct EWSI to further calculate the cost of equity to be more aligned with the weighted average of the unique risk profile by line of business. Since Water has a higher risk profile, it is recommended the City consider applying a lower cost of equity to Wastewater Treatment and Wastewater Collection in comparison to the cost of equity for Water. For illustrative purposes, three scenarios which reduce the wastewater treatment and wastewater collection by 0.10%, 0.20% and 0.30% have been provided, resulting in a recommended total cost of capital for EWS overall which has been calculated as 10.49% to 10.67%. iii. Direct EWSI to continue with a ROE ramp-up approach for Wastewater Collection across the 2025-2027 PBR term.
13	Capital Structure	EWSI's 2025-2027 Wastewater Services PBR proposed capital structure is 60% debt and 40% equity. This is consistent with past practices. While there is a variance between EWS's capital structure and the capital structure noted in the Alberta Utility Commission ("AUC")	N/A

#	PBR Topic	Findings	Recommendations for the 2025-2027 PBR Application
		general cost of capital decisions, nothing suggests that a change in their capital structure is warranted at this time. *See Section 4.2 for details.*	
14	Cost of Debt	EWSI's 2025-2027 Wastewater Services PBR is proposing an increase in the cost of debt of 1.15%. This is primarily a result of a 1.34% increase in the 30-year Government of Canada bonds rate since the 2021 PBR and is partially offset by a reduction in the risk premium EPCOR Utilities Inc. ("EUI") charges EWSI on intercompany debt. Credit rating agencies have declined to provide one-time stand-alone credit ratings to EWSI to support their regulatory filings. While nothing has been identified to suggest that the EWSI's proposed cost of debt is unreasonable, it is difficult to determine if the proposed rate is reflective of market pricing if EWSI was to engage in a more traditional negotiation of financial terms with multiple lenders. *See Section 4.3 for details.*	Direct EWSI to provide further information to support that the cost of debt included in its 2025-2027 PBR Application reflects the current actual cost of borrowing to EUI.

Table 2: Cost of Capital Summary of Findings and Recommendations for the 2025-2027 PBR Application

Performance Measures Work Stream

This section describes key findings and recommendations related to the performance measures work stream:

#	PBR Topic	Findings	Recommendations for the 2025-2027 PBR Application
15	Efficiency Factor	EWSI has proposed an efficiency factor of 0.25% for Wastewater Treatment and Wastewater Collection, which is the same as proposed in the previous PBR. The efficiency factor of 0.25% is appropriate for Wastewater Treatment. However, there are further organizational transformation and integration efforts occurring for Wastewater Collection and its financial management to consider a higher efficiency factor for it.	Consider doubling the proposed efficiency factor from 0.25% to 0.50% for Wastewater Collection and direct EWSI to recalculate 2025-2027 rates.

#	PBR Topic	Findings	Recommendations for the 2025-2027 PBR Application
		See Section 5.2 for details.	
16	Approach to Establishing Performance Measures vs. Overall Objectives and Customer Priorities	A description of how the proposed performance measures, standards, and weightings either reflect how EWSI will progress against its strategic objectives or customer priorities (per the stakeholder engagement observations) is not provided. *See Section 5.4 for details.*	i. Direct EWSI to provide a comprehensive description of how the proposed suite of performance measures provides a balanced view of EWSI's overall performance and how the company is progressing towards achieving its strategic objectives; and ii. Direct EWSI to provide a comprehensive description of how the proposed suite of performance measures reflects the customer priorities derived from stakeholder engagement.
17	Consolidation of Safety Performance Measures	The PBR application proposes to consolidate safety performance measures for the two lines of service. This is an appropriate approach for safety performance. *See Section 5.4.8 for details.*	N/A
18	Wastewater Collection – Customer Service Index	The current response time measures (Service Maintenance Calls and Emergency Dig Ups) could be consolidated/modified to enable benchmarking. EWSI is proposing to move Service Maintenance Calls and Emergency Dig Ups to the System Reliability Index, even though they are response time measures that should be in the Customer Service Index. *See Section 5.5.2 for details.*	Direct EWSI to retain response time measures (such as Service Maintenance Calls and Emergency Dig Ups or suitable alternatives) in the Customer Service Index.
19	Wastewater Collection – System Reliability and Optimization Index	Full Property Flood Inspections is a leading indicator, not reflective of how effective the Enhanced Building Flood Proofing program is in removing properties from the high and medium-high risk of flooding category.	i. Direct EWSI to evaluate whether the Full Property Flood Inspections measure should be replaced by a lagging indicator that reflects the effectiveness of

#	PBR Topic	Findings	Recommendations for the 2025-2027 PBR Application
		Sewer Renewal and Infrastructure Condition Rating are proposed to be removed as performance measures. Because significant investments in reliability and life-cycle replacements are proposed, a corresponding measure on the effectiveness or impact of the investments is warranted. *See Section 5.5.3 for details.*	the Enhance Building Flood Proofing program. ii. Direct EWSI to consider measures within the System Reliability Index that reflect the impact of the proposed reliability and life-cycle investments.
20	Wastewater Treatment – H2S 1-hour and 24-hour Exceedances	These measures are indicators of odour incidents and are averages from two sites. By averaging the results, measurements that don't reach the odour threshold at one site may mask the exceedances at the other. *See Section 5.6 for details.*	For the H2S 1-hour and 24-hour Exceedances measures, direct EWSI to evaluate if measures reporting individual exceedances at the monitoring sites would better represent actual performance and potential odour incidents.
21	Wastewater Treatment – Biosolids Management	This measure as proposed is the amount of biosolids to be beneficially reused annually. Without the context of how much biosolids are generated each year, this measure does not indicate effectiveness of the biosolids management program. A ratio or percentage would measure effectiveness and is available for benchmarking. *See Section 5.6 for details.*	Direct EWSI to consider adjusting the Biosolids Management measure to one that reflects the ratio of beneficial reuse of biosolids to the total amount of biosolids generated.
22	Wastewater Treatment – Energy Efficiency	This measure is appropriate and available for benchmarking. Further, EWSI's standard would put them in the top quartile in the AWWA benchmarking survey. *See Section 5.6 for details.*	N/A

Table 3: Performance Measures Summary of Findings and Recommendations for the 2025-2027 PBR Application

1.3.2 Findings and Recommendations for the Next PBR / PBR Regulatory Process

The following tables summarize our findings and recommendations either for the next PBR application (for 2028) or for improving PBR Application requirements on an ongoing basis. These have been organized by the Cost of Service and Rates Design, Cost of Capital, and Performance Measures work streams:

Cost of Service and Rates Design

This section describes key findings and recommendations to direct the PBR evaluation of forecast rate revenue requirements, cost of service methods, and rates design for subsequent PBR applications:

#	PBR Topic	Findings	Recommendations for the Next PBR / PBR Process
23	Historical Financial Results	The 2025-2027 PBR application only provided 2022 actual financial results. According to EPCOR's Minimum Filing Requirements[4], a minimum of four years of historical actual results is required, including operating, capital expenditures, depreciation, and return on rate base. It was noted by EWSI that providing historical actual results would be challenging given recent organizational restructuring. Only providing one year is challenging for a regulator to assess whether future projections are appropriate, as the only basis provided in this application was the 2022 values and the 2024 decision values. *See Section 3.1 for details.*	Direct EWSI to ensure that the minimum historical actual financial results are provided for future PBR applications as per the existing Minimum Filing Requirements.
24	Ratio of Direct vs. Indirect Administrative Operating Costs	It is acknowledged EWSI has developed detailed models and methods for how EWS Shared Services and Corporate Shared Services costs are allocated to each utility service. These drivers use a mix of staffing headcount, revenues, and infrastructure costs to allocate individual shared services to each service. However, it is observed that, particularly for Wastewater Collection, the portion of total operating costs comprised of these shared services administration costs are significant. For 2027F, the combined forecast represents 37.2% of the total operating costs for Wastewater Collection (adding back capitalized overhead transfers). Conversely, this ratio for Wastewater Treatment was only 19.4%. For many of these EWS Shared Services, the administrative functions appear to be indirect and overhead in nature. For	i. Direct EWSI to evaluate and report on its level and types of indirect, overhead administration costs it allocates into customer rates, including a comparison to industry practices and benchmarks. ii. Based on (i) above, direct EWSI to describe: • How these shared services provide additional value-for-money for Edmonton's customers; and • How EWSI can efficiently manage these costs to ensure reasonable rates.

[4] EPCOR Water Services Inc., "Minimum Filing Requirements for Edmonton Water Services", Report to City of Edmonton Utility Committee, 2015

#	PBR Topic	Findings	Recommendations for the Next PBR / PBR Process
		Wastewater Collection, this results in a large share of its operating costs being comprised of these indirect costs, which challenges its ability to charge reasonable, cost efficient rates. *See Section 3.3.5 for details.*	
25	Depreciation Studies	It is noted that the depreciation study was provided by an external consultant with deep industry experience. However, it is typical and reasonable that such a review includes relevant asset lifetime comparisons to other utility organizations and analysis based on these comparisons. *See Section 3.4.1 for details.*	Direct EWSI to update the PBR minimum filing requirements to include benchmarking data versus comparable water, wastewater, and stormwater utilities across Canada and the United States when completing a depreciation study.
26	Cost of Service and Rates Design Methods	It was found that the cost of service studies did not perform or provide information regarding several typical points of analysis and considerations for Wastewater Treatment and Wastewater Collection. *See Section 3.5 for details.*	Direct EWSI to address the common cost of service leading practices items i-vii per Section 3.5 in the next PBR application and beyond.
27	Customer Consumption Forecasts	It was observed that there is a lack of established norms and standards for estimating future customers' consumption habits given historical billing data and judgement for making future projections. As these projections for customer consumption determine the denominator for calculating rates, the statistical methods for developing these projections in a standardized manner should be clarified and strengthened to mitigate the risk incurred by customers from EWSI establishing consumption estimates which may be lower than what statistical analysis may otherwise suggest. *See Section 3.6 for details.*	i. Direct EWSI to review, revise, and formalize the statistical analysis used as the basis for projecting future average consumption trends per account as part of the PBR regulatory process. ii. In addition, direct EWSI to analyze residential and multi-family indoor usage relative to outdoor irrigation usage trends when completing this analysis.
28	Billing Comparisons	The billing comparisons provided in the original PBR application featured monthly bill estimates for combined wastewater and stormwater rates. Typically,	i. Direct EWSI to develop rates benchmarking reports separately for Water, Wastewater, and Stormwater;

#	PBR Topic	Findings	Recommendations for the Next PBR / PBR Process
		regulators assess wastewater and stormwater rates separately given they are unique, separate services. It is important to split out these services and demonstrate bill comparisons separately, including noting how EWSI's monthly bills compare to the average of others included in the sample. Further, it is useful for regulators to assess bills across the most comparable utilities. It is not useful to compare EWSI's bills against significantly smaller, less dense, and rural municipal utilities. In addition, while care must be exerted to avoid inappropriate conclusions simply based on these comparisons, it is useful for utility management to adopt a willingness to analyze how to increase future efficiencies, service levels, and value-for-money if its rates are demonstrably larger than its peers. *See Section 3.6 for details.*	ii. Direct EWSI to review and update its peer comparable group for the purposes of comparing utility rates; and iii. EWSI's Stormwater residential monthly bills across 2025-2027 are projected to be larger than other jurisdictions included in the billing comparisons. Based on this, direct EWSI to further analyze this situation and report back regarding: • Initiatives it will target to continue the achievement of efficiencies to manage future rate increases; and • How it will provide Edmonton's customers with increased value for money relative to other jurisdictions.

Table 4: Cost of Service and Rates Design Summary of Findings and Recommendations for Future PBR Regulatory Processes

Cost of Capital

This section describes key findings and recommendations to direct the PBR evaluation of the cost of capital areas for subsequent PBR applications:

#	PBR Topic	Findings	Recommendations for the Next PBR / PBR Process
29	Credit Rating Analysis	Credit rating agencies have declined to provide one-time stand-alone credit ratings to EWS to support their regulatory filings. Further, EWSI has not provided any analysis to supplement this. Should third-party credit rating reports be unavailable for regulatory review, a regulator would typically expect the utility to supplement their PBR application with some internally prepared analysis. Any analysis that the utility organization prepares pertaining to their cost of debt in reference to business risk, financial risk,	Direct EWSI to provide supporting information to justify their proposed cost of debt within the PBR application process.

#	PBR Topic	Findings	Recommendations for the Next PBR / PBR Process
		considerations of their liquidity, or other risks would be beneficial. *See Section 4.3 for details.*	

Table 5: Cost of Capital Summary of Findings and Recommendations for Future PBR Regulatory Processes

Performance Measures

This section describes key findings and recommendations to direct the PBR evaluation of performance measures for subsequent PBR applications:

#	PBR Topic	Findings	Recommendations for the Next PBR / PBR Process
30	Historical Performance vs. Performance Measures	On average, EWSI's performance measures show historical performance significantly exceeding standards, indicating that either the standards are set too low or there is a level of investment of resources beyond what is required. Measures that significantly exceed the standard may mask underperformance in other areas, particularly when determining financial incentives and penalties. *See Section 5.4.3 for details.*	Direct EWSI to undertake an evaluation of the measures where EWSI has consistently exceeded the standard to evaluate the costs and benefits for ratepayers of exceeding performance standards and/or to determine if the standards should be adjusted.
31	Efficiency Factor	Since EWSI has assumed ownership of Wastewater Collection, focus has been placed on the total financial efficiencies gained as a result. *See Section 5.2 for details.*	Direct EWSI to provide an updated analysis regarding capital and operating efficiencies gained to support its 2028 PBR application.
32	Role of Regulator in Establishing Performance Measures	The PBR process for establishing performance measures is currently based on EWSI proposing a suite of performance measures and standards to the Utility Committee for its review In other jurisdictions, the regulatory authority takes a lead role in establishing the performance measures. *See Section 5.4.2 for details.*	Undertake a review of the regulatory process for establishing and directing performance measures EWSI include, including the roles of the parties involved (Council, Administration, EWSI) and leading practices considerations from applicable regulatory agencies (e.g., AUC, OFWAT, IPART, or others).
33	Performance Measures Framework	It is not clear if the proposed suite of performance measures supports the objective of evaluating progress towards specific commitments related to the	Based on the outcomes from Recommendation 32 above, direct either EWSI or Utility Committee (with support of City administration)

#	PBR Topic	Findings	Recommendations for the Next PBR / PBR Process
	and Benchmarking	proposed operating and capital investments in the application. There is an opportunity to include more outcome-based performance measures (lagging indicators) that measure progress towards specific commitments. The PBR Application states that available benchmarking was reviewed, but it is challenging to find suitable comparators. It also states that proposed standards align with industry benchmarks where possible, but no comparators are provided. A review of the AWWA Benchmarking survey[5] indicates some benchmarking is either available, available by modifying proposed measures, or available if other measures are adopted (such as service interruption measures). *See Section 5.4 for details.*	to review the suite of performance measures, and adjust them as required, to: i. Reflect that the PBR process is a financial regulatory process with an objective to ensure customers are receiving value for the rates they pay ii. Measure EWSI's progress towards meeting prescribed commitments iii. Include an appropriate number of outcome-based measures (lagging indicators), and iv. Include measures that can be benchmarked against comparative utilities.
34	Performance Measures Methodology	The previous PBR review recommended that a performance measure methodology benchmarking assessment be conducted. It is acknowledged that EWSI presented an overview to the Utility Committee on May 6, 2024[6]. However, the scope of the referenced report was narrower than the full scope of recommendations noted in this report. *See Section 5.4 for details.*	Based on the outcomes from Recommendation 32 above, direct either EWSI or Utility Committee (with support of City administration) to undertake a review of the performance measures methodology, including benchmarking against other comparative regulatory regimes, to address how base and bonus points are allocated and the implications for financial incentives and penalties. The review should include an evaluation of appropriate financial penalties/incentives.
35	Performance Measures Related to the Capital Program	Capital business cases do not include reference to performance measures that may be impacted by capital investments. *See Section 5.4.6 for details.*	Direct EWSI to update its capital business cases to include a section that outlines how the proposed capital investment supports or impacts the relevant performance measures.

[5] American Water Works Association, "AWWA Utility Benchmarking; Performance Management for Water and Wastewater; Benchmarking data from 2022 for 69 key performance indicators", 2023
[6] EPCOR WATER SERVICES, "Response to July 9, 2021, Utility Committee Motions, Review of PBR Performance Measures", May 6, 2024

#	PBR Topic	Findings	Recommendations for the Next PBR / PBR Process
36	Wastewater Collection – Environmental Index	Stormwater Flow Monitoring is not reflective of performance and a measure that better reflects the effectiveness of the total loadings plan or SIRP could be considered. Stormwater Rebate Projects is a leading indicator and does not reflect the effectiveness of the program. *See Section 5.5.1 for details.*	Based on the outcomes from Recommendation 32 above, direct either EWSI or Utility Committee (with support of City administration) to review the measures comprising the Wastewater Collection Environmental Index to ensure the proposed measures are meaningful indicators of performance and reflect progress towards achievement of strategic objectives and a return on investment for customers.
37	Wastewater Collection – Customer Service Index	Wastewater service interruption is a prevalent measure across North America (AWWA) and internationally (Ofwat, IPART), but is not proposed in the application. Other common customer service measures are call center performance indicators and customer experience measures, none of which are proposed in the application. *See Section 5.5.2 for details.*	Based on the outcomes from Recommendation 32 above, direct either EWSI or Utility Committee (with support of City administration) to review and modify the measures comprising the Wastewater Collection Customer Service Index to ensure they reflect the most important customer priorities.
38	Wastewater Treatment – Wastewater Effluent Performance Limit	The Standard of 26% indicates that EWSI intends to consistently treat effluent to a level well below that allowed in its Approval to Operate, which likely requires a higher level of investment than if EWSI operated closer to its Approval limits. *See Section 5.6 for details.*	For the Wastewater Effluent Performance Limit measure, direct EWSI to evaluate the costs and benefits for ratepayers of treating wastewater to a level well below the level allowed in its Approval to Operate and if the standard is set at a level that is warranted from a customer service or cost/benefit perspective.

Table 6: Performance Measures Summary of Findings and Recommendations for Future PBR Regulatory Processes

2.0 Introduction

This section provides a brief description of the services provided by EWSI which are the focus of the PBR Application Review. It also describes the existing legislation and guidance directing the PBR regulatory review and the project scope established with the City's project management.

2.1 Background of EWSI Services

EWSI is a direct wholly owned subsidiary of EPCOR Utilities Inc. (here in "EUI"), which provides wastewater treatment, sanitary wastewater collection and transmission, and stormwater management services to customers within the City. Wastewater Collection (Drainage Services) comprises both sanitary and stormwater services. It was transferred to EWSI from the City in 2017.

Per EWSI's PBR Application, it is noted that the wastewater collection system collects, stores, and conveys more than 300 million litres of wastewater per day from approximately 430,000 customers within the City (spanning residential and non-residential accounts). These flows are directed to either the Gold Bar Wastewater Treatment Plant ("GBWWTP") or the ARROW Utilities Wastewater Treatment Plant for treatment, after which effluent is discharged back to the North Saskatchewan River. The wastewater collection system spans over 4,200 km of sanitary and combined sanitary and stormwater pipes (approximately 850 km of combined systems), 81 lift stations, and additional storage areas within the linear network.

In addition to the portion of the collection system, which is combined stormwater and sanitary, EWSI's stormwater management system includes a collection of infrastructure spanning both overland flood routes (roadways, culverts, ditches and swales) and underground linear infrastructure (individual storm sewers and the combined sewers), 18 pump stations, and other stormwater storage facilities (e.g., wet and dry ponds, underground storage, engineered wetlands and low impact developments). Combined, these serve to manage the volume and quality of the stormwater prior to its return to the receiving waters.

EWSI' GBWWTP treats wastewater from both the sanitary and combined sewer systems for the customers within the City. It is noted that EWSI has entered in a wastewater swap agreement with ARROW Utilities to minimize duplicative linear system investments. This requires EWSI to send wastewater from nearly 30,000 customers in northeast Edmonton to the ARROW Utilities Wastewater Treatment Plant (WWTP) in Strathcona County for treatment. In return, wastewater from Leduc, Leduc County, Beaumont and the Edmonton International Airport is sent to the GBWWTP for treatment. Both entities then send biosolids to the Clover Bar Biosolids Resource Recovery Facility for nutrient recovery.

2.2 PBR Regulatory Process Overview

The current rates for these utilities have been set under the previous PBR Application (2021) and are due to expire on March 31, 2025. To support the rates schedule for both Drainage and Wastewater Treatment for April 1, 2025, to December 31, 2027, EPCOR Water Services Inc. (EWSI) submitted a rate application to the City on May 31, 2024. The focus of this review was to provide an independent, objective review of this PBR Application.

The enabling legislation to guide this regulatory process was originally provided in the City's Bylaw 12294[7]. It is understood this bylaw was repealed and process information established in an administration report[8] provided in 2021, which was recently updated on May 6, 2024[9]. To guide this PBR regulatory review, a set of long-standing guiding objectives have been established which are noted below as:

1. EWSI is entitled to a reasonable margin of profit from operations in relation to the provision of utility services within the boundaries of the city of Edmonton;
2. The citizens of the city of Edmonton must be provided with safe and reliable utility services;
3. All customer charges will be based upon cost of service;
4. Rates will be sufficient to ensure the continued development of utility infrastructure to reasonably ensure the satisfaction of these objectives;
5. Utility services are to be provided in a manner that reflects reasonable environmental management and aligns with City objectives;
6. Service levels and EWSI performance will be assessed with reference to industry benchmarks and/or EWSI's historical performance;
7. PBR hearing process will provide EWS with an opportunity to present its final argument and/or summarize its position before a decision on rates is rendered; and
8. The timing of a decision and the effective date for rates approved must reflect the financial needs of EWSI.

In addition, a review of the PBR's Minimum Filing Requirements[10] (herein MFR") was performed. This detailed specific information expected to be provided to support EWSI's PBR applications and are itemized to enable an objective, independent review to support the regulatory process. This guidance was reviewed and compared to the information submitted in EWSI's 2025-2027 PBR Application.

2.3 Project Scope and Structure

From review of the City's requirements, it was noted that the following key activities were requested:

1. **Assessment of the Cost of Service and Rates Design**: including an overall assessment of the current cost of service and utility rate design structure to ensure rates are being allocated appropriately, factoring in:
   - The impact of cost of service studies submitted by EWSI; and
   - Review of any potential inconsistencies in applying certain charges to unique City of Edmonton issues (e.g. golf courses, sports fields, and others).

[7] The City of Edmonton, "Bylaw 12294, EPCOR Edmonton Regulated Utilities Procedures Bylaw", 2017
[8] The City of Edmonton, "EPCOR Water Services Inc. – Performance Based Rates Applications and Regulatory Process, February 22, 2021
[9] EPCOR Water Services Inc., "2025-2027 PBR Application - Proposed Regulatory Schedule and Guiding Objectives", Attachment 1, May 6, 2024
[10] EPCOR Water Services Inc., "Minimum Filing Requirements for Edmonton Water Services; Performance Based Regulation; General Framework and Guidelines", 2015

2. **Assessment of Cost of Capital**: including a review of the requested return on equity and debt and considers:
   - Overall PBR framework, methodology, and term to ensure costs incurred by EWSI are reasonable and the current process is working as intended;
   - Operational and financial risks for EWSI in comparison to the benchmark return on equity approved by the Alberta Utilities Commission;
   - Deferral accounts and the impact on risk for EWSI and return on equity;
   - Inflation methodology and factors proposed along with any other proposed annual adjustments to customer rates; and
   - Jurisdictional scan of approaches currently being used by other comparable regulators/utilities especially given current economic conditions.
3. **Assessment of EWSI's Performance Metrics**: with a review of:
   - Efficiency factors being implemented/proposed;
   - Current and historical financial operating and capital performance with a focus on operating and capital expenditure forecasts and actuals; and
   - Potential suggestions for future consideration.

To deliver this review, a partnership was formed across individual, senior-based consulting firms and consultants, including:

i. Myron Moore, Owner and President, Mooreview Management Consulting Inc.
ii. Randy Soifer, Owner, Randy Soifer Consulting Ltd.
iii. Rob Spackman, Principal Consultant, Confluence Advisory Inc.
iv. Troy MacDonald, Partner, Grant Thornton LLP
v. Angie Brown, Partner, Grant Thornton LLP
vi. Janet Mitchell, Independent Consultant
vii. Marie Casey, Independent Consultant

Further, work was organized and delivered through the following focused consulting teams:

- **Cost of Service and Rates Design**: Myron Moore, Randy Soifer, Janet Mitchell, and Marie Casey;
- **Cost of Capital**: Grant Thornton LLP (Troy MacDonald, Angie Brown, and senior consulting resources);
- **Performance Measures**: Rob Spackman, Randy Soifer, Marie Casey.

3.0 Cost of Service and Rates Design

This section provides a description of the review performed for the cost of service and rates design content within the PBR Application both for Wastewater Treatment and Wastewater Collection (which includes both sanitary and stormwater management services).

3.1 Rate Revenue Requirements Forecasting Method

Based on the review completed for the PBR 2025-2027, it is understood that EWSI undertakes a comprehensive forecast of its revenue requirements for its regulated Wastewater Treatment and Wastewater Collection operations. The revenue requirement is based on forecasted operating costs and capital expenditures prepared by managers for 2025, 2026 and 2027. Operating costs forecasts are developed on a bottom-up basis for the year 2025 based on the best available information regarding expected work activity and cost levels for the upcoming year. Since these forecasts are initially prepared in 2024 dollars, the operating cost forecasts are then escalated using the PBR factor of "1-x" (i.e.., the weighted average inflation factor less EWSI's proposed efficiency factor of 0.25%) to arrive at the forecast costs in nominal dollars for 2025 to 2027.

EWSI forecasts capital expenditures and capital additions for 2025, 2026 and 2027 based on its planned capital projects and programs for each year. These forecasts are developed through EWSI's capital management process. It then calculates its forecast revenue requirements for 2025 to 2027 based on the following:

- Forecast operating costs;
- Depreciation expense for existing assets and forecast capital additions; and
- Debt and equity returns on in-service capital (the "rate base").

To support the 2025-2027 PBR Application, EWSI provided forecasts for the 2023-2027 operating costs for Wastewater Treatment and Wastewater Collection. It also provided 2024 Decision ("2024D") values, which were approved for the 2024 rates as part of the previous PBR. For comparison, the only year which had actual historical financial information available was 2022. In the analysis of trends in operating expenses, the focus was on the changes from 2024D and the 2024 Forecast ("2024F") due to the lack of comparable historical information. The review of the PBR Application is guided by the information provided by EWSI in its PBR Application and responses to Information Requests. EWSI provided responses for information requests submitted and explanations for any variances year over year exceeding $0.5 million. Note that the PBR review activities did not independently verify the accuracy of the information provided.

It should be noted that the provided information was compared to the information requirements per EWSI's Minimum Filing Requirements document, which specifies the information requirements that EWSI is specified to provide to support its PBR applications. In this document, it specifies that a minimum of four years actual financial results is required to be provided in the PBR Application. With only 2022 actual financial information provided; these minimum filing requirements were not met. EWSI expressed that these were unavailable due to a significant organizational restructuring, resulting in the prospect of restating previous year's financials to be particularly onerous and not possible for this PBR Application. It is noted that, in absence of historical financial results, it is not feasible for the regulator to independently assess the trending of actual results and their impact on the forecasted costs.

Based on the above methods, the following tables summarize the proposed 2025-2027 rate revenue requirements for Wastewater Treatment and Wastewater Collection, including increases relative to both 2022 actual results and the approved values for 2024:

Rate Revenue Requirement	Summary of Wastewater Treatment Rate Revenue Requirements ($millions)								
	2022 Actual	2023 Forecast	2024 Decision	2024 Forecast	2025 Forecast	2026 Forecast	2027 Forecast	2027F vs. 2022A Change	2027F vs. 2024D Change
Operations and Maintenance Expenses	60.2	65.1	66.5	73.8	78.1	79.7	81.1	34.7%	22.0%
Franchise Fees and Property Taxes	10.6	11.3	10.8	11.6	11.7	12.0	12.5	18.4%	16.0%
Depreciation and Amortization	23.3	25.2	26.4	28.2	30.3	32.3	34.0	45.7%	28.4%
Return on Rate Base Financed by Debt	12.4	13.4	13.6	13.4	14.9	16.1	18.0	45.5%	32.2%
Return on Rate Base Financed by Equity	19.4	20.6	23.2	21.5	26.1	28.2	30.2	55.1%	30.2%
Revenue Requirement before Revenue Offsets	*125.9*	*135.6*	*140.5*	*148.5*	*161.1*	*168.2*	*175.7*	39.6%	25.1%
Revenue Offsets	$ (7.2)	$ (7.1)	$ (7.3)	$ (8.8)	$ (8.9)	$ (9.1)	$ (9.3)	29.5%	26.9%
Total Revenue Requirement	**118.7**	**128.5**	**133.2**	**139.7**	**152.2**	**159.1**	**166.4**	**40.2%**	**25.0%**
Year over year $ change		9.8	4.7	6.5	12.5	6.9	7.3		
Year over year % change		8.2%	3.7%	4.9%	9.0%	4.6%	4.6%		

Table 7: Summary Forecasted Wastewater Treatment Rate Revenue Requirements

Rate Revenue Requirement	Summary of Wastewater Collection Rate Revenue Requirements ($millions)								
	2022 Actual	2023 Forecast	2024 Decision	2024 Forecast	2025 Forecast	2026 Forecast	2027 Forecast	2027F vs. 2022A Change	2027F vs. 2024D Change
Wastewater Collection (Sanitary + Stormwater)									
Operations and Maintenance Expenses	113.4	113.1	107.9	107.1	104.1	106.4	108.4	-4.5%	0.4%
Franchise Fees and Property Taxes	12.5	13.5	13.1	14.5	13.5	13.3	13.4	7.2%	2.4%
Depreciation and Amortization	39.7	42.6	51.1	48.1	52.9	57.4	62.4	57.3%	22.2%
Return on Rate Base Financed by Debt	34.5	41.6	40.6	47.2	52.3	57.1	64.2	86.1%	58.4%
Return on Rate Base Financed by Equity	39.0	53.5	69.3	69.6	84.2	99.9	118.9	204.6%	71.5%
Revenue Requirement before Revenue Offsets	*239.1*	*264.3*	*282.0*	*286.5*	*307.1*	*334.2*	*367.3*	53.6%	30.3%
Revenue Offsets	$ (3.4)	$ (2.1)	$ (5.3)	$ (4.2)	$ (4.3)	$ (4.4)	$ (4.5)	31.4%	-15.8%
Total Revenue Requirement	**235.7**	**262.2**	**276.7**	**282.3**	**302.8**	**329.8**	**362.8**	**53.9%**	**31.1%**
Year over year $ change		26.5	14.5	5.6	20.5	27.0	33.0		
Year over year % change		11.2%	5.5%	2.0%	7.3%	8.9%	10.0%		
Sanitary Utility									
Operations and Maintenance Expenses	56.8	56.1	49.1	53.5	52.0	53.1	54.1	-4.8%	10.2%
Franchise Fees and Property Taxes	11.6	12.8	12.1	13.8	12.8	12.5	12.6	8.2%	4.1%
Depreciation and Amortization	19.8	20.0	21.4	22.5	24.5	26.2	28.3	42.8%	32.0%
Return on Rate Base Financed by Debt	17.9	21.0	20.3	24.1	26.8	28.7	31.7	77.4%	56.4%
Return on Rate Base Financed by Equity	20.3	27.0	34.5	35.6	43.1	50.2	58.6	188.8%	70.0%
Revenue Requirement before Revenue Offsets	*126.4*	*136.8*	*137.3*	*149.5*	*159.1*	*170.7*	*185.3*	46.6%	34.9%
Revenue Offsets	$ (3.5)	$ (2.9)	$ (4.6)	$ (3.6)	$ (3.6)	$ (3.7)	$ (3.5)	-1.3%	-24.7%
Total Revenue Requirement	**122.9**	**133.9**	**132.7**	**145.9**	**155.4**	**167.0**	**181.8**	**48.0%**	**37.0%**
Year over year $ change		11.0	- 1.2	13.2	9.5	11.6	14.8		
Year over year % change		9.0%	-0.9%	9.9%	6.5%	7.4%	8.9%		
Stormwater Utility									
Operations and Maintenance Expenses	56.6	57.1	58.9	53.6	52.1	53.3	54.3	-4.1%	-7.8%
Franchise Fees and Property Taxes	0.8	0.7	1.0	0.7	0.7	0.7	0.8	-7.8%	-20.3%
Depreciation and Amortization	19.9	22.6	29.7	25.7	28.4	31.2	34.2	71.7%	15.1%
Return on Rate Base Financed by Debt	16.7	20.6	20.3	23.1	25.6	28.4	32.6	95.4%	60.3%
Return on Rate Base Financed by Equity	18.7	26.5	34.9	33.9	41.2	49.8	60.3	221.7%	73.0%
Revenue Requirement before Revenue Offsets	*112.8*	*127.5*	*144.7*	*137.0*	*148.0*	*163.5*	*182.1*	61.5%	25.8%
Revenue Offsets	$ 0.1	$ 0.8	$ (0.7)	$ (0.7)	$ (0.7)	$ (0.7)	$ (1.0)	-1318.0%	39.2%
Total Revenue Requirement	**112.8**	**128.3**	**143.9**	**136.4**	**147.4**	**162.8**	**181.0**	**60.4%**	**25.8%**
Year over year $ change		26.5	14.5	5.6	20.5	27.0	33.0		
Year over year % change		11.2%	5.5%	2.0%	7.3%	8.9%	10.0%		

Table 8: Summary Forecasted Wastewater Collection Rate Revenue Requirements

From Tables 7 and 8, there are significant increases in rate revenue requirements for return on rate base (both equity and debt) and deprecation expenses. Wastewater Treatment's 2027F projections are forecasted to increase relative to 2022 actuals in the amount of 45.7% for

depreciation, 45.5% for return on debt, and 55.1% for return on equity. Meanwhile, Wastewater Collection (spanning both Sanitary and Stormwater) features 2027F forecasts which increase from 2022 actuals the amount of 57.3% for depreciation, 86.1% for return on debt, and 204.6% for return on equity. In comparison, less significant increases are proposed for operations and maintenance expenses (34.7% for Wastewater Treatment and -4.5% for Wastewater Collection). These items are discussed in subsequent sections in this report.

3.2 Core Operations Cost Projections

3.2.1 Wastewater Treatment

A forecast of operating cost projections was provided for Wastewater Treatment and is detailed in the following table:

Operating Cost (Section #)	Summary of Operating costs by Expense Cost Category ($millions)								
	2022 Actual	2023 Forecast	2024 Decision	2024 Forecast	2025 Forecast	2026 Forecast	2027 Forecast	2027F vs. 2022A Change	2027F vs. 2024D Change
Core Operations (3.2)									
Power, Other Utilities and Chemicals	6.3	6.8	8.4	6.8	9.3	9.5	9.6	53.0%	14.1%
Gold Bar WWTP Operations	6.8	7.3	6.5	7.9	8.0	8.2	8.3	22.7%	29.2%
Biosolids Management	11.0	16.1	15.9	17.7	18.0	18.3	18.7	69.4%	17.4%
Monitoring and Compliance	1.6	1.6	1.8	1.6	1.6	1.7	1.7	7.1%	-3.4%
Maintenance	10.6	10.4	10.6	10.9	11.1	11.3	11.5	8.9%	9.0%
Capital Overhead	(2.3)	(3.1)	(3.4)	(3.0)	(2.2)	(2.2)	(2.3)	-0.6%	-33.1%
Sub-total	**34.0**	**39.0**	**39.7**	**41.9**	**45.8**	**46.7**	**47.6**	**40.0%**	**19.8%**
Allocated Administration (3.3)									
Billing and Collection Services Charges (3.3.1)	6.0	5.9	5.9	5.1	4.9	5.0	5.1	-15.9%	-14.3%
Integrated Operations Allocation (3.3.2)	8.2	9.3	10.1	11.6	11.8	12.0	12.2	48.9%	21.0%
EWS Shared Services Allocation (3.3.3)	6.8	5.1	5.3	9.2	9.3	9.5	9.7	43.4%	83.5%
Corporate Shared Sevices Allocation (3.3.4)	5.2	5.8	5.4	6.1	6.2	6.4	6.5	25.2%	19.1%
Sub-total	**26.2**	**26.0**	**26.8**	**32.0**	**32.3**	**32.9**	**33.5**	**27.9%**	**25.2%**
Franchise Fees and Property taxes (3.3.6)	10.6	11.3	10.8	11.6	11.7	12.0	12.5	18.4%	16.0%
Total Operating Costs	**70.8**	**76.3**	**77.3**	**85.4**	**89.8**	**91.7**	**93.6**	**32.3%**	**21.1%**
Year over year $ change		5.6	0.9	8.1	4.4	1.9	1.9		
Year over year % change		7.9%	1.2%	10.5%	5.2%	2.1%	2.1%		

Table 9: Forecasted Wastewater Treatment Operating Costs

Overall, Core Operations 2027F costs are forecast to increase 40% versus 2022 actuals and 19.8% versus 2024D values, primarily driven by sharp increases in Biosolids Management and Power, Other Utilities, and Chemicals (discussed below). EWSI noted that it uses (or adheres to) the following process to forecast major direct operating cost categories:

Power, Other Utilities, and Chemicals

Power, other utilities, and chemicals are forecast separately and represent 12% of the total operating costs for Core Operations (not including capitalized overhead, franchise fees, and property taxes).

The Power contract is set to expire at the end of 2024 and a new contract will be signed for the 2025-2027 through a competitive bidding process. The Power cost forecast for 2025 (approximately 78% of the utility expense) is based on an energy price forecast provided by EDC Associates (EDC) and incorporates contract pricing for renewable energy attributes from the Hilda Wind Farm in southern Alberta. The existing power contract is in place until December 31, 2024. There is an anticipated reduction of $1.1 million in power expense due to decrease in

consumption assumptions between 2024D to 2024F which is primarily related to lower power charges due to the shutdown of the dewatering facility. For the 2026 to 2027 years, EWSI has applied the inflation factor to calculate the forecast.

Water and natural gas are approximately 8% of the utility expense. The 2025 forecasts are based on estimates of consumption multiplied by the price per unit consumed. There is a $0.2 million decrease in natural gas costs due to lower rates between 2024D and 2024F. For the 2026 to 2027 forecast years, EWSI has applied the inflation factor.

Chemicals are approximately 14% of the utility expense. The 2025 forecasts are based on the Company's estimate of expected chemical volumes and prices. There is a $0.3 million decrease in chemical costs between 2024D and 2024F primarily due to efficiencies achieved in process and dosing optimization. For the 2026 to 2027 forecast years, EWSI has applied the inflation factor.

Gold Bar Wastewater Treatment Operations

The Gold Bar WWTP operating costs primarily consist of staff costs and employee benefits for operators, and process engineers to operate and monitor the Gold Bar WWTP and the Ostara nutrient recovery facility at the Clover Bar Site. Contractor costs that primarily relate to the disposal of inorganic waste are also included in these operations costs.

The increase from 2024D to 2024F is due to:

- An expected $0.8 million increase in insurance costs due to a rise in EWSI's general liability premiums; and
- An $0.6 million increase is primarily due to the reclassification of Ostara operations from Power/other to WWTP Operations. While the decrease in Power and Other Utilities Charges and Chemicals was not broken out specifically to Ostara operations, it is included in the decrease in power, chemical and natural gas costs. The reclassification in operations agreed to financial schedules provided.

Biosolids Management

The Biosolids management operating costs consist primarily of staff cost and employee benefits for operators and engineers to manage the biosolids program at Clover Bar, contractor costs related to disposal of biosolids, and power costs incurred for the operation of the dewatering facility. There was a $2.5 million increase forecast for Biosolids management costs in 2024F versus 2024D due to using a third-party mobile dewatering facility. This contract was a temporary solution used by EWSI while determining a long-term solution for dewatering. These additional costs were partially offset by $0.9 million power costs savings due to this third-party contract.

Monitoring and Compliance

The monitoring and compliance costs support regulatory compliance in operating source control and overstrength surcharge programs. These costs are relatively consistent over the period of 2024D to 2024F and variances are below EWSI's threshold of significant variances of $0.5 million.

Maintenance

These costs are relatively consistent over the period of 2024D to 2024F and variances are below EWSI's threshold of significant variances of $0.5 million.

Capitalized Overhead

Capitalized overhead includes indirect costs for several support functions, including but not limited to supervision and management oversight, project management and governance, accounting, supply chain and health and safety resources.

These costs are relatively consistent over the period of 2024D to 2024F and below EWSI's threshold of significant variances of $0.5 million. The difference between the 2024D and the 2025F is due to the implementation of an updated capital overhead methodology in 2025. This is discussed in further detail in Section 3.3.

Based on the forecasts and supporting details provided by EWSI, there is nothing to suggest that these forecasted operating costs for Wastewater Treatment are unreasonable.

3.2.2 Wastewater Collection

A forecast of operating cost projections was provided for Wastewater Collection (which includes both the sanitary and stormwater utility linear system services) and is detailed in the following table:

Operating Cost (Section #)	Summary of Operating costs by Expense Cost Category ($millions)								
	2022 Actual	2023 Forecast	2024 Decision	2024 Forecast	2025 Forecast	2026 Forecast	2027 Forecast	2027F vs. 2022A	2027F vs. 2024D
Core Operations (3.2)									
Operations and Maintenance	47.7	46.6	46.9	43.9	45.2	46.2	47.0	-1.4%	0.3%
Construction	2.4	1.6	0.8	2.8	2.8	2.9	2.9	20.8%	286.1%
Capital Overhead	(5.9)	(5.8)	(4.1)	(5.9)	(10.9)	(11.1)	(11.3)	92.0%	178.2%
Sub-total	**44.2**	**42.4**	**43.6**	**40.8**	**37.1**	**38.0**	**38.6**	**-12.6%**	**-11.3%**
Allocated Administration (3.3)									
Billing and Collection Services Charges (3.3.1)	8.7	7.4	7.5	8.0	7.5	7.7	7.8	-9.9%	4.9%
Integrated Operations (3.3.2)	17.2	18.5	16.6	16.3	16.7	17.0	17.3	1.0%	4.3%
EWS Shared Services Allocation (3.3.3)	24.4	25.7	23.3	22.2	22.6	23.1	23.5	-3.5%	0.7%
Corporate Shared Services Allocation (3.3.4)	19.0	19.1	17.0	19.9	20.2	20.7	21.1	10.8%	24.2%
Sub-total	**69.2**	**70.7**	**64.4**	**66.4**	**67.0**	**68.5**	**69.7**	**0.7%**	**8.3%**
Franchise Fees and Property Taxes (3.3.6)	12.5	13.5	13.1	14.5	13.5	13.3	13.4	7.2%	2.4%
Total	**125.9**	**126.6**	**121.0**	**121.6**	**117.6**	**119.7**	**121.7**	**-3.3%**	**0.6%**
Year over year $ change		0.7	-5.6	0.6	-4.0	2.1	2.0		
Year over year % change		0.6%	-4.4%	0.5%	-3.3%	1.8%	1.7%		
Assigned to Sanitary Utility	**68.4**	**79.2**	**61.2**	**67.3**	**64.8**	**65.6**	**66.7**		
Assigned to Stormwater Utility	**57.4**	**47.5**	**59.9**	**54.3**	**52.8**	**54.0**	**55.1**		

Table 10: Forecasted Wastewater Collection Operating Costs

Overall, Core Operations 2027F costs are forecast to decrease 12.6% versus 2022 actuals and 11.3% versus 2024D values. EWSI noted that it uses (or adheres to) the following process to forecast major direct operating cost categories:

Operations and Maintenance

Operations and Maintenance includes the following subcategories:

- ***Operations*** – This includes the Network Operations, Environmental Monitoring and Compliance, Operations Environmental Support, and Emergency Response and Flood Proofing. The Operations team is responsible for informing and making operational and strategic decisions, leading emergent/emergency response and monitoring regulatory compliance.

- ***Operations Support*** – This includes Program Planning, Program Coordination, and System and Industrial Monitoring. This team is responsible for operational and capital planning, execution of these programs and the data governance strategy.
- ***Flow Control Facilities (FCF)*** – This includes both the Flow Control Mechanical Maintenance and Flow Control Electrical Maintenance. This team is responsible for the safe operation and maintenance for the collection lift stations, the FCF electrical and controls, and associated trunkline inspections and investigations.
- ***Maintenance*** – This includes the Responsive Maintenance and Repair, Inspections and Investigations, and Preventive Maintenance. This team is responsible for the execution of preventative and responsive maintenance, repair of the wastewater and stormwater gravity collection system, and inspections and investigations except for the trunk line.

There is a $3.0 million decrease noted from 2024D to 2024F, which the following adjustments combine to reflect:

- A reallocation of $1.6 million in Operations that resulted in a decrease in maintenance and a corresponding increase in Construction costs;
- $1.5 million lower than anticipated costs related to backwater value subsidy program, which is being supplemented by a new Stormwater Management Rebate program; and
- A transfer of staff and related costs of $2.5 from the Operations and Maintenance to Controls and Automation and Customer Service functions. There was corresponding increase in controls and Automation and Customer Service functions costs that are included as part of Integrated Operations Costs as part of the adopting the One Water approach. This reduction of staff and related costs due to the transfer to Integrated Operations was offset by staff charges to capital projects being $1.8 million lower than anticipated. This increase of $1.8 million in staff costs combined with an increase in contractor expenses off reset the $2.5 million in relocation of costs resulting in a minimal overall change in staff and related costs included in Operations and Maintenance.

Construction

The Trunk System Construction group is responsible for executing new and rehabilitative deep, trunk sewer construction work. The increase from 2024D to 2024F is largely due to the reallocation of $1.6 million in costs from Operations and Maintenance. The remaining change in costs is due to increases in various other construction related costs.

Capitalized Overhead

Capitalized overhead includes indirect costs for several support functions including, but not limited to, supervision and management oversight, project management and governance, accounting, supply chain, and health and safety resources.

The increase of $1.8 million in 2024F over 2024D reflects an updated forecast based on more recent experience with Collection. At the time the original forecast was done for 2024D, there was limited availability of historical information due to the transfer of Drainage Services from the City at the end of 2017. The difference between 2024F and 2025F is due to the implementation of an updated capital overhead methodology in 2025. This is discussed in further detail in Section 3.2.3.

3.2.3 Capitalized Overhead Allocations

In response to an information request MV-EWS-4, EWSI provided its capitalized overhead allocations model for review. This model identifies the labour and salary costs for each work area and allocated a portion of these costs to capital overhead based on the operating budget and capital activity in each work area. The updated capital overhead methodology had a significant impact on the Wastewater Collection allocations since a simpler version of this model was being used when the operations were transferred from the City to EWSI. For the 2025 forecast year and onwards, capitalized overhead is determined using the same method as Water and Wastewater Treatment currently use. This has resulted in a larger amount of these operating costs capitalized. For the 2026 to 2027 years, EWSI has applied the inflation factor.

A review of the mathematical accuracy of all the tables presented within the PBR Application and supporting schedules was performed. It was found that the cost drivers outlined in the cost allocation methodology were consistent with cost drivers used in the allocation calculation. The 2025 overhead allocations were recalculated using this revised method, and the results appeared reasonable and consistent with other cost drivers utilized by EWSI.

Based on the forecasts and supporting details provided by EWSI, there is nothing to suggest that these forecasted operating costs for Wastewater Collection are unreasonable.

3.3 Allocated Administration Costs

Beyond the Core Operations costs, there is additional administration costs allocated to both Wastewater Treatment and Wastewater Collection. These include Billing and Customer Collection Services Charges, Integrated Operations, EWS Shared Services, and Corporate Shared Services. Each of these is described in the following sections.

3.3.1 Billing and Customer Collection Services

Customer billing and metering consists of cost of services provided by Energy Alberta Inc. (EEA) and regulated by Alberta Utilities Commission (AUC), and an allocation of the water meter operations and water meter reading services provided by EWSI.

Billing & Collection Services	Summary of Customer Billing and Metering ($millions)								
	2022 Actual	2023 Forecast	2024 Decision	2024 Forecast	2025 Forecast	2026 Forecast	2027 Forecast	2027F vs. 2022A Change	2027F vs. 2024D Change
Wastewater Treatment	6.0	5.9	5.9	5.1	4.9	5.0	5.1	-15.9%	-14.3%
Wastewater Collection									
Sanitary Utility	5.5	4.9	4.9	5.3	4.8	4.9	5.0	-9.8%	1.0%
Stormwater Utility	3.2	2.5	2.5	2.7	2.7	2.8	2.9	-10.0%	12.5%
Wastewater Collection	8.7	7.4	7.5	8.0	7.5	7.7	7.8	-9.9%	4.9%
Total	**14.7**	**13.3**	**13.4**	**13.1**	**12.4**	**12.7**	**12.9**	**-12.3%**	**-3.6%**
Year over year $ change		(1.4)	0.1	(0.3)	(0.7)	0.3	0.2		
Year over year % change		-9.7%	0.7%	-2.2%	-5.2%	2.2%	1.8%		

Table 11: Billing and Customer Collection Services Allocations

Overall costs from 2024D to 2024F are consistent. The decrease in costs allocated to Wastewater Treatment are primarily due to lower meter reading costs, i.e. salary, related to the implementation of the Automated Metering Infrastructure (AMI) project (which utilities are investing in for the remote collection of water use data in real time) . It is noted that this decrease in costs was partially offset by higher development costs of AMI than anticipated and higher customer billing costs due to an increase in customer counts. The increase in costs allocated to

Wastewater Collection (Sanitary Utility and Stormwater Utility) directly relate to increases in costs due to higher customer counts. The decrease from 2024F to 2025F is related to lower metering costs due to the full implementation of AMI. The 2026 to 2027 forecasts have been increased by the inflation factor.

Based on the forecasts and supporting details provided by EWSI, there is nothing to suggest that these forecasted operating costs for Billing and Customer Collection Services are unreasonable.

3.3.2 Integrated Operations

In 2023, EPCOR integrated Water, Wastewater Treatment and Wastewater Collection into one business unit through a comprehensive restructuring. The "One Water" approach is designed with the goal to streamline operations across the entire water cycle. This led to the centralization of functions into the new business unit. These centralized Operations were broken into three groups, Core operations, Integrated Operations and EWS Shared Services. Integrated Operations and Shared Services are allocated between the Water, Wastewater Treatment and Wastewater Collection. Our analysis focuses on Wastewater Treatment and Wastewater Collection as these are the focus of the Application.

Integrated Operations provides the following centralized functions: Regulatory and Business planning, One Water Planning (including: Integrated Resource Planning, Pipe Strategies, Plant Strategies and Land Strategies), Engineering, Quality Assurance and Environment, Project Management, Controls and Automation, Customer Service, Development and Infill, and Facilities. The Integrated Operations costs are assigned based on functional cost causation allocators identified (such as headcount). Where the costs were not able to be identified using a specific functional cost causation allocator, a composite cost causation allocator was utilized. See the table below for its allocations across Wastewater Treatment and Wastewater Collection (both the Sanitary and Stormwater Utilities):

Integrated Operations Allocations	Summary of Operating costs by Expense Cost Category ($millions)								
	2022 Actual	2023 Forecast	2024 Decision	2024 Forecast	2025 Forecast	2026 Forecast	2027 Forecast	2027F vs. 2022A Change	2027F vs. 2024D Change
Wastewater Treatment	8.2	9.3	10.1	11.6	11.8	12.0	12.2	48.9%	21.0%
Wastewater Collection									
Sanitary Utility	7.7	8.3	7.3	7.1	7.3	7.4	7.6	-2.3%	3.3%
Stormwater Utility	9.4	10.3	9.3	9.2	9.4	9.6	9.8	3.6%	5.0%
Wastewater Collection	17.2	18.5	16.6	16.3	16.7	17.0	17.3	1.0%	4.3%
Total	**25.4**	**27.8**	**26.7**	**27.9**	**28.4**	**29.0**	**29.6**	**16.5%**	**10.6%**
Year over year $ change		2.4	(1.1)	1.2	0.5	0.6	0.5		
Year over year % change		9.5%	-3.8%	4.4%	1.8%	2.1%	1.8%		

Table 12: Integrated Operations Allocations

It is noted that the allocations to Wastewater Treatment are projected to increase by 48.9% between 2027 versus 2022 actuals, or 21.0% between 2027 and 2024D. These increases are only 1.0% and 4.3%, respectively, for Wastewater Collection. The overall increase in integrated costs between 2024D and 2024F is due to the reallocation of resources and the transfer of associated expenses based on the previous organizational structure to the new One-Water structure. There was also a creation of a new Situational Awareness function that led to an increase in the controls and automation expense within the Integrated Operations. The 2025 to 2027 forecasts have been increased by the inflation factor.

An additional review of the tables presented in the PBR Application and supporting schedules was performed. A mathematical error was found in one of the tables in Appendix J. In response, EWSI provided an updated schedule. This error did not affect the revenue rate requirement calculations and was only a clerical error. The cost drivers outlined in the cost allocation methodology were consistent with cost drivers used in the allocation calculation. The allocations for 2024F were recalculated based on cost drivers provided and no deviations were found.

In addition, a review of the model for how Integrated Operations was allocated across Water, Wastewater Treatment, and Wastewater Collection was performed. For 2024F, Water is allocated 43%, Wastewater Treatment 24%, and Wastewater Collection 33%. Compared to 2024D, this allocates 1% more to Water, 2% more to Wastewater Treatment, and 3% less to Wastewater Collection.

Based on the forecasts and supporting details provided by EWSI, there is nothing to suggest that these forecasted operating costs for Integrated Operations are unreasonable.

3.3.3 EWS Shared Services

EWS Shared Services provides the following centralized functions: Information Systems, Executive Administration, Controller, Communications and Public Engagement, Health Safety & Environment, Technical Training, Human Resources, Supply Chain Management, and Incentive Compensation. Many of these are indirect administrative activities which enable the direct service delivery resourcing of the utility services. The shared services costs are assigned based on appropriate functional cost causation allocators identified such as headcount, revenue, and asset costs. Where costs were not able to be identified using a specific functional cost causation allocator, a composite cost causation allocator was utilized. A review of the EWS Shared Services model was performed and the allocation drivers selected appeared reasonable. While most of the cost allocations are consistent with the methods used in 2024D, some of the cost drivers were updated for 2024F to ensure that costs were allocated on a reasonable, cost-effective, and predictable basis and that they are reflective of the benefits provided by the functions. See the table below for its allocations across Wastewater Treatment and Wastewater Collection:

EWS Shared Services Allocations	Summary of Shared Services ($millions)								
	2022 Actual	2023 Forecast	2024 Decision	2024 Forecast	2025 Forecast	2026 Forecast	2027 Forecast	2027F vs. 2022A Change	2027F vs. 2024D Change
Wastewater Treatment	6.8	5.1	5.3	9.2	9.3	9.5	9.7	43.4%	83.5%
Wastewater Collection									
Sanitary Utility	12.2	12.8	11.7	11.1	11.3	11.5	11.8	-3.3%	0.9%
Stormwater Utility	12.2	12.8	11.7	11.1	11.3	11.5	11.8	-3.3%	0.9%
Wastewater Collection	24.4	25.6	23.4	22.2	22.6	23.0	23.6	-3.3%	0.9%
Total	**31.2**	**30.7**	**28.7**	**31.4**	**31.9**	**32.5**	**33.3**	**6.9%**	**16.1%**
Year over year $ change		(0.5)	(2.0)	2.7	0.6	0.6	0.8		
Year over year % change		-1.5%	-6.5%	9.4%	1.8%	1.8%	2.4%		

Table 13: EWS Shared Services Allocations

The overall increase in shared services between 2024D and 2024F is due to the following factors:

- Increase in information services costs due to higher application and infrastructure costs;
- Increase in insurance due to the rise in EWSI' general liability premiums;

- Increase in rent due to a 2023 organizational restructuring, which led to the elimination of rent recoveries between Water and Drainage entities (formerly received by Drainage Services from Water, which are no longer in effect); and
- Increase in supply chain management costs due to higher labour and material costs than anticipated.

There was an increase in costs allocated to Wastewater Treatment and a decrease in costs allocated to Wastewater Collection due to the new allocation methodology. This resulted in allocations to Water reduced by 1% (to 38%), allocations to Wastewater Treatment increased by 7% (to 18%), and allocations to Wastewater Collection reduced by 6% (to 44%).

The mathematical accuracy of the tables presented in the PBR Application and supporting schedules was reviewed. The cost drivers outlined in the cost allocation methodology were consistent with cost drivers used in the allocation calculation. One deviation found was that the cost driver per the Appendix for Incentive Compensation was different than the cost driver in the calculation of the cost allocation. This was recalculated for 2024F based on cost drivers provided. Overall, the calculation in the cost allocation appears reasonable and consistent with other cost drivers used by EWSI. Note that a detailed review of the shared services functions, their overall costs, and appropriateness of each cost causation driver relative to other potential choices was not in scope.

Based on the forecasts and supporting details provided by EWSI, there is nothing to suggest that these forecasted operating costs for EWS Shared Services are unreasonable.

3.3.4 Corporate Shared Services

Corporate Shared Services costs are allocated for corporate services obtained from EUI. These include Board Costs, Executive and Executive Assistants, Corporate Finance Services, Treasury, Audit & Risk Management, Human Resources, Information Services, Supply Chain Management, Communications and Public Engagement, Legal Services, Health, Safety, Security and Environment, Incentive Compensation, and Asset Usage Fees. See the table below for allocations across Wastewater Treatment and Wastewater Collection :

Corporate Shared Services Allocations	Summary of Corporate Shared Services ($millions)								
	2022 Actual	2023 Forecast	2024 Decision	2024 Forecast	2025 Forecast	2026 Forecast	2027 Forecast	2027F vs. 2022A Change	2027F vs. 2024D Change
Wastewater Treatment	5.2	5.8	5.4	6.1	6.2	6.4	6.5	25.2%	19.1%
Wastewater Collection									
Sanitary Utility	9.5	9.5	8.5	9.9	10.1	10.3	10.5	10.8%	24.2%
Stormwater Utility	9.5	9.5	8.5	9.9	10.1	10.3	10.5	10.8%	24.2%
Wastewater Collection	19.0	19.1	17.0	19.9	20.2	20.7	21.1	10.8%	24.2%
Total	**24.2**	**24.9**	**22.4**	**26.0**	**26.5**	**27.1**	**27.5**	**13.9%**	**23.0%**
Year over year $ change		0.7	(2.4)	3.6	0.5	0.6	0.5		
Year over year % change		2.7%	-9.8%	16.0%	1.9%	2.2%	1.8%		

Table 14: Corporate Shared Services Allocations

These costs are estimated using a “bottom up” approach to forecast expenditures based on historical work activity and cost levels. EUI allocates Corporate Shared Services costs to EPCOR business units using the following five step process:

1. Categorize Corporate Shared Services costs as directly assignable or allocable;

2. Assign directly assignable costs to the appropriate business unit;
3. Review/develop/modify allocation method for allocable costs;
4. Apply allocation method to allocate costs; and
5. Conduct a final review for reasonableness.

From review, the allocation process and allocations methodology used is consistent with methodology used in the last PBR cycle and previous years.

Based on the forecasts and supporting details provided by EWSI, there is nothing to suggest that these forecasted operating costs for Corporate Shared Services are unreasonable.

3.3.5 Ratio of Indirect Shared Services versus Direct Operating Costs

A review of the ratio of total shared services administration costs relative to direct operating costs was performed to identify how efficient the operating cost structure of the utility services is. Typically, the aim is to minimize the degree of administrative overhead added to the direct cost of the service. It is noted that many functions within EWS Shared Services appear to be indirect administration activities which support the direct service delivery resources. This included the sum of EWS Shared Services and Corporate Shared Services relative to all other operating costs (considered as direct costs incurred to deliver the utility services). Franchise fees and property taxes are not included, and capitalized overhead has been added back in this analysis.

For Wastewater Treatment, the projected 2027F overhead ratio is 19.4% (which hasn't changed significantly since 2022 actuals). Please refer to the following table for details:

Operating Cost (Section #)	Summary of Operating costs by Expense Cost Category ($millions)								
	2022 Actual	2023 Forecast	2024 Decision	2024 Forecast	2025 Forecast	2026 Forecast	2027 Forecast	2027F vs. 2022A Change	2027F vs. 2024D Change
Direct Operating Costs									
Core Operating Costs (less capitalized OH)	36.3	42.2	43.1	44.9	48.0	49.0	49.9	**37.4%**	**15.6%**
Billing and Collection Services Charges	6.0	5.9	5.9	5.1	4.9	5.0	5.1	-15.9%	-14.3%
Integrated Operations Allocation	8.2	9.3	10.1	11.6	11.8	12.0	12.2	48.9%	21.0%
Sub-total Direct Operating	**50.5**	**57.3**	**59.2**	**61.5**	**64.7**	**66.0**	**67.2**	**32.9%**	**13.5%**
% of Direct vs. Total Operating Costs	***81%***	***84%***	***85%***	***80%***	***81%***	***81%***	***81%***	***-0.4%***	***-4.8%***
Allocated Shared Services Costs									
EWS Shared Services Allocation	6.8	5.1	5.3	9.2	9.3	9.5	9.7	43.4%	83.5%
Corporate Shared Sevices Allocation	5.2	5.8	5.4	6.1	6.2	6.4	6.5	25.2%	19.1%
Sub-total Shared Services	**11.9**	**10.8**	**10.7**	**15.3**	**15.6**	**15.9**	**16.2**	**35.5%**	**50.8%**
% of Shared Services vs. Total Operating Costs	***19%***	***16%***	***15%***	***20%***	***19%***	***19%***	***19%***	***1.6%***	***26.4%***
Total Operating Costs	**62.5**	**68.2**	**69.9**	**76.8**	**80.3**	**81.9**	**83.4**	**33.4%**	**19.3%**

Table 15: Wastewater Treatment Direct vs. Shared Services Operating Costs

For Wastewater Collection, this ratio is 37.2% (which hasn't changed significantly since 2022 actuals). Please refer to the following table for details:

Operating Cost (Section #)	Summary of Operating costs by Expense Cost Category ($millions)								
	2022 Actual	2023 Forecast	2024 Decision	2024 Forecast	2025 Forecast	2026 Forecast	2027 Forecast	2027F vs. 2022A	2027F vs. 2024D
Direct Operating Costs									
Core Operating Costs (less capitalized OH)	50.1	48.2	47.6	46.7	48.0	49.1	49.9	**-0.3%**	**4.9%**
Billing and Collection Services Charges	8.7	7.4	7.5	8.0	7.5	7.7	7.8	-9.9%	4.9%
Integrated Operations	17.2	18.5	16.6	16.3	16.7	17.0	17.3	1.0%	4.3%
Sub-total Direct Operating	**75.9**	**74.1**	**71.7**	**71.1**	**72.2**	**73.8**	**75.1**	**-1.1%**	**4.7%**
% of Direct vs. Total Operating Costs	***64%***	***62%***	***64%***	***63%***	***63%***	***63%***	***63%***	***-1.4%***	***-2.0%***
Allocated Shared Services Costs									
EWS Shared Services Allocation (3.3.3)	24.4	25.7	23.3	22.2	22.6	23.1	23.5	-3.5%	0.7%
Corporate Shared Services Allocation (3.3.4)	19.0	19.1	17.0	19.9	20.2	20.7	21.1	10.8%	24.2%
Sub-total Shared Services	**43.4**	**44.8**	**40.3**	**42.0**	**42.8**	**43.8**	**44.6**	**2.8%**	**10.6%**
% of Shared Services vs. Total Operating Costs	***36%***	***38%***	***36%***	***37%***	***37%***	***37%***	***37%***	***2.5%***	***3.5%***
Total	**119.3**	**118.9**	**112.0**	**113.1**	**115.0**	**117.5**	**119.7**	**0.3%**	**6.8%**

Table 16: Wastewater Collection Direct vs. Shared Services Operating Costs

While the forecasted ratio of shared services versus total operating costs for Wastewater Treatment appears reasonable, the forecast for Wastewater Collection is almost double this value. Even though the methods EWSI uses to allocate shared services to each utility leverages specific cost drivers of their choosing, the result indicates a significant percentage of administrative overhead costs within Wastewater Collection. It is recommended that further review of this operating cost structure be reviewed to ensure that the service delivery costs are reasonably efficient.

3.3.6 Franchise Fees and Property Taxes

Franchise fees are paid to the City of Edmonton for the exclusive rights to provide Wastewater Services within City boundaries, based on 8% of Sanitary revenue, less the municipal portion of property taxes. Property taxes include property and business taxes assessed by and payable to the City of Edmonton, for properties owned by Wastewater Treatment and allocated portion of taxes from shared properties. The increase in franchise fees from 2024D to 2024F directly relates to increases in forecasted revenues, while increases in property tax are due to rates increasing higher than anticipated. For 2024F to 2027F, franchise fees are based on expected revenues, while inflation is driving increases to property taxes.

Based on the forecasts and supporting details provided by EWSI, there is nothing to suggest that these forecasted operating costs for Franchise Fees and Property Taxes are unreasonable.

3.4 Capital Costs

A review of the capital costs was performed given that the utility rates include depreciation expense for the net-book value of the financed portion of the in-service assets used to deliver the utility services. Specifically, a review of EWSI's depreciation study and proposed capital program was included.

3.4.1 Depreciation Study

EWSI engaged a consultant from Alliance Consulting Group to perform a depreciation study. This consultant considered input from EWSI project representatives and used judgement from his extensive experience in the industry. The results of the study included:

- Development of additional, more detailed asset classes to establish a more accurate asset lifetime expectation; and

- On average, a reduction of service lifetimes across both Wastewater Treatment and Wastewater Collection, thereby increasing depreciation expense.
    - *As noted by EWSI through an information request MV-EWS-3, the potential annual impact to rate revenue requirements should the entire rate base be charged the proposed depreciation schedule is approximately $2.9 million for Wastewater Treatment and $4.9 million for Wastewater Collection annually over the 2025-2027 PBR term.*

EWSI has proposed to use the new depreciation schedules per the result of the study for new assets acquired in 2025 and beyond. The existing depreciation schedule (as used for the 2021-2024 PBR) will be maintained for all existing assets as of the end of 2024. As such, the implications of accepting this change set a large precedent for future PBR terms.

The depreciation study did not provide any benchmarking data from comparable wastewater or stormwater utilities across Canada and / or the United States. Through an information request MV-EWS-1), EWSI has indicated that publicly available data is not readily available and the judgement used in the study represents approximately 35 years of comparable utility experience.

However, the provision of benchmarking data across comparable utilities is a reasonable information requirement to support a regulator accepting the changes EWSI has proposed. Further, this information can be obtained by EWSI through a straight-forward benchmarking study with target, comparable utilities. It is recommended that such a study be completed prior to approval of 2025-2027 rates based on the proposed depreciation study.

3.4.2 Capitalization of SaaS Software Investments

EWSI has proposed to capitalize its planned information technology investments in SaaS ($13.3 million across 2025-2027 per EWSI's response to an information request MV-EWS-29)) instead of expensing them as operating costs. A capital business case was not prepared as EWSI deemed this total expenditure to be a collection of fifteen individual SaaS investments.

EWSI's decision to capitalize these investments is based on regulatory accounting practices instead of International Financial Reporting Standards (IFRS), which are standards created and maintained by the International Accounting Standards Board. These would otherwise direct these investments to be recognized as operating expenses. EWSI reinforces this proposal based on a decision by the AUC in 2023 to approve EPCOR's proposed capitalization treatment of 2023-2025 cloud-based SaaS costs of $0.5 million (as part of EPCOR Distribution and Transmission Inc.'s rate application). This decision pertained only to the 2023-2025 test period. AUC indicated that this decision was in the best interests of the public (by avoiding a potential one-time sharp increase to operations and maintenance costs) and the projected investments were immaterial. It reserved the right to review any future applications past 2025.

Given the AUC decision and rationale provided by EWSI for this accounting method, we find this to be reasonable for the 2025-2027 PBR term. However, it is reasonable for EWSI to document a full business case for this program, given that they should be viewed as a collection of investments rather than individual, independent projects.

3.4.3 Proposed Capital Programs

A review of the proposed capital programs was performed. Additionally, a review of previous PBR term's capital program versus capital delivery was completed.

It is noted that EWSI has indicated it utilizes a risk-based investment approach to develop its proposed capital program levels. It noted that it considers adjusting higher or lower capital programs of expenditures relative to the net differences in risk assessed to the infrastructure, targeted service and performance levels, and rates impact on customers. While these alternative capital programming scenarios and their impacts were not provided as part of the PBR Application, it is noted that following a portfolio and program management process such as described is a leading practice.

It is noted that the capital business cases do not include details regarding:

- Future impact to incremental operating costs required to maintain the new infrastructure, (or reduction in operating costs due to the expected efficiencies gained by the capital investment);
- Alignment to the targeted suite of performance metrics and why the investments are required for these priority performance outcomes.

These observations are discussed further in Section 5.

Wastewater Treatment Capital Program

The total planned 2025-2027 capital expenditures is $199.8 million, which is 16% higher than the previously approved PBR plan for 2022-2024. In addition, a review of actual / forecast capital delivered versus planned across previous PBR terms is provided below:

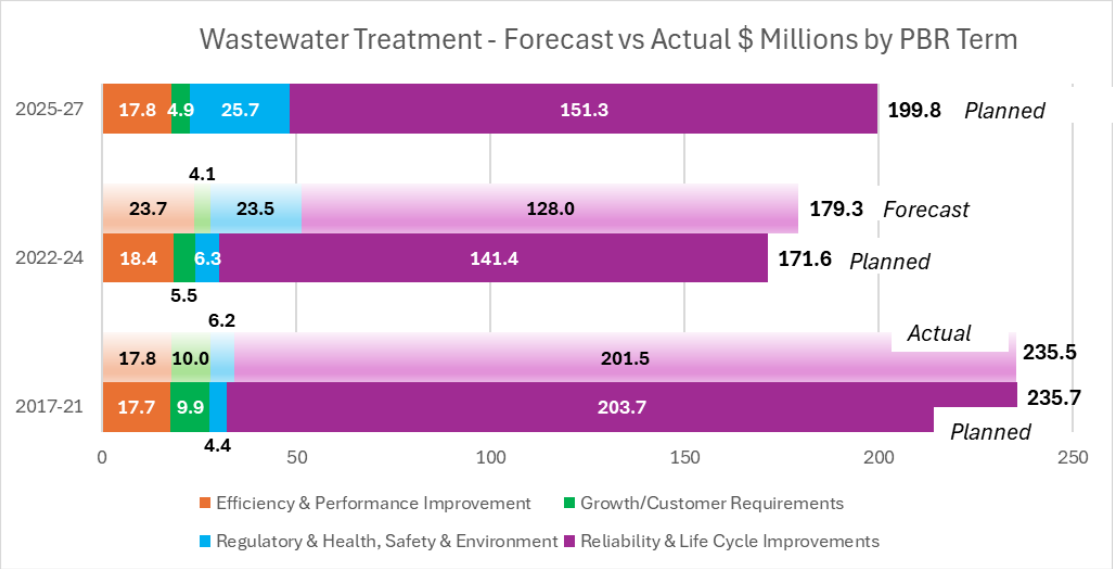

Figure 1: Wastewater Treatment Capital Delivered vs. Planned

Per the 2017-2021 PBR term, it is shown that the delivered capital was approximately 100% of its plan. As well, it is forecasted that the 2022-2024 forecasted capital to be delivered by the end of 2024 is 4% higher than planned (note, however, that only 2022 actuals are available to test this observation). It is also acknowledged that annual compliance updates are presented and reviewed with the Utility Committee regarding revisions to the capital plan and its delivery.

From this, the recent capital delivery efficiency of EWSI seems reasonable. The additional capital expenditures proposed for 2025-2027 have been identified and explained by EWSI.

Wastewater Collection Capital Program

The total planned 2025-2027 capital expenditures is $687.9 million, which is 12% less than the previously approved PBR plan for 2022-2024. In addition, a review of actual / forecasted capital delivered versus planned across previous PBR terms is provided below:

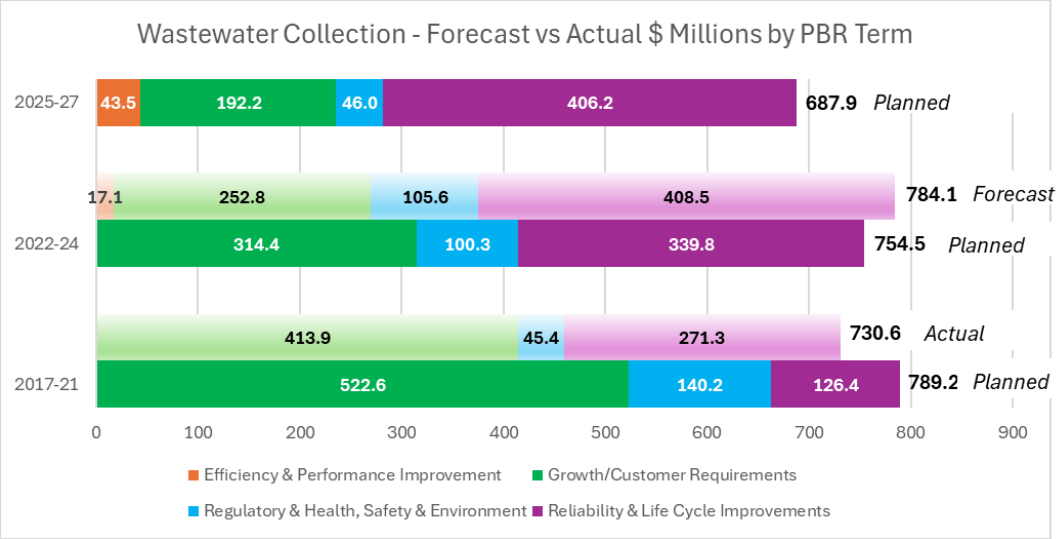

Figure 2: Wastewater Collection (Wastewater Collection) Capital Delivered vs. Planned

Per the 2017-2021 PBR term, it is shown that the delivered capital was approximately 93% of its plan. Also, it is forecasted that the 2022-2024 forecasted capital to be delivered by the end of 2024 is 4% higher than planned (note, however, that only 2022 actuals are available to test this observation). It is also acknowledged that annual compliance updates are presented and reviewed with the Utility Committee regarding revisions to the capital plan and its delivery.

From this, the recent capital delivery efficiency of EWSI seems reasonable. Planning for capital expenditures for Wastewater Collection continue to target capital efficiencies per its transfer from the City to EWSI in 2017. It is acknowledged that capital delivery is regularly reviewed as part of annual compliance reporting requirements to the Utility Committee.

3.5 Cost of Service Methods

A review of the costs of service both for Wastewater Treatment and Wastewater Collection was performed. A cost of service distributes the total rate revenue requirement projections across customer classes based on fair and equitable cost allocations. Consultant reports (HDR Engineering) were provided by EWSI for separate studies completed on a deemed base year. EWSI uses these cost allocation methods to project forward rate revenue requirements for each customer class identified and for the projected servicing demands estimated per class.

Both studies referred to methods noted within the Water Environment Federation (WEF Manual # 27) guidance, which is commonly used as an industry standard directing wastewater cost of service practices. From review of the methods described, it appears that methods, guidance, and considerations as suggested possible by the WEF are leveraged.

It is acknowledged that customer class definition analysis is challenging in wastewater systems given that many of the treatment costs can be assigned to remove contaminants from the discharged wastewater. Only a few customers feature industrial strength monitoring upon which charges for treatment for overstrength discharges can be based. Most customers within the

residential, multi-family, and commercial classes do not receive such industrial strength monitoring (and nor they should).

Having noted this challenge, it was found that the cost of service studies either did not perform or provide specific information regarding the following typical considerations for wastewater treatment and wastewater collection (not to be confused with stormwater) systems:

i. The calculation of wastewater return factors for each of the residential, multi-family, and commercial customer classes was not performed, despite this being referred to as a leading practice within Appendix K – Sanitary and Storm Drainage Cost of Service Study. This calculates the percentage of billed water which returns to the sanitary system per customer class. It is also typically distinctly different than the ratios of billed consumption across these three customer classes, directly impacting the distribution of volume-related costs to these classes based on their relative volume;

ii. The Wastewater Treatment service does not appear to include or distribute costs of service to its Hauled Wastewater customers (i.e., those who truck and dump wastewater loads at EWSI's wastewater receiving stations). Without this unique customer class included in the PBR application an evaluation of the hauled wastewater non-regulated rate revenues versus costs was not possible, nor the resulting impact to any cost allocation modifications appropriate for the City's collection (retail) customers. In addition, it would be expected that some of the Wastewater Treatment costs incurred to support treatment of pollutant strengths and internal plant wastewater volumes should be allocated to this class. This analysis was not provided;

iii. The Wastewater Collection cost of service did not define the costs of service required for the University of Alberta (which operates its own collection mains). It uses a historical discount factor received from the City when Drainage was transferred;

iv. The Wastewater Treatment and Collection Service cost of service did not analyze the differences in transmission and treatment costs involved with the ARROW wastewater "swaps". It was indicated that the strength of wastewater is not sampled for either incoming wastewater received by EWSI nor outflowing wastewater transmitted to Arrow;

v. The impacts of inflow and infiltration (I/I) were not considered in detail, other than high-level allocations to customer classes based on their billed water consumption. More detailed analysis typically considers how I/I should be allocated between inside-city retail wastewater collection customers versus wholesale customers (such as UofA and ARROW potentially), how it should be allocated to inside-city customers based on the number of connections versus discharged wastewater volumes, and how its strengths of the contaminants within the I/I treated by the plant are allocated to customer classes;

vi. There was only high-level analysis of operating costs regarding how they should be allocated to cost drivers, as it was assumed that the distribution of net book value of assets across cost drivers should also direct the allocation of operating costs. Typically, a cost of service study provides a detailed analysis on manpower allocations, power, chemicals, and external contractor expenditures to allocate costs to cost drivers based on their own merits and cost drivers; and

vii. One of the primary outputs of a cost of service report is the supporting rationale for how costs are functionalized, allocated into cost drivers, and distributed across customer classes. The rationale provided by EWSI to allocate functional costs to cost drivers was only high-level and did not detail the specific cost allocation rationale used per function or asset-type. Without this detail, it is not possible for a third-party to review methods or cost allocation calculations.

It is recommended that future cost of service reports address points i-vii above, as these are in line with industry leading practices and could result in adjustments to the percentages of rate revenue requirements distributed across the customer classes.

3.6 Consumption & Units of Service Forecasts

This section discusses the analysis presented to propose future customer servicing demands. It also addresses the current plans to introduce new Stormwater-only accounts during the 2025-2027 PBR term.

3.6.1 Customer Consumption Forecasts

EWSI has proposed the following average consumption per account trends per customer class across the 2025-2027 PBR term based on its historical consumption trends and subjective assumptions for future customer consumption characteristics:

- Residential: decrease of 1.3% annually
- Multi-Family: increase of 1.1% annually
- Commercial: decrease of 0.4% annually

EWSI has provided the basis for the multi-family and commercial consumption trend analysis per account in a clear and transparent manner (i.e., statistical trend analysis over a 10-year period). However, this specific, transparent analysis is not detailed for the residential class either in the PBR Application nor in its response to information requests. It is not clear how the projected 1.3% annual decline was arrived at for the 2025-2027 PBR term. Further, it appears to be the same annual reduction estimate EWSI has used previously and has not been appropriately updated for the current forecast period.

Based on previous average monthly consumption per account data published by EWSI, the following graph denotes the actual results from 2017-2023 and forecasted values for 2024-2027:

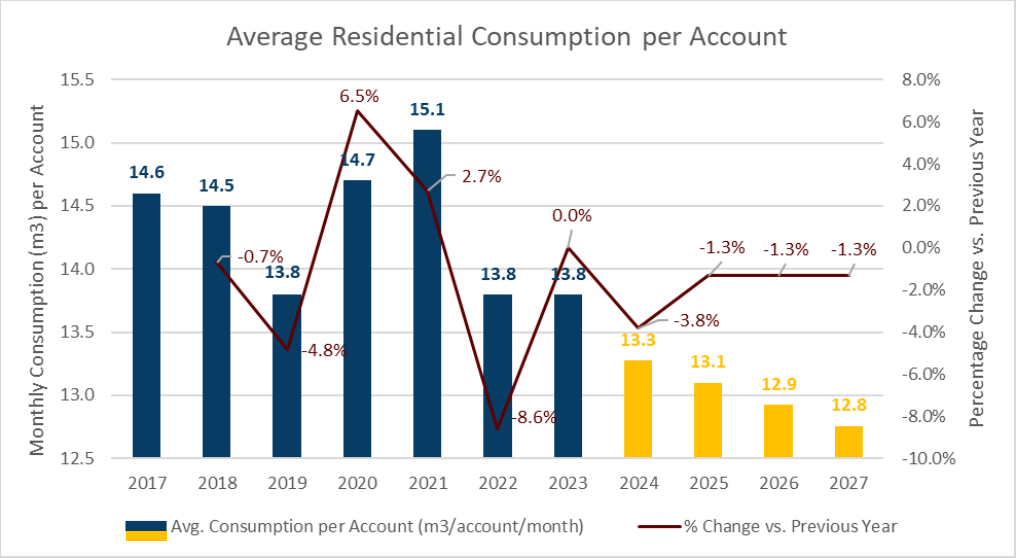

Figure 3: Average Residential Consumption per Account

Per Figure 3, it is shown that the average residential consumption per month has largely stabilized across the years of 2019, 2022, and 2023. 2020 and 2021 were higher, but most likely due to the effects of covid protocols. As such, these years are outliers. The forecasted years' annual average consumption per account values do not reflect this trending.

While it is acknowledged that newer communities feature greater water efficiency performance and that it may be reasonable to project a small annual decline for this class, the 1.3% annual decline assumption appears to place too much risk on customers for the resulting rate calculations, since the average consumption per account appears to be stabilizing since 2019 (ignoring higher results for 2020 and 2021 due to covid). It is also noted that information provided by EWSI in a response to an information request (MV-EWS-16) did not specifically address average residential consumption per account. This risk to customers is compounded with the removal of the deferral account over the 2025-2027 PBR term.

Further, EWSI states that the forecasted average residential account consumption for 2024 is 13.3 m^3/month. Forecasted consumption rates per average customers are based on this 2024 forecasted value. However, EWSI does not describe how this 2024 forecasted value is derived. Recent consumption data for the class indicates that the average monthly consumption per residential is approximately 13.8 m^3/month, which indicates that the average consumption per account may be leveling out. As such, the forecasted 13.3 m^3/month value for 2024 is inappropriate to use as a basis for projecting forward 2025-2027 values.

The primary focus of the PBR application process is on the assessment of projected rate revenue requirements across the PBR term. This is important, as these provide the numerator in calculating rates. However, it is observed that there are a lack of established norms and standards for estimating future customers' consumption habits given historical billing data. As these projections for customer consumption determine the denominator for calculating rates, the statistical methods for developing these projections in a standardized manner need to be clarified and strengthened to mitigate the risk incurred by customers by EWSI establishing consumption estimates which may be lower than what statistical analysis may otherwise suggest. It is noted that EWSI bears the risk of projected consumption levels being too high versus actuals. Given

this shared risk characteristic between the utility and its customers, it is critical to establish a statistically valid and transparent basis for developing these projections.

Finally, as noted in Section 3.5, each class's demands placed on the sanitary collection system and wastewater treatment plants have not been specifically calculated, separate from billed water consumption. It is a leading, and common, practice among EWSI's peers to distinguish between billed water consumption and estimated wastewater discharges into the sanitary system.

It is recommended that EWSI review and formalize the statistical methods used to calculate and estimate projected average consumption per customer account. Further, it is a leading practice to calculate estimated indoor versus outdoor usage characteristics when arriving at future projections for customer consumption behaviors.

3.6.2 New Stormwater-Only Accounts

It is understood that EWSI plans to introduce net-new stormwater-only customer accounts to its billing and revenue collections across the 2025-2027 PBR term. However, it is also understood that it is not yet known or estimated the number of net-new customers nor the revenue potential these net-new customers will contribute within the 2025-2027 PBR term. These net-new customers and revenues have not been considered by the cost of service or proposed rates. It is acknowledged that further discovery work is required by EWSI prior to it being able to estimate this.

As such, there is a greater potential that the Stormwater rates are slightly high for the 2025-2027 PBR term given that almost all stormwater utility costs are fixed and that the greater the number of customers EWSI can bill will have an effect to lower bills for all other customers. As such, the inclusions of these new customers will result to provide EWSI a surplus above what is projected across 2025-2027. Consequently, there is a higher degree of risk on customers for the resulting rates calculations than what is placed on EWSI. This is discussed further in Section 5.2.

3.7 Rates Design & Billing Comparisons

This section discusses the approaches taken by EWSI in its proposed rates design for Wastewater Treatment and Wastewater Collection. It also discusses the billing comparisons analysis provided by EWSI in the PBR Application.

3.7.1 Rates Design

EWSI's rates development approach is consistent with leading analytical approaches wherein the following primary steps are followed:

- Project forward total rate revenue requirements;
- Use a cost of service to distribute these rate revenue requirements to customer classes; and
- Design rates per customer class to achieve their projected rate revenue requirements.

It is noted that, for the 2025-2027 rates design, no changes to the existing rate structures for Wastewater Treatment and Wastewater Collection have been proposed. As such, the rate structures match the original design intents and objectives of the existing rate structures. Additionally, it is noted that the rate structures for Wastewater Treatment and Wastewater Collection have not been adjusted since EWSI assumed ownership of these services (2009 for Wastewater Treatment and 2017 for Wastewater Collection). This reflects the current degree to

which Drainage Services has been integrated, as a holistic rates design across Water, Wastewater, and Stormwater has not yet occurred.

It is understood that, to support the next PBR Application for the PBR term starting in 2028, EWSI plans to review and potentially refresh its rates designs across Water, Wastewater Treatment, and Wastewater Collection. This is expected to develop a holistic approach for rates design across its entire suite of water, wastewater, and stormwater services and can then align with its "One-Water" resource management approach currently under development. This is also expected to reflect a point in which EWSI has fully integrated Wastewater Collection into its operations and can fully manage it in coordination with Water and Wastewater Treatment to achieve holistic efficiency and effectiveness gains. It should also reflect a state wherein EWSI can develop mutually reinforcing rates mechanisms across the utilities relative to the respective servicing demands placed on the utilities both by regional and inside-City customers. These should also reflect a set of priority and holistic rate-making objectives. This rates development strategy for the 2028 PBR term is entirely reasonable and appropriate and reflects the planned journey for integrating the utilities.

Key considerations for EWSI as it approaches a new rate design exercise include:

- Develop and confirm specific, priority rates objectives per the industry-accepted work of James Bonbright[11] to ensure that the "to-be" rates design is aligned to priority organizational outcomes;
- Demonstrate how the proposed rates structure align to:
    - Priority rates objectives (see first point above);
    - Projected customer usage demands and monthly billed volume frequency analysis; and
    - Cost of service results per customer class, with particular focus on how the mix of fixed and variable rates fund specific types of consumption and non-consumption related costs.
- Present how rates can be established and communicated to customers in a clear, simple, and understandable way so they can take appropriate measures to mitigate their billing charges.

As noted in Section 3.5 Cost of Service, further analysis and understanding of regional versus inside-City costs are required to support the development of these holistic rates.

3.7.2 Billing Comparisons Analysis

It is acknowledged that EWSI has provided projected monthly billing projections for both 2025 and 2027 relative to select Canadian jurisdictions. It is acknowledged that, for several jurisdictions, 2025 and 2027 rates are projected based on that jurisdiction's current rates inflated annually by 2.5%. It is also acknowledged that comparing monthly bills across jurisdictions can be limited in its ability to compare cost efficiencies, as each jurisdiction is faced with its own set of unique circumstances, including number of customers, infrastructure density, service levels, age of infrastructure, rates objectives, weather, and others.

[11] James Bonbright, Albert Danielson, David Kamerschen, "Principles of Public Utility Rates," 2nd Edition, 1988

Given the above, the following are key observations from the billing analysis provided by EWSI:

i. Sturgeon County, Sherwood Park, Spruce Grove, and St. Albert should be eliminated as comparable to EWSI given none of these own and operate their own wastewater treatment plants and are much smaller jurisdictions than Edmonton. From a comparable perspective, it is not usual for a large city to directly compare its utility rates to significantly smaller, less dense, and more rural jurisdictions. It is acknowledged that these locations are in close proximity to Edmonton and thus provide a regional comparison. However, then, these should be presented as such in a separate analysis – not as a group of direct comparable utilities;

ii. Other larger jurisdictions within Canada should be considered for comparison as applicable (e.g. Peel / Mississauga, Halifax, Toronto, etc.) as these have more common servicing and organization cost characteristics as EWSI;

iii. In some other jurisdictions, there is a common fixed rate based on the size of the meter which is intended to fund portions of both the water and wastewater systems. It is not clear how EWSI addressed these considerations in its benchmarking data;

iv. **Wastewater**: only Winnipeg (which has received national attention over the past few years due to its large wastewater treatment plant upgrades program) is noted to have a higher projected residential monthly bill than Edmonton; and

v. **Stormwater**: Edmonton's residential monthly bill is projected to be larger than all others.

Additionally, the billing comparisons provided in the PBR Application featured monthly bill estimates for combined wastewater and stormwater rates. Typically, regulators assess wastewater and stormwater rates separately. It is important to split out these services and demonstrate bill comparisons separately, including noting how EWSI's monthly bills compare to the average of others included in the sample.

As well, while care must be exerted to avoid inappropriate conclusions simply based on this analysis, it is useful for utility management to adopt a willingness to analyze how to increase future efficiencies and value-for-money if its rates are demonstrably larger than its peers.

As such, the following recommendations are provided to direct future billing comparisons analysis:

i. Develop rates benchmarking reports separately for Water, Wastewater, and Stormwater (i.e., not mixed in the same graph);

ii. Review and update EWSI's peer comparable group for the purposes of comparing utility rates, focusing on similarly sized cities with their own water and wastewater treatment plants. Further, address unusual abnormalities across this peer group based on unique billing structures;

iii. EWSI's Stormwater residential monthly bills across 2025-2027 are projected to be larger than other jurisdictions. It is prudent for EWSI to further analyze this situation and report back regarding:

- Initiatives it will target to continue the achievement of operating and capital efficiencies to manage future rate increases; and

- How it will provide Edmonton's customers with increased value for money relative to other jurisdictions.

iv. In a response to an information request on this topic (MV-EWS-11), EWSI noted that *"many of the other large municipalities have rates and rate structures that make it difficult to conduct an "apples-to-apples" bill comparison"*. While important to note, this does not make it impossible to update their list of peers to improve their current billing comparisons with more reasonable comparators. EWSI also responded with separate monthly bill calculations for Stormwater versus Wastewater but included these results for different services in the same graph. Given these, improvement opportunities noted in i-iii above will improve the level of transparency, findings, and subsequent regulatory review capabilities which this exercise should provide for the Utility Committee in future PBR applications. This is a particularly important regulatory review component to help in ascertaining EWSI's service-delivery value for money and competitiveness.

3.7.3 Rates Projections and Adjustments

Given the current rate structure, 2025-2027 rates are calculated per customer class based on each class's rate revenue requirements plus any applicable adjustments.

Within the PBR framework, projected annual rates are first calculated based on inflation. The projected rate revenues from this step are compared to the projected rate revenue requirements. Based on the projected differences, rates are then adjusted based on a rebasing calculation. Per the 2025-2027 PBR Application, *"rebasing refers to the rate adjustment required to fully recover the forecast revenue requirement for the 2025-2027 PBR term"* beyond those calculated by inflation relative to the 2024 rates. This is a common rate calculations process, as it ensures that the rates per customer class are set to obtain the expected rate revenue requirements given the projected customer units of service.

It is also noted that the PBR framework permits non-routine adjustments, which are permissible when significant costs are incurred due to an unforeseen circumstance during the PBR term. Within this framework, EWSI has the ability to request approval from the Utility Committee for a non-routine adjustment to pass these costs along to customers. This helps protect EWSI from unanticipated risks or costs incurred beyond their reasonable control, such as impacts from a pandemic, City-driven system investments, changes to government environmental regulations, changes to franchise fees, and others. As such, it is noted that EWSI is also planning to refund the consumption deferral account balances across 2025-2027 as the accumulated consumption deferral account balances incurred from the 2022-2024 PBR term are in a positive balance. This deferral account mechanism was established due to the difficulty in projecting average consumption characteristics during the covid protocols. This mechanism helped mitigate the rate increases to customers across the 2025-2027 term. It should be noted that, if the deferral account balances had been negative, EWSI would have been able to increase rates during this term. This mechanism helped mitigate risk between both EWSI and its customers for an unusual risk outside of its reasonable control.

It is noted that EWSI did not request any additional non-routine adjustments during the 2025-2027 PBR term. The use of the deferral accounts will also be discontinued.

3.8 Summary of Recommendations: Cost of Service & Rates Design

Based on the findings and analysis described within this section, the following are the summary recommendations. These are referenced to either Table #1 (i.e., recommendations for the current 2025-2027 PBR Application) or Table #4 (i.e., recommendations for the next PBR application / PBR regulatory process).

Key Findings and Recommendations	Timeframe suggested for implementation
1) **Historical Financial Results:** Direct EWSI to ensure that the minimum historical actual financial results are provided for future PBR applications as per the existing Minimum Filing Requirements. *See Recommendation #23, Table #4.*	To inform the 2028 PBR Application
2) **Direct Operating Cost Projections:** A review of the projected direct operating costs increases from 2024D to 2027F was performed. Comparisons to the previous year's actual results were not possible given that EWSI only provided 2022 actual financial data. These explanations were found to be consistent with the noted increase in costs. *See Recommendation #1, Table #1.*	For the 2025-2027 application
3) **Capitalized Overhead Allocation Method:** EWSI provided its capitalized overhead allocation model for review. It was found to allocate a portion of roles related to capital delivery (managers and senior managers of direct labor, capital finance, health and safety, supply chain, etc.). Costs for administrative overhead roles with only an indirect relationship to capital delivery were not included in these allocations. This aligns with Public Sector Accounting Board (PSAB) standards. *See Recommendation #2, Table #1.*	For the 2025-2027 application
4) **EWS Shared Services Allocations:** Total EWS Shared Services allocations are forecast to increase 16.1% across this term ($28.6M in 2024D to $33.2M in 2027F). Increases beyond inflation have been explained by EWSI. EWSI also provided its updated allocations model for review. The methodology has been updated to reflect the centralization of shared services across Water, Wastewater Treatment, and Wastewater Collection. It was found that the method used to allocate shared services is reasonable, wherein different cost drivers are selected for each type of shared service. An assessment for the selection of individual cost drivers was not in scope, however. *See Recommendation #3, Table #1.*	For the 2025-2027 application
5) **Corporate Shared Services Cost Allocations:** Total Corporate Shared Services allocations are forecast to increase 23.2% across this term ($22.4M in 2024D to $27.6M in 2027F). Increases beyond inflation have been explained by EWSI. EWSI also provided its corporate cost allocations model for review. It uses the same allocation methods as used for the previous PBR term and appears reasonable. *See Recommendation #4, Table #1.*	For the 2025-2027 application

6) **Ratio of Direct vs. Indirect Administrative Operating Costs:** It is acknowledged EWSI has developed detailed models and methods for how EWS Shared Services and Corporate Shared Services costs are allocated to each utility service. However, it is observed that, particularly for Wastewater Collection, the portion of total operating costs comprised of these shared services costs are significant (37% of the total). For many of these EWS Shared Services, the administrative functions appear to be indirect and overhead in nature. Based on this, it is recommended the Utility Committee direct EWSI to: i. Evaluate and report on its level and types of indirect, overhead administration costs it allocates into customer rates, including a comparison to industry practices and benchmarks. ii. Based on (i) above, further direct EWSI to describe: a) How these shared services provide value-for-money for Edmonton's customers; and b) How EWSI can efficiently manage these costs to ensure reasonable, cost efficient rates. *See Recommendation #24, Table #4.*	To inform the 2028 PBR Application
7) **Depreciation Study:** EWSI engaged a consultant from Alliance Consulting Group to perform a depreciation study. The results of the study included (1); the development of additional, more detailed asset classes to establish a more accurate asset lifetime expectation and, (2); on average, a reduction of service lifetimes across both Wastewater Treatment and Wastewater Collection, thereby increasing depreciation expense. The depreciation study did not provide any benchmarking data from comparable wastewater or stormwater utilities across Canada and / or the United States. However, the provision of benchmarking data across comparable utilities is reasonable for the City's Utility Committee and regulator to review prior to it accepting the changes EWSI has proposed. Based on this, it is recommended the Utility Committee direct EWSI to: i. Conduct a benchmarking study comparing the results of the depreciation study to asset lifetimes used by comparable wastewater and stormwater utilities in Canada and the United States. This should be reviewed by the Utility Committee prior to its rates approval based on the proposed depreciation schedules. ii. Calculate rates for the 2025-2027 PBR term using the existing asset lifetimes and depreciation schedules. *See Recommendation #5, Table #1.* Further to this, it is recommended the Utility Committee direct EWSI to update the PBR minimum filing requirements to include benchmarking data versus comparable water, wastewater, and stormwater utilities across Canada and the United States when completing a depreciation study. *See Recommendation #25, Table #4.*	For the 2025-2027 application To inform the 2028 PBR Application

8) **Capitalization of Software Costs:** EWSI has proposed to capitalize its planned information technology investments in SaaS ($13.3 million across 2025-2027) instead of expensing them as operating costs. A capital business case was not prepared as EWSI deemed this total expenditure to be fifteen individual SaaS investments. Its decision to capitalize these investments is based on regulatory accounting practices instead of IFRS. EWSI reinforces this proposal based on a decision by the AUC in 2023 to approve EPCOR's proposed capitalization treatment of 2023-2025 cloud-based SaaS costs of $0.5M. Given the AUC decision and rationale provided by EWSI for this accounting method, this is found to be reasonable for the 2025-2027 PBR. Given this, it is recommended that the Utility Committee direct EWSI to document an appropriate business case for its targeted program of individual investments in SaaS across 2025-2027 given that the collective expenditure is well above established thresholds. *See Recommendation #6, Table #1.*	For the 2025-2027 application
9) **Capital Program Forecasts**: A review of the 2025-2027 capital program levels and previous delivery performance was reviewed. The recent capital delivery efficiency of EWSI seems reasonable. Planning for capital expenditures for Wastewater Collection appears to reflect target capital efficiencies per its transfer from the City to EWSI. It is acknowledged that capital delivery is regularly reviewed as part of annual compliance reporting requirements to the Utility Committee. *See Recommendation #7, Table #1.*	For the 2025-2027 application
10) **New Stormwater Customers**: It is understood that EWSI plans to introduce net-new stormwater-only customer accounts to its billing and revenue collections across the 2025-2027 PBR term. However, it is also understood that it is not yet known or estimated the number of net-new customers nor what revenue potential these net-new customers will contribute within the 2025-2027 PBR term. As such, there is a high potential that the Stormwater rates are likely slightly high for the 2025-2027 PBR term. *See Recommendation #8, Table #1 and Recommendation #15, Table #4*	For the 2025-2027 application
11) **Cost of Service and Rates Design**: EWSI engaged HDR to perform cost of service and rates design services for both Wastewater Treatment and Wastewater Collection. In reviewing these studies, they referenced examples of methods established by the Water Environment Federation ("WEF"). From review of the methods employed, it appears it does follow cost allocation methods which are presented within the WEF guidance as possible considerations. Based on the scope of the analysis completed and the results, there is nothing urgent requiring a change for the 2025-2027 PBR Application. *See Recommendation #9, Table #1* Regarding EWSI's details within the studies, it was observed there are several areas of analytical limitations which are commonly addressed in such studies. EWSI has an opportunity to advance on these during its next cost of service study and will need to if it seeks to develop a holistic rates design across Water, Wastewater, and Stormwater for 2028. Based on this, it is recommended the Utility Committee direct EWSI to	For the 2025-2027 application To inform the 2028 PBR Application

address the common cost of service leading practices items i-vii per Section 3.5 in the next PBR application and beyond. *See Recommendation #26, Table #4*	
12) **Consumption Forecast:** EWSI has proposed an annual decrease of 1.3% for average residential consumption per account. The rationale for the projected trending for the residential class is not specifically calculated or stated either in the PBR application nor in information provided in its response to an information request. While it is acknowledged that newer communities feature greater water efficiency performance and that it may be reasonable to project a small annual decline for this class, the 1.3% annual decline assumption appears to place too much risk on customers for the resulting rate calculations, particularly when considering the average consumption per account since 2019 and the planned removal of the deferral account. Given this, it is recommended the Utility Committee direct EWSI to: i. Detail the specific analysis that leads to their proposal to base 2025-2027 rates on the assumption that the average residential account consumption will decline by 1.3% annually. ii. If the 1.3% annual decline is not supported in a satisfactory manner from (i) above, further direct EWSI to calculate a revised and reasonable trend estimate for 2025-2027; iii. Calculate a revised and reasonable estimate for 2024 (upon which 2025-2027 forecasts are based). iv. Calculate updated rates for the 2025-2027 PBR term using updated projected average consumption per residential account based on the above steps. *See Recommendation #10, Table #1*	For the 2025-2027 application
As these projections for customer consumption determine the denominator for calculating rates, the statistical methods for developing these projections in a standardized manner should be clarified and strengthened to mitigate the risk incurred by customers from EWSI establishing consumption estimates which may be lower than what statistical analysis may otherwise suggest. Given this, it is recommended that the Utility Committee direct EWSI to: i. Review, revise, and formalize the statistical analysis used as the basis for projecting future average consumption trends per account as part of the PBR regulatory process; and ii. Analyze residential and multi-family indoor usage relative to outdoor irrigation usage trends when completing this analysis. *See Recommendation #27, Table #4*	To inform the 2028 PBR Application
13) **Billing Comparisons**: EWSI provided projected monthly billing comparisons for its customers relative to other Canadian jurisdictions. From this analysis, it is observed that only Winnipeg residents will feature higher monthly bills than Edmonton, and Edmonton residents will feature the highest stormwater monthly bills. *See Recommendation #11, Table #1*	For the 2025-2027 application

Typically, regulators assess wastewater and stormwater rates separately given they are unique, separate services. It is important to split out these services and demonstrate bill comparisons separately, including noting how EWSI's monthly bills compare to the average of others included in the sample. Further, it is useful for regulators to assess bills across the most comparable utilities. It is not useful to compare EWSI's bills against significantly smaller, less dense, and rural municipal utilities. In addition, while care must be exerted to avoid inappropriate conclusions simply based on these comparisons, it is useful for utility management to adopt a willingness to analyze how to increase future efficiencies, service levels, and value-for-money if its rates are demonstrably larger than its peers. Given this, it is recommended for the Utility Committee to direct EWSI to: i. Develop rates benchmarking reports separately for Water, Wastewater, and Stormwater; ii. Review and update its peer comparable group for the purposes of comparing utility rates; and iii. EWSI's Stormwater residential monthly bills across 2025-2027 are projected to be larger than other jurisdictions included in the billing comparisons. Based on this, further direct EWSI to further analyze this situation and report back regarding: • Initiatives it will target to continue the achievement of efficiencies to manage future rate increases; and • How it will provide Edmonton's customers with increased value for money relative to other jurisdictions. *See Recommendation #28, Table #4*	To inform the 2028 PBR Application

Table 17 Summary of Findings and Recommendations for Cost of Service & Rates Design

4.0 Cost of Capital

To complete the review of EWSI's cost of capital Mooreview Management Consulting Inc. engaged Grant Thornton LLP to review this section of the PBR Application. Grant Thornton was selected for this purpose as they had performed cost of capital reviews on EWSI's previous PBR Applications and this work was reference in the current PBR Application by EWSI. The following provides a summary of their review. A complete copy of their Grant Thornton's report has been included in **Appendix A**.

4.1 Overview of Capital Structure and Cost of Capital Proposed by EWSI

In the 2025-2027 PBR, EWSI has proposed the following capital structure and cost of capital information:

	2021-2024 PBR	2024-2027 PBR	Change
Capital Structure:			
Debt	60.00%	60.00%	0.00%
Equity	40.00%	40.00%	0.00%
Cost of Capital:			
Cost of Debt	3.50%	4.65%	+1.15%
Cost of Equity	9.89%	10.80%	+0.91%
Weighted Average Cost of Capital	6.08%	7.11%	+1.03%

Table 18: Proposed Capital Structure and Cost of Capital

EWSI's proposed capital structure, cost of debt and return of equity is based upon a report prepared by ScottMadden, Inc. ("ScottMadden"). The above indicated cost of common equity has been proposed for Wastewater Treatment, while the cost of equity for Wastewater Collection has been proposed to ramp up to the 10.80% over a five-year period, increasing from 5.50% in 2022 to the 10.80% by 2026. The approved cost of common equity for 2024 is 8.10%. The proposed rate of return for the remaining ramp up period is as follows:

Period	Cost of equity
2025	9.00%
2026	9.90%
2027	10.80%

Table 19: Wastewater Collection Cost of Equity Ramp Up Schedule

4.2 Capital Structure

4.2.1 Analysis

A Company's capital structure deals with how it finances its overall operations and growth through different sources of funds, including the mix of debt and equity investment. In the 2025 – 2027 PBR, EWSI has estimated their cost of capital (weighted average cost of capital) based on 60.00% debt and 40.00% equity.

A comparison was performed of EWSI's requested capital structure to the cost of capital decisions of other Canadian regulators since the Company's 2021 PBR. The cost of capital

information presented by EWSI's expert ScottMadden regarding their identified U.S. Water Utility Proxy Group was also reviewed. The following companies were selected as a sample from ScottMadden's report: American Water States Company; American Water Works 10 Company, Inc.; California Water Service Group; and SJW Group. During the period of 2021 to 2024, it was observed that the allowed common equity ratios for the same utilities considered have been relatively stable over the 2021-2024 period *(see **Appendix A**, Figure 4 – Allowed capital structure - common equity)*.

The sample of ScottMadden's U.S. Water Utility Proxy Group all include authorized continuation of the Water Cost of Capital Mechanism ("WCCM"), whereby the return on equity may be adjusted between cost of capital proceedings if there is a positive or negative change of more than 100 basis points in the average of the Moody's As utility bond rate as measured over the period of October 1 through September 30. As such, if there is a change, either positive or negative, of more than 100 basis points, the return on equity is adjusted by one half of the difference. The WCCM allows the return on equity ("ROE") to change, based on the existence of certain conditions, as noted above, but the equity thickness remains constant.

The equity thickness approved for the U.S. Water Utility Proxy Group per SEC 24 filings, form 10-K does not match to what was noted in ScottMadden's report on Schedule 5, page 2 of 2. ScottMadden calculated the actual debt-to-equity structure by analyzing the 2022 financial statements for each selected company and taking the common equity and dividing it by the total permanent capital. ScottMadden's resultant equity spreads for the U.S. Water Utility Proxy Group therefore represent the actual equity spread, and not the allowed equity spread. The actual equity spreads per the ScottMadden report range from 38.65% to 59.29%, while the allowed equity spreads noted in **Appendix A**, Figure 4 range from 53.40% to 57.04%. The equity spreads for the U.S water utility groups are higher, as it is the spread the utilities are allowed, not necessarily what the utilities achieve. The 10-K form from the SEC filings in the table above, noting that this is the allowed equity spread, can be used to calculate an updated ROE.

4.2.2 Findings and Recommendations: Capital Structure

A review of EWSI's proposed capital structure of 60.00% debt and 40.00% common equity in its 2025–2027 PBR Application was performed. No changes were found from the prior rate setting period. This was considered for appropriateness within the current economic environment and in the context of the approved capital structure for utilities in other jurisdictions and noted the following:

- EWSI's capital structure allocates a higher weighting to equity than other utilities in Alberta. The AUC approved capital structure for distribution and transmission utilities is 37.00% equity which is less than the 40.00% proposed by EWS. However, the difference between the AUC approved capital structure and EWS's desired capital structure is consistent with the prior rate setting period;
- There has not been a sufficient change in the business, regulatory or financial risk since 2021 that would indicate the capital structure needs to be changed. Note, however, that company risk is discussed in further details in Section 4.4 Return on Equity of this report;
- The allowed capital structure of investor-owned Canadian utility peers have remained relatively stable, with some increasing, since its 2021 PBR; and

- Most companies seek to carry higher levels of equity to debt service obligations in the current higher interest rate environment.

It is determined that a change in the capital structure of EWSI is not warranted at this time. If the common equity ratio were reduced by the City, we would also note that this change could increase the Company cost of debt and therefore the required return on equity to generate a fair and reasonable return.

See Recommendation #13, Table #2.

4.3 Cost of Debt

The cost of debt reflects the overall rate being paid by a company to raise capital using traditional debt facilities. The cost of debt generally reflects the company's risk level. As company risk increases or decreases the cost of debt generally increases/decreases. EWSI borrows from their parent company, EUI. The table below summarizes the components of the cost of debt from the 2022 – 2024/2026 PBR and the 2025–2027 PBR applications:

	2021-2024 PBR	2024-2027 PBR	Change
Cost of Debt:			
Government of Canada forecasted 30-year bond yield	1.83%	3.17%	+1.34%
Spread for EUI	1.62%	1.43%	-0.19%
EWS risk premium charged by EUI	0.00%	0.00%	0.00%
Transaction fee	0.05%	0.05%	0.00%
Weighted Average Cost of Capital	**3.50%**	**4.65%**	**+1.15%**

Table 20: Cost of Debt Comparison

The cost of debt applied in the 2024 PBR has increased 1.15% from the 2021 PBR. It is noted that the methodology for calculating the cost of debt for the current PBR term is consistent with the cost of debt in the 2021 PBR. Each component of the calculation is considered as follows:

4.3.1 Government of Canada Forecasted Bond Yields

The information provided by EWSI in the 2024 PBR Application is based on Government of Canada 30-year bond yield. They have applied 3.17% which is consistent with the underlying support cited in the 2025-2027 PBR. On July 17, 2024, long-term Government of Canada benchmark bond yields are 3.32%. In recent months, the Bank of Canada interest rate has decreased, with the most recent reduction on July 24, 2024 *(see **Appendix A** Grant Thornton Report Figure 6 – Government of Canada Benchmark bond yields).* It is also expected that the Bank of Canada interest rate will experience a further decrease in September. This further demonstrates the expected volatility in the bond markets as of the date of this report. While this does not directly result in a reduction to the cost of debt at this time, we recommend that EWSI includes updated 30-year bond yield information in their compliance application for utility committee consideration. The 3.17% used by EWSI in the 2025-2027 PBR falls within the range of actual bond rates experienced at the time of this report.

The RBC Economics Macroeconomic Outlook published in December of 2023 was also considered as further support for interest rates of various terms. This supports that the 3.17%

risk free rate used as the starting point in the cost of debt calculation is within the range of recent and forecasted market interest rates on 30-year Canada bonds *(see **Appendix A** Grant Thornton Report Figure 6 – Financial market forecast detail – interest rate*s).

Historically, EWSI relied on Dominion Bond Rating Service ("DBRS") to provide a one-time private stand-alone credit rating to calculate its forecast cost of new long-term debt. However, DBRS has declined to provide such ratings if the ratings and reports are to be publicly disclosed in regulatory proceedings. EWSI was requested (through the Information Requests process MV-EWS-8) to include DBRS' reports in a confidential exhibit, however EWSI's response was *"there are no current reports pertaining to EWS from any rating agencies that can be shared"* as there are concerns of confidentiality and public disclosure. This rating is consistent with the past three PBR applications. EWSI, however, has noted there have been no material changes in its operational, regulatory, or financial environment since the previous A (low) rating issued, and thus have used the previous DBRS rating of A (low) in its 2025–2027 PBR Application.

Although EWSI was unable to provide reports obtained from DBRS and S&P for a one-time stand-alone credit rating, EPCOR Utilities Inc. Management's Discussion and Analysis for the three months ended March 31, 2024, was considered. Based on this information it is noted that EUI's current credit ratings have not changed since the 2021 PBR and are as follows:

- S&P - A- with a stable outlook for both its issuer credit rating and senior unsecured debt rating;
- DBRS rating as A (low)/stable senior unsecured debenture rating and R-1 (low)/stable short term 21 debt; and
- Fitch Ratings has also assigned a rating to EUI of A-/issuer default rating to EUI and A/instrument rating to EUI's senior unsecured debt.

It is noted that, should third-party credit rating reports be unavailable for regulatory review, a regulator would typically expect the utility to supplement their PBR application with some internally prepared analysis. Any analysis that the utility organization prepares pertaining to their cost of debt in reference to business risk, financial risk, considerations of their liquidity, or other risks would be beneficial.

4.3.2 EUI Spread

The EUI spread reflects the spread between the low-risk 30-year Canadian bond and the real cost for EUI to issue similar term standalone facilities. EWSI has proposed a decrease in the spread of 0.19% from 1.62% in the previous PBR term to 1.43% in the current application.

The year-to-date 2024 spreads on 30-year Canadian utility BBB and A rated senior secured fixed 29 rate bonds were reviewed and compared the rates and spreads to the 2021 rates for the same classes of bonds. It is noted that market cost of debt rates for Canadian utilities with an A or BBB 35 credit rating are in the range of 4.47% to 5.57%. Therefore, nothing was identified which would suggest EWSI's proposed spread for EUI is unreasonable *(see **Appendix A** Grant Thornton Report Figure 7 – Summary interest rates by credit rating*).

4.3.3 Transaction Costs

Included in the calculation of the cost of debt is a 0.05% transaction fee to reflect the costs that would be incurred by EUI to issue debt in public markets. This is consistent with the assumption applied in both previous PBR periods and is consistent with Canadian regulatory practices. Therefore, it is concluded that this component of the cost of debt calculation is not unreasonable.

4.3.4 Findings and Recommendations: Cost of Debt

A review of EWSI's proposed cost of debt found the following:

- Given that EWSI secures its debt from its parent company, EUI, is it difficult to truly determine if the proposed rate is reflective of market pricing if EWSI was to engage in a more traditional negotiation of financing terms with multiple lenders. However, there was nothing identified in this review which would suggest that a 4.65% cost of debt for this Company is unreasonable on a standalone basis;
- It is noted that EWSI has remained consistent since the 2021 PBR by using a forecast based on 30-year debt; and
- Given that credit rating reports are no longer available for regulatory review, it is recommended that EWSI provide further supporting information to support that the cost of debt included in EWSI's 2025-2027 Wastewater Services PBR reflects the current actual cost of borrowing to EUI. It was found that the information presented by EWSI regarding the cost of debt was consistent with their supporting materials and are reflective of current market conditions.

See Recommendation #14, Table #2 and Recommendation #29, Table #5.

4.4 Cost of Equity

EWSI engaged a consultant from ScottMadden to provide a recommendation on their cost of equity. In the expert report filed as an attachment to the 2025-2027 PBR Application, ScottMadden utilized several methods to calculate ROE: 1) discounted cash flows ("DCF"), 2) Risk Premium Model "RPM", and 3) capital asset pricing model ("CAPM"). The results of this analysis are summarized in the table below:

	Canadian Utility Proxy Group	U.S Water Utility Proxy Group
Discounted cash flow model	9.24%	10.00%
Risk premium model	10.81%	11.17%
Capital asset pricing model	9.15%	11.70%
Indicated cost of common equity before flotation cost adjustment	10.00%-11.70%	
Flotation cost adjustment	0.50%	
Indicated cost of common equity after flotation cost adjustment	10.50%-12.20%	
Indicated cost of common equity	**10.80%**	

Table 21: Cost of common equity model results

ScottMadden used the range of indicated cost of common equity based on the results of the U.S. Water Utility Proxy Group. ScottMadden stated that "the results of the Canadian Utility Proxy Group and the U.S. Water Utility Proxy Group overlap from 10.0% to 10.81% and 10.50% to 11.31%, before and after accounting for flotation costs, respectively". ScottMadden based his range of 10.00% to 11.70% on the U.S. Water Utility Proxy Group and then applied a flotation cost adjustment of 0.50% to arrive at the range of 10.50% to 12.20%. He continued to note that the recommended cost of equity of 10.80% *"falls within this range, which is subsequently at the*

low end of the indicated range of common equity cost rates of 10.50% to 12.20%. This approach recognizes that primary weight must be applied to the results based on the U.S Water Utility Proxy Group results due to operational comparability, while also recognizing that geographical similarities between EWSI and the Canadian Utility Proxy Group must also be accounted for".

It is noted that the above indicated cost of common equity is being proposed for Wastewater Treatment. The cost of common equity for Wastewater Collection is proposed to ramp up to 10.80% over a five-year period, from 5.50% in 2022 to the full 10.80% by 2026. It is noted that a ramp up approach is reasonable as the integration of Wastewater Collection assets and operations and the achievement of desired efficiencies is not yet fully complete. The Utility Committee should continue to monitor the integration of Wastewater Collection by EWSI as full integration should be complete before the full cost of equity is applied to this utility service.

4.4.1 Jurisdiction Review of ROE Methods

A jurisdictional review was performed and found the following: 1) CAPM, DCF and RPM methodologies are widely used to determine the cost of equity for regulated utilities, but the empirical capital asset pricing model ("ECAPM") is not widely used. Further details regarding the methodologies used in other jurisdictions are summarized below:

British Columbia

The British Columbia Utilities Commission, in its 2023 decision, used CAPM, DCF, and RPM to determine a fair ROE. The BCUC considers that assigning an equal weighting to each of the three techniques is appropriate to determine the approved ROE as it recognizes that each technique has its own strengths and weaknesses and responds differently to varying factors. The BCUC concludes that relying on more techniques is important at times when pure market-based models, such as DCF and CAPM tend to be impacted by volatile markets.

FortisBC Energy Inc's application for the 2023 decision included a report jointly completed by Concentric Energy Advisors Inc. and Mr. James Coyne. This report included both multi-stage and constant growth DCF, CAPM, and RPM approaches, similar to EWS's current application.

Alberta

The Alberta Utilities Commission, in its 2013 decision, accepted the use of DCF and CAPM methodologies in determining the cost of equity.

Newfoundland

Newfoundland Power's current 2025-2026 General Rate Application included an advisor report from Concentric Energy Advisors, Inc., which utilized the constant growth DCF, multistage DCF, CAPM and the risk premium methodologies to determine return on equity. It should be noted that this matter is still ongoing, and the regulator has not commented on the methodologies presented at this time.

4.4.2 Utilization of US Data

The ScottMadden report relies on proxy groups of both Canadian and U.S utilities in determining an appropriate ROE. The Canadian group contains publicly traded Canadian utility companies, while the U.S group contains publicly traded U.S. water utilities. ScottMadden noted that a proxy group of water utilities would have comparable risk to EWSI by being engaged in regulated water and wastewater activities. Because there is limited data available for Canadian water utilities, the U.S proxy group focused on water utilities and the Canadian proxy group focused on publicly traded utilities. ScottMadden also noted that more weight was attributed to the results based on

the U.S water utility proxy group as, in their opinion, these utilities considered the operational risks facing water utilities.

In BCUC's Generic Cost of Capital Proceeding, Concentric Energy Advisors utilized three proxy groups: (1) Canadian Proxy Group (comprised of a combination of both gas and electric companies), (2) U.S. Proxy Group (comprised of a combination of both gas and electric companies), and (3) combined the U.S. and Canadian utilities into a North American Utility Proxy Group. The BCUC, in its 2023 decision, also recognized the intergraded nature of Canadian and US financial markets. Canadian data is often limited due to the small number of publicly traded utilities.

The AUC recognizes that while U.S. companies have higher business risks than the Alberta utilities, for the purpose of establishing comparables, it was appropriate to include U.S. companies in the proxy group. The reasons for accepting U.S. companies include (i) the limited number of publicly traded Canadian utility companies; (ii) the prevalence of U.S. business operations among many publicly traded Canadian utilities; and (iii) investors tendency to consider both U.S. and Canadian investment utility opportunities. However, the AUC retains the view that judgement must be applied when interpreting data from the proxy utilities to establish the ROE required by investors in the AUC.

The National Energy Board ("NEB"), Ontario Energy Board ("OEB") and Quebec Regie de l'Energie ("Regie") have also accepted the use of U.S. data and proxy groups for purposes of establishing the allowed ROE.

The lack of Canadian comparable utilities, the unique business and financial risk of water and wastewater operations and the Canadian regulatory acceptance of the use of U.S. comparables support the use of U.S. utilities in the estimation of the ROE for EWSI. However, some adjustments to the U.S. results may be warranted. In other regulatory jurisdictions, it has been found that adjustments to the U.S. data were relevant.

4.4.3 Jurisdiction Review of Allowed ROE

*See **Appendix A** Grant Thornton Report Figure 9 - Allowed return on common equity* for a table summarizing the allowed return on common equity approved by other Canadian regulators and a sample selected from ScottMadden's U.S. Water Utility Proxy Group from 2021 to 2024.

During the period of 2021 to 2024, it was observed that the allowed return on common equity approved by Canadian regulators have remained constant or increased by up to 0.90%, except for the Ontario Energy Board generic cost of capital, which decreased by 0.15% from 2023 to 2024. It is noted that while the Ontario Energy Board's generic cost of capital decreased in 2024, in comparison to 2021, the cost of equity is still 0.87% higher. EWSI is proposing an increase of 0.91%, which is consistent with the movement in Canadian regulators return on common equity, although it is the most significant increase proposed in comparison to other Canadian jurisdictions. It is also noted that during the period of 2021 to 2024, the allowed return on common equity approved for a sample of ScottMadden's U.S. Water Utility Proxy Group increased 1.07% to 1.22%.

Although the proposed cost of equity of 10.80% for EWSI is higher than all of the above allowed return on common equity's, it is important to note that the cost of equity and capital structures must not just be considered in isolation. As an example, the U.S. water utilities have a higher

equity thickness than EWSI has proposed, resulting in a higher return on equity; this is discussed in further detail in the following section.

4.4.4 EWSI PBR Risk versus AUC Risk

The applied allowed return on common equity in the 2024 PBR of 10.80% is a 0.91% increase from the 2021 PBR of 9.89%. It is noted that generic approved ROEs have been increasing in recent years, with the exception of three jurisdictions remaining stagnant since the last PBR. While the AUC has increased their generic cost of equity to 9.28% in 2024 from the previously approved 8.50%, EWSI proposed a cost of equity higher than the AUC's. It is noted that the AUC generic cost of equity has increased 1.39% since the last PBR, while EWSI is proposing a higher increase of 1.52%.

EWSI has currently proposed a weighted ROE of 4.32% which is an increase over EWSI's 2021 rate. EWSI's approved weighted ROE was higher than AUC in 2021 by 0.81%, and the current proposed weighted ROE is higher than AUC by 0.89%. The concept of EWSI having a higher risk profile than the AUC has been accepted in past PBR hearings. It is highlighted that the spread over the AUC would grow by 0.13%. There is no rationale provided for this increase.

The applied cost of common equity in the 2024 PBR of 10.80% is an increase of 0.91% from the 2021 PBR of 9.89%. It was noted during the review of Canadian regulatory decisions that generic approved cost of equity's have increased or remained constant since the last PBR. Allowed return on common equity have typically increased between 0.00% and 0.90% in Canadian jurisdictions, depending on the regulator. Allowed return on common equity have typically increased between 1.07% and 1.22% in the selected sample of ScottMadden's U.S. Water Utility Proxy Group. Based on recent regulatory decisions and the increase in interest rates since the last PBR, it would be expected that the cost of equity for the 2024 PBR to fall between 9.95%-10.85%. This would be consistent with the increase in approved cost of equity for Canadian utilities from 2021–2024 particularly focusing on the Alberta comparatives and other examples. It is noted that the EWSI proposal is at the high end of this range.

Furthermore, the applied cost of equity in the 2024 PBR includes a risk premium of 1.52% over the AUC's generic approved allowed return on common equity in its 2020 decision. This is an increase of 0.13% from the risk premium included in the 2021 PBR of 1.39% *(See **Appendix A** Grant Thornton Report Figure 11 – EWS vs AUC risk premium).* Based on a review of the business and financial risk affecting the Company, there have not been identified additional risks or considerations that would warrant an increase in the risk premium from the 2021 PBR. As the AUC generic cost of capital is updated on an ongoing basis this rate reflects many of the changes in market rates and risk since the previous EWSI PBR Application. Therefore, the premium that EWSI earns above the AUC generic cost of capital is meant to reflect the residual company specific risk for EWSI. Thus, there is more reason for the risk premium to decrease, rather than increase.

The 1.52% risk premium has been included to reflect EWSI's view that the higher return when compared to AUC is appropriate because it reflects EWSI's different and unique risk compared to the Alberta electric and gas utilities. The concept of EWSI having a higher risk profile than the AUC has been accepted in past PBR hearings. A summary and analysis for these risk factors has been provided in detail in Grant Thorntons' report *(See **Appendix A** Grant Thornton Report Figure 12 – 2024 PBR Risk factors and rationales).* Highlights of this risk analysis include:

- EWSI's risk differential versus the AUC's generic cost of capital has not increased since 2021;
- EWSI has benefitted from the use of deferral accounts to mitigate the extent of risk it bears. Its PBR framework also permits the use of special and non-routine rates adjustment mechanisms for unusual or uncontrollable risks;
- The implied risk for Water line of business is not viewed as consistent across Wastewater Treatment and Stormwater lines of business. Since water is a consumable product, the Water line of business would carry a higher risk than Wastewater Collection and Wastewater Treatment due to its nature. This gives rationale for considering adjusting the cost of equity to reflect the varying levels of risk by service.

Further to the above points, care must be taken when comparing EWSI's risks relative to other utilities, as it simply cannot be assumed that all other US-based utilities include the delivery of stormwater services (as many US municipalities retain this service when contracting in a third-party water and wastewater utility provider). Further, there are different regulatory standards for wastewater treatment across the United States, as many jurisdictions are targeting increased treatment levels of wastewater effluent to support a variety of water re-use applications.

4.5 Summary of Recommendations: Cost of Capital

The Grant Thornton report has provided a detailed table for information purposes to summarize the return on equity, capital structure, and other relevant factors that may impact the utilities overall return *(See **Appendix A** Grant Thornton Report Figure 13 – Summary of ROE by jurisdiction*). While EWSI's proposed cost of equity of 10.80% is higher than all regulatory precedents in both Canadian and U.S. jurisdictions, the equity layer must be considered, and a comparison should be considered in relation to the weighted ROE. Once applying both the approved allowed return on common equity and the approved common equity, EWSI's proposed weighted ROE is higher than most Canadian utilities but lower than the U.S. water utilities.

The jurisdictional review noted approved weighted ROE in the range of 3.43% to 4.34% in Canadian jurisdictions and in the range of 5.48% to 5.82% for the sample selected from ScottMadden's U.S Water Utility Proxy Group. It is noted that EWSI's requested cost of equity and equity ratio results in a weighted ROE of 4.32%, which is at the higher end of the range for Canadian jurisdictions but is below the range for the selected sample of ScottMadden's U.S Water Utility Proxy Group.

Based on the entirety of observations and considerations from this review, the following summary level adjustments are proposed:

- ScottMadden has incorporated a variation of traditional CAPM and ECAPM into its calculation of the cost of equity and based its determination of cost of equity under this approach on the average results of their CAPM and ECAPM calculations. No recent Canadian regulatory decisions have been identified where the ECAPM method was accepted in the calculation of the cost of equity. It is therefore recommended to remove the average ECAPM in determining the cost of equity and using the results of the average CAPM instead. This reduces the proposed cost of equity by 0.09%;
- The applied cost of equity in the 2024 PBR of 10.80% is an increase of 0.91% from the 2021 PBR of 9.89%. Generic approved cost of equity rates have typically increased

between 0.00% and 0.90% for Canadian regulators from 2021–2024. It would be expected that the allowed return on common equity for the 2025-2027 PBR to fall between 9.95% - 10.85%. EWSI's proposal is at the high end of this range;

- The applied cost of equity in the 2024 PBR includes a risk premium of 1.52% over the AUC's generic approved cost of equity in its 2023 decision. This is an increase of 0.13% from the risk premium included in the 2021 PBR of 1.39%. No additional risks or considerations have been identified that would warrant an increase in the risk premium from the 2021 PBR;
- It is noted that EWSI's proposal to hold the equity structure at 40.00% is appropriate at this time based upon or jurisdictional review and based upon the current higher interest rate environment. In the current higher interest rate environment, most companies would be seeking to carry higher levels of equity to debt service obligations. However, it is noted that reducing equity levels in the future will be appropriate, but for the current period, 40.00% is appropriate; and
- It is acknowledged that EWSI has not considered the varying risk profiles of Water, Wastewater Treatment and Wastewater Collection. While it is agreed that some of EWSI services have a higher level or risk than reflected in the AUC generic cost of capital, the risk is not consistent across all EWSI's services. For example, because water is a consumable product, Water would carry a higher risk than Wastewater Treatment or Wastewater Collection. Therefore, it is recommended that the City considers adjusting the cost of equity to reflect the varying levels of risk by service.
- Grant Thornton has recommended that as a starting point, an appropriate cost of equity for EWS is 10.67% to reflect the removal of the ECAPM methodology and to keep the spread above the AUC generic rate consistent with the 2021 PBR as there is no evidence that EWS's risk profile has changed. It is also recommended that the cost of equity be more aligned with the risk profile by line of business. Since Water has a higher risk profile, the City could consider applying a lower cost of equity to Wastewater Treatment and Wastewater Collection in comparison to the cost of equity for Water. Grant Thornton has illustrated three scenarios which reduce the Wastewater Treatment and Wastewater Collection by 0.10%, 0.20% and 0.30%, resulting in an overall cost of equity for EWS calculated as 10.49% to 10.67%.

For clarity Grant Thornton summarized the impact of the above recommendations in the following table. The recommendation of 10.67% is shown as a starting point based on the adjustments for technical considerations including the use of the ECAPM methodology as well as the spread between EWSI's cost of equity and the AUC generic rate. Additionally, a reduction to Wastewater Treatment and Wastewater Collection in the range of 0.10% to 0.30% is shown, implying a total cost of equity of 10.49% to 10.61% for EWSI.

Item	2025 PBR (Proposed)	Grant Thornton Recommended		
		After considering technical considerations	Overall considering risk profile of varying lines of business	
Capital Structure			**High: 10.61%**	**Low: 10.49%**
Debt	60.00%	40.00%	60.00%	40.00%
Equity	40.00%	40.00%	40.00%	40.00%
Cost of Debt	4.65%	4.65%	4.65%	4.65%
Cost of Equity	10.80%	10.67%	10.61%	10.49%
Weighted Return on Debt	2.79%	2.79%	2.79%	2.79%
Weighted Return on Equity	4.32%	4.27%	4.24%	4.20%
Weighted Average Cost of Capital	7.11%	7.06%	7.03%	6.99%

Table 22: Proposed vs. Recommended Cost of Capital

See Recommendation #12, Table #2.

5.0 Performance Measures

This section provides a description of the performance measures review performed for the PBR Application.

5.1 Approach

A review of the proposed performance measures has been undertaken with the following considerations:

- Assessment of the overall performance measure framework and the approach to setting performance measures;
- Analysis of current and proposed performance measures and standards;
- Review of relevant supporting materials, including the *Stakeholder Engagement Report* (Appendix H) and the report *EPCOR Water Services - Review of PBR Performance Measures* presented to Utility Committee on May 6, 2024;
- Review of relevant performance measures and frameworks used in other regulatory systems, including Alberta Utilities Commission, the United Kingdom Water Services Regulation Authority (Ofwat), the New South Wales (Australia) Independent Pricing and Regulatory Tribunal (IPART), the Water Industry Commission for Scotland (WICS), as well as from the American Water Works Association's (AWWA) Utility Benchmarking Survey; and
- EWSI's responses to information requests (IR) related to performance measures.

5.2 Efficiency Factor

EWSI has proposed an efficiency factor of 0.25% for Wastewater Treatment and Wastewater Collection, which is the same as proposed in the previous PBR. It is noted from the 2021-2024 PBR Review that increasing the efficiency factor from 0.25% to 0.50% for Drainage Services (now Wastewater Collection) was recommended in Grant Thornton's report[12] (it was noted that this report also agreed with the 0.25% efficiency factors proposed by EWSI for both Water and Wastewater Treatment). From review of the current application for 2025-2027, it is deemed that the efficiency factor of 0.25% is still appropriate for Wastewater Treatment. However, it is observed there are further integration and transformation efforts occurring for Wastewater Collection and its financial management across 2025-2027. There are also areas in the PBR application where customers are bearing a disproportionally high degree of risk to rates. Combined, these suggest an opportunity to increase the efficiency factor for Wastewater Collection to 0.50%. The rationale for this is due to:

i. Due to a recent re-organization, EWSI was not able to provide the required previous four years of historical financial results (as only 2022 values were re-stated). This does not support EWSI's Minimum Filing Requirements, and it would be expected that this information should readily be provided for a regulator to perform a detailed review of historical results in the event that internal integrations of the assets and operations were complete;

ii. EWSI has not yet analyzed or developed holistic rates across Water, Wastewater, and Stormwater. The rate structures proposed in the 2025-2027 PBR are the same as those

[12] Grant Thornton LLP, "City of Edmonton: EPCOR Water Services Inc. - Performance Based Regulation Review; Water PBR 2022-2026 Application; Wastewater Treatment PBR 2022-2024 Application; and Drainage PBR 2022-2024 Application", May 2021

inherited upon assuming the assets and operations from the City. This demonstrates that EWSI is still in the process of integrating and managing the utilities' financials. In addition, further cost of service details as described in Section 3.5 need to be addressed to develop a holistic set of rates across the utilities for 2028;

iii. EWSI's plan to introduce more stormwater-only customer billing accounts across 2025-2027 which are not considered in its rates proposal (despite no apparent net-new costs to service these customers) that will directly flow into a surplus for the utility. As such, the proposed rates within the PBR for existing Stormwater customers are too high in light of this method to implement new customers;

iv. A higher allocation of EWS Shared Services and Corporate Shared Services costs into Wastewater Collection's operating cost structure than Wastewater Treatment, suggesting opportunities to review and potentially further manage administration efficiencies;

v. The consistent exceedance of several performance standards (see section 5.4.3), which indicates that EWSI has been readily meeting existing performance standards and may be incurring incremental costs to do so (subject to a focused review for these per recommendations from previous PBRs). It is acknowledged that EWSI has been previously requested to analyze and report on the incremental costs is incurs to achieve these higher levels of performance. However, EWSI has not yet provided this analysis, which demonstrates that further integration of Wastewater Collection and understanding of the incremental capital and operating cost investments incurred to achieve additional levels of performance is required;

vi. Observations from the jurisdictional billing comparison analysis that EWSI is projected to have higher-than-average rates for both Wastewater and Stormwater (particularly Stormwater); and

vii. Observations that EWSI will still be integrating Wastewater Collection into the development of a fully functional "One-Water" approach. These efforts have been initiated and it has been identified that further integration and planning developments will be performed across 2025-2027, including the development of an updated Stormwater Integrated Resource Plan (SIRP). EWSI noted in a response to an information request (MV-EWS-28 Part v) that further efficiencies in this area are highly likely given references to industry leading practices. Given this, there is a greater opportunity for EWSI to achieve further efficiencies in Wastewater Collection given the relatively short time period it has owned this function versus the length of time it has owned Wastewater Treatment (which it has held since 2009 and has a much more established operating history).

As noted in Grant Thornton's previous PBR reviews issued to the City[13,14], "one of the benefits of a PBR approach is to create a mechanism to drive efficiency and effectiveness gains to the benefit of the ratepayer. The efficiency factor is a function that reduces annual inflationary increases, which in turn creates an incentive for the utility to continuously identify opportunities for cost improvement." Based on this purpose and the above considerations, the following recommendations are provided:

[13] Grant Thornton LLP, "EPCOR Water Services Inc. - Performance Based Regulation Review for Water PBR 2022-2026 Application, Wastewater Treatment PBR 2022-2024 Application, and Drainage PBR 2022-2024 Application", Report issued to the City of Edmonton, May 2021
[14] Grant Thornton LLP, "EPCOR Performance Based Regulation 2017-2021 Filing Review", Report issued to the City of Edmonton, September 2016

i. **For the 2025-2027 PBR (Recommendation #15, Table #3):** It is recommended the City consider increasing the efficiency factor to 0.5% for Wastewater Collection. Doubling the efficiency factor for it would balance the need to continue motivating EWSI to obtain efficiencies while also recognizing that this service will be further integrated into EWSI across 2025-2027; and

ii. **For the 2028 PBR (Recommendation #31, Table #6):** It is recommended EWSI provide an updated analysis regarding capital and operating efficiencies gained since receiving Wastewater Collection to support its 2028 PBR application.

Finally, it is also acknowledged that the review of the efficiency factor versus return on equity are distinct, independent characteristics within the PBR framework. They are not dependent, which is reinforced by EWSI in its response noted to an information request (MV-EWS-28 Part vi) submitted regarding the transition of Drainage Services and the potential ramp up of its ROE, wherein it detailed that: *"efficiencies provide a partial offset to the impact of the ramp-up of ROE, however, are not related."* As such, recommended changes to the ROE versus efficiency factor are not duplicative in their nature.

5.3 Description of Performance Framework

For each of the two lines of service, a performance measures framework has been established that is comprised of four indices, or categories, as follows:

- Water Quality and Environment
- Customer Service
- System Reliability and Optimization
- Safety

Each index is comprised of several individual performance indicators. There are a total of 14 performance indicators proposed for Wastewater Collection and 11 performance indicators proposed for Wastewater Treatment. For both lines of service, the application is proposing to use a consolidated set of performance measures for the Safety Index. While for the previous PBR period there were four safety performance measures, this application suggests consolidating two of them (Lost Time Frequency Rate and Injury Frequency Rate) into a single measure (All Injury Frequency Rate).

For the remaining Wastewater Collection measures, the application is proposing to:

- Retain eight measures in the existing indices
- Move three measures to a different index
- Eliminate four measures
- Introduce four new measures

For the remaining Wastewater Treatment measures, the application is proposing to:

- Retain seven measures in the same index
- Eliminate one measure
- Introduce one new measure

A performance standard is established for each of the performance measures. The annual performance of each line of service is evaluated using a points-based system as follows:

- Each index is assigned a weighting representing the points available for that index out of a total of 100 points for all four indices;
- Each performance measure within an index is weighted equally;
- For each performance measure, a ratio of the actual performance achieved to the standard is calculated, referred to as the factor. The points assigned to each measure are a product of the factor and the weighting of the individual measure; and
- If actual performance exceeds the standard, bonus points are available up to a maximum of 10 bonus points for each line of service. Refer to the following table:

Performance Indices Points Framework	Base	Bonus	Total
Water Treatment			
Water Quality & Environment	45.0	4.5	49.5
Customer Service	15.0	1.5	16.5
System Reliability & Optimization	25.0	2.5	27.5
Safety	15.0	1.5	16.5
Total Water Treatment	**100.0**	**10.0**	**110.0**
Water Collection			
Water Quality & Environment	35.0	3.5	38.5
Customer Service	20.0	2.0	22.0
System Reliability & Optimization	30.0	3.0	33.0
Safety	15.0	1.5	16.5
Total Water Treatment	**100.0**	**10.0**	**110.0**

Table 23: Performance Framework

Annual financial penalties will be applied if total points are less than 100. For Wastewater Collection a penalty of $67,000 is assessed for each point below 100 up to a maximum of $1,000,000. For Wastewater Treatment a penalty of $27,000 is assessed for each point below 100 up to a maximum of $400,000. In both cases, the total points would need to be as low as 85 points for the maximum penalty to be assessed.

5.4 Observations for Performance Measures Framework

5.4.1 Approach to Establishing Performance Measures

The objective of a performance measures framework typically is to represent a balanced assessment of the overall business, with a focus on tracking strategic objectives and areas of service important to customers and stakeholders. This align with the objectives of the PBR Performance Measures Framework as indicated in the application, which states that the Framework was established "to define critical areas of operational performance." The four indices appear to be appropriate to represent a balanced overview of the performance of a wastewater utility.

The PBR process, however, is a financial regulatory process that is intended to ensure that customers are receiving sufficient value for the rates they pay. In this case then, the performance measures framework has a different objective and should also focus on measuring progress towards achievement of strategic outcomes and specific commitments related to proposed operating and capital investments. While observations related to specific measures are provided in the sections below, generally there is an opportunity to include more outcome-based measures (lagging indicators). For example, a modification suggested below related to

the Enhanced Building Flood Proofing program is to report on how many properties are removed from the high or medium high risk category (lagging indicator), rather than the number of inspections completed (leading indicator). It is noted that all 24 performance commitments imposed by Ofwat in the UK are outcome based (lagging) indicators.

The application makes several references to the performance measures, weightings and standards reflecting the expectations of customers, stakeholders and the regulator. However, what is not clear in the application is how the performance measures and associated weightings and standards are reflective of the expectations or priorities of customers, stakeholders and the regulator. While the *Stakeholder Engagement Report (Appendix H)* within the EWSI 2025-2027 PBR Application presents an analysis of residential customer priorities, a comprehensive description of how the proposed suite of performance measures reflects those customer priorities is not provided.

It is noted that for the next PBR period commencing in 2028, EWSI will provide a consolidated application for all three lines of service. The 2025-27 period may be an opportune time to review and modify the approach to establishing performance measures.

5.4.2 Role of Regulator in Establishing Performance Measures

It is noted that the process for establishing performance measures for the 2025-2027 period is that performance measures and standards are proposed by EWSI in its application with review and approval by Edmonton City Council. In other relevant regulatory jurisdictions, the regulatory authority takes a lead role in establishing the required suite of performance measures that reflects the regulator's expectations and that the regulated company must report on. Four regulatory regimes reviewed are:

- Alberta Utilities Commission (AUC) for Electric Distribution Systems and for Gas Distributors
- United Kingdom Water Services Regulation Authority (Ofwat)
- New South Wales (Australia) Independent Pricing and Regulatory Tribunal (IPART)
- Water Industry Commission for Scotland (WICS)

These regulatory regimes were selected either due to geographic and legislative proximity (AUC) or relevance to the water and wastewater industry (Ofwat, IPART, WICS).

For the first three regulatory regimes noted (AUC, Ofwat, IPART) standard performance measures are established by the regulator. Company performance is then assessed against standards established in the company's license, against performance of the industry sector overall (Ofwat) or against the company's historical performance.

It is acknowledged that the regulatory situation is different for EWSI in that it is the only water and wastewater utility under the regulatory authority of Edmonton City Council. This is similar to the situation in Scotland where Scottish Water is the water and wastewater provider. The role of WICS, the economic regulator for Scottish Water, relative to performance measures has been evolving since 2005 when WICS was established (*Strategic Review of Charges 2027-2033: Draft Methodology*, 14 August 2024):

- For the 2006-2009 and 2010-2014 business cycles, performance commitments for Scottish Water were based on those used by Ofwat

- For the 2015-2020 business cycle, a Customer Forum was commissioned to develop customer priorities upon which a set of performance commitments was established
- For the 2021-2026 business cycle, Scottish Water's board set its performance targets
- For the 2027-2033 business cycle, WICS is proposing to return to using a set of measures based largely on those used by Ofwat, with measures and targets reflective of the priorities of the Scottish Government, customer research and the proposed capital investment plan, and with opportunities to benchmark against performance of the water and wastewater companies in England and Wales.

There is an opportunity for the City of Edmonton to leverage practices from regulatory authorities in other jurisdictions and for Council's Utility Committee, with support of Administration, to take a more active role in establishing performance measures that are relevant to Council's regulatory priorities. This would include a process to determine those priorities for EWSI to report on through the performance measures program.

5.4.3 Historical Performance Relative to Standards

The application references EWSI's "ability to consistently achieve the performance standards", citing the average historical annual PBR points of 105.9 for Wastewater Collection (Table 22.3.1-1) and 109.3 for Wastewater Treatment (Table 22.3.1-2). On their surface, the annual PBR points reflect strong and reasonable results. However, it is noted that these average points reflect that the points are capped at 110.

The historical performance for each performance measure was evaluated by analyzing the annual factor (ratio of actual performance to the standard), with average results provided in the following table. Note that the analysis shown in this table does not include those measures included in the Safety Index, as the Safety Index is discussed in a subsequent section.

Set of Measures	Average Factor 2017-2023	Average Factor PBR Period 2022-2023
All performance measures	1.75	1.60
Wastewater Collection	1.17	1.41
Wastewater Treatment	2.56	1.87
Measures retained for PBR 2025-2027	2.06	1.88
Measures removed for PBR 2025-2027	0.90	0.84

Table 24: Analysis of Historical Performance

The analysis reveals that historical performance has exceeded the established standards by an average of 75%. It is further noted that for the measures proposed to be retained for the 2025-2027 PBR period, actual performance has exceeded the established standards by an average of 88% over the 2022-2023 period, while for the measures proposed to be removed, actual performance fell short by an average of 16%. For the measures proposed to be retained for the 2025-2027 period, none had average annual performance fall short of the standard in the 2022-

2023 period. Furthermore, for the five measures proposed to be removed, only one had an average performance achieving the standard for the 2022-2023 period. While more detailed assessments of the individual performance measures are provided below, it is suggested that the intentions behind the measures proposed to be eliminated should be retained, either by retaining the measures or introducing alternative that measure similar outcomes. EWSI's perspective, obtained through Information Requests, is also provided in the subsequent sections.

There are five measures (not including Safety Index measures) for which historical performance has significantly exceeded the standard, with a factor of 1.5 or greater deemed as significant:

- Reportable Environmental Incidents (per the PBR Application Section 22.4.2.1)
- Sewer Odour Hot Spots (per the PBR Application Section 22.4.4.3)
- Environmental Incidents (per the PBR Application Section 22.5.1)
- H2S - 1 Hour Exceedances (per the PBR Application Section 22.5.2)
- H2S - 24 Hour Exceedances (per the PBR Application Section 22.5.2)

While strong performance against reasonable standards is laudable, performance that consistently exceeds the standard by a significant amount may indicate that either the standard is set too low or EWSI is making a level of investment of resources beyond what is required.

Water and wastewater utilities internationally are increasingly setting performance outcomes based on customer values or customer willingness to pay assessments. These detailed assessments develop varying levels of service or risk tolerance, determine the costs associated with those varying levels of service, and enable customers to make choices (through surveys and focus groups) on the levels of service they are willing to pay for. Examples of level of service choices for customer may be related to the acceptable frequency of odour incidents, acceptable frequency of basement flooding incidents or level of wastewater treatment beyond that required by the environmental regulator.

In the application, EWSI indicates that "increasingly stringent performance standards may not be warranted from a customer service or cost/benefit perspective." While this is in reference to performance standards, the same applies to the performance itself. In addition, the review of the previous PBR (*EPCOR Water Services Inc – Performance Based Regulation Review, May 31, 2021*) recommended that EWSI establish the costs of a study to evaluate the additional costs to ratepayers of exceeding performance standards.

In response to an information request (MV-EWS-26) on the topic of evaluating the costs of exceeding performance standards, EWSI indicated it relies on management judgement and has not undertaken an assessment of the costs and has no plans to due to the associated cost and complexity. Without this information, the regulator is not able to assess the benefits and costs to customers of consistently exceeding performance standards and what choices the regulator has with respect to balancing the level of service, risks and the costs to ratepayers.

5.4.4 Performance Evaluation Framework

As described above, points are awarded for each measure based on EWSI's performance relative to the standard. Measures for which EWSI has historically significantly, or even moderately, exceeded the standard may mask underperformance in other areas when evaluating EWSI's overall performance, particularly when determining bonus points and financial penalties.

This “distortion” may occur within or across indices as illustrated in the Wastewater Collection results from 2021 and 2022. As an example, in both 2021 and 2022, one of three measures in the Environmental Index did not meet the standard. For the Customer Service Index, two of four measures did not meet the standard in 2021 and one did not meet the standard in 2022. Yet both indices earned full points, including bonus points. This demonstrates that overperformance in one measure (Environmental Incidents in the Environmental Index and Sewer Odour Hotspots in the Customer Service Index) compensates for underperformance in the other measures.

	2021				2022			
Index/Measure	**Standard Achieved**	**Base Points Available**	**Bonus Points Available**	**Total Points Earned**	**Standard Achieved**	**Base Points Available**	**Bonus Points Available**	**Total Points Earned**
Environmental Index		**30.0**	**3.0**	**33.0**		**35.0**	**3.5**	**38.5**
Stormwater Flow Monitoring	Yes				Yes			
Environmental Incidents	Yes				Yes			
Green Hectares	No				No			
Customer Service Index		**20.0**	**2.0**	**22.0**		**20.0**	**2.0**	**22.0**
Service Maintenance Calls	Yes				Yes			
Emergency Dig Ups	No				Yes			
Service Connections	No				No			
Sewer Odour Hot Spots	Yes				Yes			
Reliability and Optimization Index		**35.0**	**3.5**	**30.4**		**30.0**	**3.0**	**31.6**
Blocked Sewers	No				No			
Sewer Renewal	No				No			
Infrastructure Condition Rating	Yes				Yes			
Full Property Flood Inspections	No				Yes			
Safety Index		**15.0**	**1.5**	**16.5**		**15.0**	**1.5**	**16.5**
Near Miss Reporting	Yes				Yes			
Work Site Inspections	Yes				Yes			
Lost Time Frequency Rate	Yes				Yes			
All Injury Frequency Rate	Yes				Yes			
Total for all indices		**100.0**	**10.0**	**101.9**		**100.0**	**10.0**	**108.6**

Table 25: 2021 Wastewater Collection Performance

For the Reliability and Optimization Index, three of four measures did not meet the standard in 2021 and two did not meet the standard in 2022. The index did not receive full points in 2021, but this shortfall was overcome by the bonus points in the other indices, even though they also had measures that did not meet the standard. As a result, even though 6 of 15 measures did not meet the performance standard in 2021 and four did not in 2022, Wastewater Collection overall received more than 100 points, resulting in no financial penalty.

To address this "distortion effect", the previous PBR review (*EPCOR Water Services Inc – Performance Based Regulation Review, May 31, 2021*) recommended that EWSI conduct a performance measure methodology benchmarking assessment. It is understood that this assessment was not undertaken. Such an assessment should include not only a review of how points and bonus points are assigned, but also the financial penalties associated with not achieving standards. As rate revenues have continued to grow, so should the revenue at risk associated with performance. It should be noted that EWSI provided the report “Review of PBR Performance Measures” to Utility Committee on May 6, 2024, but this particular topic of the mechanics of the performance measures framework was not within the scope of that report. This report is discussed further in Section 5.4.7.

The previous PBR review also recommended that EWSI provide a performance measure summary table in its annual reports that shows historical performance across all indices and sub-indices, including total actual points earned. This was not provided in the 2021 or 2022 annual reports.

5.4.5 Availability of Benchmarking Data

The application indicates that EWSI investigated the performance measures used by other utilities, associations and regulatory jurisdictions, including AWWA, Ofwat and the National Water & Wastewater Benchmarking Initiative (now the Canadian Infrastructure Benchmarking Initiative). The application also states that standards have been proposed to align with industry benchmarks where possible. However, no industry comparators are provided for any of the proposed measures.

The latest AWWA Utility Benchmarking Survey provides the water and wastewater utility performance data for 69 performance indicators from 130 participating utilities from across North America. It is noted that there are some measures proposed by EWSI that can be benchmarked against the data available in the survey (Energy Efficiency) or could be with some minor modification (Biosolids Management). There are other measures used in the AWWA benchmarking program that could be adopted by EWSI as the intent is similar for some proposed measures (Service Maintenance Calls) or because they may be more meaningful and provide benchmarking opportunities, such as service interruption frequency.

For the 2025-30 performance period, Ofwat is imposing a standard set of 24 common measures (performance commitments) across the approximately 25 UK water and wastewater companies it regulates. This provides consistency in the regulatory framework and enables comparison of company performance, which informs financial incentives and penalties. While it is not suggested that the same measures be adopted by EWSI, a review of the Ofwat measures would provide valuable information on measures adopted in other jurisdictions.

The Canadian Infrastructure Benchmarking Initiative (CIBI) has 40 municipal participants from across Canada and, because it evolved from the former National Water and Wastewater

Benchmarking Initiative, would provide valuable benchmarking data to evaluate EWSI performance in a Canadian context. The data is only available to CIBI subscription members.

EWSI's PBR Application states that there are many factors that make comparisons to other utilities difficult. The AWWA Utility Benchmarking report states *"understanding that there may never be perfect utility-to-utility comparisons, benchmarking can still be a useful tool to monitor individual system performance and improvement."* It is recognized that no two utilities are alike, yet dozens of utilities across North America participate in the benchmarking programs noted and use the information to monitor, assess and ultimately improve their performance. The differences between specific operating conditions need to be acknowledged and recognized within a benchmarking and performance assessment program, while still playing a valuable role in evaluating performance, including informing the establishment of the standards against which EWSI can be evaluated.

It is important to also note that care must be taken when benchmarking to utilities in other jurisdictions, as they are often differences in the environmental regulatory standards they need to operate (e.g., in many States within the USA there is a trend for increasing the level and types of treatment of wastewater effluent). Care should also be taken when comparing utility relative to the scope of services they provide, as often municipalities in the USA will provide their own stormwater services separate from the privately-owned water and wastewater utilities which operate in their jurisdiction.

5.4.6 Impact of Proposed Capital Program on Performance Measures and Operating Costs

For the 2025-2027 PBR period, EWSI is forecasting a capital expenditure of $888 million. Business cases are provided for individual Wastewater Treatment projects and programs with capital expenditures of $5.0 million or more and Wastewater Collection projects and programs with capital expenditures of $10.0 million or more. Each business case follows a standard format that includes the background and justification for the project, the alternatives considered and key risks. However, the business cases do not provide the impact of the proposed capital projects on performance as reflected in the proposed performance measures. For example, the proposed capital program includes $557.5 million (more than 60% of the proposed capital program) for reliability and life cycle replacements, which in turn would presumably have an impact for performance measures within the System Reliability and Optimization Indices.

Without a clear linkage to performance expectations, it is difficult for the regulator to evaluate the appropriate level of capital expenditure and ensure overall capital cost containment. By connecting the proposed investments in infrastructure to performance measures, which in turn should reflect customer priorities, a "golden thread" is established between customer priorities, infrastructure investments and the company's performance commitments.

Similarly, the business cases do not indicate the impact of each capital project on operating costs, either due to the additional costs to operate and maintain the new infrastructure, or due to efficiencies gained as a result of the investment. A portion of the proposed capital program is directed toward efficiency and performance improvement, which presumably will have some influence on operating costs (efficiency) and performance measures.

5.4.7 Previous Utility Committee Direction on Performance Measures

As noted above, EWSI provided *Report EXT02462 - EPCOR Water Services – Review of Performance Measures* to Utility Committee for information on May 6, 2024, addressing item 4 in the direction received from Utility Committee on July 9, 2021 in a motion arising from the previous PBR application:

> *That Administration work with EPCOR to bring forward reports prior to the next Performance Based Rates term for Wastewater Collection and Wastewater Treatment effective April 1, 2025, providing further background and the appropriate regulatory treatment for the following items:*
>
> 1. *Improved disclosure of changes in accounting and capitalization policies and treatment;*
> 2. *Reporting the size of the workforce including actual and forecast full-time equivalents;*
> 3. *A review of how long-term debt interest rates are set for EPCOR Water Services Inc.;*
> 4. *A review of the performance measures to ensure they are increasingly stringent and challenging over time; and*
> 5. *A review of the deferral account and other adjustment mechanisms to deal with variations in usage.*

The report was organized as follows:

1. Introduction
2. Background:
   2.1. Framework for Performance Standards
   2.2. Performance Standards
   2.3. Assessment of Performance
3. Rationale for Maintaining the PBR Performance Measure Approach

Section 3 of the report addressed the premise of the direction from Utility Committee and the primary conclusion of the report is that setting increasingly stringent or aspirational standards "may not always be warranted from a customer service or cost/benefit perspective." The primary conclusion may be appropriate, recognizing that the scope of the report was limited to addressing the direction received from Utility Committee. It is understood that the purpose of the report would not have been to address the findings of this review related to the performance measures framework, including:

- How the selected suite of performance measures ensure progress towards achievement of strategic outcomes and commitments related to the operational and capital investments included in the application;
- How the performance measures and associated weightings and standards are reflective of the expectations or priorities of customers, stakeholders and the regulator;
- The role of the various parties (Utility Committee, EWSI, Administration) in establishing the performance measures and standards;

- The cost/benefit of consistently exceeding performance standards and the information needed by the regulator (Utility Committee) to make informed choices regarding level of service, risk and cost to ratepayers; and
- The details of the assessment framework itself, including how points and bonus points are assigned and the role of financial penalties and incentives.

Like the application, the report also indicates that "it has been challenging to find broad based industry benchmarks for the majority of the individual measures." As described in section 5.4.5 (Availability of Benchmarking Data) above, it is reasonable to include at least some measures that can be benchmarked against industry data to evaluate performance or establish appropriate standards.

5.4.8 Consolidation of Safety Performance Measures

For the 2025-2027 PBR period, EWSI is proposing to report on safety performance for Wastewater Collection and Wastewater Treatment through consolidated safety performance measures and to incorporate safety measures for Water in the next consolidated PBR application. The justification provided is to "drive consistency in approach and comparability of results." This appears to be a reasonable and appropriate approach.

In an information request (MV-EWS-25) on this topic, EWSI was asked to comment on whether consolidating safety performance measures across all three utility services will mask underperformance in one service area and how EWSI plans to ensure safety performance meets the standard in each of the three service areas. EWSI's response is provided below:

> *Consolidation of safety performance measures across all three utility services will not mask underperformance in any of the individual service areas. Consolidation of safety performance measures is appropriate as safety is managed consistently across EWS' operations. Currently, performance measures for each service area are tracked individually and also in aggregate. Safety performance results are communicated broadly within EPCOR on a monthly basis to ensure all utility service areas are meeting performance targets. This detailed level of reporting will continue following the consolidation of the safety performance measures across all three utility services.*

It is noted that, while it is reasonable to consolidate safety performance measures across the utilities, it is still important to report on individual measures per utility (as opposed to a higher-level blending of performance across the utilities).

5.5. Observations for Specific Performance Measures – Wastewater Collection

This section provides the observations on specific performance measures for the Wastewater Collection line of service, organized by the indices.

5.5.1 Environmental Index

Stormwater Flow Monitoring

Flow monitoring of stormwater discharges is an important, basic function of a stormwater utility. It is not clear, however, how the inclusion of this performance measure contributes to a balanced overview of utility performance. It is noted from the Stakeholder Engagement Report (Appendix H) that reducing contaminants to the river is a customer priority and the application indicates that

the flow monitoring contributes to the Total Loadings Plan and to evaluating the effectiveness of the Stormwater Integrated Resource Plan (SIRP). A measure that better reflects the customer priority or the effectiveness of the Total Loadings Plan or the SIRP could be considered, such as total loadings to the river or a reduction in total loadings relative to a target.

In response to an information request (MV-EWS-23) on this measure, EWSI stated that this measure is required in its Approval to Operate, that EWSI has proposed alternative measures related to the Total Loadings Plan for its Approval to Operate, and if approved by Alberta Environment and Protected Areas, will consider those measures for the 2028 PBR term. It should be noted that the objectives are different for the two regulatory processes. AEPA is EWSI's environmental regulator, while the PBR process is a financial regulatory framework and it should be expected that performance measures are different between the two regulatory processes. The objective of the PBR process should be to ensure that customers are receiving value for the rates paid to EWSI and as such, an outcome-based, lagging indicator would be appropriate.

Reportable Environmental Incidents

The inclusion of Reportable Environmental Incidents is an appropriate measure to include in the Environmental Index. As performance from 2021 to 2023 has consistently been below 20, the proposed standard of 30 appears to be high and a lower standard should be considered.

Stormwater Rebate Projects

This performance measure is proposed to replace the Green Hectares measure. While the Stormwater Rebates Program is a laudable program with an objective to reduce runoff to the collection system, the measure as conceived only reflects the number of rebates and not the effectiveness of the program. A measure that better reflects the effectiveness or progress of the program to reduce stormwater runoff should be considered, such as volume of rainfall retained or effective impervious area removed, potentially relative to a planned target. This would then also focus the program on the most effective projects with a higher return on investment, rather than a focus solely on the number of projects.

In response to an information request (MV-EWS-23), EWSI indicated that the Green Hectares measure that is proposed to be removed is a proxy for volume of rainfall retained or effective impervious area removed and will still be reported to Utility Committee through progress reporting on the Stormwater Integrated Resource Plan (SIRP). EWSI is recommending its removal from the PBR process because of challenges with auditing for PBR reporting purposes.

A measure of how EWSI is achieving the desired outcomes of the program, i.e. a lagging indicator, would be appropriate for the PBR framework.

5.5.2 Customer Service Index

The four performance measures proposed for the Customer Service Index are all response time measures, which are appropriate for the Customer Service category. Three of the four proposed measures are new for this PBR period:

- Stormwater Facility Response Time
- Deficient Appurtenance Response Time
- Sewer Odour Response Time

The Stakeholder Engagement Report (Appendix H) indicates that “quick response time for blocked sewers and emergencies” is of most importance to customers, while “reducing the number of blocked main-line sewers” and “maintaining sewer drainage performance to reduce flood risk” is also important. Wastewater service interruption frequency, duration and response time performance measures are prevalent measures used by wastewater utilities throughout North America (AWWA) and internationally (Ofwat, IPART) and reflect the direct impact on service delivered to the customer base.

It is not clear, then, why “Stormwater Facility Response Time” and “Deficient Appurtenance Response Time” are proposed rather than measures of direct customer service interruption and response time. In its application, EWSI stated “it has proven challenging to find broad based industry benchmarks.” Wastewater service interruption is a commonly used measure with benchmarking readily available.

In response to an information request (MV-EWS-27) on this topic, EWSI stated that service interruption performance measures will be considered in its future PBR application.

The Stakeholder Engagement Report (Appendix H) within the PBR Application also indicates that high priorities include “easy to report any issues with sewer or stormwater drainage” and “customer service/support that is easily available to ask questions.” Common measures for customer service performance include those related to customer experience, including call centre performance indicators or measures of customer satisfaction derived from post-contact survey, or metrics related to billing and meter reading performance. Not only are these measures commonly used in the water/wastewater utility sector, but also in the electricity and gas sector, including by AUC. No measures of this nature have been suggested in the application.

In response to an information request (MV-EWS-27) on this topic, EWSI indicated that customer service quality and experience measures will be considered in its 2028 PBR application.

5.5.3 System Reliability and Optimization Index

Service Maintenance Calls and Emergency Dig Ups

Service Maintenance Calls and Emergency Dig Ups are both response time measures. The application proposes moving these measures from the Customer Service Index to the System Reliability Index, yet response time measures are more appropriate in the Customer Service Index. In response to an IR, EWSI stated that moving the measures to the System Reliability Index aligns with the practice for Water performance indicators.

It is also noted that the response time for those services requiring an emergency dig up are differentiated from those that do not. It is also noted that the benchmark for service maintenance calls is 24 hours and for emergency dig ups is 48 hours. Benchmarking is available for wastewater service unplanned disruptions of varying frequency from AWWA (less than 4 hours, between 4 and 12 hours and longer than 12 hours). It can be argued that the customer impact and experience associated with a service interruption of 24 or 48 hours is likely not impacted by how the interruption is resolved (i.e. a dig up or not). As a result, there is an opportunity to consolidate and modify these measures to align with customer expectations and available benchmarking.

Full Property Flood Inspections

This performance measure is intended to measure the effectiveness of the Enhanced Building Flood Proofing program, which is “aimed at identifying and implementing flood-proofing

measures" for "40,000 properties deemed at high and medium high risk of basement flooding." This performance measure, however, only reflects the number of properties inspected and not the effectiveness of the program at reducing flood risk. A measure that better reflects the effectiveness of the Enhanced Building Flood Proofing program could be considered, such as a reduction in the number of properties at high and medium-high risk of flooding, relative to a planned target.

In response to an information request (MV-EWS-23) on this measure, EWSI indicated that the removing properties from higher flood risk categories occurs over a longer period due to the length of time it takes to install the required infrastructure and risk assessments are updated on a five year cycle. However, the impact of each infrastructure project is likely established as part of its business case and that establishing a lagging indicator that recognizes the timeframes involved (such as measuring against a planned target) would be appropriate.

Performance Measures Proposed to be Removed

Two performance measures proposed to not be carried forward from the 2022-2024 PBR period are Sewer Renewal and Infrastructure Condition Rating. As noted above, three of the four measures in the System Reliability index are response time measures and are not reflective of system reliability. The application indicates that Sewer Renewal is proposed to be removed as it does not reflect EWSI's risk-based approach to investment in the system. Given the significance of the proposed capital investment in reliability and life-cycle replacements, a measure that reflects the reduction in risk could be considered, such as the length of sewer that moves to a lower risk rating, against a planned target.

The Infrastructure Condition Rating is proposed to be removed because it does not change appreciably over time. An alternative measure could be considered that reflects how much infrastructure is moved from a lower condition rating to a higher condition rating against a planned target, again to reflect the significant investment proposed in reliability and life-cycle replacements.

In response to an information request (MV-EWS-24) on these measures, EWSI indicated that alternative measures will be considered for the 2028 PBR term or for separate tracking and reporting outside the PBR performance measures program. As the PBR process is a financial regulatory framework, performance indicators that measure the return on the significant capital investment in reliability and life-cycle replacements would be appropriate for the 2025-27 period.

5.6 Observations for Specific Performance Measures – Wastewater Treatment

Wastewater Effluent Performance Limit

This measure represents the quality of wastewater effluent discharged to the North Saskatchewan River relative to that allowed by EWSI's Approval to Operate from Alberta Environment. The proposed standard of 26% indicates that EWSI intends to consistently treat effluent to a level well below (i.e., better than) that allowed in its Approval and actual performance has been increasing with a 10-year average of 21%.

Year	% below limit	Year	% below limit	Year	% below limit	Year	% below limit
2014	23%	2017	22%	2020	19%	2023	19%
2015	23%	2018	27%	2021	18%	10 year average	21%
2016	18%	2019	25%	2022	17%		

Standard | 2014-2016: 46% | 2017-2021: 28% | 2022-2023: 26%

Table 26: Wastewater Effluent Performance Limit Historical Results

While this aligns with the customer priority of reducing contaminants to the river, it likely also requires a higher level of investment of resources than if EWSI operated closer to its Approval limits, which in turn results in increased costs being borne by ratepayers.

As noted above, water and wastewater utilities internationally are increasingly setting performance outcomes based on customer values or customer willingness to pay assessments and in its application, EWSI indicates that "increasingly stringent performance standards may not be warranted from a customer service or cost/benefit perspective." It is suggested that EWSI assess the cost of treating wastewater to a level well below the level allowed in its Approval to Operate and if continuing to lower (i.e. improve) the standard for this measure is warranted from a "customer service or cost/benefit perspective". Setting the standard at 26% is a choice that is made without knowing what the cost of that choice is.

In response to an information request (MV-EWS-26) on this topic, EWSI stated that it has undertaken an informal assessment by applying management judgement and experience. It has also suggested a modification to the WELP measure to exclude exception events as outlined in the application (paragraph 614). EWSI also indicated that this measure may no longer be relevant in the context of its total loadings management plan and may be removed in the future.

H2S 1-hour and 24-hour Exceedances

These measures are intended to numerically reflect the instances that odour may be detected by neighbouring residents by measuring H2S at two sites in the vicinity of the Gold Bar Wastewater Treatment Plant. However, by averaging the results, measurements that don't reach the odour threshold at one site may mask the exceedances at the other site.

	2022	2023
H2S - 1 hour - Standard	**4.0**	**4.0**
H2S - 1 hour - Gold Bar	0.0	1.0
H2S - 1 hour - Beverly	1.0	5.0
H2S - 1 hour - Total	1.0	3.0
H2S - 24 hour - Standard	**1.0**	**1.0**
H2S - 24 hour - Gold Bar	0.0	0.0
H2S - 24 hour - Beverly	2.0	0.0
H2S - 24 hour - Total	1.0	0.0

Table 27: H2S 1-hour and 24-hour Exceedances

If the intent is to identify individual incidents of H2S measurements that exceed the odour threshold, then a measure that provides individual exceedances rather than an average would better represent actual performance as experienced by neighbouring residents.

In response to an information request (MV-EWS-23) on this measure, EWSI stated that the average is used to provide a better understanding of performance over the larger area surrounding the plant and not just at a single station location. It can be argued, however, that a resident may experience an odour event at their home, even if the average for the larger area does not exceed the threshold.

Biosolids Management

The Biosolids Management measure is proposed as a new measure intended to reflect the amount of biosolids EWSI beneficially reuses annually. However, without the context of the amount of biosolids generated, the proposed standard is not necessarily reflective of performance related to biosolids management. It is also noted that the Biosolids Inventory Reduction Factor is proposed for removal as a performance measure. A measure that reflects the ratio of beneficial reuse of biosolids to the total amount of biosolids generated, on an annual or rolling average basis, may better reflect the effectiveness of EWSI's biosolids management program. Annual beneficial reuse as a percentage is reported in the AWWA Utility Benchmarking Survey.

In response to an information request (MV-EWS-23) on this topic, EWSI indicated that the Biosolids Inventory Reduction measure was a three year rolling average of the ratio of total dry tonnes of biosolids removed from the lagoons to total dry tonnes deposited in the lagoons. EWSI stated that the reason for removal of this measure was because increasing inventory of biosolids was no longer an issue and that settling rate issues in the lagoons are impacting EWSI's ability to harvest thickened biosolids.

The explanation provided by EWSI does not provide the rationale for moving away from a measure as suggested, i.e., the ratio of beneficial reuse of biosolids to the total amount of biosolids generated. This is a common measure reported in the AWWA Utility Benchmarking Survey, as well as in the Canadian Benchmarking Initiative.

Energy Efficiency

The Energy Efficiency measure as proposed is an appropriate measure for a wastewater utility. This measure is available for benchmarking through the AWWA Utility Benchmarking Survey. A preliminary review of the data suggests that EWSI is a top performer for this measure relative to the data in the survey.

5.7 Summary of Recommendations: Performance Measures

Based on the findings and observations above, several recommendations have been developed for improvement of the performance measures framework overall or for specific measures and (indices. The recommendations have been organized into three categories as follows:

- For action by City Council supported by Administration, with consultation from EWSI (1 recommendation in this category);
- For action by EWSI (10 recommendations); and
- For action either by City Council supported by Administration OR by EWSI, depending on the outcome of Recommendation 1, which will determine which entity should be accountable and responsible (4 recommendations).

Recommendation 1 is a review of roles and responsibilities for establishing performance measures and will determine which party is accountable responsible for Recommendations 12 through 15. At a minimum, it is acknowledged that EWSI should be engaged in these initiatives.

Recommendation for action by City Council supported by Administration	Timeframe suggested for implementation
1) Undertake a review of the process for establishing performance measures, including the roles of the parties involved (Council, Administration, EWSI) and leading practices from applicable regulatory agencies (e.g., AUC, Ofwat, IPART, etc.) *See Recommendation #32, Table #6.*	During the 2025-2027 period to inform the application for the period commencing 2028
Recommendations for action by EWSI	**Timeframe suggested for implementation**
2) Provide a comprehensive description of how the proposed suite of performance measures reflects the customer priorities derived from stakeholder engagement. *See Recommendation #16, Table #3.*	For the 2025-2027 application
3) Provide a comprehensive description of how the proposed suite of performance measures provides a balanced view of EWSI's overall performance and how the company is progressing towards achieving its strategic objectives. *See Recommendation #16, Table #3.*	For the 2025-2027 application
4) Undertake an evaluation of the measures where EWSI has consistently exceeded the standard to evaluate the costs and benefits for ratepayers of exceeding performance standards and/or to determine if the standards should be adjusted. *See Recommendation #30, Table #6.*	During the 2025-2027 period to inform the application for the period commencing 2028
5) In capital business cases, include a section that outlines how the proposed capital investment supports or impacts the relevant performance measures. *See Recommendation #35, Table #6.*	In the application for the period commencing 2028
6) Retain response time measures (such as Service Maintenance Calls and Emergency Dig Ups or suitable alternatives) in the Customer Service Index. *See Recommendation #18, Table #3.*	For the 2025-2027 application
7) Evaluate whether the Full Property Flood Inspections measure should be replaced by a lagging indicator that reflects the effectiveness of the Enhance Building Flood Proofing program, such as a reduction in the number of properties at high and medium-high risk of flooding, relative to a planned target. *See Recommendation #19, Table #3.*	For the 2025-2027 application

8) Given the significant proposed investment in reliability and life-cycle replacements, include measures within the System Reliability Index that reflect the impact of the investments, such as reduction in infrastructure risk or improvement in infrastructure condition, relative to planned targets associated with the proposed investments. *See Recommendation #19, Table #3.*	For the 2025-2027 application
9) For the Wastewater Effluent Performance Limit measure, evaluate the costs and benefits for ratepayers of treating wastewater to a level well below the level allowed in its Approval to Operate and if the standard is set at a level that is warranted from a customer service or cost/benefit perspective. *See Recommendation #38, Table #6.*	During the 2025-2027 period to inform the application for the period commencing 2028
10) For the H2S 1-hour and 24-hour Exceedances measures, evaluate if measures reporting individual exceedances at the monitoring sites rather than an average of the two sites would better represent actual performance and potential odour incidents. *See Recommendation #20, Table #3.*	For the 2025-2027 application
11) Consider adjusting the Biosolids Management measure to one that reflects the ratio of beneficial reuse of biosolids to the total amount of biosolids generated, on an annual or rolling average basis, to better reflect the effectiveness of EWSI's biosolids management program and enable benchmarking against comparator utilities. *See Recommendation #21, Table #3.*	For the 2025-2027 application
12) The Wastewater Treatment – Energy Efficiency measure is appropriate and available for benchmarking. Further, EWSI's standard would put them in the top quartile in the AWWA benchmarking survey. *See Recommendation #22, Table #3.*	For the 2025-2027 application
Recommendations for action by either City Council supported by Administration OR by EWSI, depending on the outcome of recommendation 1).	**Timeframe suggested for implementation**
13) Review the suite of performance measures, and adjust them as required, to: a) Reflect that the PBR process is a financial regulatory process with an objective to ensure customers are receiving value for the rates they pay b) Measure EWSI's progress towards meeting prescribed commitments c) Include an appropriate number of outcome-based measures (lagging indicators), and d) Include measures that can be benchmarked against comparative utilities. *See Recommendation #33, Table #6.*	During the 2025-2027 period to inform the application for the period commencing 2028

14) Undertake a review of the performance measures methodology, including benchmarking against other comparative regulatory regimes, to address how base and bonus points are allocated and the implications for financial incentives and penalties. The review should include evaluation of appropriate financial penalties/incentives. *See Recommendation #34, Table #6.*	During the 2025-2027 period to inform the application for the period commencing 2028
15) Review the measures comprising the Wastewater Collection Environmental Index to ensure the proposed measures are meaningful indicators of performance and reflect progress towards achievement of strategic objectives and a return on investment for customers, particularly Stormwater Flow Monitoring and Stormwater Rebate Projects. *See Recommendation #36, Table #6.*	During the 2025-2027 period to inform the application for the period commencing 2028
16) Review and modify the measures comprising the Wastewater Collection Customer Service Index to ensure they reflect the most important customer priorities. Customer service interruption frequency, duration and response time measures are prevalent measures that should be included in alignment with those indicators in the AWWA Utility Benchmarking Survey. Also consider customer service/call center measures and customer experience measures. *See Recommendation #37, Table #6.*	During the 2025-2027 period to inform the application for the period commencing 2028

Table 28: Summary Recommendations for Performance Measures

Appendix A: Grant Thornton's Detailed Cost of Capital Report

Grant Thornton's detailed report assessing EWSI's proposed cost of capital is attached in the following pages.

Grant Thornton

Mooreview Management Consulting Inc.

Review of EPCOR Water Services Capital Structure and Cost of Capital as Presented in the 2025-2027 Performance Based Regulation Application for Wastewater Services

August 16, 2024

Grant Thornton

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August 16, 2024

Dear Mr. Moore:

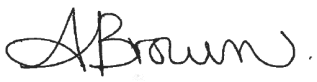
Review of EPCOR Water Services Capital Structure and Cost of Capital as Presented in the 2025-2027 Performance Based Regulation Application for Wastewater Services

We enclose our report outlining our observations regarding EPCOR Water Services capital structure and cost of capital as presented in the 2025-2027 Performance Based Regulation Application ("2025-2027 PBR") for Wastewater Services.

We believe that our report must be considered as a whole. Selecting portions of our report or the factors we considered, without considering all factors and analyses together, could create a misleading view of the underlying observations. The preparation of the report was a complex process and is not necessarily susceptible to partial analysis or summary description. Any attempt to do so could lead to undue emphasis on a particular factor or analysis.

We thank you for the opportunity to provide our services and will be pleased to discuss the foregoing at your convenience.

Yours sincerely,



Troy MacDonald, CPA, CA, CBV
Partner, Advisory Services

Angie Brown, CPA, CA, CIA
Partner, Advisory Services

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Introduction

This report was prepared by Grant Thornton LLP ("we", "us", "GT", or "Grant Thornton") under an engagement with Mr. Myron Moore, Owner and President of Mooreview Management Consulting Inc. ("you", "your" or "Mooreview"). We understand that your client, the City of Edmonton (the "City"), has requested observations regarding EPCOR Water Services Inc. ("EWS") capital structure and cost of capital proposed in their EPCOR – 2025-2027 Wastewater Performance Based Regulation ("PBR") Application (the "2025-2027 PBR", "2024 PBR", or the "Application").

This report is not considered an Expert Report under Practice Standard No. 310, 320, and 330 or a Limited Critique Report under Practice Standard No. 410, 420 and 430 of the Canadian Institute of Chartered Business Valuators. This Report is meant to provide you with our observations based on the scope of work, documents relied upon, assumptions, restrictions, and qualifications noted herein.

This report is provided for the use of the Administration of the City of Edmonton in evaluating the 2025-2027 PBR submitted by EWS. We understand that our Report may be disclosed as part of a public rate hearing process, and we consent to the use of our Report for this purpose. No other use is intended or permitted without the prior written consent of Grant Thornton LLP.

All amounts contained in this Report are expressed in Canadian dollars unless otherwise stated.

Scope of work

Our work was focused on the capital structure and cost of capital sections of the 2025-2027 PBR. With regards to those sections, we have undertaken the following:

- Considered the evidence regarding capital structure and cost of capital filed by EWS with the City of Edmonton on May 31, 2024;
- Performed a jurisdictional review of cost of capital considerations including, examining the allowed return on equity and the equity ratios of other Canadian regulators and a sample of U.S. water utilities for the period of 2021 (date of the last PBR application) to 2024, where publicly available.
- Considered information regarding company risk profile filed by EWS in their 2021 Performance Based Regulation Application and compared this to the information filed in the 2025-2027 PBR;
- Considered the evidence, information requests and related responses filed by any other parties to the 2025-2027 PBR; and
- Prepared a summary report outlining our preliminary observations from the review of the above noted documents.

Qualifications and independence

The Report has been prepared by a team of qualified Chartered Professional Accountants and Chartered Business Valuators. Further details regarding the engagement leadership qualifications are included in **Appendix C**.

We confirm that the professional staff assisting in this engagement prepared this Report acting independently and objectively. To the best of our knowledge, we have no conflicts of interest. Our fees were not contingent on an action or event resulting from the use of our Report.

Information reviewed and relied on

Unless stated otherwise within the body of this report, Grant Thornton LLP has relied upon information provided by EWS, the City of Edmonton, the City of Edmonton Utility Committee, and third-party sources in the preparation of this report, whom Grant Thornton LLP believe to be reliable. We are not guarantors of the information upon which we have relied in preparing the report and, except as stated, we have not audited or otherwise attempted to verify any of the underlying information or data contained in this report. We have made efforts to ensure a conservative, realistic and transparent approach, however, some of the analysis depends on the input from third parties whose opinions may influence the observations. Please refer to **Appendix A** for a list of information reviewed.

All analysis, information and recommendations contained herein are based upon the information made available to Grant Thornton LLP as of the date of this report. We reserve the right, but are under no obligation, to review all comments and observations included in or referred to in this Report and, if we consider it necessary, to revise our observations considering any information that subsequently becomes known to us following the date of our Report.

Overview of capital structure and cost of capital proposed by EWS

In the 2025-2027 PBR, EWS has proposed the following capital structure and cost of capital information.

Figure 1 - Summary of requested change in capital structure, cost of debt, and return on equity

	2021-2024 PBR (existing)[i]	2024-2027 PBR (proposed)	Change
Capital Structure[ii]			
Debt	60.00%	60.00%	0.00%
Equity	40.00%	40.00%	0.00%
Cost of debt[iii]	**3.50%**	**4.65%**	**1.15%**
Cost of equity[iv]	9.89%	10.80%	0.91%
Weighted-average cost of capital	**6.08%**	**7.11%**	**1.03%**

EWS's proposed capital structure, cost of debt and return of equity is based upon a report prepared by ScottMadden, Inc. ("ScottMadden"). The above indicated cost of common equity has been proposed for wastewater treatment, while the cost of equity for wastewater collection has been proposed to ramp up to the 10.80% over a five-year period; increasing from 5.50% in 2022 to the 10.80% by 2026.[v]

Observations, findings and recommendations

The following represents a summary of our key observations based on the procedures outlined throughout the report. For a more detailed explanation please refer to the referenced section of this report.

Topic	Findings	Recommendation
Capital structure	EWS's 2025-2027 Wastewater Services PBR proposed capital structure is 60% debt and 40% equity. This is consistent with past practices. While we have noted that there is a variance between EWS's capital structure and the capital structure noted in the Alberta Utility Commission ("AUC") general cost of capital decisions, nothing has come to our attention that would suggest a change in their capital structure is warranted at this time.	After analyzing other jurisdictions and current economic conditions, we agreed that EWS's proposal appears reasonable. We note that the equity thickness will likely need to be reconsidered in the future when interest rates are less volatile.
Cost of debt	EWS's 2025-2027 Wastewater Services PBR is proposing an increase in the cost of debt of 1.15%. This is primarily a result of a 1.34% increase in the 30-year Government of Canada bonds rate since the 2021 PBR and is partially offset by a reduction in the risk premium EPCOR Utilities Inc. ("EUI") charges EWS on intercompany debt. Credit rating agencies have declined to provide one-time stand-alone credit ratings to EWS to support their regulatory filings. While nothing has come to our attention to suggest that the EWS proposed cost of debt is	Given that credit rating reports are no longer available for regulatory review, we recommend that EWS provide further supporting information to support that the cost of debt included in their EWS's 2025-2027 Wastewater Services PBR reflects the current actual cost of borrowing to EUI.

Topic	Findings	Recommendation
	unreasonable, it is difficult to truly determine if the proposed rate is reflective of market pricing if EWS was to engage in a more traditional negotiation of financial terms with multiple lenders.	
Cost of equity	EWS has engaged a cost of capital expert from ScottMadden to calculate a recommended return on equity. This expert has considered a variety of methodologies including the discounted cash flow model ("DCF"), the risk premium model ("RPM"), the capital asset pricing model ("CAPM"), and the comparison to a proxy group of utilities. ScottMadden's use of the capital asset pricing model incorporated a variation of traditional CAPM, empirical CAPM ("ECAPM"). We have not identified any recent Canadian regulatory decision where ECAPM was accepted. EWS's 2025-2027 Wastewater Services PBR is proposing an increase to their cost of equity from the 9.89% in the 2022-2024/2026 Performance Based Rate Application ("2021 PBR" or the "last PBR") of 0.91% arriving at a proposed cost of equity of 10.80% on the current application. We note that the proposed cost of common equity of 10.80% is being proposed for wastewater treatment. The cost of common equity for wastewater collection is being proposed to ramp up to the 10.80% over a five-year period, from 5.50% in 2022 to the full 10.80% by 2026. The 10.80% proposed cost of equity implies a risk premium of 1.52% over the cost of equity included in the AUC's generic cost of capital. The risk premium of 1.52% implies that the risk premium over the AUC has increased since the 2021 PBR. EWS has not considered the varying risk profiles of water services, wastewater services and wastewater collection.	While we agree that some of EWS's services have a higher level or risk than reflected in the AUC generic cost of capital, the risk is not consistent across all of EWS services. Therefore, we recommend that the City should ask EWS to consider the risk premium that is appropriate for each of its main services; water, wastewater treatment, and wastewater collection and then consider a weighted average cost of equity based on the rate base attributable to each service. We'd also note that we do not believe that it is appropriate that the risk premium over the AUC generic cost of capital has increased. We would recommend that the risk premium needs to be reduced by at least 0.13% to be consistent with prior periods. Given that we have not identified any recent Canadian regulatory decisions where ECAPM was accepted, we recommend excluding the results of this methodology from the Canadian and U.S. proxies. The removal of the ECAPM results in a reduction to the cost of equity of 0.09%. We note that a ramp up approach for wastewater collection is reasonable as the transfer of asset ownership to wastewater collection is not yet complete. It would be unreasonable for this business line to earn a full return on assets they do not yet fully own.

Topic	Findings	Recommendation
Overall		EWS has proposed for the equity thickness to remain constant at 40.00% for the PBR period. After analyzing other jurisdictions and current conditions, we agree that the Company's proposal does not appear unreasonable. We note that the equity thickness will likely need to be re-considered in the future when interest rates are less volatile. While we directionally agree with the increased cost of debt given the increased interest environment, it's difficult to assess the overall cost of debt without more third-party information or information on the EUI cost of debt trends. We have considered the elements of EWS PBR in contrast to the AUC and concur with the findings that the EWS PBR having greater inherent risk compared to the other Alberta Utilities, but we do not believe that the risk differential has increased. The usage of ECAPM, which is a methodology inconsistent with those commonly accepted in Canadian regulatory hearings is lifting the proposed cost of equity by 0.09%. We note the proposed cost of equity increase is at the top of the range approved in the Canadian regulatory environment since the last PBR. We conclude that as a starting point, an appropriate cost of equity for EWS is 10.67% to reflect the removal of the ECAPM methodology and to keep the spread above the AUC generic rate consistent with the 2021 PBR as there is no evidence that EWS's risk profile has changed. We also recommend that the cost of equity be more aligned with the risk profile by line of business. Since water has a higher risk profile, we recommend the City consider applying a lower cost of equity to wastewater treatment and wastewater collection in comparison to the cost of equity for water. For illustrative purposes, we have shown three scenarios which reduce the wastewater treatment and wastewater collection by 0.10%, 0.20% and 0.30%, resulting in a recommended cost of equity for EWS overall which has been calculated as 10.49% to 10.67%.

1
2

For clarity we have summarized the impact of the above recommendations in the following table. We have shown the recommendation of 10.67% as a starting point, based on the adjustments for technical considerations including the use of the ECAPM methodology as well as the spread between EWSI's cost of equity and the AUC generic rate. Additionally, we have illustrated a reduction to wastewater treatment and wastewater in the range of 0.10% to 0.30%, implying a total cost of equity of 10.49% to 10.61% for EWSI.

Figure 2 – Proposed vs Recommended

		GT Recommended		
	2024 PBR (proposed)	**After considering technical considerations**	**Overall considering risk profile of varying lines of business**	
Capital Structure			**High - 10.61%**	**Low - 10.49%**
Debt	60.00%	60.00%	60.00%	60.00%
Equity	40.00%	40.00%	40.00%	40.00%
Cost of debt	4.65%	4.65%	4.65%	4.65%
Cost of equity	10.80%	10.67%	10.61%	10.49%
Weighted return on debt	2.79%	2.79%	2.79%	2.79%
Weighted return on equity	4.32%	4.27%	4.24%	4.20%
Weighted-average cost of capital	**7.11%**	**7.06%**	**7.03%**	**6.99%**

Capital structure

A Company's capital structure deals with how it finances its overall operations and growth through different sources of funds, including the mix of debt and equity investment. In the 2025 – 2027 PBR, EWS has estimated their cost of capital (weighted average cost of capital) based on the following:

Figure 3 – Proposed capital structure

	2021 PBR (existing)[vi]	2024 PBR (proposed)[vii]	Change
Capital Structure			
Debt	60.00%	60.00%	0.00%
Equity	40.00%	40.00%	0.00%

We compared the EWS requested capital structure to the cost of capital decisions of other Canadian regulators since the Company's 2021 PBR. We have also reviewed the cost of capital information presented by EWS's expert ScottMadden regarding their identified U.S. Water Utility Proxy Group. The following companies were selected as a sample from ScottMadden's report: American Water States Company; American Water Works Company, Inc.; California Water Service Group; and SJW Group.

Figure 4 – Allowed capital structure - common equity

Entity	2021	2022	2023	2024	Date of last Board Order/Support
British Columbia Utilities Commission[viii, ix, x]					
Benchmark utility	38.50%	38.50%	45.00%	45.00%	5-Sep-23
FortisBC Energy Inc. - *gas distribution*	38.50%	38.50%	45.00%	45.00%	5-Sep-23
FortisBC Inc. - *integrated electric*	40.00%	40.00%	41.00%	41.00%	5-Sep-23
Alberta Utilities Commission[xi, xii, xiii, xiv]					
Electric and gas distribution (except Apex Utilities Inc.)	37.00%	37.00%	37.00%	37.00%	20-Nov-23
Apex Utilities Inc.	39.00%	39.00%	39.00%	39.00%	20-Nov-23
Electric transmission	37.00%	37.00%	37.00%	37.00%	20-Nov-23
ATCO Pipelines - *gas distribution*	37.00%	37.00%	37.00%	37.00%	20-Nov-23
Ontario Energy Board[xv]					
Generic cost of capital	40.00%	40.00%	40.00%	40.00%	31-Oct-23
Quebec Regie de l'Energie[xvi]					
Gaz Metro - *gas distribution*	38.50%	38.50%	38.50%	38.50%	25-Nov-11
Nova Scotia Utility and Review Board[xvii, xviii]					
Nova Scotia Power Inc. - *integrated electric*	37.50%	37.50%	40.00%	40.00%	2-Feb-23
Prince Edward Island Regulatory & Appeals Commission[xix, xx]					
Maritime Electric - *integrated electric*	40.00%	40.00%	40.00%	40.00%	24-Apr-23
Board of Commissioners of Public Utilities, NL[xxi, xxii]					
Newfoundland Power Inc. - *integrated electric* (approved)	45.00%	45.00%	45.00%	45.00%	5-Jan-23
Newfoundland Power Inc. - *integrated electric* (proposed)				45.00%	12-Dec-23
U.S Water Utilities					
American States Water Company[xxiii]	57.00%	57.00%	57.00%	57.00%	2-Feb-24
American Water Works Company, Inc.[xxiv]	57.04%	57.04%	57.04%	57.04%	29-Jun-23
California Water Service Group[xxv]	53.40%	53.40%	53.40%	53.40%	2-Feb-24
SJW Group[xxvi]	53.00%	55.00%	55.00%	55.00%	13-Oct-23

Note – Proceedings for are still ongoing for Newfoundland Power Inc. Newfoundland Power Inc. has proposed a that they retain the current common equity ratio of 45.00% in their 2025-2026 General Rate Application on December 12, 2023.

During the period of 2021 to 2024, we observe that the allowed common equity ratios for the same of utilities considered have been relatively stable over the 2021-2024 period.

The sample of ScottMadden's U.S. Water Utility Proxy Group all include authorized continuation of the Water Cost of Capital Mechanism ("WCCM"), whereby the return on equity may be adjusted between cost of capital proceedings if there is a positive or negative change of more than 100 basis points in the average of the Moody's As utility bond rate as measured over the period of October 1 through September 30. As such, if there is a change, either positive or negative, of more than 100 basis points, the return on equity is adjusted by one half of the difference.[xxvii xxviii xxix xxx] The WCCM allows the return on equity ("ROE") to change, based on the existence of certain conditions, as noted above, but the equity thickness remains constant.

We note in our findings that the equity thickness approved for the U.S. Water Utility Proxy Group per SEC filings, form 10-K does not match to what was noted in ScottMadden's report on Schedule 5, page 2 of 2. ScottMadden calculated the actual debt-to-equity structure by analyzing the 2022 financial statements for each selected company and taking the common equity and dividing it by the total permanent capital. ScottMadden's resultant equity spreads for the U.S. Water Utility Proxy Group therefore represent the actual equity spread

and not the allowed equity spread. The actual equity spreads per the ScottMadden report range from 38.65% to 59.29%, while the allowed equity spreads noted Figure 4 range from 53.40% to 57.04%. Our equity spreads in the above table for the U.S water utility groups are higher, as it is the spread the utilities are allowed, not necessarily what the utilities achieve. We have used the 10-K form from the SEC filings in our table above, noting that this is the allowed equity spread, which will be used to calculate the ROE.

Capital structure – findings and observations

We reviewed EWS's proposed capital structure of 60.00% debt and 40.00% common equity in their 2025 – 2027 PBR and found no changes from the prior rate setting period. We considered if this was appropriate in the current economic environment and in the context of the approved capital structure for utilities in other jurisdictions and noted the following:

- EWS's capital structure allocates a higher weighting to equity than other utilities in Alberta. The AUC approved capital structure for distribution and transmission utilities is 37.00% equity which is less than the 40.00% proposed by EWS. However, the difference between the AUC approved capital structure and EWS's desired capital structure is consistent with the prior rate setting period;
- There has not been a sufficient change in the business, regulatory or financial risk since 2021 that would indicate the capital structure needs to be changed. However, we have discussed company risk in further details in the return on equity section of this report;
- The allowed capital structure of investor-owned Canadian utility peers have remained relatively stable, with some increasing, since its 2021 PBR; and
- Most companies seek to carry higher levels of equity to debt service obligations in the current higher interest rate environment.

We have determined that a change in the capital structure of EWS is not warranted at this time. If the common equity ratio were reduced by the City, we would also note that this change could increase the Company cost of debt and therefore the required return on equity to generate a fair and reasonable return.

Cost of debt

The cost of debt reflects the overall rate being paid by a company to raise capital using traditional debt facilities. The cost of debt generally reflects the company's risk level. As company risk increases or decreases the cost of debt generally increases/decreases. EWS borrows from their parent company, EUI. The table below summarizes the components of the cost of debt from the 2022 – 2024/2026 PBR and the 2025 – 2027 PBR applications:

Figure 5 – Cost of debt comparison

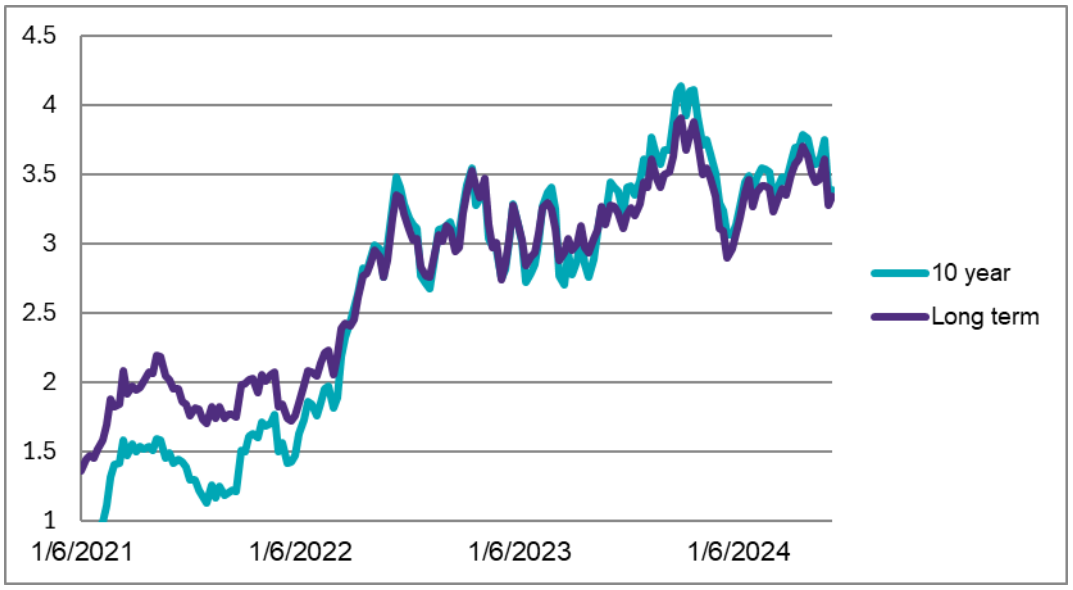
	2021-2024 PBR (existing)[xxxi]	2024-2027 PBR (proposed)[xxxii]	Change
Cost of debt			
Government of Canada forecasted 30-year bond yield	1.83%	3.17%	1.34%
Spread for EUI	1.62%	1.43%	-0.19%
EWS risk premium charged by EUI	0.00%	0.00%	0.00%
Transaction fee	0.05%	0.05%	0.00%
	3.50%	**4.65%**	**1.15%**

The cost of debt applied in the 2024 PBR has increased 1.15% from the 2021 PBR. We noted the methodology for calculating the cost of debt for the current PBR term is consistent with the cost of debt in the 2021 PBR. We considered each component of the calculation as follows.

Government of Canada forecasted bond yields

The information provided by EWS in the 2024 PBR Application is based on Government of Canada 30-year bond yield. They have applied 3.17%[xxxiii] which is consistent with the underlying support cited in the 2025-2027 PBR. At July 17, 2024, long-term Government of Canada benchmark bond yields are 3.32%[xxxiv]. The chart below shows the weekly Government of Canada benchmark long-term and 10-year bond yields from January 2021 to June 2024 **[xxxv].** In recent months, the Bank of Canada interest rate has decreased, with the most recent reduction on July 24, 2024. It is also expected that the Bank of Canada interest rate will experience a further decrease in September. This further demonstrates the expected volatility in the bond markets as of the date of this report. While this does not directly result in a reduction to the cost of debt at this time, we recommend that EWSI includes updated 30-year bond yield information in their compliance application for utility committee consideration. The 3.17% used by EWS in the 2025-2027 PBR falls within the range of actual bond rates experienced at the time of this report.

Figure 6 – Government of Canada Benchmark bond yields



We also considered the RBC Economics Macroeconomic Outlook published in December of 2023 as further support for interest rates of various terms. This information has been summarized in the following table.

Figure 7 – Financial market forecast detail – interest rates

Financial market forecasts - December 2023																
Interest rates (%, end of quarter)																
				Forecast										Forecast		
	23Q1	23Q2	23Q3	23Q4	24Q1	24Q2	24Q3	24Q4	25Q1	25Q2	25Q3	25Q4	2022	2023F	2024F	2025F
Canada																
Overnight	4.50	4.75	5.00	5.00	5.00	4.75	4.50	4.00	3.50	3.00	3.00	3.00	4.25	5.00	4.00	3.00
Three-month	4.34	4.90	5.07	5.00	4.95	4.85	4.35	3.85	3.35	3.00	3.00	3.00	4.23	5.00	3.85	3.00
Two-year	3.74	4.58	4.87	4.30	4.20	3.85	3.60	3.40	3.30	3.20	3.10	3.10	4.06	4.30	3.40	3.10
Five-year	3.02	3.68	4.25	3.65	3.60	3.40	3.35	3.30	3.30	3.25	3.20	3.20	3.41	3.65	3.30	3.20
10-year	2.90	3.26	4.03	3.55	3.65	3.50	3.40	3.35	3.35	3.30	3.30	3.30	3.30	3.55	3.35	3.30
30-year	3.02	3.09	3.81	3.40	3.65	3.60	3.60	3.55	3.50	3.45	3.40	3.40	3.28	3.40	3.55	3.40
Yield curve (10s-2s)	-84	-132	-84	-75	-55	-35	-20	-5	5	10	20	20	-76	-75	-5	20

The above table further supports that the 3.17% risk free rate used as the starting point in the cost of debt calculation is within the range of recent and forecasted market interest rates on 30-year Canada bonds.

Historically, EWS relied on Dominion Bond Rating Service ("DBRS") to provide a one-time private stand-alone credit rating to calculate its forecast cost of new long-term debt. However, DBRS has declined to provide such ratings if the ratings and reports are to be publicly disclosed in regulatory proceedings.[xxxvi] We have requested that EWS include DBRS' reports in a confidential exhibit, however EWS response to our information request was "there are no current reports pertaining to EWS from any rating agencies that can be shared" as there are concerns of confidentiality and public disclosure.[xxxvii] EWS, however, has noted there have been no material changes in its operational, regulatory, or financial environment since the previous A (low) rating issued, and thus have used the previous DBRS rating of A (low) in its 2025 – 2027 PBR.[xxxviii] This rating is consistent with the past three PBR applications.

Although EWS was unable to provide us with reports obtained from DBRS and S&P for a one-time sand-alone credit rating, we did consider EPCOR Utilities Inc. Management's Discussion and Analysis for the three months ended March 31, 2024. Based on this information we have noted that EUI's current credit ratings have not changed since the 2021 PBR and are as follows:

- S&P - A- with a stable outlook for both its issuer credit rating and senior unsecured debt rating
- DBRS rating as A (low)/stable senior unsecured debenture rating and R-1 (low)/stable short term debt.
- Fitch Ratings has also assigned a rating to EUI of A-/issuer default rating to EUI and A/instrument rating to EUI's senior unsecured debt.[xxxix]

EUI spread

The EUI spread reflects the spread between the low-risk 30-year Canadian bond and the real cost for EUI to issue similar term standalone facilities. EWS has proposed a decrease in the spread of 0.19% from 1.62% in the previous PBR term to 1.43% in the current application.[xl]

We reviewed the year-to-date 2024 spreads on 30-year Canadian utility BBB and A rated senior secured fixed rate bonds and compared the rates and spreads to the 2021 rates for the same classes of bonds and summarized our findings below.

Figure 8 – Summary interest rates by credit rating

	2021			2024		
Rating	Low	High	Average	Low	High	Average
BBB	2.86%	3.76%	3.42%	4.93%	5.57%	5.26%
A	2.57%	3.55%	3.20%	4.47%	5.02%	4.79%
Average BBB and A			**3.31%**			**5.03%**

Source: third party data base.

Based on the above table we have noted that market cost of debt rates for Canadian utilities with an A or BBB credit rating are in the range of 4.47% to 5.57%. Therefore, nothing has come to our attention which would suggest the EWS's proposed spread for EUI is unreasonable.

Transaction costs

Included in the calculation of the cost of debt is a 0.05% transaction fee to reflect the costs that would be incurred by EUI to issue debt in public markets. This is consistent with the assumption applied in both previous PBR periods and is consistent with Canadian regulatory practices. Therefore, we have concluded that this component of the cost if debt calculation is not unreasonable.

Cost of debt – findings and observations

We reviewed EWS proposed cost of debt and found the following:

- Given that EWS secures its debt from its parent company, EUI, is it difficult to truly determine if the proposed rate is reflective of market pricing if EWS was to engage in a more traditional negotiation of financing terms with multiple lenders. However, nothing has come to our attention which would suggest that a 4.65% cost of debt for this Company is unreasonable on a standalone basis.
- We note that EWS has remained consistent since the 2021 PBR by using a forecast based on 30-year debt.
- Given that credit rating reports are no longer available for regulatory review, we recommend that EWS provide further supporting information to support that the cost of debt included in their EWS's 2025-2027 Wastewater Services PBR reflects the current actual cost of borrowing to EUI. We found that the information presented EWS regarding the cost of debt was consistent with their supporting materials and are reflect of current market conditions.

Cost of equity

EWS engaged a consultant from ScottMadden to provide a recommendation on their cost of equity. In the expert report filed as an attachment to the EWS 2025-2027 PBR, ScottMadden utilized several methods to calculate ROE 1) DCF, 2) RPM and 3) CAPM. The results of this analysis are summarized in the table below:

Figure 9 – Cost of common equity model results [xli]

	Canadian Utility Proxy Group	U.S. Water Utility Proxy Group
Discounted cash flow model	9.24%	10.00%
Risk premium model	10.81%	11.17%
Capital asset pricing model	9.15%	11.70%
Indicated cost of common equity before flotation cost adjustment	10.00% - 11.70%	
Flotation cost adjustment	0.50%	
Indicated cost of common equity after flotation cost adjustment	10.50% - 12.20%	
Indicated cost of common equity	**10.80%**	

ScottMadden used the range of indicated cost of common equity based on the results of the U.S. Water Utility Proxy Group. ScottMadden stated that "the results of the Canadian Utility Proxy Group and the U.S. Water Utility Proxy Group overlap from 10.0% to 10.81% and 10.50% to 11.31%, before and after accounting for flotation costs, respectively". [xlii] ScottMadden based his range of 10.00% to 11.70% on the U.S. Water Utility Proxy Group and then applied a flotation cost adjustment of 0.50% to arrive at the range of 10.50% to 12.20% as shown below. He continued to note that the recommended cost of equity of 10.80% "falls within this range, which is subsequently at the low end of the indicated range of common equity cost rates of 10.50% to 12.20%. This approach recognizes that primary weight must be applied to the results based on the U.S Water Utility Proxy Group results due to operational comparability, while also recognizing that geographical similarities between EWS and the Canadian Utility Proxy Group must also be accounted for". [xliii]

The approved cost of common equity for 2024 is 8.10%. [xliv] We note that the above indicated cost of common equity is being proposed for wastewater treatment. The cost of common equity for wastewater collection is being proposed to ramp up to the 10.80% over a five-year period, from 5.50% in 2022 to the full 10.80% by 2026. [xlv] The proposed rate of return for the remaining ramp up period is as follows:

Period	Cost of equity
2025	9.00%
2026	9.90%
2027	10.80%

We note that a ramp up approach is reasonable as the integration Wastewater Collection assets is not yet complete. The utility committee should continue to monitor the integration of Wastewater Collection by EWSI as full integration should be complete before the full cost of equity is applied to this utility service.

We performed a jurisdictional review and found the following: 1) CAPM, DCF and RPM methodologies are widely used to determine the cost of equity for regulated utilities, but the ECAPM is not widely used. Further details regarding the methodologies used in other jurisdictions are summarized below:

Method	Observation	Impact
DCF	The DCF is an acceptable method to assess the allowed return on equity for regulated utilities in the U.S. This is based on the ease of use in the U.S. market where there is a large universe of comparable public companies that are widely followed by investment analysts to draw upon. As a result,	ScottMadden has calculated cost of equity based on the DCF model of 9.24% for Canadian Utility proxy companies and 10.00% for U.S. Water Utility proxy companies. The cost of equity calculated for the Canadian Utility proxy companies appears on the lower end of the results compared to the other tests, recent Canadian regulatory decisions, and the risk profile of EWS. The cost of equity of 10.00% calculated for U.S Water Utility proxy

Method	Observation	Impact
	there are readily available estimates of growth rates for utility proxy groups. In the Canadian context, the DCF is more challenging because not only are the number of possible proxies significantly smaller, but reliable estimates of growth rates are not publicly available.	companies is used to set the lowest range of recommended cost of common equity. Due to the limited Canadian utility specific information, we noted that the results of the Canadian Utilities DCF may not be fully reflective of market conditions. However, the removal of this conclusion would not change the outcome as the range has been recommended based on the U.S. Water Utility Proxy Group. The selection of 10.80% within that recommended range is based upon the overlap of the Canadian Utility Proxy Group and U.S Water Utility Proxy Group. Such an overlap begins at a cost of common equity of 10.00%. Removal of the cost of equity based on the DCF model for the Canadian Utility Proxy Group of 9.24% from the conclusion would still result in the overlap beginning at a cost of equity of 10.00%, and therefore would not change the outcome.
RPM	RPM analysis is based on the understanding that it is riskier to hold equity compared to holding bonds. Financial theory holds that investors are rational and will therefore require a higher return or premium to compensate them for holding assets with higher risk relative to bonds. If the rate of return on a risk-free asset can be determined and the equity premium to hold risky assets observed and established, the required return on equity can be estimated. The most recent Canadian regulatory decisions from the British Columbia Utilities Commission ("BCUC") and the Nova Scotia Utility and Review Board ("NSUARB") have allocated primary weighting to the use of the RPM method in calculating the ROE for Canadian regulated utilities. The BCUC has noted that considerable weight should be given to the use of a Risk Premium Model when determining an appropriate ROE.[xlvi]	The cost of common equity under the RPM approach in the ScottMadden report has been calculated as 10.81% for Canadian Utility proxy companies and 11.17% for U.S. Water Utility proxy companies. It is the highest cost of equity for the Canadian Utility proxy group.
CAPM	CAPM is one of the most widely used methods for determining an appropriate required rate of return for an asset held as part of a diversified portfolio and is one of the most common pricing models used by Canadian regulators. The expected cost of equity is a function of the risk-free rate of interest plus the product of a measure of systematic risk (beta), and the expected market risk premium on the market portfolio. We have not identified any recent Canadian regulatory decisions where the ECAPM method was accepted in	ScottMadden has incorporated a variation of traditional CAPM and ECAPM into its calculation of ROE, and based its determination of cost of equity under this approach on the average results of their CAPM and ECAPM calculations. Based on the ScottMadden Report, ECAPM adjusts traditional CAPM to reflect empirical studies indicating that low-beta securities (such as utilities) earn returns somewhat higher than what CAPM would predict. Excluding the use of ECAPM would reduce the ROE range proposed by 0.09%. ScottMadden used a risk-free rate of 3.21% for calculating CAPM and ECAPM using the Canadian Utility proxy group and 4.20% for the U.S. Water Utility proxy group. The Canadian risk-free rate is based on the projected 30-year Government of Canada bond yields for the from Q1 20204

Method	Observation	Impact
	the calculation of ROE. We have identified instances in the past four years where regulators accepted the use of adjusted CAPM. Therefore, the City may wish to reduce their reliance on the on the average ECAPM in determining the ROE and using results of the average CAPM instead.	through Q4 2025. The U.S. risk free rate is based on the average 30-year forecast U.S. Treasury note yields for the six quarters ending with the Q2 2025 – 2029 and 2030 – 2034.[xlvii] We reviewed the risk-free rate and the beta's applied in the methodology and found no material discrepancies between the ScottMadden conclusions.

Jurisdiction review – methodologies

We considered the methodologies used in other jurisdictions and found the following:

Location	Observation
British Columbia	The British Columbia Utilities Commission, in its 2023 decision, used CAPM, DCF, and RPM to determine a fair ROE. The BCUC considers that assigning an equal weighting to each of the three techniques is appropriate to determine the approved ROE as it recognizes that each technique has its own strengths and weaknesses and responds differently to varying factors. The BCUC concludes that relying on more techniques is important at times when pure market-based models, such as DCF and CAPM tend to be impacted by volatile markets.[xlviii] FortisBC Energy Inc's application for the 2023 decision included a report jointly completed by Concentric Energy Advisors Inc. and Mr. James Coyne. This report included both multi-stage and constant growth DCF, CAPM, and RPM approaches, similar to EWS's current application.
Alberta	The Alberta Utilities Commission, in its 2013 decision, accepted the use of DCF and CAPM methodologies in determining the cost of equity.
Newfoundland	Newfoundland Power's current 2025-2026 General Rate Application[xlix] included an advisor report from Concentric Energy Advisors, Inc., which utilized the constant growth DCF, multistage DCF, CAPM and the risk premium methodologies to determine return on equity. It should be noted that this matter is still ongoing, and the regulator has not commented on the methodologies presented at this time.

Utilization of U.S. data

The ScottMadden report relies on proxy groups of both Canadian and U.S utilities in determining an appropriate ROE. The Canadian group contains publicly traded Canadian utility companies, while the U.S group contains publicly traded U.S. water utilities. ScottMadden noted that a proxy group of water utilities would have comparable risk to EWS by being engaged in regulated water and wastewater activities. Because there is limited data available for Canadian water utilities, the U.S proxy group focused on water utilities and the Canadian proxy group focused on publicly traded utilities. ScottMadden also noted that more weight was attributed to the results based on the U.S water utility proxy group as, in their opinion, these utilities considered the operational risks facing water utilities.[l]

In BCUC's Generic Cost of Capital Proceeding, Concentric Energy Advisors utilized three proxy groups: (1) Canadian Proxy Group (comprised of a combination of both gas and electric companies), (2) U.S. Proxy Group (comprised of a combination of both gas and electric companies), and (3) combined the U.S. and Canadian utilities into a North American Utility Proxy Group.[li] The BCUC, in its 2023 decision, also recognized the intergraded nature of Canadian and US financial markets. Canadian data is often limited due to the small number of publicly traded utilities.

The AUC recognizes that while U.S. companies have higher business risks than the Alberta utilities, for the purpose of establishing comparables, it was appropriate to include U.S. companies in the proxy group. The reasons for accepting U.S. companies include (i) the limited number of publicly traded Canadian utility companies; (ii) the prevalence of U.S. business operations among many publicly traded Canadian utilities; and (iii) investors tendency to consider both U.S. and Canadian investment utility opportunities.[lii] However, the AUC retains the view that judgement must be applied when interpreting data from the proxy utilities to establish the ROE required by investors in the AUC.[liii]

The National Energy Board ("NEB"), Ontario Energy Board ("OEB") and Quebec Regie de l'Energie ("Regie") have also accepted the use of U.S. data and proxy groups for purposes of establishing the allowed ROE[liv].

The lack of Canadian comparable utilities, the unique business and financial risk of water and wastewater operations and the Canadian regulatory acceptance of the use of U.S. comparables support the use of U.S. utilities in the estimation of the ROE for EWS. However, some adjustments to the U.S. results may be warranted. In other regulatory jurisdictions, it has been found that adjustments to the U.S. data were relevant.

Jurisdictional review - allowed return on common equity

The table below summarize the allowed return on common equity approved by other Canadian regulators and a sample selected from ScottMadden's U.S. Water Utility Proxy Group from 2021 to 2024.

Figure 10 - Allowed return on common equity

Entity	2021	2022	2023	2024	Date of last Board Order/Support
British Columbia Utilities Commission[lv],[lvi],[lvii]					
Benchmark utility	8.75%	8.75%	9.65%	9.65%	5-Sep-23
FortisBC Energy Inc. - *gas distribution*	8.75%	8.75%	9.65%	9.65%	5-Sep-23
FortisBC Inc. - *integrated electric*	9.15%	9.15%	9.65%	9.65%	5-Sep-23
Alberta Utilities Commission[lviii],[lix],[lx],[lxi]					
Generic cost of equity	8.50%	8.50%	8.50%	9.28%	20-Nov-23
Ontario Energy Board[lxii]					
Generic cost of equity	8.34%	8.66%	9.36%	9.21%	31-Oct-23
Quebec Regie de l'Energie[lxiii]					
Gaz Metro - *gas distribution*	8.90%	8.90%	8.90%	8.90%	5-Mar-13
Nova Scotia Utility and Review Board[lxiv],[lxv]					
Nova Scotia Power Inc. - *integrated electric*	9.00%	9.00%	9.00%	9.00%	2-Feb-23
Prince Edward Island Regulatory & Appeals Commission[lxvi],[lxvii]					
Maritime Electric - *integrated electric*	9.35%	9.35%	9.35%	9.35%	24-Apr-23
Board of Commissioners of Public Utilities, NL[lxviii],[lxix]					
Newfoundland Power Inc. - *integrated electric* (approved)	8.50%	8.50%	8.50%	8.50%	5-Jan-23
Newfoundland Power Inc. - *integrated electric* (proposed)				9.85%	12-Dec-23
U.S Water Utilities					
American States Water Company[lxx]	8.90%	8.85%	9.36%	10.06%	2-Feb-24
American Water Works Company, Inc.[lxxi]	8.98%	8.98%	9.50%	10.20%	29-Jun-23
California Water Service Group[lxxii]	9.20%	9.05%	9.57%	10.27%	2-Feb-24
SJW Group[lxxiii]	8.90%	8.80%	9.31%	10.01%	13-Oct-23

Note – Proceedings for are still ongoing for Newfoundland Power Inc. Newfoundland Power Inc. has proposed a new ROE of 9.85% in their 2025-2026 General Rate Application on December 12, 2023.

During the period of 2021 to 2024, we observe that the allowed return on common equity approved by Canadian regulators have remained constant or increased by up to 0.90%, except for the Ontario Energy Board generic cost of capital, which decreased by 0.15% from 2023 to 2024. We note that while the Ontario Energy Board's generic cost of capital decreased in 2024, in comparison to 2021, the cost of equity is still 0.87% higher. EWS is proposing an increase of 0.91%, which is consistent with the movement in Canadian regulators return on common equity, although it is the most significant increase proposed in comparison to other Canadian jurisdictions. We also note that during the period of 2021 to 2024, the allowed return on common equity approved for a sample of ScottMadden's U.S. Water Utility Proxy Group increased 1.07% to 1.22%.

Although the proposed cost of equity of 10.80% for EWS is higher than all of the above allowed return on common equity's, it is important to note that the cost of equity and capital structures must not just be considered in isolation. As an example, the U.S. water utilities have a higher equity thickness than EWS has proposed, resulting in a higher return on equity; this is discussed in further detail below.

EWS PBR risk vs AUC risk

The applied allowed return on common equity in the 2024 PBR of 10.80% is a 0.91% increase from the 2021 PBR of 9.89%. We have noted during our review of Canadian regulatory decisions that generic approved ROEs have been increasing in recent years, with the exception of three jurisdictions remaining stagnant since the last PBR. While the AUC has increased their generic cost of equity to 9.28 % in 2024 from the previously approved 8.50%, EWS proposed cost of equity is higher than AUC. We note that the AUC generic cost of equity has increased 1.39% since the last PBR, while EWS is proposing a higher increase of 1.52%.

The following table summarizes the weighted return on common equity for AUC in comparison to EWS in 2021 as well as current approved or proposed rates.

Figure 11 – Summary of EWS vs AUC weighted return on common equity

		EPCOR Water Services Inc. [lxxiv]	Alberta Utilities Commission (AUC) [lxxv], [lxxvi]	Difference
2021				
Approved cost of equity	A	9.89%	8.50%	1.39%
Approved common equity	B	40.00%	37.00%	3.00%
	C = A x B	**3.96%**	**3.15%**	**0.81%**
Current/proposed				
Proposed/approved cost of equity	D	10.80%	9.28%	1.52%
Proposed/approved common equity	E	40.00%	37.00%	3.00%
	F = D x E	**4.32%**	**3.43%**	**0.89%**

As shown above, EWS has currently proposed a weighted ROE of 4.32%; an increase above their 2021 rate. The above table shows that EWS approved weighted ROE was higher than AUC in 2021 by 0.81%, and the current proposed weighted ROE is higher than AUC by 0.89%. The concept of EWS having a higher risk profile than the AUC has been accepted in past PBR hearings. We highlight that the spread over the AUC would grow by 0.13%. There is no rationale provided for this increase. EWS has owned these assets for a number of years and the transition risk is mitigated, which provides rationale for the spread to decrease, rather than the increased that is proposed.

The applied cost of common equity in the 2024 PBR of 10.80% is an increase of 0.91% from the 2021 PBR of 9.89%. We have noted during our review of Canadian regulatory decisions that generic approved cost of equity's have increased or remained constant since the last PBR. Allowed return on common equity have typically increased between 0.00% and 0.90% in Canadian jurisdictions, depending on the regulator. Allowed return on common equity have typically increased between 1.07% and 1.22% in the selected sample of ScottMadden's U.S. Water Utility Proxy Group. Based on recent regulatory decisions and the increase in interest rates since the last PBR, we would expect the cost of equity for the 2024 PBR to fall between 9.95% - 10.85%. This would be consistent with the increase in approved cost of equity for Canadian utilities from 2021 – 2024 particularly focusing on the Alberta comparatives and other examples, but we note that the EWS proposal is at the high end of the range.

Furthermore, the applied cost of equity in the 2024 PBR includes a risk premium of 1.52% over the AUC's generic approved allowed return on common equity in its 2020 decision. This is an increase of 0.13% from the risk premium included in the 2021 PBR of 1.39%.

Figure 12 – EWS vs AUC risk premium

	2021 PBR	2024 PBR	Difference
AUC approved cost of equity rates [lxxvii], [lxxviii]	8.50%	9.28%	0.78%
PBR cost of equity [lxxix]	9.89%	10.80%	0.91%
EWS specific risk premium	**1.39%**	**1.52%**	**0.13%**

Based on our review of the business and financial risk affecting the Company, we emphasize that we have not identified additional risks or considerations that would warrant an increase in the risk premium from the 2021 PBR. As the AUC generic cost of capital is updated on an ongoing basis this rate reflects many of the changes in market rates and risk since the previous EWSI PBR Application. Therefore, the premium that EWSI earns above the AUC generic cost of capital is meant to reflect the residual company specific risk for EWSI. Thus, there is reason for the risk premium to decrease, rather than increase.

The 1.52% risk premium has been included to reflect EWS view that the higher return when compared to AUC is, in their view, appropriate because it reflects EWS different and unique risk compared to the Alberta electric and gas utilities. The concept of EWS having a higher risk profile than the AUC has been accepted in past PBR hearings. EWS noted the following risks:

Figure 13 – 2024 PBR Risk factors and rationales

2024 PBR Risk Factors	EWS Comments	Grant Thornton Conclusion
The AUC generic Cost of Capital does not reflect the risks inherent in operating water-cycle utilities.	EWS serves the full water cycle – from water treatment, to distribution, collection of wastewater, treatment and return of wastewater back to the river. This is fundamentally different than electric has distribution utilities who do not produce the product. EWS faces risks associated with varying river water quality and irrespective of these changes, EWS is required to maintain the quality and safety of the final product. Ensuring that that the product remains safe at all stages and within strict regulatory guidelines represents a tremendous public health responsibility. EWS also bears the environmental responsibility of returning wastewater to the river while ensuring no degradation of river water quality. The AUC regulated utilities only face environmental regulatory risks which are much different from the environmental and public health risks that EWS must bear.[lxxx]	We agree with EWS rationale on this risk area, but we do not agree that the risk differential has increased since 2021.
EWS longer asset lives and higher contributed assets increase its risk	The AUC regulated utilities have shorter asset lives of approximately 35 years compared to the close to 60 years for EWS. For EWS there is a greater risk of initial capital investment recovery associated with the longer asset lives. The longer capital recovery period also results in EWS facing greater risks from operating and maintenance costs above inflation. The resulting lower depreciation rates means that reliance on depreciation as one of the sources of internal cash flow is lower. In addition, EWS faces greater risks of cost increases associated with the management of contributed assets. Approximately 15% of the assets of AUC regulated utilities are contributed	We do not agree with EWS rationale, as the impact of depreciation on cashflow is mitigated by lower maintenance capex due to the longer asset life. Furthermore, we agree with risks from inflation but not resulting in higher operating and maintenance costs would be recovered through the forecasted revenue requirement. Significant improvements which would not be expensed in the forecasted revenue requirement are expected to be capitalized and would therefore provide EWS the ability to earn a return on the asset.

2024 PBR Risk Factors	EWS Comments	Grant Thornton Conclusion
	compared to the approximately 50% for EWS. EWS does not earn a return on these contributed assets yet is required to maintain and assume operational responsibility for the assets, which represents a higher risk in comparison to the Alberta electric and gas utilities.[lxxxi]	
AUC regulated electric and gas utilities benefit from multiple de-risking tools within their PBR structure	EWS faces greater risk of revenue fluctuations associated with short-term and long-term variations in consumption which arises from EWS largely volumetric rate structure. The AUC regulated utilities do not bear this risk to the same degree largely because their rate structure is approximately 30% consumption-based rates compared to EWS rate structure which is approximately 70% consumption-based rates. EWS also bears the risk associated with having cost of debt that is locked in for the PBR term and not updated annually based on changes in market interest rates. EWS cannot pass on the variance to customers as AUC regulated utilities can. Finally, EWS has no deferral accounts for any of its expenses-even for highly variable costs outside EWS control such as chemical costs for water treatment. In contrast, Alberta electric and gas utilities do benefit from deferral accounts for certain expenses. [lxxxii]	We partially agree with EWS rationale related to revenue risk. However, EWS desired shift towards more fixed charged revenues as a method of mitigating the risk of volatile consumption could decrease the overall risk taken on by the utility. We agree with EWS rationale on cost of debt risk, however, we note that EWS borrows through intercompany loans from the parent company, EUI. These loans may not be subject to market fluctuations. EWS is locking in longer PBR terms than other regulators are approving at this time. We partially agree with EWS rationale delated to deferral accounts. The use of deferral accounts to respond to changing circumstances such as chemical costs for water treatment could decrease the risk to the company.
Water is a consumable product	In the 2021 PBR, Water is ingested by the end user, it is incumbent upon EWS to ensure that appropriate processes and procedures are maintained to establish proper treatment to ensure the product remains safe and within strict regulatory guidelines represents considerably higher risk to EWS than is seen in other utilities.[lxxxiii]	We agree with EWS rationale on this risk area, but we do not agree that the risk differential has increased since 2021. We note that some of EWS services have a higher level of risk, but the risk is not consistent across all of EWS services. Because water is a consumable product, water would carry a higher risk than wastewater collection and wastewater treatment due to its nature. This gives rationale for considering adjusting

2024 PBR Risk Factors	EWS Comments	Grant Thornton Conclusion
		the cost of equity to reflect the varying levels of risk by service.
Health and environmental	In the 2021 PBR, EWS noted that increasingly stringent health and/or environmental standards necessitate additional capital investment to meet the new requirements in addition to process and reporting changes to ensure adherence to the standards. EWSI faces additional risk due to higher frequency of regulatory changes for both environmental and public health standards placing increased pressure to cash flow to fund new infrastructure as well as complete upgrades to existing assets to meet regulation changes.[lxxxiv]	We agree with EWS rationale on this risk area, but we do not agree that the risk differential has increased since 2021. We note that some of EWS services have a higher level of risk, but the risk is not consistent across all of EWS services. Because water has stringent health and/or environmental standards, water would carry a higher risk than wastewater collection and wastewater treatment due to its nature. This gives rationale for considering adjusting the cost of equity to reflect the varying levels of risk by service.

1

Overall comments – cost of capital

It is important to note that the cost of equity and capital structures must not just be considered in isolation. As an example, a jurisdiction with a higher return on equity may have a lower equity ratio, resulting in an overall lower return (or vice versa). The following table has been included for information purposes to summarize the return on equity, capital structure, and other relevant factors that may impact the utilities overall return.

Figure 14 – Summary of ROE by jurisdiction

Province	Utility	Current Approved Cost of Equity	Current Approved Common Equity	Weighted ROE
British Columbia	Benchmark utility	9.65%	45.00%	**4.34%**
British Columbia	FortisBC Energy Inc.- *gas distribution*	9.65%	45.00%	**4.34%**
British Columbia	FortisBC Inc. - *integrated electric*	9.65%	41.00%	**3.96%**
Alberta	Generic cost of equity	9.28%	37.00%	**3.43%**
Ontario	Generic cost of equity	9.21%	40.00%	**3.68%**
Quebec	Gaz Metro- *gas distribution*	8.90%	38.50%	**3.43%**
Nova Scotia	Nova Scotia Power Inc. - *integrated electric*	9.00%	40.00%	**3.60%**
Prince Edward Island	Maritime Electric - *integrated electric*	9.35%	40.00%	**3.74%**
Newfoundland & Labrador	Newfoundland Power Inc. - *integrated electric (current – revised rates are pending approval)*	8.50%	45.00%	**3.83%**
U.S. Water Utility	American States Water Company	10.06%	57.00%	**5.73%**
U.S. Water Utility	American Water Works Company, Inc.	10.20%	57.04%	**5.82%**
U.S. Water Utility	California Water Service Group	10.27%	53.40%	**5.48%**
U.S. Water Utility	SJW Group	10.01%	55.00%	**5.51%**
Alberta	EWS proposal	10.80%	40.00%	**4.32%**

While EWS's proposed cost of equity of 10.80% is higher than all regulatory precedents in both Canadian and U.S. jurisdictions, the equity layer must be considered and a comparison should be considered in relation to the weighted ROE. Once applying both the approved allowed return on common equity and the approved common equity, EWS's proposed weighted ROE is higher than most Canadian utilities but lower than the U.S. water utilities.

Our jurisdictional review noted approved weighted ROE in the range of 3.43% to 4.34% in Canadian jurisdictions and in the range of 5.48% to 5.82% for the sample selected from ScottMadden's U.S Water Utility Proxy Group. We have noted that EWS requested cost of equity and equity ratio results in a weighted ROE of 4.32%, which is at the higher end of the range for Canadian jurisdictions but is below the range for the selected sample of ScottMadden's U.S Water Utility Proxy Group.

Conclusion on cost of capital

We have summarized the findings of our review of the cost of capital proposed by EWS in the 2025-2027 PBR. We also have an approximation of the impact of our findings on the proposed cost of capital.

- ScottMadden has incorporated a variation of traditional CAPM and ECAPM into its calculation of the cost of equity, and based its determination of cost of equity under this approach on the average results of their CAPM and ECAPM calculations. We have not identified any recent Canadian regulatory decisions where the ECAPM method was accepted in the calculation of the cost of equity. We therefore recommend removal of the average ECAPM in determining the cost of equity and using the results of the average CAPM instead. This reduces the proposed cost of equity by 0.09%.

- The applied cost of equity in the 2024 PBR of 10.80% is an increase of 0.91% from the 2021 PBR of 9.89%. Generic approved cost of equity rates have typically increased between 0.00% and 0.90% for Canadian regulators from 2021 – 2024. We would expect the allowed return on common equity for the 2025-2027 PBR to fall between 9.95% - 10.85%. EWS's proposal is at the high end of this range.
- The applied cost of equity in the 2024 PBR includes a risk premium of 1.52% over the AUC's generic approved cost of equity in its 2023 decision. This is an increase of 0.13% from the risk premium included in the 2021 PBR of 1.39%. We have not identified additional risks or considerations that would warrant an increase in the risk premium from the 2021 PBR.
- We note that EWS proposal to hold the equity structure at 40.00% is appropriate at this time based upon or jurisdictional review and based upon the current higher interest rate environment. In the current higher interest rate environment, most companies would be seeking to carry higher levels of equity to debt service obligations. However, we note that reducing equity levels in the future will be appropriate, but for the current period, 40.00% is appropriate.

Figure 15 – Resultant cost of equity based on GT's recommendations

	2024 PBR
Cost of equity - Proposed	10.80%
Adjust for removal of U.S. and Canadian ECAPM	-0.09%
	10.71%
Reduction to EWS proposed to hold AUC spread consistent with 2021 PBR (includes impact of US comparables)	-0.04%
GT recommended cost of equity	**10.67%**

The above recommendation factors in the removal of the ECAPM methodology, which reduces the cost of equity by 0.09% to 10.71%. The 10.71% is further reduced by 0.04% to provide a recommended cost of equity of 10.67%. This implies a spread of 1.39% above the AUC generic cost of capital (10.67% - 9.28% = 1.39%). We believe this is reasonable given there is no evidence that EWS's risk profile has changed since the 2021 PBR.

Our recommendation of the above impacts are outlined in the following table.

Figure 16 – Resultant ROE based on GT's recommendations

	Cost of Equity	Common Equity	Weighted ROE
GT's recommendations	10.67%	40.00%	4.27%
EWS proposal	10.80%	40.00%	4.32%
Difference	**-0.13%**	**0.00%**	**-0.05%**

We conclude that an appropriate cost of equity is 10.67% as a starting point. We also conclude that EWS proposal for the equity thickness to remain at 40.00% is appropriate at this time, resulting in a recommended weighted ROE of 4.27%, which is a reduction of 0.05% from EWS proposal. This range of recommended weighted ROE is still among the highest weighted ROEs approved in Canada, with only utilities in British Columbia experiencing a higher percentage.

The AUC's weighted ROE is 3.43%. In our view, a weighted ROE in of 4.27% for EWS is better reflective of current conditions, and it is still well above the AUC's 3.43%. This reflects that EWS experiences different risk compared to other Alberta Utilities.

In addition to the above recommendation, we acknowledge that EWS has not considered the varying risk profiles of water, wastewater treatment and wastewater collection. While we agree that some of EWS services have a higher level or risk than reflected in the AUC generic cost of capital, the risk is not consistent across all of EWS services. For example, because water is a consumable product, water would carry a higher risk than wastewater collection and wastewater treatment. Therefore, we recommend that the City considers adjusting the cost of equity to reflect the varying levels of risk by service.

We further recommend that the 10.67% is a starting point for EWS's cost of equity, and recommend a reduction to the cost of equity for wastewater treatment and wastewater collection. For illustrative purposes we have calculated the impact on the overall cost of equity for EWS if it were reduced by 0.10% to 0.30% for wastewater treatment and wastewater collection due to their lower risk profiles. The impact on the cost of equity for EWS has been calculated based on the weighted average percentage of EWS's total rate base for water (40.24%), wastewater treatment (13.72%) and wastewater collection (46.04%) in 2022, as shown in the figure below. We have shown the impact under the following three scenarios:

1. Scenario 1 – a reduction of 0.10% to the cost of equity for wastewater treatment and wastewater collection
2. Scenario 2 - a reduction of 0.20% to the cost of equity for wastewater treatment and wastewater collection
3. Scenario 3 - a reduction of 0.30% to the cost of equity for wastewater treatment and wastewater collection

Figure 17 – illustrative calculation for cost of equity based on rate base

	Water	Wastewater treatment	Wastewater collection	Total
2022 actual rate base	1,479.00	504.20	1,692.00	3,675.20
% of total	40%	14%	46%	
Starting point	10.67%	10.67%	10.67%	10.67%
Scenario 1 - 10 bps reduction	10.67%	10.57%	10.57%	10.61%
Scenario 2 - 20 bps reduction	10.67%	10.47%	10.47%	10.55%
Scenario 3 - 30 bps reduction	10.67%	10.37%	10.37%	10.49%

We note that the figure above has used a cost of equity of 10.67% as a starting point, and further reduced wastewater treatment and wastewater collection to show this impact under each scenario for illustrative purposes. We have illustrated a reduction in the range of 0.10% to 0.30% resulting in a total cost of capital for EWS overall has been calculated as 10.49% to 10.61%.

Appendix A: Information reviewed and relied on

In completing this assignment, we reviewed and relied on the following information, documents and data:

- Evidence regarding capital structure and cost of capital filed by the EWS on May 31, 2024 with the City of Edmonton;
- EWS expert report “Determination of Cost-of-Capital” (“ScottMadden Report” or the “Report”) prepared by ScottMadden Inc.
- Alberta Utilities Commission 2024 return on equity (“ROE”) concerning generic cost of capital proceedings and fair rate of return for investors;
- Allowed return on equity and equity ratios in other Canadian jurisdictions for 2021 - 2024, as available;
- Cost of capital decisions of other Canadian regulators since EWS 2021 PBR;
- Bank of Canada information;
- S&P criteria information: (1) Utilities: Key Credit Factors for The Regulated Utilities Industry, and (2) Corporates: General: Corporate Methodology;
- S&P/TSX Composite Index; and
- Various discussions with the City of Edmonton management.

Appendix B: References

[i] ECPOR Water Services Inc. - 2022 - 2024 Performance Based Regulation Application.
[ii] EPCOR Water Services Inc. - 2025 - 2027 Performance Based Regulation Application - table 10.3-1, page 102.
[iii] EPCOR Water Services Inc. - 2025 - 2027 Performance Based Regulation Application - page 48.
[iv] EPCOR Water Services Inc. - 2025 - 2027 Performance Based Regulation Application - table 10.3-1, page 102.
[v] EPCOR Water Services Inc. - 2025 - 2027 Performance Based Regulation Application - page 7.
[vi] ECPOR Water Services Inc. - 2022 - 2024 Performance Based Regulation Application
[vii] EPCOR Water Services Inc. - 2025 - 2027 Performance Based Regulation Application - table 10.3-1, page 102
[viii] BCUC FortisBC Energy Inc. Application for its Common Equity Component and Return on Equity for 2016 Decision and Order G-129-16, August 10, 2016 Decision, page 86.
[ix] BCUC FortisBC Generic Cost of Capital Proceeding (Stage 2) Order G-47-14, March 25, 2014, page 2.
[x] BCUC Generic Cost of Capital Proceeding (Stage 1) Decision and Order G-236-23, September 5, 2023 Decision, page 139.
[xi] AUC 2021 Generic Cost of Capital Decision 24110-D01-2020, October 13, 2020, page 1.
[xii] AUC 2022 Generic Cost of Capital Decision 26212-D01-2021, March 4, 2021, page 1.
[xiii] AUC 2023 Generic Cost of Capital Decision 27084-D01-2022, March 31, 2022, page 1.
[xiv] AUC 2024 Return on Equity Decision 28585-D01-2023, November 20, 2023, page 1.
[xv] OEB - Cost of Capital Parameter Updates, October 31, 2023, https://www.oeb.ca/regulatory-rules-and-documents/rules-codes-and-requirements/cost-capital-parameter-updates
[xvi] Regie de L'Energie Decision D-2011-182, November 25, 2011, page 28.
[xvii] NSUARB Decision 42-M07215, April 12, 2016, page 7.
[xviii] NSUARB - Nova Scotia Power Inc. 2022-2024 General Rate Application, Decision 12-M10431, February 2, 2023, page 9.
[xix] IRAC Order UE-19-08, September 27, 2019, page 53.
[xx] IRAC Order UE-23-04, April 24, 2023, page 13.
[xxi] NL PUB Order No. P.U.3(2022) - General rate Application, January 5, 2023, page 5.
[xxii] Newfoundland Power Inc. - 2025/2026 General Rate Application, December 12, 2023, page 2.
[xxiii] American States Water Company 2023 Annual Report, March 17, 2024, pages 35-36
[xxiv] American Water Works Company, Inc. 2023 Annual Report, February 14, 2024, page 68
[xxv] California Water Service Group - Form 10-K United States Securities and Exchange Commission, February 29, 2024, page 12.
[xxvi] SJW Group - Form 10-K United States Securities and Exchange Commission, February 22 2024, page 5.
[xxvii] American States Water Company 2023 Annual Report, March 17, 2024, pages 35-36.
[xxviii] American Water Works Company, Inc. 2023 Annual Report, February 14, 2024, page 68.
[xxix] California Water Service Group - Form 10-K United States Securities and Exchange Commission, February 29, 2024, page 12.
[xxx] SJW Group - Form 10-K United States Securities and Exchange Commission, February 22 2024, page 5.
[xxxi] ECPOR Water Services Inc. - 2022 - 2024/2026 Performance Based Regulation Application.
[xxxii] ECPOR Water Services Inc. - 2025 - 2027 Performance Based Regulation Application.
[xxxiii] EPCOR Water Services Inc. – 2025 – 2027 Performance Based Regulation Application, May 31, 2024, page 48.
[xxxiv] Bank of Canada.
[xxxv] Bank of Canada.
[xxxvi] EPCOR Water Services Inc. – 2025 – 2027 Performance Based Regulation Application, May 31, 2024, page 47.
[xxxvii] EPCOR Water Services Inc. – 2025 – 2027 Performance Based Regulation Application, MV-EWS-8.
[xxxviii] EPCOR Water Services Inc. – 2025 – 2027 Performance Based Regulation Application, May 31, 2024, page 47.
[xxxix] EPCOR Utilities Inc. Management's Discussion and Analysis for the three months ended March 31, 2024, page 13.
[xl] EPCOR Water Services Inc. – 2025 – 2027 Performance Based Regulation Application, May 31, 2024, page 48.
[xli] EPCOR Water Services Inc. – 2025 – 2027 Performance Based Regulation Application, Appendix D: Return on Equity Report, ScottMadden, Inc. page 2.
[xlii] EPCOR Water Services Inc. – 2025 – 2027 Performance Based Regulation Application, Appendix D: Return on Equity Report, ScottMadden, Inc. page 3.
[xliii] EPCOR Water Services Inc. – 2025 – 2027 Performance Based Regulation Application, Appendix D: Return on Equity Report, ScottMadden, Inc. page 3.
[xliv] EPCOR Water Services Inc. - 2025 - 2027 Performance Based Regulation Application - page 159.
[xlv] EPCOR Water Services Inc. - 2025 - 2027 Performance Based Regulation Application - page 7.
[xlvi] BCUC Generic Cost of Capital Proceeding (Stage 1) Decision and Order G-236-23, September 5, 2023 Decision, page iv.

[xlvii] EPCOR Water Services Inc. – 2025 – 2027 Performance Based Regulation Application, Appendix D: Return on Equity Report, ScottMadden, Inc. page 51.
[xlviii] BCUC Generic Cost of Capital Proceeding (Stage 1) Decision and Order G-236-23, September 5, 2023 Decision, page iv and 119.
[xlix] Newfoundland Power Inc. – 2025-2026 General Rate Application, Volume 2: Supporting Materials: Expert Evidence, Cost of Capital, December 12, 2023.
[l] EPCOR Water Services Inc. – 2025 – 2027 Performance Based Regulation Application, Appendix D: Return on Equity Report, ScottMadden, Inc. page 17.
[li] BCUC Generic Cost of Capital Proceeding (Stage 1) Decision and Order G-236-23, September 5, 2023 Decision, page 10.
[lii] AUC Determination of the Cost-of-Capital Parameters in 2024 and Beyond, October 9, 2023, page 22.
[liii] AUC Determination of the Cost-of-Capital Parameters in 2024 and Beyond, October 9, 2023, page 22.
[liv] NEB 2008 decision, OEB 2009 decision, Regie 2009.
[lv] BCUC FortisBC Energy Inc. Application for its Common Equity Component and Return on Equity for 2016 Decision and Order G-129-16, August 10, 2016 Decision, page 86.
[lvi] BCUC FortisBC Generic Cost of Capital Proceeding (Stage 2) Order G-47-14, March 25, 2014, page 2.
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[lviii] AUC 2021 Generic Cost of Capital Decision 24110-D01-2020, October 13, 2020, page 1.
[lix] AUC 2022 Generic Cost of Capital Decision 26212-D01-2021, March 4, 2021, page 1.
[lx] AUC 2023 Generic Cost of Capital Decision 27084-D01-2022, March 31, 2022, page 1.
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[lxiii] Regie de L'Energie Decision D-2013-036, March 5, 2013, page 24.
[lxiv] NSUARB Decision 42-M07215, April 12, 2016, page 7.
[lxv] NSUARB - Nova Scotia Power Inc. 2022-2024 General Rate Application, Decision 12-M10431, February 2, 2023, page 9.
[lxvi] IRAC Order UE-19-08, September 27, 2019, page 53.
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[lxviii] NL PUB Order No. P.U.3(2022) - General rate Application, January 5, 2023, page 5.
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[lxxix] EPCOR Water Services Inc. - 2025 - 2027 Performance Based Regulation Application.
[lxxx] EPCOR Water Services Inc. – 2025 – 2027 Performance Based Regulation Application, May 31, 2024, page 44.
[lxxxi] EPCOR Water Services Inc. – 2025 – 2027 Performance Based Regulation Application, May 31, 2024, page 44-45.
[lxxxii] EPCOR Water Services Inc. – 2025 – 2027 Performance Based Regulation Application, May 31, 2024, page 45.
[lxxxiii] EPCOR Water Services Inc. – 2022 – 2026 Performance Based Regulation Water Application, February 16, 2021, page 147.
[lxxxiv] EPCOR Water Services Inc. – 2022 – 2026 Performance Based Regulation Water Application, February 16, 2021, page 147.

Appendix C: Engagement leadership qualifications

Troy MacDonald

CPA, CA, CBV

Partner, Transactions

Troy is a Partner in our Transactions Group within our Advisory Services practice in Southern Ontario.

Experience

Troy specializes in advising domestic and international clients on complex capital markets transactions, mergers & acquisitions, valuations, fairness opinions and financings, including public private partnerships and project financing.

Leadership experience

Troy was the National Transactions Leader from 2010 to 2020 and the National Advisory Leader from 2020 to 2023. During this time, he played a key role in the growth of these businesses, people development and optimization.

Troy is a past member of the Grant Thornton LLP Partnership Board for six years between 2012 and 2018. During this time he chaired several committees, including compensation, governance and partner admissions.

Transaction experience

Prior to relocating to Toronto in 2008, Troy was a member of the firm's capital markets team in London, England, where he advised on initial public offerings and public company transactions.

Prior to joining Grant Thornton in 2003, he was a member of the mergers & acquisition team at Emera (TSX: EMA), a large publicly traded Canadian energy and utilities company.

Troy has extensive experience in the power and utilities sector:

- Has acted as engagement partner for the City of Edmonton on a series of regulatory matters including general rate hearings, transfer of the drainage utility to Epcor and transfer of the Goldbar Wastewater Facility to Epcor from 2012 through 2024.
- Currently advising a provincial government on its energy strategy.
- Currently acting as engagement partner for a proposed merger of two municipally owned utilities.
- Currently acting as engagement partner for the proposed sale or merger of a municipally owned utility.
- Currently helping a municipally owned utility undertake a strategic review.
- In 2023 and 2024, acted as engagement partner on their acquisition of Gagnon Power Lines.
- In 2023, acted as engagement partner to advise a large municipally owned utility on a potential strategic transaction.
- In 2020 to 2022, acted as engagement partner for the merger of Kitchener Wilmot Hydro and Waterloo North Hydro to form Enova Energy.
- In 2020 to 2022 acted as engagement partner for the merger of Energy Plus and Brantford Energy Corporation to form Granbridge Energy.
- In 2020 acted as engagement partner to the acquisition of Holland Power Services by Alectra Inc.
- In 2018 acted as engagement partner for North Bay Hydro's acquisition of Espanola Hydro.
- In 2018, acted as engagement partner for Newmarket Tay Hydro regarding the acquisition of Midland Public Utility Corporation.
- In 2017, engaged by the City of Guelph as the lead financial advisor in the merger of Guelph Hydro Electric System Inc.

with Alectra. This transaction has an enterprise value of $3 billion.

- In 2016/2017, acting as lead financial advisor on the publicly announced proposed merger of Whitby Hydro and Veridian Connections, which was completed in 2019 to form Elexicon Energy, which has an enterprise value of $500M.
- In 2016/2017, acting as lead financial advisor on the proposed merger of St. Thomas Energy Inc. and Entegrus. This transaction had an enterprise value of $200M.
- Acted as co-partner on a series of engagements for the City of Edmonton in regard to Goldbar Transfer, Drainage Transfer, Rate Hearings and Rate Reviews from 2010 to 2021.
- Acted as cost of capital advisor to PEI Energy Corporation in regard to Maritime Electric Limited Rate Case in 2014
- Acted as expert witness on cost of capital for Newfoundland & Labrador Public Utilities Board in regard to Fortis 2012 rate hearing.

As exemplified by the following overview of recent engagements, Troy has a broad range of financing and transaction experience with diverse stakeholder groups, including public companies:

- Currently acting for a civil infrastructure services company on the potential divestiture of the business.
- Currently acting for a fuel distribution company on the potential divestiture of the business.
- Currently acting for a national food retailer on the potential divestiture of the business.
- Currently acting for a communications business on the potential divestiture of the business.
- In 2023 & 2024, acted as engagement partner to advise a specialized consulting business pursue a strategic transaction.
- In 2023, acted as co-engagement partner on a distressed fuel distribution business to explore potential divestiture and negotiations with their senior lenders.
- In 2023, acted as engagement partner on the divestiture of a waste management facility in Northern Ontario.
- In 2022, acted as the engagement partner on the sale of Beneplan to Navacord.
- In 2021, acted as the engagement partner on the sale of Benefits By Design to People Corporation, an investee company of Goldman Sachs.
- In 2021, acted as the engagement partner on the management buyout of the Sussex Group.
- In 2021, acted as the engagement partner for the sale of Cloudworks Consulting Services Inc.to Accenture.
- In 2020, provided a fairness opinion for Ostara Inc. regarding a go private transaction.
- In 2020, provided a fairness opinion for Park Lawn Company Limited regarding a go private transaction.
- In 2020, acted as engagement partner for the divestiture of Loveday Mushrooms in its sale to Southmill Champs, an EOS Partners portfolio company.
- In 2020 acted as engagement partner for our client Founders Group of Food Companies Inc., on their successful sale to John Vince Foods. Grant Thornton acted as the sell-side advisor to Saxon Chocolates, a portfolio Company of Founders Group of Food Companies Inc.
- In 2020 acted as engagement partner for an automotive parts distributor for a $45M refinancing.
- In 2020 acted as engagement partner for Pedersen Construction, a heavy civil construction company, to help facilitate a series of transactions to achieve the shareholders succession planning objectives.
- In 2019/2020 acted as engagement partner for our client First Access Funding Corp. on the sale to Go Auto Group.
- In 2019 / 2020, acted as financial advisor to Pharmasave Pacific, Pharmasave West and Pharmasave Prairies regarding their merger.
- In 2019, acted as financial advisor to Okay Builders regarding the divestiture of the company to Lehigh Cement.
- In 2018, acted as lead financial advisor on the divestiture of Pinty's Fine Foods to Olymel for $250M.
- In 2018, acted as lead financial advisor to Pharmachoice East and Pharmachoice West to from a new member owned organization, including governance model, revenue model and related matters
- In 2017, acted as lead financial advisor to the Canadian Music Recording Rights Agency Limited in their merger with Sound Exchange to form new cross border member owned organization, including revenue models, governance structures and related matters.

- In 2017, acted as the financial advisor to Fresh Selections Inc. regarding the divestiture of the company to Founders Foods.
- Acted as lead financial advisor on numerous mergers, acquisitions, divestitures, valuations, fairness opinions and due diligence to many companies in a wide range of other industries.

Troy is an active advisor to First Nations and Aboriginal Peoples:

- Currently acting as engagement partner for a large consortium of First Nations in regard to the acquisition of a large natural resources company.
- Currently acting as engagement partner for a group of First Nations considering investing with a private sector energy company in the development of energy infrastructure.
- Currently acting as engagement partner for a group of First Nations acquiring an infrastructure services business.
- Currently acting as engagement partner to a First Nation regarding a $160M investment in a significant food company.
- In 2020 / 2021, acted as engagement partner for the acquisition of Clearwater Seafoods Inc. (TSX: CSI) by Mi'kmaq First Nations of Nova Scotia, in partnership with Premium Brands Holding Corporation. This transaction had an enterprise value of $1.1 billion.

Troy also spent time working with Grant Thornton UK LLP in their capital markets group advising on public offerings for renewable energy businesses, business services companies and other matters.

Troy has also been actively involved in advising on significant infrastructure and public sector projects, including the following:

- Acted for Metrolinx on a series of engagement related to evaluation of value for money on the PRESTO farecard.
- Acted for Metrolinx on a series of projects to establish private sector partnerships to realize value from major advertising assets.
- Advised Rank Inc. on the development of the Halifax World Trade Centre.
- Advised Forum Equity on a series of public private partnerships including social housing, justice facilities, health facilities and the Billy Bishop Airport Tunnel.
- Advised Brookfield on a series of public private partnerships including social housing, justice facilities and health facilities.
- Acted for Federal Government in regards to strategic decisions for an existing large scale transportation asset.

Professional qualifications and education

- Chartered Business Valuator (2002)
- Chartered Professional Accountant, Nova Scotia (1996)
- Canadian Institute of Chartered Accountants
- Canadian Institute of Chartered Business Valuators
- Bachelor of Commerce, Saint Mary's University (1994)

Community involvement

- Current Board Member & Treasurer, Metro Community Housing Association
- Past Board Member, Nova Scotia Nature Trust
- Past member, Toronto Board of Trade, Infrastructure Committee
- Past President, Past Vice-President, Past-Treasurer & Chair, Finance Committee, VON of Greater Halifax
- Past Chair, Chartered Business Valuator workshop committee

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Angie Brown

CPA, CA, CIA BComm (Hons)

Partner, Advisory

When clients are facing a period of growth, Angie creates value by assisting with their business planning, preparing financing proposals, and calculating their business value. She has helped clients from the initial stages of business planning through acquisitions, expansions, and sale decisions providing continuous support.

Whether a business is starting up, expanding, or selling, Angie and her team have the expertise needed to help it navigate through every stage.

Education

- Memorial University of Newfoundland and Labrador with a Bachelor of Commerce (Honours) Co-op in 2009
- Chartered Professional Accountant as part of the CMA, CGA and CA professional unification. Originally certified as a Chartered Accountant in 2011.
- Certified Internal Auditor in 2011

Experience

Angie has been a member of the Grant Thornton team since 2009. During that time, she has gained experience in a variety of subject matters, including:

- Pricing analysis, preparation of confidential information memorandum, review of letters of intent, review of purchase and sale agreements, and post-closing traditional support for the sale of an electrical distributor with operations throughout Atlantic Canada
- Performing buy-side transaction advisory including pricing analysis of a large multi-divisional company with operations across Canada, the US, UK, and Asia in the fishing industry
- Conducting economic feasibility analysis on a multimillion-dollar electrification decision in the public sector. This engagement included applying a front-end-loading methodology to assess alternatives, facilitating stakeholder risk workshops, and financial modeling, to support decision makers from several stakeholder organizations
- Leading the valuation of a large construction and engineering conglomerate which included approximately 50 independent entities operating across Canada
- Leading the sell-side transaction advisory services engagement for a multi-location franchised restaurant through a successful closing during the COVID-19 pandemic shut down
- Performing buy-side due diligence for the acquisition of an insurance brokerage in Atlantic Canada
- Performing business planning including financial modelling for egg farming, apple orchard, and the acquisition of an unbranded hotel
- Providing business valuation services for many private owner-managed businesses for tax planning, succession planning, and transaction advisory purposes
- Preparing financing proposals including financial forecast modelling, securing financing, and supporting clients through negotiations with lenders during periods of operational growth and capital asset acquisition
- Secondment with a telecommunications company in support of their due diligence process regarding the sale of a company division. This included working capital analysis,

historical accounts balance review/clean-up, and transitional support for the buyer

- Assessing the design and effectiveness of internal controls for public and private sector clients through annual management certification reviews and internal audit engagements
- Presenting internal audit and operational review results to management, boards of directors, and audit committees for engagements focused on identifying issues and providing practical solutions/recommendations
- Secondment with an international company's accounting department to support monthly financial reporting processes such as account reconciliations, journal entry preparation, company consolidation, and business unit financial statement reviews. This included working with statutory and year-end financial statement audit teams and responding to requests in an efficient and timely manner
- Construction project risk assessment for a high temperate hot water facility including the conversion of fuel fired boiler system to a fully electric boiler system. This project includes the development of a risk register for project owner risk management throughout the construction phase of the project.

Power and utility industry experience

Since 2012, Angie has played a key role on several rate regulatory projects including electricity generation, electricity distribution, and water and wastewater regulation. These engagements include: annual financial reviews of returns filed by utilities, financial reviews of Performance Based Regulation Applications and General Rate Applications filed by utilities, and a review of a compliance applications with respect to a prudency review of a utility's capital and operating costs.

- Board of Commissioners of Public Utilities - Newfoundland & Labrador – Financial consultant including:
  - Newfoundland Power Inc. – General rates application 2013/2014; 2016/2017; 2019 /2020, 2022/2023 and 2025/2026 (ongoing)
  - Newfoundland and Labrador Hydro – General rates application 2013 (including amended filing); 2016/2017; 2018/2019
  - Newfoundland and Labrador Hydro Prudence Review – Compliance Application
  - Review of the Costs of Supply and Distribution of Maximum Price Regulated Petroleum Products 2019/2020.
  - Financial modelling pertaining to the establishment of the cost of carbon adjustor mechanism arising as a result of the Clean Fuel Regulations, 2023
- Nova Scotia Utility and Review Board
  - Financial modelling and expert testimony pertaining to the establishment of the cost of carbon adjustor mechanism arising as a result of the Clean Fuel Regulations, 2023
- Regulatory consulting services to the City of Edmonton with respect to the review of EPCOR's Performance Based Regulation filings for water and wastewater; 2016.
- Regulatory consulting services for the City of Edmonton regarding the review of EPCOR's Performance Based Regulation 2022-2024/2026 filings for water, wastewater, and drainage
- Work stream leader for several key areas of the sanction phase (phase one) of the forensic audit for the Commission of Inquiry Respecting the Muskrat Falls Inquiry including the assessment of generation options and project risk assessment specifically pertaining to project schedule and capital cost estimate including contingency.
- Work stream leader and project manager for the construction phase (phase two) of the forensic audit for the Commission of Inquiry Respecting the Muskrat Falls Inquiry
- Regulatory consulting services to the Island Regulatory and Appeals Commission pertaining to the review of Hurricane Dorian Storm Restoration Costs filed by Maritime Electric Corporate Inc. in 2019
- Regulatory consulting services to the Island Regulatory and Appeals Commission pertaining to the review of the 2020—2021 General Rate Application filed by Maritime Electric Corporate Inc.
- Business plan and market impact analysis for a municipality in Alberta. This included developing a 10-year business plan for the potential transfer of utility operations to a separate entity and exploring the potential for creating new non-regulated revenue streams for the City
- Regulatory consulting services to the Nova Scotia Utility and Review Board (NSUARB) regarding matter M10431 –

Nova Scotia Power Inc. – 2022 General Rate Application (GRA)

- Regulatory consulting services to the City of Summerside regarding the Maritime Electric 2021/2022 - Open Access Transmission Tariff ("OATT") application.
- Regulatory consulting services to the Government of Prince Edward Island through efficiencyPEI pertaining to the preparation of the 2022/23-2024/25 Energy, Efficiency and Conservation Plan.
- New Brunswick Energy and Utilities Board
  - Expert testimony under the Petroleum Products Pricing Act concerning the setting of the cost of carbon adjustor mechanism, 2023 and 2024

Presentations and publications

Angie has extensive experience making presentations to boards of directors, senior management, member organizations, etc. These include:

- "COVID-19 Government support: What it means for you", presented to Hospitality NL
- "COVID-19 Government support: What it means for you", presented to NLOWE
- "The journey to recovery: how cashflow and cloud can get you there", presented to NLOWE
- Various presentations on forecasting and cash flow management to several chartered banks

Angie has also published a variety of thought leadership pieces including:

- "Your best defense against uncertainty? Cash flow management", published in Connections, the Labrador West Chamber of Commerce
- "Ask the Expert: What is a construction audit and how does it minimize costs and risk?", published in the EDA Distributor magazine
- "Know your worth: valuations and your business", published by NLOWE in The Advisor
- "Five Steps to Prepare to Sell a Business", published by NLOWE in The Advisor
- "Balancing utilities' affordability and innovation in 2021 and beyond", published by the Atlantic Business Magazine

Community involvement

Angie is passionate about giving back to her community. Since joining the firm in 2009, she has given her time to a variety of causes, including:

- Several years of volunteering in the back office at the Janeway Foundation's annual telethon
- Past facilitator of the Junior Achievement NL company program series, including supporting high school students in the startup, operations and liquidation of a small business over a period of 26 weeks, as well as in classroom facilitation of the economics for success program for Grade 6 students
- Board Treasurer and the Chair of the Finance Committee for the Ronald McDonald House Charities Newfoundland and Labrador 2019 to 2023.
- Board Chair for the Ronald McDonald House Charities Newfoundland and Labrador 2023 to present.
- External advisor to TaskForceNL a not-for-profit organization established in 2020 to respond to the COVID-19 pandemic through sourcing PPE for local health care providers and supporting local manufacturing industry participants as they consider their ability to produce PPE into the future
- Former board member of the Institute of Internal Auditors – Newfoundland and Labrador Chapter from 2013 to 2015 and 2019 to 2021

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