Grant Thornton

City of Edmonton

EPCOR Water Services Inc. - Performance Based Regulation Review

Water PBR 2022-2026 Application
Wastewater Treatment PBR 2022-2024 Application
Drainage PBR 2022-2024 Application

Final report date: May 31, 2021

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Mr. Barry McNabb CPA, CA
Director, Utility Regulation
City of Edmonton
5th Floor, Century Place
9803 – 102A Avenue
Edmonton, AB, T5J 3A3

May 27, 2021

Dear Mr. McNabb:

Re: City of Edmonton – EPCOR Water Services Inc. Performance Based Regulation Application Review

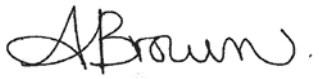
We enclose our report of the findings and observations with respect to the City of Edmonton – EPCOR Water Services Inc. ("EWSI") Performance Based Regulation Application Review.

We would like to take this opportunity to thank the City and EPCOR Water Services Inc. for their co-operation throughout this engagement.

Yours sincerely,

Grant Thornton LLP

Troy MacDonald, CPA, CA, CBV
Partner, National Advisory Service Line Leader



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

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1 Executive summary

1.1 Project overview

This report was prepared by Grant Thornton LLP ("we", "us", or "Grant Thornton") under an engagement as a Consultant to the City of Edmonton ("the City", "the Administration", or "Edmonton") for the review of the *"2022-2026 Performance Based Regulation Water Application"* ("the Application(s)" or "Water PBR 2022-2026"), the *"2022-2024 Performance Based Regulation Wastewater Treatment Application"* ("the Application(s)" or "Wastewater PBR 2022-2024"), and the *"2022-2024 Performance Based Regulation Drainage Application"* ("the Application(s)" or "Drainage PBR 2022-2024") as filed by EPCOR Water Services Inc. ("EWSI" or "the Company") on February 16, 2021 ("February Filing"). This report is provided for the use of the Administration of the City of Edmonton in evaluating the applications submitted by EWSI.

1.2 Scope of work

We have been engaged to provide subject matter expertise focused on select areas of the Applications. Our review was highly targeted in these specific areas, and we did not conduct comprehensive or exhaustive reviews of all Applications, nor did we conduct exhaustive reviews regarding the scope of work assigned by the City. Specifically, we have undertaken the following activities:

- An assessment of cost of capital including EWSI's proposed return on equity and interest on long term debt. The assessment included an evaluation of the operational and financial risks for EWSI in comparison to the benchmark return on equity approved by the Alberta Utilities Commission. The assessment also included an evaluation of the impact of any additional deferrals accounts (such as long-term debt interest rates and water consumption impact on revenue) on the risk of EWSI and the requested return on equity;
- An overall assessment of the efficiency factor proposed by EWSI for each water, wastewater, and drainage utilities, taking into account the number of years each utility has operated under performance-based regulation ("PBR");
- An overall assessment of the proposed inflation factor and methodology used by EWSI applied to customer rates;
- An overall assessment of the proposed PBR formula including the appropriateness of 5-year PBR Applications considering the current economic environment (including the impact of COVID-19);
- A scan of approaches currently being used by other regulators in North America to approve rates given COVID-19 and the economic uncertainty;
- An overall assessment of cost of service and rate design studies submitted by EWSI; and
- An assessment of how EWSI met its performance measures with potential suggestions for future considerations.

Specific procedures are outlined in each section of this report to reflect the nature of the specific matter reviewed and the nature of the information filed by EWSI. However, in general our procedures were comprised of:

- Enquiry and analytical procedures with respect to financial information in the Company's records;
- Assessing the reasonableness of the Company's explanations with accompanying Information Requests ("IRs"); and

- Assessing the Company's compliance with associated industry standards.

The tables presented throughout our report reflect the balances stated within the Applications and as a result may contain rounding differences due to presenting the information in thousands and millions of dollars.

1.3 Restrictions and limitations

Our scope of work is as set out throughout this report and reflected the scope that was agreed upon with the City. The procedures undertaken in the course of our review do not constitute an audit of EWSI's financial information and consequently, we do not express an opinion on the financial information provided by EWSI.

Information contained within this report may be considered commercially sensitive or confidential by the parties to the matter. Therefore, we defer to EWSI and the City to determine if some of the information contained in our report should be treated as confidential. We acknowledge that our report will be communicated to the parties to the matter and may become a public document accessible through the City's website. We have given the City our consent to use our report for this purpose. Our report is not to be reproduced or used for any purpose other than that outlined above without prior written permission in each specific instance. Grant Thornton LLP recognizes no responsibility whatsoever to any third party who may choose to rely on this report or other material provided to the City.

Unless stated otherwise within the body of this report, Grant Thornton LLP has relied upon information provided by EWSI, the City 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 analyses depend on the input from third parties whose opinions may influence the conclusions.

All analyses, information and recommendations contained herein are based upon the information made available to Grant Thornton LLP as of the date of this report and are subject to change without notice. We reserve the right, but will be under no obligation, to review and/or revise the contents of this report considering information which becomes known to us after the date of this report.

1.4 Summary findings and recommendations

The following section provides a summary of the total revenue requirements, total operating costs, return on rate base, and rate increases year over year for each Application.

1.4.1 Water PBR 2022-2026

Table 1: Water PBR 2022-2026 Financial Summary						
	2021F	2022F	2023F	2024F	2025F	2026F
Revenue Requirement ($ millions)						
In-City[1]	199.5	211.1	218.8	224.8	228.4	232.5
Fire protection[2]	14.8	21.2	21.8	22.3	22.8	23.3
Total	214.3	232.3	240.6	247.1	251.2	255.8
Year over year % change	N/A	8.40%	3.57%	2.70%	1.66%	1.83%
Operating Costs ($ millions)						
In-City[3]	103.3	103.7	106.8	109.2	111.3	114.0
Fire protection[4]	6.6	8.6	8.8	9.1	9.5	9.7
Total	109.9	112.3	115.6	118.3	120.8	123.7
Year over year % change	N/A	2.18%	2.94%	2.34%	2.11%	2.41%
Return on Rate Base ($ millions)						
In-City[5]	68.7	77.2	79.4	80.3	80.0	80.4
Fire protection[6]	5.1	9.2	9.5	9.5	9.5	9.7
Total	73.8	86.4	88.9	89.8	89.5	90.1
Year over year % change	N/A	17.07%	2.89%	1.01%	(0.33)%	0.67%
Total Annual Rate Increase (Note 1)						
Residential[7]	N/A	14.96%	4.23%	4.93%	4.93%	4.94%

[1] Water PBR 2022-2026 Financial Schedule 3-1, Line 13
[2] Water PBR 2022-2026 Financial Schedule 3-2, Line 9
[3] Water PBR 2022-2026 Financial Schedule 5-1, Line 25
[4] Water PBR 2022-2026 Financial Schedule 5-1, Line 28
[5] Water PBR 2022-2026 Financial Schedule 14-1, Line 20
[6] Water PBR 2022-2026 Financial Schedule 14-1, Line 39
[7] Water PBR 2022-2026, Page 174, Table 12.2.5-1, Line 6

Table 1: Water PBR 2022-2026 Financial Summary						
	2021F	2022F	2023F	2024F	2025F	2026F
Multi-residential[8]	N/A	(0.74)%	4.74%	4.93%	4.93%	4.93%
Commercial[9]	N/A	11.23%	4.53%	4.93%	4.93%	4.93%

Note 1: The above total annual rate increases has been adjusted from the information provided by EWSI, in Table 12.2.5-1 to 12.2.5-3. During our review we noted EWSI was incorrectly representing the rebasing rate increases for each customer class. We have confirmed with EWSI that the rebasing adjustment is 2.87% per year for all customer classes. This is consistent with the underlying financial models provided by EWSI.

As seen in the above table, significant increases occurred from 2021 to 2022 forecasted revenue requirements and total annual rate increases, with the one exception for multi-residential customers annual rates. The explanations for these are as follows:

- Revenue Requirement – majority of the 8.40% increase is related to an approximate increase of $8.9 million and $6.0 million in commercial class customers and public fire protection share revenue requirements respectively.[10]
- Total Annual Rate Increases – majority of the residential and commercial customer class rate increases from 2021 to 2022 is related to the fire protection rates and special rate adjustments (i.e. rebasing, increase in fixed charge revenue and 90-day deferral). The decrease in multi-residential rates is due to the special rate adjustment fixed charge decrease, which is offset by the other special rate adjustments (i.e. re-basing, 90-day deferral, and fire protection) and inflation.[11]

1.4.2 Wastewater PBR 2022-2024

Table 2: Wastewater PBR 2022-2024 Financial Summary				
	2021F	2022F	2023F	2024F
Revenue Requirement ($ millions)				
Total[12]	108.9	122.6	128.9	134.5
Year over year % change	N/A	12.58%	5.14%	4.34%
Operating Costs ($ millions)				
Total[13]	46.8	60.8	67.2	66.5
Year over year % change	N/A	29.91%	10.53%	(1.04)%
Return on Rate Base ($ millions)				

[8] Water PBR 2022-2026, Page 175, Table 12.2.5-2, Line 6
[9] Water PBR 2022-2026, Page 175, Table 12.2.5-3, Line 6
[10] Water PBR 2022-2026 Rate Design Model, Dashboard Tab and Water PBR 2022-2026 Cost of Service Model, Exhibit 15 Tab
[11] Water PBR 2022-2026, Pages 174 to 175, Tables 12.2.5-1 to 12.2.5-3
[12] Wastewater PBR 2022-2024 Financial Schedule 3-1, Line 15
[13] Wastewater PBR 2022-2024 Financial Schedule 5-1, Line 15

Table 2: Wastewater PBR 2022-2024 Financial Summary				
	2021F	2022F	2023F	2024F
Total[14]	35.3	34.4	34.5	37.9
Year over year % change	N/A	(2.55)%	0.29%	9.86%
Total Annual Rate Increase				
Residential[15]	N/A	20.55%	1.25%	1.94%
Multi-residential[16]	N/A	19.77%	1.90%	1.94%
Commercial[17]	N/A	19.89%	1.81%	1.94%

As seen in the above table, significant increases occurred from 2021 to 2022 forecasted revenue requirements, operating costs, and total annual rate increases. The explanations for these increases are as follows:

- Revenue Requirement – majority of the increase is related to the approximate $14.0 million increase in operating costs from 2021 to 2022. Refer to operating costs below.
- Operating Costs – majority of the approximate $14.0 million increase is related to the approximate $12.6 million cost in 2022 related to the Clover Bar Biosolids Recycling Facility.[18]
- Total Annual Rate Increases – majority of the increase from 2021 to 2022 is related to the special rate adjustment for rebasing (17.72% increase in 2022) as proposed by EWSI.[19]

[14] Wastewater PBR 2022-2024 Financial Schedule 14-1, Line 16
[15] Wastewater PBR 2022-2024, Page 157, Table 12.3-1, Line 4
[16] Wastewater PBR 2022-2024, Page 158, Table 12.3-2, Line 4
[17] Wastewater PBR 2022-2024, Page 158, Table 12.3-3, Line 4
[18] Wastewater PBR 2022-2024 Rate Design Model, I-3 Tab
[19] Water PBR 2022-2026, Pages 174 to 175, Tables 12.2.5-1 to 12.2.5-3

1.4.3 Drainage PBR 2022-2024

Table 3: Drainage PBR 2022-2024 Financial Summary				
	2021F	2022F	2023F	2024F
Revenue Requirement ($ millions)				
Sanitary, incl. CORe[20]	138.2	119.4	122.0	135.0
Stormwater, incl. SIRP[21]	81.3	114.2	127.6	142.0
Total	219.5	233.6	249.6	277.0
Year over year % change	N/A	6.42%	6.85%	10.98%
Operating Costs ($ millions)				
Total[22]	127.7	110.6	105.6	108.4
Year over year % change	N/A	(13.39)%	(4.52)%	2.65%
Return on Rate Base ($ millions)				
Sanitary, incl. CORe [23]	46.0	39.6	46.0	54.8
Stormwater, incl. SIRP[24]	5.8	36.0	45.1	55.1
Total	51.8	75.6	91.1	109.9
Year over year % change	N/A	45.95%	20.50%	20.64%
Total Annual Rate Increase				
Residential				
Sanitary, incl. CORe[25]	N/A	4.20%	0.13%	6.82%
Stormwater, incl. SIRP[26]	N/A	8.68%	9.65%	8.71%
Multi-residential				
Sanitary, incl. CORe[27]	N/A	7.25%	0.50%	9.52%
Stormwater, incl. SIRP[28]	N/A	8.68%	9.65%	8.71%

[20] Drainage PBR 2022-2024 Financial Schedule 3-1, Line 50
[21] Drainage PBR 2022-2024 Financial Schedule 3-2, Line 50
[22] Drainage PBR 2022-2024 Financial Schedule 5-1, Line 26
[23] Drainage PBR 2022-2024 Financial Schedule 14-1, Lines 17 and 35
[24] Drainage PBR 2022-2024 Financial Schedule 14-1, Lines 53 and 71
[25] Drainage PBR 2022-2024, Page 205, Table 13.4-1, Lines 6 and 7
[26] Drainage PBR 2022-2024, Page 205, Table 13.4-1, Lines 14 and 15
[27] Drainage PBR 2022-2024, Page 206, Table 13.4-2, Lines 6 and 7
[28] Drainage PBR 2022-2024, Page 206, Table 13.4-2, Lines 14 and 15

Table 3: Drainage PBR 2022-2024 Financial Summary				
	2021F	2022F	2023F	2024F
Commercial				
Sanitary, incl. CORe[29]	N/A	5.91%	5.04%	11.32%
Stormwater, incl. SIRP[30]	N/A	8.66%	9.67%	8.71%

While specifically commenting on the components of revenue requirement and accessing the validity of annual rate increases was outside of the scope of our review, we wish to provide the following comments for the City's consideration:

- It appears that the current Applications include a material increase in rates in year one (2022 forecast) followed by modest incremental increases thereafter. This approach to rate profiling could result in rate concerns and thus a negative impact on rate payers. In general, a smoother approach to rate making would consider alternatives to soften the impact of rate increases for customers. We recommend that EWSI consider alternatives to spread the proposed rate increases more evenly over the associated PBR terms.

[29] Drainage PBR 2022-2024, Page 207, Table 13.4-3, Lines 6 and 7
[30] Drainage PBR 2022-2024, Page 207, Table 13.4-3, Lines 14 and 15

The following represents a summary of our key findings and recommendations:

#	Report Section	Findings and Recommendations
1)	Cost of service and rate design	• EWSI's cost of service models are consistent with best practice frameworks (i.e. AWWA and WEF frameworks) and have incorporated the methodologies of the HDR COSS. • EWSI's implementation of the HDR COSS results for the wastewater utility in revenue to cost ratios for customer classes that are within +/- 5%, with the exception of the overstrength class of service as HDR's cost of service study does not include costs associated with the Biosolids Management Program. • We have concluded that the residential and multi-residential customer class count forecast methodology is reasonable. However, forecasting residential and multi-residential consumption is subject to volatility from consumer patterns such as the impacts of the COVID-19 pandemic. Therefore, it is difficult to predict the accuracy of this component of EWSIs forecast. • EWSI has used judgement when forecasting the commercial customer class and we have noted there may be implications regarding potential under-forecasting. It is our understanding that the use of judgement is tied to the COVID-19 pandemic impacts for not just the customer count, but also consumption. • While the use of judgement was necessary due to the COVID-19 pandemic, we recommend that EWSI review the adoption of annual adjustments or deferral accounts to mitigate the risk of economic uncertainty related to the consumption volume and customer count forecasts. Should the City approve some combination of deferral mechanisms this would result in a decrease in risk to ESWI that could be reflected as a reduction in the approved return on equity.

#	Report Section	Findings and Recommendations
2)	Cost of Capital	• We have determined that a change to the organizational capital structure is not warranted at this time. Therefore, our recommended capital structure for Water, Wastewater and Drainage PBR Applications is 60% debt and 40% equity. • Changing from a forecast based on 20-year debt to a forecast based on 30-year debt is not unreasonable if EWSI is attempting to more closely align the timeline to the associated asset life. However, this does result in an increase to the cost of debt by 0.28%. We would have concerns with changing back and forth between 20-year and 30-year debt in future rate setting periods. Therefore, we encourage the City to ensure consistency with this change is applied in future Applications. • We found that the information presented by EWSI regarding cost of debt was consistent with their supporting materials and are reflective of current market conditions. • Given that EWSI secures its debt from its parent company EUI, it is 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. We agree that a 3.50% cost of debt is reasonable. • EWSI is proposing a premium in comparison to the AUC's approved cost of capital in two ways; 1)40% equity versus the AUC approved 37% equity would generate a higher return for EWSI in comparison to other utilities in Alberta, 2) EWSI has proposed a premium return on equity versus the AUC approved return on equity. • The City could consider a reduction of the proposed ROE by 25 basis points to account for items which are reducing EWSI's risk profile, such as the shift to fixed charges, deferral accounts, the term of the PBR period proposed. • For future rate setting periods we recommend that the City requires EWSI to supplement their Application with a summary schedule reflecting a buildup approach to cost of capital where the base is set in accordance with the AUC's generic cost of capital guidance and EWSI's evidence is focused on identifying risks that increase or decrease the risk implied in the AUC guideline cost of capital. This discussion of risk could propose the quantitative impact of the risk to further support their conclusion of the total implied risk premium.

#	Report Section	Findings and Recommendations

3)	Efficiency Factor	• EWSI has proposed an efficiency factor of 0.25% for all three utilities, which is the same as the previous PBR. Our analysis of forecast and actual operating costs in 2017, 2018, and 2019 indicate EWSI has incurred operational efficiencies that far exceed 0.25%.
		• We have concluded maintaining an efficiency factor of 0.25% is reasonable for the water and wastewater utilities.
		• EWSI has stated the 0.25% efficiency factor proposed for the drainage utility was due to:
		  ○ The drainage transfer included delivering the capital program at 10% lower costs and 5% lower operating costs by 2021; and
		  ○ The ramped-up return on equity, in combination with an efficiency factor higher than 0.25%, would move the risk/return profile for drainage beyond an acceptable level.
		• Our analysis found that suggesting the future ability to find efficiencies in a utility operation that has been held for a short time period is comparable to the efficiencies available to the water utility which has a well-established operating history does not appear to be a reasonable request.
		• We recommend that the City consider efficiency factors within the range of 0.25% to 0.50%. Doubling the efficiency factor for the drainage utility would balance continuing to motivate the EWSI to strive for efficiencies while also respecting that this is a new and evolving business for the Company.

#	Report Section	Findings and Recommendations

4)	Inflation Factor	• EWSI's methodology to calculate the inflation factor is consistent with the methodology used in the previous PBR term, with the following exceptions:
		  ○ EWSI changed the weighting to perform the inflation calculation on a standalone utility basis (i.e. splitting water and wastewater); and
		  ○ EWSI used actual labour costs relative to all other costs in the 2017-2021 PBR Filing, whereas they are proposing to use forecast labour costs relative to all other forecast costs in the current Applications.
		  ○ Our analysis concluded that the changes in methodology did not have a material impact on the proposed Applications.
		• EWSI has determined inflation factors as follows:
		  ○ Water PBR 2022-2026: 2.31%[31]
		  ○ Wastewater PBR 2022-2024: 2.26%[32]
		  ○ Drainage PBR 2022-2024: 2.33%[33]
		• We are of the opinion that deviating from past methodology in calculation inflation factor weighting is not reasonable. We recommend EWSI continue to use historical costs to ensure the methodology applied remains consistent across all past and future PBR terms, and update the bylaws for each utility to clearly state the use of historical costs when calculating inflation factor weighting. In the proposed Applications, the use of forecast operating costs does not have a material impact, however, it may have material impacts in future PBR terms.

[31] Water PBR Application 2022-2026, Page 59, Paragraph 193
[32] Wastewater PBR Application 2022-2024, Page 56, Paragraph 175
[33] Drainage PBR Application 2022-2024, Page 83, Paragraph 211

5)	Performance measures	• The Company has provided rationale relating to the water, wastewater, and drainage utilities proposed performance measure weightings and nothing has come to our attention that would suggest these changes are unreasonable.
		• Findings and observations for immediate consideration:
		  o We conclude that EWSI should use the 10-year average of 23.2% for the WELPI Factor standard for the wastewater utility.
		  o Nothing has come to our attention to suggest switching performance measure audits from an external auditor to EPCOR's Internal Audit Department is unreasonable. As a best practice, the City should consider implementing a defined method to confirm that the opinion is on an independent basis, where possible.
		  o Due to EWSI's inability to utilize the bonus points assigned to the Water Quality Index, they are proposing to assign those bonus points to other indices. Considering the bonus points are minimal (0.5), we don't believe the reallocation of these bonus points will provide significant effects, or distortion, to the other indices.
		• Findings and observations to be addressed prior to the next PBR term (2024):
		  o While EWSI has made adjustments to most performance standards (increasing or decreasing to make the standard more challenging), we encourage the Utility Committee (and City Council) to request EWSI update performance standards in areas where the Company continuously outperforms standards at a level that demonstrates the standard is no longer relevant. EWSI should not be limited until the next PBR to make these adjustments.
		  o We recommend EWSI provide a performance measure summary table by utility in their annual reports that show historical performance across all indices and sub-indices, including total actual points earned.
		  o Based upon our review of EWSI's past performance and the existing bonus point structure, there is a significant potential for overperformance in one index to offset lacklustre performance in another.
		  o We recommend for EWSI to undertake a benchmark review prior to the next PBR period to ensure that EWSI's performance metrics are reflective of industry standards.
		  o We agree with EWSI's intent to move the drainage utility's Environmental Incident Factor to a reportable and preventable metric in the next PBR, as well as incorporate internal tracking to

#	Report Section	Findings and Recommendations
		ensure enough data is captured over the 2022-2024 PBR term. We recommend for EWSI set a deadline to establish this process. o We recommend EWSI establishes a mechanism to reduce the Stormwater Flow Monitoring standard of 63% over time to reflect historical average performance. This mechanism doesn't have to be limited to waiting until the next PBR term before its changed. • Findings and observations for future consideration: o We recommend EWSI adopt consistent methodology when developing standards, including benchmarking and using the 10-year average, when available.

#	Report Section	Findings and Recommendations
6)	Regulatory benchmarking	• Observation 1.1: While regulators acknowledge shifts in customer demand patterns, some regulators state that the utilities sector has been relatively insulated from the COVID-19 pandemic's impact, through continued operations as an essential business. • Observation 1.2: Many regulators have approved deferral accounts specifically for tracking COVID-related costs. In most cases, these accounts will be temporarily in place for the duration of the pandemic. • Observation 1.3: Provided utilities are allowed a reasonable opportunity to recover their costs from ratepayers (including customer payment deferrals), many regulators do not view additional risk to the utility sector as a result of the COVID-19 pandemic. • Observation 1.4: Several jurisdictions introduced a form of customer payment deferral program and have limited rate increases (though some utilities cannot since they are unable to incur deficits due to legislative restrictions). • Observation 1.5: Some regulators have yet to approve the use of carrying costs, however, for those who have, they allow utilities to apply their approved WACC on carrying costs. • Observation 1.6: Generally, regulators have taken a status quo approach (e.g. interim changes rather than updating for new term) by limiting regulatory process changes, streamlining regulatory proceedings, temporarily decreasing reporting requirements and frequencies from utilities, and/or deferring major decisions to a later date. • Observation 2.1: The degree of management control and uncertainty are often considered when assessing the use of deferral accounts. In addition, regulators balance the use deferral accounts to reduce/eliminate risk with incentives to lower utility costs (i.e. deferral accounts provide certainty of cost recovery for the Utilities but results in less incentive for cost reduction). • Observation 2.2: Most regulators require utilities to provide a detailed report to analyze variances and increasingly, regulators are opting for shorter review periods when assessing results associated with deferral accounts. • Observation 3.1: A 5-year term appears to be the most commonly implemented PBR term. • Observation 3.2: While some regulators have postponed major changes, there was no evidence to suggest a cost of service approach or shorter PBR terms is being favored.

2 Introduction

2.1 Purpose

We have been engaged to assist the City with reviewing the Water PBR 2022-2026, Wastewater PBR 2022-2024, and Drainage PBR 2022-2024 applications.

This report is structured to provide our review of the Applications based on the targeted areas of our scope of work at the beginning, followed by a regulatory benchmarking assessment. The purpose of the regulatory benchmarking assessment is to provide the City with insight into how other regulators in Canada have operated and approved similar applications given the COVID-19 pandemic. If something outside of our scope or work were to come to our attention, we would have raised it as a value-add consideration. In the course of our review, we did not note any value-add considerations.

The reader is cautioned that our scope of work did not cover the full PBR filings and as such our findings and observations are limited to the areas of our review. We assisted the City of Edmonton in completing its regulatory due diligence and review of EWSI's PBR Applications. Grant Thornton was engaged to provide subject matter expertise in certain focus areas of each Application. The purpose is for us to provide our subject matter expertise to assist the City in their regulatory role.

2.1.1 Review areas

For each Application we have conducted a review in the following areas:

- Cost of service and rate design;
- Cost of capital, specifically looking into the Company's proposed Return on Equity
- Efficiency factor;
- Inflation factor;
- Performance metrics; and
- Regulatory benchmarking analysis of other jurisdictions.

The scope of work for each of these categories is detailed in their respective sections of this report.

3 Cost of service and rate design

3.1 Objectives and approach

Our objectives with respect to the information provided by EWSI regarding the cost of service and rate design studies under the Water PBR 2022-2026, Wastewater PBR 2022-2024, and Drainage PBR 2022-2024 is to conduct an overall assessment. Our review included the reasonableness of how costs/revenue requirements are allocated to customers and how these align with industry standards and if there are material changes in customer classes and customer rates compared to the previous PBR term.

3.1.1 Water PBR 2022-2026 – Cost of service methodology

EWSI determines the costs of providing service to its customers in accordance with the principles and methodologies advocated by the American Water Works Association ("AWWA").[34] The AWWA recommends the use of a cost of service model that generates revenue from customer segments and classes in proportion to the cost to serve each respective segment and customer and avoids cross-segment and cross-class subsidies. The AWWA cost of service methodology consists of three main steps: 1) functionalization of costs, 2) allocation of costs, and 3) distribution costs.[35]

We have determined that EWSI's cost of service models are consistent with the 2017-2021 PBR and applies the AWWA framework.

EWSI's water works system has remained relatively consistent, therefore a new cost of service study was not completed for the Water PBR 2022-2026. However, for the Water PBR 2022-2026 EWSI has updated the methodology used to assign and allocate operating costs to system functions.[36] EWSI's rationale for the updated methodology is described in the Water PBR 2022-2026 as follows:

> *The biggest change in cost allocations are the functions supported by distribution and transmission operations…This change has resulted in a shift of costs from transmission mains and services to distribution mains, hydrant, and meters based on the actual level of effort required to support each function. The updated methodology provides a more accurate representation of the level of effort or costs required to support each function.*[37]

We have concluded that EWSI's updated operating costs by function the impact on the proportionate share of the total revenue requirement by customer segment and class have been minimal (less than 0.5%) with the implementation of the updated functionalization methodology.[38] Overall, the magnitude of this methodology change is not significant and appears to be reasonable.

In the Water PBR 2022-2026, the Company has included the public fire protection rates within the water rates over the 2022-2026 PBR term. EWSI has explained this process in the Water PBR 2022-2026 as follows:

> *In past PBR terms the public fire protection revenue requirement has been recovered through the Fire Hydrant Service Agreement with the City of Edmonton Fire Rescue Services Department, which was funded through the City's property tax levy. EWSI has been directed by Edmonton City*

[34] Water PBR Application 2022-2026, Page 154, Paragraph 498
[35] Water PBR Application 2022-2026, Page 154 to Page 156
[36] Water PBR Application 2022-2026, Page 158, Paragraph 508
[37] Water PBR Application 2022-2026, Page 158, Paragraph 510
[38] Water PBR Application 2022-2026, Page 159, Paragraph 511 and Table 11.3.2-1

> *Council to include the recovery of the public fire protection revenue requirement through water rates over the 2022-2026 PBR term.*[39]

Furthermore, EWSI provided rationale on the public fire protection allocation and rate design in the Water PBR 2022-2026, as follows:

> *Using guidance from AWWA's M1 Manual EWSI has developed a methodology to allocate the public fire protection revenue requirement between customer classes. The allocation methodology is based on the potential demand that each customer class places on the fire system…The equivalent fire service demand is then used to allocate the public fire protection revenue requirement between customer classes*[40]*…The use of the equivalent fire service demand calculation allows for a more equitable recovery of costs from customers that place larger demands on the fire system.*[41]

We asked EWSI in GT-RFI-2021-5 to provide the fire protection rates similar to Table 11.4.2-1 of the Water PBR 2022-2026 for each of the three methodologies (i.e. single fixed rate per customer class, volumetric rate, and rate per equivalent meter). Additionally, we asked EWSI to elaborate on why their position is that the use of equivalent meters provides the most equitable method related to fire protection rates. In response to our question, EWSI provided the response GT-EWSI-5, which included tables GT-EWSI-5.a-1 to GT-EWSI-5.a-3 for the 2022 fire protection rates calculated using the three methodologies, in addition to the following rationale:

> *The Multi-Residential and Commercial customer classes include a wide range of different customers (consumption patterns and size of premises). The Commercial class includes but is not limited to coffeeshops, small offices, restaurants, retail spaces, shopping centres, hospitals, office towers, breweries, industrial customers, and warehouses. It is EWSI's opinion that using either the single fixed rate per customer class, or volumetric rate will create inequity within the Multi-Residential and Commercial Customer classes.*

Additionally, EWSI provided the following table GT-EWSI-5.b-1 to demonstrate an example of the 2022 Commercial Fire Protection rates using each methodology, as follows:

Table 4

	Coffee Shop	Medium Retail	Shopping Centre/Mall	Large Warehouse
Building Square Footage	1,500	20,000	540,000	600,000
Meter Size	25 mm (1")	40 mm (1.5")	75 mm (3")	50 mm (2")
Monthly Consumption	100 m^3	26 m^3	5,400 m^3	300 m^3
Monthly Fire Protection Bill ($)				
Single fixed rate per customer class	15.72	15.72	15.72	15.72
Volumetric rate	16.29	4.20	879.84	48.88
Rate per equivalent	14.68	29.36	88.07	46.97

EWSI, as directed by Edmonton City Council, has incorporated fire protection rates into their Water PBR 2022-2026 application. The public fire protection rates were established using the AWWA methodology equivalent meter to allocate the public fire protection revenue requirement between customer classes and based on EWSI's response above appears to be reasonable.

[39] Water PBR Application 2022-2026, Page 160, Paragraph 512
[40] Water PBR Application 2022-2026, Page 160, Paragraph 513
[41] Water PBR Application 2022-2026, Page 160, Paragraph 514

3.1.2 Water PBR 2022-2026 - Rate design

EWSI's In-City customers are grouped into three customer classes: residential, multi-residential, and commercial.[42] EWSI has indicated on the Water PBR 2022-2026 that the only change to each of these customer class rate structures is the addition of public fire protection to water rates.[43] Refer to section above related to public fire protection applied to water rates.

We have determined that the customer rate structures are consistent with the previous PBR term and reasonable, with the one change of the public fire protection rates.

The table below provides a summary of the in-city and fire protection services revenue requirement forecasted by EWSI for the Water PBR 2022-2026 by customer class:[44] [45]

Table 5: Revenue Requirement Forecast ($ millions)

	2022F	2023F	2024F	2025F	2026F
In-City					
Residential	133.6	137.5	140.9	143.7	147.0
Multi-residential	33.9	34.4	34.8	35.5	36.2
Commercial	41.3	44.5	46.7	46.8	46.9
University of Alberta	2.3	2.3	2.4	2.4	2.4
Total	**211.1**	**218.8**	**224.8**	**228.4**	**232.5**
Fire Protection					
Public Share	18.4	18.8	19.3	19.7	20.1
Private Share	2.8	3.0	3.0	3.1	3.2
Total	**21.2**	**21.8**	**22.3**	**22.8**	**23.3**

[42] Water PBR Application 2022-2026, Page 163, Paragraph 518
[43] Water PBR Application 2022-2026, Page 163, Paragraph 521, Page 164, Paragraphs 524 and 527
[44] Water PBR 2022-2026, Financial Schedule 3-1, Line 13 and Water PBR 2022-2026 Cost of Service Model, Exhibit 15 Tab
[45] Water PBR 2022-2026, Financial Schedule 3-2, Line 9 and Water PBR 2022-2026 Cost of Service Model, Exhibit 15 Tab

The Water PBR 2022-2026 presented the following rate structures and annual increases or decreases for each customer class:[46] [47]

Table 6: Water PBR 2022-2026 Rates Annual Changes									
	2018A	2019A	2020A	2021F	2022F	2023F	2024F	2025F	2026F
Consumption Rates									
Residential	2.55%	2.82%	3.29%	2.44%	(5.57)%	4.93%	4.93%	4.93%	4.93%
Multi-residential	2.61%	2.90%	3.35%	2.51%	(5.57)%	4.93%	4.93%	4.94%	4.93%
Commercial	2.70%	3.00%	3.46%	2.59%	(5.57)%	4.93%	4.94%	4.93%	4.94%
Fire Protection Rates									
Residential	Not applicable					2.06%	2.06%	2.06%	2.06%
Multi-residential						2.06%	2.06%	2.06%	2.06%
Commercial						2.06%	2.06%	2.06%	2.06%
Total Annual Rate Changes (Note 1)									
Residential	Not applicable				14.96%	4.23%	4.93%	4.93%	4.93%
Multi-residential					(0.74)%	4.74%	4.93%	4.93%	4.93%
Commercial					11.23%	4.53%	4.93%	4.93%	4.93%

Note 1: The above total annual rate increases has been adjusted from the information provided by EWSI, in Table 12.2.5-1 to 12.2.5-3. During our review we noted EWSI was incorrectly representing the rebasing rate increases for each customer class. We have confirmed with EWSI that the rebasing adjustment is 2.87% per year for all customer classes. This is consistent with the underlying financial models provided by EWSI.

The annual rate increases presented above for the Water PBR 2022-2026 include the following:

- Consumption rates – the 2022 forecast decrease is due to the impact of the inflation and rebasing increase of 2.06% and 2.87% respectively[48], which is offset by the corresponding decrease to variable rates of 10.50%, due to EWSI applying for a special rate adjustment to increase the monthly service connection fee.[49] The 2023 to 2026 forecast increases are due to the impact of inflation and rebasing special rate adjustment aforementioned.

[46] Water PBR 2022-2026, Financial Schedule 20-1
[47] Water PBR 2022-2026, Pages 174 and 175, Tables 12.2.5-1 to 12.2.5-3, Line 6
[48] Water PBR 2022-2026, Page 174, Table 12.2.5-1, Line 1 and 2
[49] Water PBR 2022-2026, Page 171, Paragraph 544 and Water PBR 2022-2026 Rate Design Model Tabs R-2 and R-2.2

- Fire protection rates – the 2022 to 2026 forecast rate increases are due to the impact of inflation.[50]
- Total Annual Rate Changes – includes the impact of all the rate increases over the Water PBR 2022-2026 term, including inflation and special rate adjustments.[51]

We have concluded that the customer rate increases over the Water PBR 2022-2026 appear to be appropriately applied to each customer class. However, EWSI should consider the impact on each customer class and consumption usage based on the impact of each special rate adjustment individually.

3.1.3 Wastewater PBR 2022-2024 - Cost of service methodology

EWSI engaged HDR Engineering, Inc ("HDR") in the fall of 2019 to develop a wastewater treatment cost of service analysis to support historical practice of establishing cost-based rates. Objectives of this analysis was to develop wastewater treatment cost of service aligned with the Water Environment Federation ("WEF") and described *Manual of Practice No. 27*, have an equitable distribution of costs to various customer classes, review current rate structure and future alternatives, and provide EWSI with a cost of service model to use and evaluate the distribution of future cost and rate impacts.[52]

We have determined that EWSI's cost of service models incorporated the generally accepted wastewater rate-setting methodologies and principals established by WEF.

In relation to HDR's report, EWSI believes it provides a sound basis for developing fair and equitable cost-based rates. HDR's study and analysis compared the distributed expenses for each customer class of service to the current revenues received from each customer class of service. This comparison provides an over or under collection of revenue by customer class, if implemented.[53] As a result of this, EWSI noted in their report the following details and recommendation of HDR:

> *HDR typically reviews a cost of service to determine whether a class of service is within a "reasonable range of their cost of service", where reasonable is considered to be within +/- 5% of the overall required adjustment. Therefore, all but the overstrength customer class of service are within a reasonable range of their cost of service. Accordingly, HDR has recommended that EWSI should examine this more closely to better assure that these costs are the sole responsibility of the overstrength customers.*[54]

We asked EWSI in GT-RFI-2021-3 to explain their review of the issue raised by HDR regarding overstrength class of service and plan to address this commentary to better assure that these costs are the sole responsibility of these customers. EWSI provided their response in GT-EWSI-3 as follows:

> *Although HDR noted that the revenue to cost ratio for the overstrength class of service were outside of the +/-5% range, on pages 16 and 17 of this report, HDR also noted that:*
>
> - *A cost of service analysis is a dynamic analysis and the results change over time as costs change and as customer usage changes;*
> - *Since the short fall for the overstrength class of service is close to the direct assignment of overstrength costs, EWSI is advised to examine this allocation to better assure that these costs are the sole responsibility of the overstrength customers; and*

[50] Water PBR 2022-2026, Page 17, Footnote 4
[51] Water PBR 2022-2026, Pages 174 and 175, Tables 12.2.5-1 to 12.2.5-3, Line 6
[52] Wastewater PBR Application 2022-2024, Page 146, Paragraph 423
[53] Wastewater PBR Application 2022-2024, Page 148, Paragraph 428
[54] Wastewater PBR Application 2022-2024, Page 149, Paragraph 429

- *As noted above, the cost of service is based upon a specific time period (2021), and costs and usage can change over time and that cost of service is often best determined over an extended number of studies.*
    - *Accordingly, HDR recommended that EWSI continue to review the wastewater treatment cost of service for the various customer classes before making interclass adjustments.*
    - *EWSI concurs with HDR's recommendations. EWSI does not believe that it would be prudent to implement interclass adjustments based on a single year's cost of service data. Instead, over the next several years, EWSI will conduct further cost of service studies to obtain a better understanding of how overstrength costs of service vary over time and how to design overstrength rates that provide for better alignment of overstrength revenues with costs, thereby providing for better assignment of cost responsibility to customers.*[55]

Furthermore, EWSI noted the following related to the impacts of the Biosolids Management Program and Dewatering Facility on the cost of service:

> *HDR's Cost of Service Study was based upon a specific time period (2021) and does not include costs associated with the Biosolids Management Program. With the transition of the Biosolids Management Program to Wastewater Treatment in 2022, further analysis is required to assess the impacts on the cost of service. Furthermore, the new Dewatering Facility will also have an impact of the cost of service. As such, EWSI is not proposing to make any interclass adjustments to the wastewater treatment rates or overstrength charges in the 2022-2024 PBR term to reflect the results of the HDR Cost of Service Study. Instead, EWSI plans to update the cost of service analysis over the 2022-2024 PBR term to incorporate the Biosolids Management Program and Dewatering Facility with the overall objective of implementing improvements and refinements to rate structure and rate design in the 2025-2029 PBR term to ensure that revenues from each class of service will fall within reasonable ranges of their cost of service.*[56]

We asked EWSI in GT-RFI-2021-4 to explain how they are addressing cost of service of these two programs during 2022-2024 PBR term while the updated cost of service study is being undertaken to reflect these programs. EWSI provided their response GT-EWSI-4 as follows:

> *Biosolids are a component of total suspended solids. In HDR's wastewater cost of service analysis (Appendix N1), the costs of treating total suspended solids are considered to be strength-related and, therefore, are allocated to both strength and overstrength cost components. The dewatering facility is an integral part of biosolids management, rather than a separate program. This facility will provide EWSI with the capability to dewater biosolids using its own assets, rather than relying on contracted services. As shown in the business case (Reference "Appendix G4 –Dewatering Facility Project (Updated –UA-EWSI-13)"), the dewatering facility reduces the overall cost of biosolids management, providing substantial long-term benefits to wastewater treatment customers. EWSI calculated the increase in wastewater treatment revenue requirements associated with the transfer of the biosolids management function from Drainage Services over the 2022-2024 period (see section 12.2.1 of the Application). This increase is reflected in the Special Rate Adjustment for rebasing and results in an 18% increase in 2022 rates for both wastewater treatment and overstrength surcharges, so that the costs of biosolids management are included 2022-2024 rates.*

[55] GT-EWSI-3
[56] Wastewater PBR Application 2022-2024, Page 149, Paragraph 430

This treatment also provides for an increase in overstrength revenues while EWSI continues to undertake additional cost of service studies in anticipation of future interclass adjustments. Please note that the increase in wastewater treatment and overstrength surcharges related to the biosolids management transfer are offset by a corresponding decrease in 2022 Drainage rates.[57]

As indicated, EWSI is using HDR's recommendation to not implement interclass adjustments based on a single year's cost of service data based on the overstrength class of service range was outside the +/- 5% due to the costs associated with the Biosolids Management Program excluded during HDR's analysis. We have determined that EWSI's approach appears reasonable, and EWSI plans to update the cost of service during the 2022-2024 PBR term is appropriate to increase accuracy and improvements to their operations.

3.1.4 Wastewater PBR 2022-2024 - Rate design

EWSI groups wastewater treatment customers into the same categories as water services customers: residential, multi-residential, and commercial. EWSI believes that these rate structures are appropriate and is not proposing any changes for the 2022-2024 PBR term.[58]

We have concluded that the customer rate structures are consistent with the previous PBR term and reasonable.

The table below provides a summary of the in-city and fire protection services revenue requirement forecasted by EWSI for the Wastewater PBR 2022-2024 by customer class:[59] [60]

Table 7: Revenue Requirement Forecast ($ millions)

	2022F	2023F	2024F
Residential	73.4	77.5	79.1
Multi-residential	21.3	22.4	22.9
Commercial - Strength	22.5	24.9	26.1
Commercial - Overstrength	5.4	5.5	5.6
SRA - 90 Day Deferral	-	(1.4)	0.8
Total	**122.6**	**128.9**	**134.5**

[57] GT-EWSI-4
[58] Wastewater PBR Application 2022-2024, Page 150-151, Paragraphs 432 to 435
[59] Wastewater PBR 2022-2024, Financial Schedule 19-1, Line 13 and Wastewater PBR 2022-2024 Rate Design Model, Dashboard Tab
[60] Wastewater PBR 2022-2024, Page 157, Table 12.2.2-1, Line 4 and Wastewater PBR 2022-2024 Rate Design Model, Dashboard Tab and S-3 Tab

The Wastewater PBR 2022-2024 presented the following rate structures and annual increases or decreases for each customer class:[61] [62]

Table 8: Wastewater PBR 2022-2024 Rates Annual Changes							
	2018A	2019A	2020A	2021F	2022F	2023F	2024F
Consumption Rates							
Residential	5.44%	5.44%	6.05%	5.19%	19.73%	1.94%	1.93%
Multi-residential	5.44%	5.44%	6.05%	5.19%	19.73%	1.94%	1.93%
Commercial	5.44%	5.44%	6.04%	5.20%	19.73%	1.93%	1.93%
Fixed Monthly Service Charge							
All classes	(1.61)%	5.59%	6.62%	5.38%	22.79%	(0.48)%	1.93%
Total Annual Rate Changes							
Residential	Not applicable				20.55%	1.25%	1.94%
Multi-residential					19.77%	1.90%	1.94%
Commercial					19.89%	1.81%	1.94%

The annual rate increases presented above for the Wastewater PBR 2022-2024 include the following:

- Consumption rates – the 2022 forecast the increase is due to the impact of the inflation and rebasing increase of 2.01% and 17.72% respectively.[63] The 2023 and 2024 forecast increases are due to the impact of inflation of 2.01%, which is offset by a decrease of 0.07% for the rebasing special rate adjustment.[64]
- Fixed monthly service charges – the 2022 and 2023 forecast rate increase and decrease are due to the impact of inflation and the special rate adjustments related to rebasing and COVID-19 deferral.[65] The 2024 forecast rate increase is due to the impact of inflation of 2.01%, which is offset by a decrease of 0.07% for the rebasing special rate adjustment.[66]
- Total Annual Rate Changes – includes the impact of all the rate increases over the Wastewater PBR 2022-2024 term, including inflation and special rate adjustments.[67]

[61] Wastewater PBR 2022-2024, Financial Schedule 20-1
[62] Wastewater PBR 2022-2024, Pages 157 and 158, Tables 12.3-1 to 12.3-3, Line 4
[63] Wastewater PBR 2022-2024, Pages 157 and 158, Tables 12.3-1 to 12.3-3, Lines 1 and 2
[64] Wastewater PBR 2022-2024, Pages 157 and 158, Tables 12.3-1 to 12.3-3, Lines 1 and 2
[65] Wastewater PBR 2022-2024, Pages 157 and 158, Tables 12.3-1 to 12.3-3, Lines 1 to 3 and Wastewater PBR 2022-2024 Rate Design model, I-1 Tab and S-1 to S-3 Tabs
[66] Wastewater PBR 2022-2024, Pages 157 and 158, Tables 12.3-1 to 12.3-3, Lines 1 and 2 and Wastewater PBR 2022-2024 Rate Design model, I-1 Tab and S-1 to S-2 Tabs
[67] Wastewater PBR 2022-2024, Pages 157 and 158, Tables 12.3-1 to 12.3-3, Line 4

We concluded that the customer rate increases over the Wastewater PBR 2022-2024 appear to be appropriately applied to each customer class. However, EWSI should consider the impact on each customer class and consumption usage based on the impact of each special rate adjustment individually.

3.1.5 Drainage PBR 2022-2024 – Cost of service methodology

EWSI engaged HDR Engineering, Inc ("HDR") in the fall of 2019 to develop a sanitary and stormwater cost of service analysis to support historical practice of establishing cost-based rates. Objectives of this analysis was to develop a sanitary cost of service aligned with the Water Environment Federation ("WEF") and described *Manual of Practice No. 27*, a stormwater utility cost of service analysis consistent with industry best practices, have an equitable distribution of costs to various customer classes, review current rate structure and future alternatives, and provide EWSI with a cost of service model to use and evaluate the distribution of future cost and rate impacts.[68]

We concluded that EWSI's cost of service models incorporated the principles and methodologies implemented by WEF and industry best practices.

In relation to the sanitary utility cost of service study, EWSI currently uses the following customer classes of service: residential, multi-residential, commercial and University of Alberta. EWSI's rationale for the University of Alberta isolated as its own customer class of service is their unique characteristics, including its own collection system.[69]

We asked EWSI in GT-RFI-2021-18 to elaborate on the unique characteristics of the customer and compare those characteristics of the broader commercial class of customers. In response to our question, EWSI provided GT-EWSI-18 which is as follows:

> *The U of A's main campus has its own collection system which interconnects with EWSI's sanitary sewer system. Therefore, rather than providing both collection and transmission services for wastewater as are provided for all other wastewater customers, the Sanitary Utility provides only transmission service from the interconnection points to the Gold Bar Wastewater Treatment Plant. Therefore, EWSI has designated the U of A as a Large Wholesale customer with the Collection System, so that the U of A receives a preferential variable monthly per cubic metre rate. This rate, which is 56% of the variable monthly charge for all other customers is intended to represent the costs associated with transmission-only services. Over the next several years, as EWSI continues to update its new cost of service analyses, EWSI will review the Large Wholesale rate to determine if interclass adjustments will be required in subsequent PBR terms.*

We have concluded by on EWSI's response, this approach appears to be reasonable for the cost of service study related to the sanitary utility.

EWSI applied the HDR cost of service methodology after calculating their 2022-2024 forecast revenue requirements, resulting in revenue surplus or shortfall for the sanitary utility including CORe, the stormwater utility including SIRP and for Drainage Services as a whole, as summarized in Table 12.3-1 of the Drainage PBR 2022-2024.[70] EWSI stated the following based on the Sanitary Utility and Stormwater Utility Cost of Service Summary:

> *These results suggest that although sanitary utility rates could be reduced and stormwater utility rates increase to rebalance revenues between the two utilities, rebalancing would have very little*

[68] Drainage PBR Application 2022-2024, Page 182, Paragraph 468
[69] Drainage PBR Application 2022-2024, Page 185, Paragraph 502
[70] Drainage PBR Application 2022-2024, Page 192, Paragraph 526

impact on customer bills, since the decrease in the sanitary utility portion of the customer's bill would be offset by a corresponding increases in the stormwater utility.[71]

Based on EWSI's statement, we asked EWSI to describe how they determined that rebalancing would have very little impact on customer bills, and if available to provide calculation of the forecasted customer billing impact over the 2022-2024 PBR period if the rebalancing of the sanitary and stormwater rates exercise was performed in GT-RFI-2021-1. In response, EWSI provided the response GT-EWSI-1, which included tables GT-EWSI-1.a-1 and GT-EWSI-1.b-1 for the Revenue to Cost Ratios and Average Monthly Residential Drainage Bills both before and after rebalancing sanitary and stormwater rates, respectively, in addition to the following rationale:

EWSI modelled alternatives for rebalancing Sanitary Utility and Stormwater Utility Rates and the impact of rebalancing on Residential customers' bills. Row 10 of columns A to C of Table GT-EWSI-1.a-1shows that, in the PBR Application, on a combined basis, revenue to cost ratios for the Residential customer class decreased from 105.3% in 2022 to 102.5% in 2024 primarily due to COVID-related changes to customer growth and consumption. Columns D to F show the effects of rebalancing stormwater and sanitary rates over the PBR term. In this alternative, the Stormwater Utility revenue-to-cost ratio rises from 80.9% to 100% over the 2022-2024 PBR term, while the Sanitary Utility revenue-to-cost ratio decreases from 111.6% to 102.1% over the same period. While there are substantial changes between utilities, on a combined basis, row 10 shows that the combined revenue-to-cost ratio for the Residential customer class is 102.7% in 2024, essentially unchanged from the 102.5% revenue-to-cost ratio in the PBR application. Revenue to cost ratios for the Multi-Residential and Commercial customer classes show greater changes, primarily due to the fixed/variable rate structure of the Sanitary Utility.

A comparison of average monthly residential customer bills with and without rebalancing over the 2022-2024 PBR term period is summarized in Table GT-EWSI-1.b-1below. This table shows that the average residential bill in 2024 is forecast to be $47.15 without rebalancing and $47.43 with rebalancing. These amounts are very similar and, as such, EWSI does not believe that rebalancing of the utility rates is required at this time. Instead, EWSI will continue to perform cost of service studies over the next several years and, based on the results of these studies, will develop proposals to refine and re-design Sanitary Utility, Stormwater Utility and Wastewater Treatment rates and rate structures commencing in 2025.[72]

We have determined based on the information presented, EWSI's approach to revisit the cost of service studies over the next few years is appropriate to allow for improvements in treatment of rates and rate structures to commence in 2025.

Throughout each of the Applications, EWSI plans to invest into capital expenditures for each of the utility sectors, such as the supporting of the City's expansion by investing $48.5 million to relocate sanitary and stormwater infrastructure to facilitate the City's planned West Valley Light Rail Transit (LRT) extension.

In relation to the LRT investment, we asked EWSI in GT-RFI-2021-2 how the costs associated with reallocating infrastructure due to LRT was funded and if so, has any funding been provided by the City of Edmonton to recoup these costs. In response to our question, EWSI provided GT-EWSI-2 as follows:

The forecast costs associated with relocating drainage infrastructure due to City LRT projects form part of the Drainage revenue requirement which is funded by EWSI's ratepayers. These costs are identified under Drainage Services' "LRT Relocates Program" in row 22 of Table 7.2-1 of the

[71] Drainage PBR Application 2022-2024, Page 193-194, Paragraph 529
[72] GT-EWSI-1

Drainage Application. This funding is in accordance with article 9 of the Drainage Services Franchise Agreement between the City and EWSI, September 1, 2017.

No funding has been provided by the City of Edmonton to EWSI for these costs. They are entirely funded by ratepayers through the sanitary and stormwater rates.[73]

We have concluded that EWSI is in accordance with the agreements between themselves and the City in relation to the treatment of the LRT.

3.1.6 Drainage PBR 2022-2024 - Rate design

EWSI groups drainage's sanitary and stormwater utility customers into the same categories as water and wastewater service customers: residential, multi-residential, and commercial.[74] EWSI believes that these rate structures are appropriate and is not proposing any changes for the 2022-2024 PBR term.[75]

We have concluded that the customer rate structures implemented are consistent with the previous Water and Wastewater PBR terms and reasonable.

The table below provides a summary of the in-city and fire protection services revenue requirement forecasted by EWSI for the Drainage PBR 2022-2024 by customer class:[76] [77]

Table 9: Revenue Requirement Forecast ($ millions)

	2022F	2023F	2024F
Sanitary Utility			
Residential	73.0	74.6	81.8
Multi-residential	22.1	21.9	24.2
Commercial	21.9	23.1	26.4
Large wholesale	2.4	2.4	2.6
Total	**119.4**	**122.0**	**135.0**
Stormwater Utility			
Residential	60.6	67.6	75.1
Multi-residential	6.4	7.0	7.7
Commercial	47.2	53.1	59.3
Total	**114.2**	**127.6**	**142.0**

The Drainage PBR 2022-2024 presented the following rate structures and annual increases or decreases for each customer class:[78] [79]

[73] GT-EWSI-2
[74] Drainage PBR Application 2022-2024, Page 195, Paragraph 531
[75] Drainage PBR Application 2022-2024, Page 195, Paragraph 533 and Page 196, Paragraph 535
[76] Drainage PBR 2022-2024, Financial Schedule 19-1, Lines 9 to 13
[77] Drainage PBR 2022-2024, Financial Schedule 19-1, Lines 28 to 31
[78] Drainage PBR 2022-2024, Financial Schedule 20-1, Lines 1, 4, 19 and 20
[79] Drainage PBR 2022-2024, Pages 205 to 207, Tables 13.4-1 to 13.4-3, Lines 6, 7, 14 and 15

Table 10: Drainage PBR 2022-2024 Rates Annual Changes							
	2019A	2020F	2021F	2022F Jan-Mar	2022F Apr-Dec	2023F	2024F
Stormwater Utility							
Stormwater Utility Rate	4.57%	4.11%	4.31%	4.36%	18.19%	9.65%	8.72%
Sanitary Utility							
Flat Monthly Service Charges	3.01%	3.02%	2.94%	3.04%	(1.66)%	1.77%	3.91%
Variable Monthly Charge – All premises except large wholesale	1.77%	2.11%	1.92%	1.85%	19.09%	0.83%	10.66%
Variable Monthly Charge – Large Wholesale with Collection System	1.77%	2.11%	1.92%	1.85%	19.10%	0.81%	10.67%
Total Annual Rate Changes – Stormwater Utility							
Residential	Not applicable				8.68%	9.65%	8.71%
Multi-residential					8.68%	9.65%	8.71%
Commercial					8.68%	9.65%	8.71%
Total Annual Rate Changes – Sanitary Utility							
Residential	Not applicable				4.20%	0.13%	6.82%
Multi-residential					7.25%	0.50%	9.52%
Commercial					5.91%	5.04%	11.32%

The annual rate increases presented above for the Drainage PBR 2022-2024 include the following:

- Stormwater Utility – the 2022 to 2024 forecast rate increases are due to the impact of inflation and special rate adjustments, including rebasing, 90-day deferral due to COVID-19, and SIRP.[80]

[80] Drainage PBR 2022-2024, Pages 205 to 207, Tables 13.4-1 to 13.4-3 and Drainage PBR 2022-2024 Rate Design Model, I-1 and S-2 to S-5 Tabs

- Flat monthly service charges – the 2022 to 2024 forecast rate increases are due to the impact of inflation and special rate adjustments, including rebasing and 90-day deferral due to COVID-19.[81]
- Variable monthly changes – the 2022 to 2024 forecast rate increases are due to the impact of inflation and special rate adjustments, including rebasing and CORe.[82]
- Total Annual Rate Changes: Stormwater Utility – the 2022 to 2024 forecast rate increases are due to the impact of inflation and special rate adjustments, including rebasing, 90-day deferral due to COVID-19, and SIRP.[83]
- Total Annual Rate Changes: Sanitary Utility – the 2022 to 2024 forecast rate increases are due to the impact of inflation and special rate adjustments, including rebasing, 90-day deferral due to COVID-19, impact of declining consumption, and CORe.[84]

We have determined that the customer rate increases over the Drainage PBR 2022-2024 appear to be appropriately applied to each customer class. However, EWSI should consider the impact on each customer class and consumption usage based on the impact of each special rate adjustment individually.

3.2 General observations

EWSI prepares its customer count forecasts of customer growth separately for its residential, multi-residential and commercial customer classes, with consistent methodologies in each of their Applications.

3.2.1 Residential

Customer growth assumptions from the 2017-2021 PBR term were based on historical trends, review of third-party forecasts of Edmonton population growth, and judgement. In order to improve accuracy for the proposed Applications the revised methodology utilizes forecasts of housing starts from three independent sources, which is similar to the AUC for Energy Services' 2016-2017 Regulated Rate Application.[85] Those three independent sources include:[86]

- the City of Edmonton;
- the Conference Board of Canada; and
- the Canada Mortgage and Housing Corporation.

We have concluded that EWSI's revised methodology is appropriate for the forecasting the residential customer growth assumptions.

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[81] Drainage PBR 2022-2024, Pages 205 to 207, Tables 13.4-1 to 13.4-3 and Drainage PBR 2022-2024 Rate Design Model, I-1, S-1, S-4 and S-5 Tabs
[82] Drainage PBR 2022-2024, Pages 205 to 207, Tables 13.4-1 to 13.4-3 and Drainage PBR 2022-2024 Rate Design Model, I-1, S-1, S-3 and S-5 Tabs
[83] Drainage PBR 2022-2024, Pages 205 to 207, Tables 13.4-1 to 13.4-3 and Drainage PBR 2022-2024 Rate Design Model, I-1, S-2, S-3, S-4, and S-5 Tabs
[84] Drainage PBR 2022-2024, Pages 205 to 207, Tables 13.4-1 to 13.4-3 and Drainage PBR 2022-2024 Rate Design Model, I-1, S-1, S-3, S-4, and S-5 Tabs
[85] Water PBR Application 2022-2026, Pages 79-80, Paragraph 255, Wastewater PBR Application 2022-2024, Page 76, Paragraph 234, Drainage PBR Application 2022-2024, Page 105, Paragraph 269
[86] Water PBR Application 2022-2026, Page 80, Paragraph 256, Wastewater PBR Application 2022-2024, Page 77, Paragraph 235, Drainage PBR Application 2022-2024, Page 105, Paragraph 270

3.2.2 Multi-residential

EWSI generally forecasts based on historical trending for multi-residential customer counts, however, with economic trends reducing growth of residential sites over the forecast period, this will extend to growth in multi-residential sites as well. During the 2018-2019 period, this customer class averaged 0.36% growth. EWSI is forecasting a slow start to the recovery for 2021 and 2022, with 0.20% growth annually and growth in the years 2023 and onwards is expected to return to near-historical levels, forecast at 0.30%.[87]

3.2.3 Commercial

In the proposed Applications, EWSI is updating their commercial customer class forecast methodology for two major changes, which are as follows:

- *…separate forecasts were developed for regular commercial customers and for the University of Alberta.*[88]
- *…incorporating expectations of the COVID-19 pandemic impact, which results in the need for more weight placed on judgement about the future rather than historical trending.*[89]

With the separate forecast for the University of Alberta, we asked EWSI in GT-RFI-2021-19 to describe how the direct costs associated with servicing the University of Alberta were identified and allocated and how this forecast overall was prepared. In response to our question, EWSI provided GT-EWSI-19 as follows:

> *The forecasting methodology described in paragraph 275 of the Drainage Application refers to the development of the consumption and customer count forecasts, not to the development of cost forecasts or the apportionment of costs between large wholesale customers with their own collection systems and other commercial customers. As noted in GT-EWSI-18, the U of A is classified as a large wholesale customer with its own collection system. Therefore, the U of A uses less of EWSI's Drainage Services infrastructure than would a comparably sized customer that relied on EWSI for both wastewater collection and transmission. Over the next several years as EWSI continues to update its new cost of service analyses, EWSI will review the Large Wholesale rate to determine if interclass adjustments will be required in subsequent PBR terms. This review will include determining the sufficiency of the large wholesale rate.*[90]

Designing a separate forecasting methodology for the University of Alberta appears to be reasonable for EWSI as this customer has unique characteristics compared to the typical commercial class customer.

To gain an understanding with regards to the use of judgement in the proposed new methodology, in GT-RFI-2021-12 we asked EWSI to provide further explanation and rationale on the judgement used when calculating customer count. In addition, we asked to provide specific examples of judgement applied, supporting evidence, and if a sensitivity analyses has been prepared to determine impact of judgement used on revenue requirement. In response to our question, EWSI provided GT-EWSI-12 as follows:

> *EWSI has been unable to identify external forecasts of variables that can be used to form the basis of its commercial customer count forecast. As a result, only historical customer count data is used as an input into the forecast. Due to the effect of the COVID-19 pandemic and resulting societal restrictions,*

[87] Water PBR Application 2022-2026, Page 81, Paragraph 260, Wastewater PBR Application 2022-2024, Page 78, Paragraph 239, Drainage PBR Application 2022-2024, Page 106, Paragraph 274
[88] Water PBR Application 2022-2026, Page 81, Paragraph 261, Wastewater PBR Application 2022-2024, Page 78, Paragraph 240, Drainage PBR Application 2022-2024, Page 106, Paragraph 275
[89] Water PBR Application 2022-2026, Page 81, Paragraph 262, Wastewater PBR Application 2022-2024, Page 78, Paragraph 241, Drainage PBR Application 2022-2024, Page 106, Paragraph 276
[90] GT-EWSI-19

EWSI determined that the level of commercial growth in the City of Edmonton was likely to be lower than historical growth. Thus, EWSI applied judgement with respect to the extent of the reduced commercial activity, and its impact on commercial customer growth. Assumptions with respect to the duration of the pandemic were also required, however as stated in paragraph 255 of the Water Application, EWSI's assumption of a return to pre-pandemic levels of activity by 2023 are aligned with the expectations of the City of Edmonton, Government of Alberta and ATB Financial.

The COVID-19 pandemic and resulting societal restrictions affect not just customer count, but also consumption. As stated in paragraph 252 of the Water Application, EWSI has assumed that commercial consumption per customer does not return to the long term trend line until 2024. While EWSI expects an initial "bump" in consumption when businesses re-open, it is not clear how large this increase will be, due to the loss of bars, restaurants, gyms and other high water-consuming businesses, which are likely to take time to be replaced. EWSI anticipates that residential consumption per customer, on the other hand, will return more swiftly to pre-pandemic levels. In EWSI's judgement, the initial societal restrictions in 2020 provided the best available estimation of the magnitude of the increase in residential consumption per customer, with recovery beginning in the third quarter of 2021.[91]

To conclude GT-EWSI-12, the Company confirmed they did not conduct a scenario analysis to determine the impact of judgement used to calculate revenue requirement.

Furthermore, in GT-RFI-2021-12 we asked EWSI to clarify the impact on the revenue requirement regarding potential changes in customer count and consumption volumes, and EWSI's response noted in GT-EWSI-12 is as follows:

Changes in the number of customers have only minimal impacts on revenue requirements… Assuming no change in the number of customers, a change in the consumption would have a smaller impact on revenue requirement than a change in customers.[92]

We have concluded that the use of judgement in the commercial customer class count and consumption forecast methodology could cause implications if under-forecasting. Therefore, we recommend EWSI review and understand the use of judgement in this forecasting approach. The use of judgement would involve several uncertainties, especially understanding implications tied to COVID-19 pandemic impacts not just for the customer count, but also consumption.

3.2.4 Forecast risk for Consumption Volume and Customer Count

The City of Edmonton requested in their question IR-COE-3.b.i explanations for both the benefits and implications of EWSI updating its forecast of the consumption volume and customer count on an annual basis over the 2022-2026 PBR term. In response, EWSI provided their response in COE-EWSI-3.b.i as follows:

An annual update of the forecast for both consumption and customer counts could be incorporated into the annual rate filing completed by EWSI early each year. This would result in the forecast for these factors being completed in January or February for a billing cycle that would begin April 1 of that same year. In effect, the forecast would be based on more recent actual and projected data.

The assumed benefit of such an update would be an increase in forecast accuracy. Given that the timing of the PBR application requires forecasts 6 or more years into the future from the time the

[91] GT-EWSI-12
[92] GT-EWSI-12

application is developed, is appears logical that a forecast based on more recent data would provide a more accurate forecast. However, there are noted limitations to this assumption as there are number of variables that could not be forecast any more accurately in the near term. In particular, weather is a significant determinant for residential forecast variation and near term forecasts would not be anymore accurate. General economic trends may also be more apparent in near term forecasts, but their impact, particularly on the commercial class, may be no more discernable. Historically, EWSI's commercial forecast has been impacted by the small number of very large commercial accounts and their level of activity. Many of the underlying factors determining their consumption are unique to the sector in which they operate rather than the general economy, imply there is still forecast risk…[93]

Furthermore, the City of Edmonton asked EWSI to comment on both the benefits and implications if consumption volume risk was passed onto customer for the 2022-2026 PBR term through a deferral account. EWSI provided response COE-EWSI-3.b.ii as follows:

A deferral account approach to addressing forecast risk has the same general outcome as the approach proposed in question i) although the impact to ratepayers would be even greater. As the variance in the deferral account would be determined on an actual to forecast basis, it would include all of the variables that would continue to present forecast risk on a new term basis. For example (and as noted above), a near term basis forecast approach would not remove weather related forecast risk, so that would continue to be borne by EWSI. Under a deferral account approach, the actual impact of weather, and any other similar factors, would be known and accounted for in determining the level of the deferral to be collected in a subsequent period. The end result would be even greater variability and thus less predictability in customer rates.

Depending upon the time period over which the deferral account balance is collected, it could potentially have an even greater impact on customers. An annual collection of deferral balances would moderate the impact versus the aggregation of balances over an entire PBR term with the collection of those balances in the subsequent term. This latter approach could markedly increase rates in the new term, resulting is significant and unexpected costs to ratepayers.[94]

We have determined that EWSI should consider the adoption of annual adjustments or deferral accounts to mitigate the risk of economic uncertainty related to the consumption volume and customer count forecasts.

3.3 Findings and observations

In summary, based on the results of our procedures, we have concluded the following with respect to EWSI's cost of service and rate design for the Applications:

- EWSI's cost of service model is consistent with AWWA framework;
- EWSI's updated functionalization methodology appears to be reasonable;
- EWSI as directed by Edmonton City Council has incorporated fire protection rates during the 2022-2026 PBR term and implemented using the AWWA methodology equivalent meter to allocated the public fire protection revenue requirement between customer classes, which appears to be reasonable based on our review;

[93] COE-EWSI-3.b.i
[94] COE-EWSI-3.b.ii

- EWSI developed a wastewater and drainage cost of service analysis consistent with rate-setting methodologies of the WEF, industry standards and cost of service principals and methodologies, which is consistent with prior years and appears reasonable;
- EWSI is following HDR's recommendation to not implement interclass adjustments based on a single year's cost of service data and the overstrength class of service were outside the +/- 5% range, which based on our observations appears to be reasonable approach as HDR's cost of service study does not include costs associated with the Biosolids Management Program;
- EWSI has indicated they are not proposing any changes to the customer classes rate structures, with the exception of the fire protection rates noted above, which is reasonable and consistent with the 2017-2021 PBR;
- EWSI's decision to develop a separate forecast for regular commercial customers and for the university of Alberta appears to be reasonable;
- We have concluded that the residential and multi-residential customer class count forecast methodology is reasonable. However, forecasting residential and multi-residential consumption is subject to volatility from consumer patterns such as the impacts of the COVID-19 pandemic. Therefore, it is difficult to predict the accuracy of this component of EWSIs forecast.
- EWSI has used judgement when forecasting the commercial customer class and we have noted there may be implications regarding potential under-forecasting. It is our understanding that the use of judgement is tied to the COVID-19 pandemic impacts for not just the customer count, but also consumption.
- While the use of judgement was necessary due to the COVID-19 pandemic, we recommend that EWSI review the adoption of annual adjustments or deferral accounts to mitigate the risk of economic uncertainty related to the consumption volume and customer count forecasts. Should the City approve some combination of deferral mechanisms this would result in a decrease in risk to ESWI that could be reflected as a reduction in the approved return on equity.

3.4 Assumptions and limitations

Areas outside of our scope in relation to the cost of service and rate designs throughout the Applications are as follows

- Special rate adjustments;
- Mathematical accuracy of the cost of service models or rate design calculations; and
- The assignment of the 2022-2024 and 2022-2026 forecast revenue requirements.

4 Cost of capital

4.1 Objectives and approach

Our objectives with respect to the information provided by EWSI regarding the rate base and return on rate base under the Water PBR 2022-2026, Wastewater PBR 2022-2024, and Drainage PBR 2022-2024 is to conduct an in-depth review and assessment of the of the cost of capital. Specifically, we have completed the following:

- Reviewed the cost of equity methodology used by EWSI and its consistency with estimation techniques using common industry standards;
- Reviewed the proposed capital structure including benchmarking against other jurisdictions;
- Reviewed the proposed cost of debt;
- Reviewed the proposed return on equity, considered how this compared to the AUC generic cost of capital, and performed benchmarking;
- Considered EWSI company specific risk factors and provided observations regarding additional factors that may impact EWSI's return on equity, and
- Identified any material changes from the previous PBR period.

4.1.1 Key concepts - fair return standard

The concept that an investor-owned utility is entitled to earn a fair return has been in place in Canada dating back to the 1929 Northwestern Utilities case. Despite the relatively long history of the fair return concept there is no single universally accepted method to determine a fair return on equity for an investor-owned utility. All methodologies are imperfect, and cost of capital estimation is both an art and a science. Each methodology is reliable depending on the prevailing economic and capital market conditions and each has its own strengths and weaknesses. In our view it is best to estimate the cost of capital using more than one methodology, as the return determined by any model or test will not perfectly capture all the variables that might be considered in determining a fair return. Once the quantitative analysis has been completed it is often then useful to compare the conclusion to market-based information through benchmarking to consider the rationale for the discount or premium determined through the analysis. Other key elements in determining a fair return include the estimation of a risk-free rate of return as well an estimate of the adjustment required for financial flexibility.

The principles underlying the determination of a fair return are articulated in key legal decisions in Canada and the US.[95] Overall, a fair return allows a regulated utility the opportunity to:

- Maintain its financial integrity;
- Attract capital on reasonable terms; and
- Earn a return equal to what investors expect to earn on other investments of comparable risk.

4.1.2 Key concepts - cost of capital

Historically, regulators have determined an allowed return by comparing it to one or more estimates of the company's overall cost of capital. Cost of capital is a key parameter in regulatory settings as it represents the expected rate of return investors require based on the risk-adjusted alternatives available in capital markets. Cost of capital represents the weighted average cost of the various sources of capital (debt, common equity and preferred equity) that are used to finance a company's assets and the cost of which is dependent on a company's level of business (including regulatory) and financial risk. The various components of the cost of capital are linked; therefore, it is impossible to estimate a fair return on equity without also considering capital structure. This is because debt holders' claims on a company's cash flow take priority over those of equity holders. As the company's debt ratio increases so does its cost of equity due to the rise of potential variability of equity holder returns.

Although the key legal decisions provide the overall framework, we note that they do not prescribe for example how to determine utility comparability, how to estimate the cost of capital, or how to apply those estimates when setting a fair return.

4.1.3 EWSI's implied capital structure

Capital structure deals with how a company finances its overall operations and growth through different sources of funds, including the mix of debt and equity investment. EWSI has estimated cost of capital (weighted average cost of capital) based on the implied capital structure. This capital structure has been summarized in the table below:

Table 11: Capital Structure

	2017 – 2021 PBR	PBR Term Forecast (Note 1)	Change
Water - Capital Structure[96]			
Debt	60%	60%	0%
Equity	40%	40%	0%
Wastewater - Capital Structure[97]			
Debt	60%	60%	0%

[95] 1)Northwestern Utilities Ltd. V. Edmonton (City), [1929] S.C.R. 186; (2) Bluefield Water Works and Improvement Co. v. Public Service Commission of West Virginia, (262 U.S. 679, 692 (1923)); and (3) Federal Power Commission v. Hope Natural Gas Co. (320 U.S. 591 (1944)).
[96] Water PBR 2022-2026, Page 146, Table 9.2-1
[97] Wastewater PBR 2022-2024, Page 138, Table 9.2-1

Table 11: Capital Structure			
	2017 – 2021 PBR	PBR Term Forecast (Note 1)	Change
Equity	40%	40%	0%
Drainage - Capital Structure[98] *Note 1*			
Debt	N/A	60%	N/A
Equity	N/A	40%	N/A

Note 1: There was no previous PBR term for the Drainage services for EWSI. Additionally, the PBR terms for these Applications are staggered, whereby the Water PBR term is 2022-2026 and both Wastewater and Drainage PBR terms are 2022-2024.

Note 2: As at mid-year 2018, EWSI had a capital structure of 34% debt and 66% equity for the Drainage Utility. The capital structure was expected to meet the target of 60% debt and 40% equity forecast year 2021. With an additional equity injection forecast of $70 million in 2022 and $10 million in 2024, this targeted capital structure is expected to be maintained during the PBR term as well (2022-2024 Drainage PBR Application Model, Tab R-8).

In all three Applications EWSI is applying for a deemed capital structure of 60% debt to 40% equity. This is consistent with the deemed capital structure awarded to EWSI in prior PBR periods and indicates that from EWSI's perspective nothing had changed to warrant a shift in the previously approved capital structure.

We compared this capital structure with approved capital structures of other utilities in Canada and found the following:

Table 12: Allowed Capital Structure - Common Equity (%)					
Entity	2017	2018	2019	2020	2021
British Columbia Utilities Commission[99]					
FortisBC Energy	38.50	38.50	38.50	38.50	38.50
FortisBC Inc.	38.50	38.50	38.50	38.50	38.50
AUC[100] [101]					
Dist. and transmission utilities (except AltaGas)	37.00	37.00	37.00	37.00	37.00
AltaGas – electric and natural gas distribution	41.00	39.00	39.00	39.00	39.00
Ontario Energy Board[102]					
Generic cost of equity	40.00	40.00	40.00	40.00	40.00
Quebec Energy[103] [104]	38.50	38.50	38.50	38.50	38.50

[98] Drainage PBR 2022-2024, Page 174, Table 10.2-1
[99] Notice of Initiating a Generic Cost of Capital Proceeding: Page 1
[100] Alberta Utilities Commission 2021 Generic Cost of Capital, October 12, 2020: Page 1
[101] Alberta Utilities Commission 2018 Generic Cost of Capital, August 2, 2018: Page 2
[102] Cost of Capital Parameter Updates
[103] 2018 Annual Report: Page 34
[104] Annual Information Form Fiscal year ended on September 30, 2020: Page 20

Table 12: Allowed Capital Structure - Common Equity (%)					
Entity	2017	2018	2019	2020	2021
Nova Scotia Utility and Review Board[105] Nova Scotia Power Inc. – integrated electric	37.50	37.50	37.50	37.50	37.50
Prince Edward Island Regulatory & Appeals Commission[106] Maritime Electric Company Limited	40.00	40.00	40.00	40.00	40.00
National Energy Board (Note 1)	N/A	N/A	N/A	N/A	N/A
Board of Commissioners of Public Utilities, NL[107] [108] Newfoundland Power Inc. – integrated electric	45.00	45.00	45.00	45.00	45.00

Note 1: National Energy Board ("NEB") allows a WACC on the rate base rather than an ROE and a deemed capital structure. NEB has not issued a ROE decision since 2009.

4.1.3.1 Capital structure – findings and observations

We reviewed EWSI's proposed deemed capital structure 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:

- EWSI's capital structure allocates a higher weighting to equity that other utilities in Alberta. The AUC approved capital structure for distribution and transmission utilities is 37% equity which is less than the 40% equity proposed by EWSI. However, the difference between the AUC approved capital structure and EWSI's desired capital structure is consistent with the prior rate setting period.
- There has not been a significant change in the business, regulatory or financial risk since 2017 that would indicate the capital structure needs to be changed. However, we have noted some changes to the risk profile which should be considered in the context of setting the return on equity. This has been discussed further in the return on equity section below;
- The allowed capital structure of investor-owned Canadian utilities in other jurisdictions have remained constant since EWSI's the last PBR (as shown in Table 12 above); and
- The Company's credit metrics have been sufficient to receive an indicative rating of A(low) from DBRS Morningstar when EWSI requested a hypothetical scenario where the regulated Canadian Operations is considered a separate legal entity from EWST, EUI and other business segments[109]. If the common equity ratio were reduced by the City we would agree that this could weaken the evaluation of credit metrics for EWSI.

We have determined that a change to the organizational capital structure is not warranted at this time. Therefore, our recommended capital structure for Water, Wastewater and Drainage PBR Applications is 60% debt and 40% equity.

[105] Nova Scotia Utility and Review Board: Decision 2016 NSUARB 42 M07215m Page 8, Paragraph 22
[106] The Island Regulatory And Appeals Commission Order UE20-06
[107] Board Order No. P.U. 18 (2016): Page 49
[108] Board Order No. P.U. 2 (2019): Page 16
[109] Appendix C – DBRS Morningstar - EWSI Credit Rating Report dated September 3, 2020

4.1.4 Cost of debt

Cost of debt is one part of EWSI's capital structure. The cost of debt reflects the overall rate being paid by a company to use these types of debt financing. It generally reflects the company's risk level compared to others and as company risk increases/decreases generally cost of debt increases/decreases respectively. Cost of debt is consistently calculated across all three PBR Applications. This approach is appropriate given that the risk profile for all three utility operations would be comparable. The table below summarizes the components of the cost of debt calculation from the 2017-2021 PBR (if applicable) and the current PBR Applications for water, wastewater, and drainage:[110] [111] [112]

Table 13: Cost of Debt			
	2017 – 2021 PBR	2022 – 2024/2026 Forecast	Difference
Government of Canada forecast 30-year bond yield	2.64% *(Note 1)*	1.83%	(0.81)%
Spread for EUI	2.13%	1.62%	(0.51)%
Transaction fee	0.05%	0.05%	0.00%
Total cost of debt	**4.82%**	**3.50%**	**(1.32)%**

Note 1 – in 2017-2021 the Government of Canada forecasted bond yield that was applied by EWSI was based on 20-year bonds.

As noted in the table above, the cost of debt applied in the current PBR has declined 1.32% from the 2017-2021 PBR.

We noted the methodology for calculating the cost of debt for the current PBR term is consistent with the 2017-2021 PBR with one exception. Historically, EWSI relied on 20-year Government of Canada bond yields and 20-year EUI credit spreads. For this PBR term, EWSI has adjusted the methodology to use the 30-year yields to calculate the stand-alone cost of debt. EWSI indicated that they consider this approach more appropriate given that its long-term debt is used to fund assets with lives that generally far exceed 30-years.

However, in COE-EWSI-1.c.iv the City asked EWSI to provide the forecasted debt rate for 2022-2026 based on a 20 year debt rate. EWSI responded as follows:

> *EWSI was able to find only one of the Canadian banks providing indicative credit spreads for 20-year debt. All of the other banks provide only 10-year or 30-year indicative credit spreads. Due to these limitations, EWSI has estimated the 20-year credit spreads based on averaging the 10 and 30-year credit spreads as indicated in Table COE-EWSI-1.c iv)-1 below.*[113]

Table 14					
	2022F	2023F	2024F	2025F	2026F
Forecast cost of debt based on 20-year debt	3.22%	3.22%	3.22%	3.22%	3.22%

[110] Water PBR 2022-2026, Page 73, Paragraphs 230 and 231
[111] Wastewater PBR 2022-2024, Page 70, Paragraphs 213 and 214
[112] Drainage PBR 2022-2024, Page 98, Paragraphs 246 and 247
[113] COE-EWSI-1.c.iv

Forecast cost of debt based on 30-year debt	3.50%	3.50%	3.50%	3.50%	3.50%
Difference	**0.28%**	**0.28%**	**0.28%**	**0.28%**	**0.28%**

We find EWSI's request to change to forecasting cost of debt based on 30-year debt to be reasonable given their demonstrated asset life exceeds this term. However, we would have concerns with changing back and forth between 20-year and 30-year debt in future rate setting periods. Therefore, we encourage the City to ensure consistency with this change is applied in future Applications.

4.1.5 Government of Canada forecast 30-year bond yield

Current long-term Government of Canada benchmark bond yields are above those used to establish the Company's regulated ROE as part of the current PBR. The chart below shows the weekly Government of Canada benchmark long-term and 10-year bond yields from January 2017 to April 2021[114].

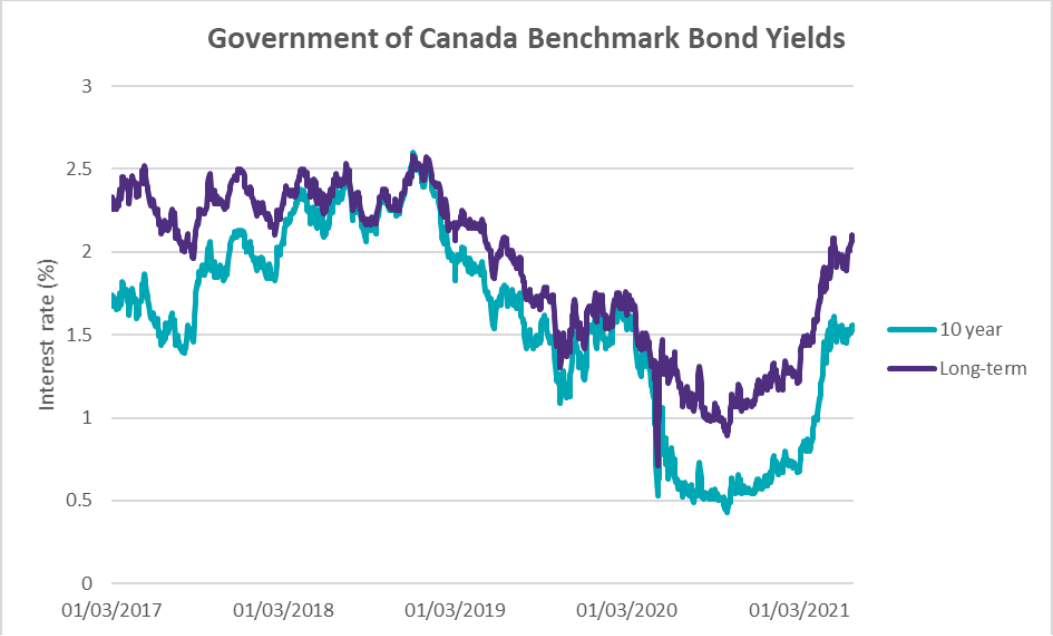

Figure 1: Government of Canada Benchmark Bond Yields

[114] www.bankofcanada.ca/?p=39890

During the period the Government of Canada bond yields have fluctuated as follows:

Table 15: Government of Canada Bond Yields		
	10 Year	Long term
03-Jan-17	1.74%	2.33%
03-Jan-18	2.05%	2.29%
03-Jan-19	1.83%	2.07%
03-Jan-20	1.53%	1.62%
04-Jan-21	0.68%	1.22%
30-Apr-21	1.54%	2.08%

We have considered the information provided by EWSI in each of the PBR Applications and would find that the Government of Canada 30-year bond yield they have applied (1.83%) in the cost of debt calculation is consistent with the underlying support cited in their Application. Additionally, it falls within the range of actual rates experiences in recent months.

RBC Economics Macroeconomic Outlook[115] published in December 2020 further supports that interest rates for various term facilities are expected to increase from the time of this report until the fourth quarter of 2022 as summarized in the table below:

Table 16: Financial Market Forecast Detail - Interest rates[116]																
	Actual				Forecast								Actual	Forecast		
	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2021 Q4	2022 Q1	2022 Q2	2022 Q3	2022 Q4	2019	2020	2021	2022
Overnight	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.50	0.50	1.75	0.25	0.25	0.50
3-month	0.21	0.20	0.12	0.15	0.15	0.15	0.20	0.20	0.25	0.25	0.50	0.55	1.66	0.15	0.20	0.55
3-year	0.42	0.29	0.25	0.30	0.30	0.30	0.35	0.35	0.55	0.75	0.90	1.10	1.70	0.30	0.35	1.10
5-year	0.59	0.37	0.36	0.45	0.50	0.60	0.70	0.80	0.95	1.05	1.20	1.35	1.69	0.45	0.80	1.35
10-year	0.70	0.53	0.57	0.70	0.75	0.90	1.00	1.05	1.15	1.25	1.35	1.50	1.70	0.70	1.05	1.50
30-year	1.31	0.99	1.11	1.25	1.30	1.40	1.45	1.50	1.60	1.65	1.75	1.85	1.76	1.25	1.50	1.85

4.1.6 EUI Spread

The EUI spread is meant to reflect the spread between the low risk Canadian bond and the real cost for EUI to issue similar term standalone facilities. The spread has decreased by 0.51% from 2.13% in the previous

[115] RBC Economics - Macroeconomic Outlook – Vaccine clears path for recovery but not out of the woods yet – December 15, 2020

[116] RBC Economics - Macroeconomic Outlook – Vaccine clears path for recovery but not out of the woods yet – December 15, 2020

PBR term to 1.62% in the current application.[117] [118] [119] EWSI has indicated that they reflect new debt issuances from its parent company, EUI, through deemed inter-company loans. Furthermore, EWSI indicated that on September 3, 2020, Dominion Bond Rating Service issued a one-time private rating advising EWSI that its private rating is A (low) (equivalent to S&P rating of A-). We found this to be consistent with the information presented in EUI's Management's Discussion and Analysis for the quarter ended March 31, 2021, which currently has an A (low) rating from DBRS and A-rating from S&P.

Finally, we noted that in a press release in May of 2020 EUI indicated they had raised capital principal amount of $300 million 30-year notes with a coupon rate of 2.899%, maturing on May 19, 2050.[120]

4.1.7 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 of debt calculation is reasonable.

4.1.8 Cost of debt – findings and observations

We reviewed EWSI's proposed cost of debt and found the following:

- Changing from a forecast based on 20-year debt to a forecast based on 30-year debt is not unreasonable if EWSI is attempting to more closely align the timeline to the associated asset life. However, this does result in an increase to the cost of debt by 0.28%. We would have concerns with changing back and forth between 20-year and 30-year debt in future rate setting periods. Therefore, we encourage the City to ensure consistency with this change is applied in future Applications.
- We found that the information presented by EWSI regarding cost of debt was consistent with their supporting materials and are reflective of current market conditions.
- Given that EWSI secures its debt from its parent company EUI, it is 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. We agree that a 3.50% cost of debt is reasonable.

[117] *Water PBR 2022-2026, Page 73, Paragraphs 230 and 231*
[118] *Wastewater PBR 2022-2024, Page 70, Paragraphs 213 and 214*
[119] *Drainage PBR 2022-2024, Page 98, Paragraphs 246 and 247*
[120] *News release - EPCOR Utilities Inc. completes C$400 million debt offering - May 19, 2020*

4.1.9 Return on equity

In determining the appropriate return on equity, the City should consider the following components to the to the calculation:

- Risk-free rate of return;
- Equity risk premium;
- Size premium;
- Industry risk premium; and
- Company specific risks.

We have reviewed the proposed return on common equity proposed by EWSI. We have also reviewed the information presented in the Appendix D EPCOR Water Services Inc. – Return on Common Equity Memorandum.

EWSI has requested the following return on equity ("ROE") for Water, Wastewater, and Drainage Applications: [121] [122] [123]

Table 17: Business Unit and Consolidated Rates of Return on Common Equity

	Water	Wastewater	Drainage Consolidated	Total Consolidated
2022	9.95%	9.95%	5.85%	7.97%
2023	9.95%	9.95%	7.09%	8.52%
2024	9.95%	9.95%	8.13%	9.01%
2025	9.95%	9.95%	9.07%	9.48%
2026	9.95%	9.95%	9.95%	9.95%
2022-2026	9.95%	9.95%	8.19%	9.05%
2017-2021	10.175%	10.175%	N/A	10.175%
Difference	(0.225%)	(0.225%)	N/A	(1.125%)

Table 10.2-2 of the Drainage 2022-2024 PBR demonstrates EWSI's return on equity for each of the Applications, including the consolidated return on equity in each of the five years of the ramped-up ROE period, stating the following:

> *Three conclusions are drawn from the data in Table 10.2-2. With the exception of the 2026 rate of return, each of the forecast consolidated rates of return in the final column are less than the 9.95% indicated common equity rates of return. Second, the average consolidated rate of return of 9.05% is materially less than the 9.95% and provides a premium above the Commission's 8.50% generic*

[121] Water PBR 2022-2026, Page 150, Table 9.2-2
[122] 2022-2026 Wastewater PBR, Page 142, Table 9.2-2
[123] Drainage PBR 2022-2024, Page 178, Table 10.2-2

cost of capital of approximately 50 basis points, whereas the premium for EWSI's risks from the GT Report is 1.83%.[124]

Overall EWSI is proposing a ROE of 9.95% for both Water and Wastewater, which is approximately 22 bps less than the 2017-2021 PBR terms approved ROE. Additionally, the proposed consolidated ROE is approximately 112 bps less than the previously approved ROE as well from the 2017-2021 PBR term.

4.1.10 Previous PBR approved ROE

During the previous 2017-2021 PBR Application process we understand the following key points which we believe will provide background for the current application:

- EWSIs applied requesting a ROE of 10.5% for water and wastewater for the 2017-2021 PBR Term,[125]
- Grant Thornton recommended that the Utility Committee consider a reduction to the proposed cost of equity in the range of 8 to 38 basis points (i.e. 10.12% to 10.42% cost of equity),[126]
- Mr. Beckett also provided additional evidence on this topic as the Utility Advisor,
- The Utility Committee approved return on equity for EWSI was 10.175% (i.e. the low end of the range recommended by Grant Thornton).[127]

4.1.11 Change in AUC approved ROE rates over time

In comparing the EWSI's proposed ROE to the AUC approved generic cost of capital the timeline of the decisions provides important context. We understand the comparatives as follows:

- **March 23, 2015** - In Decision 2191-D01-2015 the AUC's final approved ROE for 2013, 2014, and 2015 was set at 8.3%.
- **June 6, 2016** - EWSI's application for the 2017-2021 PBR term was filed requesting a ROE of 10.5% which implied a premium of 2.2% over the AUC's approved rates at the time.
- **October 7, 2016** - During the period of when the City of Edmonton was reviewing EWSI's 2017-2021 PBR Application, the AUC issued Decision 20622-D01-2016 approving an allowed return on equity of 8.5% for 2017.[128]
- **October 14, 2016** - The City of Edmonton Utility Committee approved EWSIs return on equity of 10.175% which implied a premium of 1.675% over the AUC's approved rates at the time.
- **February 16, 2021** - EWSI's 2022-2024 and 2022-2026 PBR Application requesting a ROE of 9.95% which implied a premium of 1.45% over the AUC's approved rates at the time.

We understand, based on EWSI's Applications, that they have interpreted the 2016 Grant Thornton Report to mean that we recommended a risk premium of 1.83%. However, we wish to clarify that our opinion at the time was that a return on equity rate between 10.12% to 10.42% was reasonable for EWSI. We noted that no additional risks or considerations were identified that would warrant an increase in the risk premium from the 2012-2016 PBR.

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[124] Drainage 2022-2024 PBR: Page 178, Paragraph 460
[125] Water PBR 2017-2021: Page 65, Paragraph 191; Wastewater PBR 2017-2021: Page63, Paragraph 227
[126] Grant Thornton Report, EPCOR Performance Based Regulation 2017-2021 Filing Review, Page 145, Paragraph F
[127] City of Edmonton Special Utility Committee Minutes, October 14, 2016: Page 4 of 7
[128] Decision 20622-D01-2016 on October 7, 2016

The table below presents the proposed specific risk premium of the Applications compared to the 2017-2021 PBR approval.

Table 18: Risk Premium Summary	2012 – 2016 PBR Term	2017 – 2021 PBR Term	2022 – 2026 PBR Term Forecast (Note 1)
Water – Specific Risk Premium[129]			
AUC approved ROE Rates	8.30%[130]	8.50%[131]	8.50%
PBR ROE	10.875%	10.175%	9.95%
Difference	2.575%	1.675%	1.45%
Wastewater – Specific Risk Premium[132]			
AUC approved ROE Rates	8.30%[133]	8.50%[134]	8.50%
PBR ROE	10.875%	10.175%	9.95%
Difference	2.575%	1.675%	1.45%
Drainage – Specific Risk Premium[135]			
AUC approved ROE Rates	N/A	N/A	6.74%
PBR ROE	N/A	N/A	8.19%
Difference	N/A	N/A	1.45%

Note 1: There was no previous PBR term for the Drainage services for EWSI. Additionally, the PBR terms for these Applications are staggered, whereby the Water PBR term is 2022-2026 and both Wastewater and Drainage PBR terms are 2022-2024.

4.1.12 Change in EWSI's ROE

The applied ROE in the Applications of 9.95% is a decrease of 0.225% from the 2017 PBR of 10.175%. We have noted during our review of Canadian regulatory decisions that generic approved ROE's have been stagnant since the last PBR (see Canadian regulatory overview for summary of approved rates). However,

[129] Water PBR 2022-2026, Pages 148 to 150, Paragraphs 479 to 483
[130] 2012: 8.75%, 2013 to 2015: 8.30%, and 2016: 8.30% - Alberta Utilities Commission 2011 Generic Cost of Capital, December 8, 2011, Page 103 Paragraph 550, Alberta Utilities Commission 2013 Generic Cost of Capital, March 23, 2015, Page 58 Paragraph 277, and Alberta Utilities Commission 2016 Generic Cost of Capital, October 7, 2016, Page 2 Table 1
[131] 2017 to 2021: 8.50% - Alberta Utilities Commission 2016 Generic Cost of Capital, October 7, 2016, Page 2 Table 1, Alberta Utilities Commission 2018 Generic Cost of Capital, August 2, 2018, Page 2 Table 1, and Alberta Utilities Commission 2021 Generic Cost of Capital, October 13, 2020, Page 1 Paragraph 1
[132] Wastewater PBR 2022-2024, Pages 140 to 142, Paragraphs 407 to 411
[133] 2012: 8.75%, 2013 to 2015: 8.30%, and 2016: 8.30% - Alberta Utilities Commission 2011 Generic Cost of Capital, December 8, 2011, Page 103 Paragraph 550, Alberta Utilities Commission 2013 Generic Cost of Capital, March 23, 2015, Page 58 Paragraph 277, and Alberta Utilities Commission 2016 Generic Cost of Capital, October 7, 2016, Page 2 Table 1
[134] 2017 to 2021: 8.50% - Alberta Utilities Commission 2016 Generic Cost of Capital, October 7, 2016, Page 2 Table 1, Alberta Utilities Commission 2018 Generic Cost of Capital, August 2, 2018, Page 2 Table 1, and Alberta Utilities Commission 2021 Generic Cost of Capital, October 13, 2020, Page 1 Paragraph 1
[135] Drainage PBR 2022-2024, Pages 176 to 178, Paragraphs 456 to 460

we also noted that due to the uncertainty in the market at the present time that regulators have approved short term extensions of existing ROE. Further information on this has been provided in the Industry Benchmarking section of this report.

EWSI's Applications has outlined several risks related to their rationale for their risk premium. The below table outlines the risks and both EWSI's and our rationale on each of the risks:

Table 19: Risk Factors and Rationales

Risk Factors	EWSI Comments	Grant Thornton Conclusion
Water is a consumable product	Water is ingested by the end user, it is incumbent upon EWSI 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 EWSI than is seen in other utilities.	We agree with EWSI's rationale on this risk area.
Health and environmental	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.	We agree with EWSI's rationale on this risk area.
Revenue	Demand for water is subject to considerable variation, particularly in the summer months. Additionally, water demand has declined on a per capita basis over a considerable period resulting in increased risk associated with recovering historic infrastructure costs. EWSI's rate structure is comprised of a very high portion of volumetric rates indicating that revenue fluctuates with changes in consumption. In contrast, electric	We partially agree with EWSI's rationale related to revenue risk. However, EWSI's 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. Additionally, the use of deferral accounts to respond to changing circumstances such as volatile consumption and

Table 19: Risk Factors and Rationales		
Risk Factors	**EWSI Comments**	**Grant Thornton Conclusion**
	and gas utilities have a lower percentage of volumetric rates implying that their revenue fluctuates less for a given level of consumption change. Overall, EWSI experiences higher revenue volatility than is seen in a gas or electric utility.	the impacts of COVID-19 could decrease risk to the Company.
Capital recovery	Water and wastewater utility assets typically have longer lives than electric and gas utilities. The resulting lower depreciation rates means that reliance on depreciation as one of the sources of internal cash flow is lower. In addition, the longer capital recovery period results in water and wastewater utilities facing greater risks from inflation which results in a higher replacement cost per dollar of net plant.	We do not agree with EWSI's rationale, as there is no apparent link between internal cash flow and depreciation. Furthermore, we agree with risks from inflation but not resulting in higher replacement cost per dollar of net plant when you consider replacement costs after time value of money discounts.
Level of contributed assets	EWSI utilities, particularly drainage, have a greater percentage of contributes assets (or assets not paid for by ratepayers though rates). As EWSI does not earn a return on these assets yet is required to maintain and assume operational responsibility for the assets, this represents a risk not seen to the same level in electric and gas utilities.	We do not agree with EWSI's rationale, as repairs and maintenance expense 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 EWSI the ability to earn a return of the asset.
Determination of return on equity	The City's PBR process is based on 5-year terms (with 3-year terms in this application as a one-time measure to stagger future application) with EWSI's rate of return on equity fixed for that entire period. In contrast, the AUC's rate of return is adjusted more frequently based on their generic cost of capital proceedings. As	We do not agree with EWSI's rationale, as proposing PBR terms for 3 and 5 years compared to other regulators across Canada approving 1 to 2 years for ROEs during a time of uncertainty could also decrease the overall risk taken on by EWSI. Additionally, the world volatilely, including the COVID-19 pandemic, typically creates many

Table 19: Risk Factors and Rationales		
Risk Factors	**EWSI Comments**	**Grant Thornton Conclusion**
	EWSI is effectively "locked in" to the established return on equity irrespective of changes to the underlying financial market drivers and conditions, this represents an additional risk to EWSI.	uncertainties within the economy, however, EWSI is locking in longer PBR terms than other regulators are approving at this time.
Debt	Under EWSI's PBR Framework, the risk of interest rate fluctuations is entirely borne by EWSI and is not passed on to its customers. Under the AUC PBR, Alberta electric and gas utilities pass on interest rate risk to their customers through rate adjustments. As such, this risk factor represents another component of the EWSI risk premium above the AUC's Generic Cost of Capital.	We agree with EWSI's rationale on this risk area, however, we note that EWSI borrows through intercompany loans from the parent company (EUI) these loans may not be subject to market fluctuations.

4.1.13 Canadian regulatory overview

We have reviewed the cost of capital decisions of other Canadian regulators and we acknowledge that looking to cost of capital decisions of other Canadian regulators may have an aspect of circularity. However, we believe that the recent decisions of other regulators can provide another check as to reasonableness of a proposed return on equity. We have compiled the allowed return on common equity approved by other Canadian regulators in the table below:

Table 20: Allowed Return on Common Equity (%)					
Entity	**2017**	**2018**	**2019**	**2020**	**2021**
British Columbia Utilities Commission[136]					
FortisBC Energy	8.75	8.75	8.75	8.75	8.75
FortisBC Inc.	8.75	8.75	8.75	8.75	8.75
AUC[137] [138]					
Generic cost of equity	8.50	8.50	8.50	8.50	8.50

[136] Notice of Initiating a Generic Cost of Capital Proceeding: Page 1
[137] Alberta Utilities Commission 2021 Generic Cost of Capital, October 12, 2020: Page 1
[138] Alberta Utilities Commission 2018 Generic Cost of Capital, August 2, 2018: Page 2

Table 20: Allowed Return on Common Equity (%)					
Entity	2017	2018	2019	2020	2021
Ontario Energy Board[139] Generic cost of equity	8.78	9.00	8.98	8.34	8.34
Quebec Energy[140] [141]	8.90	8.90	8.90	8.90	8.90
Nova Scotia Utility and Review Board[142] Nova Scotia Power Inc. – integrated electric	9.00	9.00	9.00	9.00	9.00
Prince Edward Island Regulatory & Appeals Commission[143] Maritime Electric	9.35	9.35	9.35	9.35	9.35
National Energy Board (Note 1)	N/A	N/A	N/A	N/A	N/A
Board of Commissioners of Public Utilities, NL[144] [145] Newfoundland Power Inc. – integrated electric	8.50	8.50	8.50	8.50	8.50

Note 1: NEB allows a WACC on the rate base rather than a ROE and deemed capital structure. NEB has not issued a ROE decision since 2009.

We observe that the allowed ROEs approved by Canadian regulators have decreased or remained constant, however, some jurisdictions approved the ROE noted in the table above for a multi-year period (i.e. 1 to 2 years) before the impact of the global pandemic. Therefore, the stability reflected in the above table may not be reflective of current market conditions. While we acknowledge that it is inherently difficult to quantify an appropriate ROE in the current economic environment it appears unreasonable to award a ROE which ignores current economic conditions for a period that will span three to five years. For example, other regulators such as the AUC, IRAC, and PUB would have the opportunity to review utility ROEs again in the next twelve to eighteen months which will give them the opportunity to consider current market conditions at that time.

[139] Cost of Capital Parameter Updates
[140] 2018 Annual Report: Page 34
[141] Annual Information Form Fiscal year ended on September 30, 2020: Page 20
[142] Nova Scotia Utility and Review Board: Decision 2016 NSUARB 42 M07215m Page 8, Paragraph 22
[143] The Island Regulatory And Appeals Commission Order UE20-06
[144] Board Order No. P.U. 18 (2016): Page 49
[145] Board Order No. P.U. 2 (2019): Page 16

We note the approved ROE rates captured in the table above relate to electricity and gas transmission and distribution and not specifically water and wastewater treatment utilities. However, we believe the timeline for decision making and the trends of this data is useful in considering the approach to approving ROE for EWSI.

4.1.14 Return on equity – findings and observations

We reviewed EWSI proposed cost of equity and found the following:

- EWSI is proposing a premium in comparison to the AUC's approved cost of capital in two ways; 1)40% equity versus the AUC approved 37% equity would generate a higher return for EWSI in comparison to other utilities in Alberta, 2) EWSI has proposed a premium return on equity versus the AUC approved return on equity.
- The City could consider a reduction of the proposed ROE by 25 basis points to account for items which are reducing EWSI's risk profile, such as the shift to fixed charges, deferral accounts, the term of the PBR period proposed.
- For future rate setting periods we recommend that the City requires EWSI to supplement their Applications with a summary schedule reflecting a buildup approach to cost of capital where the base is set in accordance with the AUC's generic cost of capital guidance and EWSI's evidence is focused on identifying risks that increase or decrease the risk implied in the AUC guideline cost of capital. This discussion of risk could propose the quantitative impact of the risk to further support their final conclusion of the total implied risk premium.
- The following table outlines an illustration of the components of the return on equity in the EWSI proposed rates in comparison to a scenario where the ROE is reduced by 25 basis points.

Table 21
Cost of equity — GT Illustrative Calculation

	Notes	EWSI Proposed	Reduced by 25 bps
Buildup approach			
Risk-free rate	[1]	1.83%	1.83%
Equity risk premium	[2]	5.50%	5.50%
Size premium	[3]	1.46%	1.46%
Industry risk premium	[4]	(3.14%)	(3.14%)
Specific risk premium	[5]	4.30%	4.05%
Cost of equity		**9.95%**	**9.70%**
CAPM approach - full information beta			
Risk-free rate	[1]	1.83%	1.83%
Equity risk premium	[2]	5.50%	5.50%
Full information beta	[6]	0.43	0.43
Size premium	[3]	1.46%	1.46%
Specific risk premium	[5]	4.29%	4.04%
Cost of equity		**9.95%**	**9.70%**

[1]	*Page 98 of Drainage - the 2022 average yield - 30-year Government of Canada Bonds*
[2]	*Duff & Phelps, LLC, Cost of Capital Navigator*
[3]	*Duff & Phelps, LLC, Cost of Capital Navigator - decile 8*
[4]	*Duff & Phelps, LLC, Cost of Capital Navigator - GICS 551040 - Water Utilities*
[5]	*Based on Grant Thornton's assessment of company risks*
[6]	*Duff & Phelps, LLC, Cost of Capital Navigator - GICS 551040 - Water Utilities*

5 Efficiency factor

5.1 Objectives and approach

We reviewed the efficiency factor proposed by EWSI in the Water PBR 2022-2026, Wastewater PBR 2022-2024, and Drainage PBR 2022-2024. Our review included:

- An overall assessment of the three business areas for EWSI;
- Consideration regarding the accuracy and consistency of the overall forecast methodology and assumptions proposed; and
- Consideration regarding the number of years each utility has operated under a PBR.

Our overall assessment also included identifying any differences or material changes from the previous PBR period.

5.2 Application specific observations

The efficiency factor was addressed in each of the PBR applications by EWSI with our observations summarized below.

5.2.1 Water PBR 2022-2026 and Wastewater PBR 2022-2024 observations

EWSI has proposed to continue to apply the 0.25% efficiency factor in both the Water PBR 2022-2026 and the Wastewater PBR 2022-2024. The Company's rationale quoted in both applications as follows:

> *EWSI has not contracted an external expert to develop an efficiency study for the 2022-2026 PBR application as it believes it would yield similar results to the previous Kaufmann Consulting report. The underlying industry parameters have not changed since that time. As an alternative, EWSI is proposing to maintain the 0.25% efficiency factor. This will allow EWSI to remain in alignment with City of Edmonton goals.*[146]

Historically, EWSI has held an efficiency factor of 0.25% for the water and wastewater utilities. During the 2017-2021 PBR Review, EWSI's consultant Kaufmann Consulting recommended a negative 0.5% efficiency factor which included a 0.2% stretch factor.[147] During our review of this matter when preparing the 2017-2021 PBR Review, we determined that EWSI had not presented sufficient information that would support a negative 0.5 efficiency factor with a 0.2% stretch factor.[148] Kaufmann Consulting's rationale indicated that there was a change in data, methodology, and experts used in the Kaufmann Consulting report, which differed from the 2012-2016 PBR term.[149] Based on this rationale, it was our view that any change in the efficiency factor should be based on factors other than a change related to the experts used and methodology approach. We concluded that while we recognized the efficiency factor is impacted by macro industry productivity measures, it was our view that one of the benefits of a PBR approach is to create a mechanism to drive efficiency and effectiveness gains to the benefit of the rate payer.[150] We also concluded

[146] Water PBR 2022-2026: Page 12, Paragraph 38; Wastewater PBR 2022-2024: Page 11-12, Paragraph 35
[147] 2017-2021 PBR Review: Page 59
[148] 2017-2021 PBR Review: Page 59
[149] 2017-2021 PBR Review: Page 59
[150] 2017-2021 PBR Review: Page 60

that including an efficiency factor in the inflation equation creates an incentive for the utility to continuously identify opportunities for cost improvement beyond a pass through for inflation.[151]

Based on our review of EWSI's proposed efficiency factor of 0.25% for the water and wastewater utility, nothing has come to our attention that the proposed efficiency factor for these two utilities is unreasonable. However, we have noted below in our drainage observations that EWSI has gained efficiencies in operating costs when comparing forecasted costs to actual costs. Table 22 demonstrates that those efficiency gains far exceed the efficiency factor of 0.25%.

5.2.2 Drainage PBR 2022-2024 observations

In the Drainage PBR 2022-2024, which is the initial PBR for this utility since being transferred from the City of Edmonton to EWSI in 2017, the Company is proposing an initial efficiency factor of 0.25%.[152] The rationale provided in the Application references the following:

> *… in transferring the Drainage utility to EPCOR, the City of Edmonton established aggressive efficiency expectations for both operating and capital costs (to deliver the capital program at 10% lower costs and 5% lower operating costs by 2021).*[153]

The Company also noted their proposed "ramped-up" return on equity over a five-year period beginning in 2022, as presented in Table 10.2-2 of the Drainage 2022-2024 PBR.[154] This table demonstrates EWSI's incremental increase to the drainage utility each year over a five-year period starting in 2022, and noted the following:

> *The ramped Drainage return on equity, as described above and included in the Application, effectively reduces Drainage's return below a level commensurate with the risk the utility takes on. Drainage is seen as a higher risk business due to several factors explained in Appendix D. Thus, the addition of the Drainage business to the EWSI portfolio increases EWSI's overall business risk profile, yet EWSI has proposed a lower return on equity for Drainage in order to mitigate rate increases. Any efficiency factor above 0.25%, in combination with the ramped return on equity, is seen as moving the risk/return profile for Drainage beyond an acceptable level.*[155]

To gain further clarity regarding the 0.25% drainage efficiency factor proposed in the initial PBR term, which is the same level as the more mature operations in the water and wastewater utilities, we asked EWSI to further elaborate on these statements in GT-RFI-2021-11. EWSI's response noted in GT-EWSI-11 is as follows:

> *For the 2022-2024 PBR term, EWSI is offering to accept a lower than fair return on equity of 6.6% for its "base" Drainage operations. This means that for the Water, Wastewater Treatment and Drainage PBR forecasts combined, the return on equity is 8.52% for the period 2022-2024, well below the fair return of 9.95%. By reducing the return on equity, EWSI is able to provide what it has called the Edmonton Economic Recovery Rebate" to its ratepayers saving them over $66 million dollars in 2022-2024 and providing additional savings into 2025. By increasing the efficiency factor above 0.25%, this would further reduce the average return below the 8.52% forecast.*

[151] 2017-2021 PBR Review: Page 60
[152] Drainage PBR 2022-2024: Page 14, Paragraph 42
[153] Drainage PBR 2022-2024: Page 14, Paragraph 43
[154] Drainage PBR 2022-2024: Page 178, Table 10.2-2
[155] Drainage PBR 2022-2024: Page 14-15, Paragraph 44

> *The addition of the Drainage utility to EWSI's portfolio of operations has resulted in an increase to its overall business risk. Higher business risk would ordinarily be reflected in higher return on equity, yet, EWSI is proposing to accept a return on equity that is far lower than the fair return in order to provide ratepayers with lower rates to support economic recovery in Edmonton. Given the additional risk associated with Drainage assets and lower return on equity, EWSI considers that any further increase in the efficiency factor above 0.25% would move its risk/return profile beyond an acceptable level.*[156]

EWSI also noted that during the 2022-2024 PBR term, there will be additional operation and capital efficiencies through initiatives outlined in Section 2.3.9 and Section 3.3 of the Drainage PBR 2022-2024.[157] These additional efficiencies, according to EWSI, have already been reflected in forecast operating costs, which has been reflected in customer rates.

Lastly, EWSI reiterated the purpose of performance-based regulation, as follows:

> *By definition, a performance-based regulation approach to rate setting provides incentives for the utility to achieve operating cost efficiencies to earn a higher return during the PBR term. Any permanent operating cost efficiencies achieved in the PBR term are then passed on to ratepayers through lower rates beginning in the next PBR term. These incentives are inherent in EWSI's PBR and will continue to drive operational savings that will be passed on to customers.*[158]

EWSI did not contract an external expert to develop an efficiency study, as stated in the water and wastewater observations section above, as they believe it will yield similar results as the Kaufmann Consulting report. As this is the drainage utility's initial PBR since transferring from the City, establishing an efficiency factor that is at the same threshold as more mature operations under EWSI may not be the most congruent approach to PBR principles. As stated in our 2017-2021 PBR review, 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.[159] 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.

Table 22 below was provided by EWSI in IR-COE-06 (d) which shows the difference between forecast operating costs and actual operating costs incurred. We calculated the difference as a percentage, as follows:

Table 22: Forecast VS Actual Operating Costs ($ millions)

Utility	2012D-2016D	2012A-2016A	Variance	2017D-2021D	2017A-2021F	Variance
Water[160]	$ 519.9	$ 480.5	$ (39.4)	$ 564.9	$ 529.6	$ (35.3)
Wastewater[161]	$ 237.1	$ 218.9	$ (18.2)	$ 286.8	$ 256.9	$ (29.9)
Water % change			**(7.58)%**			**(6.25)%**
Wastewater % change			**(7.68)%**			**(10.43)%**

[156] GT-EWSI-11
[157] Drainage PBR 2022-2024: Section 2.3.9, Page 46, Paragraphs 115-117; Section 3.3, Page 65, Paragraph 162
[158] GT-EWSI-11
[159] 2017-2021 PBR Review: Page 60
[160] COE-EWSI-6.d-1: Line 14 and Line 15
[161] COE-EWSI-6.e-1: Line 13

Table 22 demonstrates that in the past two PBR terms, 2012-2016 and 2017-2021, EWSI has over forecasted their operating costs for both the water and wastewater utilities. Based on our calculation of the percent change between the forecast and actuals for each PBR term, EWSI has operational efficiencies that far exceed the efficiency factor of 0.25%. The purpose of this exercise was to demonstrate that while EWSI has forecasted drainage operating costs in the 2022-2024 PBR term, is it likely that the forecasted drainage operating costs may be higher than the actual costs incurred.

Furthermore, in our EPCOR 2017 Drainage Utility Transfer Review we noted that EWSI does appear to have generated a degree of operational efficiencies as compared to if the Drainage Utility remained with the City. However, based on EWSI's reference to a 5% operational efficiency target, we noted that the Company didn't meet that target and instead met generated operational efficiencies of 3.8%.[162] Our findings conclude that there is merit for EWSI to find additional operational efficiencies in the future. Plans to continue operational efficiencies in future PBR periods have been outlined and focus on One Water Planning and the Real Estate Consolidation Plan. As EWSI plans to continue these efficiencies in future PBR periods, it is suggested that the City continue to monitor EWSI's operational efficiency results.

Based on our analysis above, as well as the findings in our Drainage Utility Transfer Review, we are unable to conclude if an efficiency factor of 0.25% for the drainage utility is appropriate at this time. In our opinion, this efficiency factor was based on the historical precedent set by the water and wastewater utilities. In our 2017-2021 PBR Review, we disagreed with EWSI's proposed 0.00% efficiency factor due to insufficient evidence provided by EWSI. Ultimately, we recommended the following:

> *Absent additional evidence on this matter we recommend the 2012-2016 X factor of 0.25% be maintained.*[163]

Taking into consideration that this is the drainage utility's initial PBR term, as well as consideration of our analysis conducted above, we recommend that an efficiency factor higher than 0.25% up to 0.5% be applied to the drainage utility. Doubling the efficiency factor for the drainage utility would balance continuing to motivate EWSI to strive for efficiencies while also respecting that this is a new and evolving business for the Company.

[162] EPCOR 2017 Drainage Utility Transfer Review: Page 19
[163] 2017-2021 PBR Review: Page 60

5.3 General observations

We conducted a scan of other Canadian regulators and approved efficiency factors described in Table 23 below. Please note, some regulators refer to efficiency factors as productivity factors, X factors, or stretch factors but the purpose of the mechanism is the same as EWSI's efficiency factor.

Table 23: Approved Efficiency Factors in Other Canadian Jurisdictions

Regulator	Efficiency Factor
OEB (general) 2014[164]	0.00-0.06%
OEB (Wellington North Power) 2021[165]	0.45%
BCUC (Fortis) 2020[166]	0.5% inclusive of stretch factor
AUC (Enmax) 2017[167]	0.3% inclusive of stretch factor

We do recognize that the regulators referenced in Table 23 are for electric, and some instances gas, utilities which have different business models and cost structures as compared to water utilities. These differences could bring into question the reasonability of using a standard efficiency factor for all utility companies.

5.4 Findings and observations

Based on our overall assessment of the Applications, we note the following:

- With absence of an efficiency factor study and other supporting evidence provided by the Company, nothing has come to our attention to suggest a change in EWSI operations of water and wastewater that would be a basis for deviating from historical efficiency factors. Therefore, we have concluded that maintaining an efficiency factor of 0.25% is not unreasonable for the water and wastewater operations; and
- While we understand EWSI's comments regarding the risk profile of the drainage utility we are of the opinion that the establishment of an efficiency factor and the establishment of an appropriate return on equity are separate issues. Suggesting that the future ability to find efficiencies in a utility operation that has been held for a short time period is comparable to the efficiencies available to the water utility which has a well-established operating history does not appear to be a reasonable request. As such, we would recommend that the City consider efficiency factors within the range of 0.25% to 0.50%. Doubling the efficiency factor for the drainage utility would balance continuing to motivate the EWSI to strive for efficiencies while also respecting that this is a new and evolving business for the Company.

[164] Ontario Energy Board EB-2010-0379 Appendix D
[165] https://www.wellingtonnorthpower.com/wp-content/uploads/2020/11/dec_rate_order_WellingtonNorth_2019_IRM_20190328.pdf
[166] BCUC Order Number G-166-20: Page 2, Paragraph 1.b.iii
[167] AUC Decision 20414-D01-2016: Page 45, Paragraph 169

6 Inflation factor

6.1 Objectives and approach

We reviewed EWSI position regarding the proposed inflation factor in the Water PBR 2022-2026, Wastewater PBR 2022-2024, and Drainage PBR 2022-2024. Our review was performed with the objective of determining if the overall forecast methodology and assumptions used are accurately applied and consistent with the underlying support. Our review of the inflation factor included identifying changes from the previous PBR period and commenting on the appropriateness of these changes, where relevant.

Each application applies a consistent inflation factor forecasting methodology. The Company determines its inflation factor using the Conference Board of Canada's November 2020 data series forecast for 2020-2025.[168] The two data series used are the Alberta Consumer Price Index ("Alberta CPI") non-labour component forecast data and the Average Hourly Earnings, Alberta, Industrial Aggregate ("AHE Index") forecast data. This determines a composite inflation factor. This methodology was designed using the principles outlined by the Alberta Utility Commission's ("AUC") September 12, 2012 report *"Rate Regulation Initiative – Distribution Performance-Based Regulation"* ("the 2012 Decision").[169]

For the proposed Applications, EWSI has determined inflation factors as follows:

- Water PBR 2022-2026: 2.31%;[170]
- Wastewater PBR 2022-2024: 2.26%;[171] and
- Drainage PBR 2022-2024: 2.33%.[172]

6.2 Application specific observations

The inflation factor was addressed in each of the PBR applications by EWSI as summarized below.

6.2.1 Water PBR 2022-2026 observations

In the Water PBR 2022-2026, the Company proposed an adjusted inflation factor weighting of the Alberta CPI and AHE Index factors to 60% and 40%, respectively, in the inflation factor forecast calculation.[173] This weighting has changed since the previous 2017-2021 PBR term, which had a weighting of 65% Alberta CPI and 35% AHE Index.[174] EWSI's rationale for the weighting change is described at a high level in the application, paragraph 190, as follows:

> *For the 2022-2026 PBR term, EWSI has proposed a new inflation factor for Water Services with weighting of 60% CPI (non-labour component) and 40% AHE (labour component), based on Water Services forecast cost structure. Weightings of 65% CPI and 35% AHE have been applied since EWSI's 2012-2016 PBR Applications for Water Services and Wastewater Treatment Services. The weightings of 65% CPI and 35% AHE were based on the combined operating expenses for Water Services and Wastewater Treatment. For the 2022-2024 and 2022-2026 PBR Applications EWSI*

[168] GT-EWSI-6
[169] AUC's Rate Regulation Initiative – Distribution Performance-Based Regulation
[170] Water PBR Application 2022-2026, Page 59, Paragraph 193
[171] Wastewater PBR Application 2022-2024, Page 56, Paragraph 175
[172] Drainage PBR Application 2022-2024, Page 83, Paragraph 211
[173] Water PBR Application 2022-2026, Page 58, Paragraph 190
[174] Water PBR Application 2022-2026, Page 58, Paragraph 190

has applied separate weight factors for Water Services, Wastewater Treatment, and Drainage Services, based on each operations proportion of labour costs relative to all other costs over the PBR term.[175]

Further, the City of Edmonton requested calculations supporting the weighting change in IR-COE-5. EWSI's response noted in COE-EWSI-05 included tables that supported their proposed weightings for the water utility.[176] The weighting calculations for the labour component (AHE Index) equalled 38%, rounded to 40%, and the non-labour component (Alberta CPI) equalled 62%, rounded to 60%. We recalculated the inflation weighting as described in COE-EWSI-05 and arrived at 2.31%, the same as what is proposed in the PBR application. A part of our recalculation included testing the inflation weighting of 35% AHE Index and 65% Alberta CPI that was approved in the 2017-2021 PBR term. Our test resulted in an inflation factor of 2.29%. Based on this recalculation we note no material differences.

EWSI's response above provides clarity on EWSI's rationale for the proposed weighting change of the inflation factor calculation. Upon review of EWSI's response, we were able to confirm that the change in weighting is supported by EWSI's forecasted expenses.

6.2.2 Wastewater PBR 2022-2024 observations

In the Wastewater PBR 2022-2024, the Company has proposed no changes to the inflation factor methodology and weighting.[177] The weighting of 65% Alberta CPI and 35% AHE Index has been applied to the water and wastewater utilities since EWSI's 2012-2016 PBR application, and EWSI has determined this weighting is consistent with the wastewater utility's forecast cost structure.[178]

The methodology described in Schedule 3, Section 2.1 of the proposed *Drainage and Wastewater Treatment Bylaw 19627* is consistent with the methodology used in the 2017-2021 PBR applications. This methodology is also consistent with Schedule 3 Section 2.1 of the EPCOR *Water Services and Wastewater Treatment Bylaw, Revised Bylaw 17698* for the 2017-2021 PBR term.

The City of Edmonton requested the calculation that supports the wastewater utility's inflation weighting in IR-COE-5. EWSI's response noted in COE-EWSI-05 included tables that supported their proposed weightings for the wastewater utility.[179] The weighting calculations for the labour component (AHE Index) equalled 34%, rounded to 35%, and the non-labour component (Alberta CPI) equalled 66%, rounded to 65%.

EWSI's response provides clarity on EWSI's rationale for the proposed weighting for the inflation factor calculation in the Wastewater PBR 2022-2024. Upon review of EWSI's response, we were able to confirm that the change in weighting is supported by EWSI's forecasted expenses.

6.2.3 Drainage PBR 2022-2024 observations

The Drainage PBR 2022-2024 is an initial PBR application for this utility and has no previous bylaw or terms of refence for establishing a weighting structure for the inflation factor. The Company has instead utilized the existing methodologies applied to the water and wastewater utilities, which was initially established using the AUC's principles described in the 2012 Decision.

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[175] Water PBR Application 2022-2026, Page 58, Paragraph 190
[176] COE-EWSI-05: Table COE-EWSI-5.a-1
[177] Wastewater Treatment PBR Application 2022-2024, Page 55, Paragraph 173
[178] Wastewater Treatment PBR Application 2022-2024, Page 55, Paragraph 173
[179] COE-EWSI-05: Table COE-EWSI-5.c-1

EWSI has proposed a weighting of 40% Alberta CPI and 60% AHE Index based on Drainage Services forecast cost structure.[180] The methodology used to calculate the inflation factor forecast is consistent with the 2017-2021 PBR term for Water and Wastewater Treatment. This methodology is also consistent with the proposed *Drainage and Wastewater Treatment Bylaw 19627* in Schedule 3, Section 2.1.

The City of Edmonton requested the calculation that supports the Drainage inflation weighting in IR-COE-5. EWSI's response noted in COE-EWSI-05 included tables that supported their proposed weightings for the drainage utility.[181] The weighting calculations for the labour component (AHE Index) equalled 60% and the non-labour component (Alberta CPI) equalled 40%. EWSI's response provides clarity on EWSI's rationale for the proposed weighting for the inflation factor calculation in the Drainage PBR 2022-2024. Upon review of EWSI's response, we were able to confirm that the weighting is supported by EWSI's forecasted expenses.

During our review of the drainage efficiency performance to 2022 we noted that it appears that EWSI is including an amount for increased revenues from billing adjustments. Billing adjustments would not be considered an increase in operating efficiency in our view therefore we recommended in the drainage transfer review that the City consider annual monitoring of actual efficiency performance by EWSI throughout the future PBR period.

6.3 General observations

As previously mentioned, the Company determines its inflation factor based on the Conference Board of Canada's November 2020 data series forecast for 2020-2025 (Alberta CPI and AHE Index).[182] This methodology is applied consistently across all Applications, is consistent with the 2017-2021 PBR term, and follows the principles outlined in the 2012 Decision.[183]

In EWSI's response to GT-RFI-2021-6, we were able to confirm the inputs in Table 4.2.1-1 of the Water PBR 2022-2026 and Wastewater PBR 2022-2024, as well as Table 5.2.1-1 of the Drainage PBR 2022-2024, and found no material discrepancies with the two data series from Conference Board of Canada published in November 2020.

Upon further review of EWSI's calculation to establish the appropriate weightings for the inflation factor for each utility, we noted a change in methodology. In both the Water and Wastewater 2017-2021 PBR applications, EWSI stated the following:

> *In the 2012-2016 PBR term, EWSI implemented a new inflation factor which is calculated based on a weighting of 65% non-labour component and 35% labour component to represent EWSI's internal cost structure. This weighting is calculated based on the proportion of EWSI's actual labour costs relative to all other costs.*[184]

Furthermore, Appendix E for the Water and Wastewater Treatment PBR 2017-2021 applications states the following:

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[180] Drainage PBR Application 2022-2024, Page 82, Paragraph 209
[181] COE-EWSI-05: Table COE-EWSI-5.b-1
[182] GT-EWSI-6
[183] AUC's Rate Regulation Initiative – Distribution Performance-Based Regulation
[184] 2017-2021 Water Services PBR Application: Page 12, Paragraph 37; 2017-2021 Wastewater Treatment PBR Application: Page 10, Paragraph 30

The weighting of these two series is set at 65% on CPI and 35% on AHE. This weighting was based on the proportion of EWSI's actual labour costs relative to all other costs.[185]

In each of the Water PBR 2022-2026, Wastewater PBR 2022-2024, and Drainage PBR 2022-2024, EWSI references using *"forecast costs structure"* to establish the proposed inflation factor weightings.[186] This is inconsistent with the 2017-2021 PBR Filing methodology, as well as the AUC's 2012 Decision which references the use of historical (i.e. actual) costs when developing inflation factor weightings.[187] Upon further review of the current Bylaw 17698, EWSI's proposed changes to this Bylaw, and the proposed Drainage and Wastewater Treatment Bylaw 19627, we have not noted any reference or guidance on whether EWSI must use historical (actual) or forecast labour costs relative to all other costs when determining inflation factor weightings.

To understand the possible impact of changing weighting methodology from using historical costs to forecast costs, we recalculated EWSI's inflation weighting for the water utility using historical actuals in the 2017-2021 PBR term. Our recalculation using actual operating costs for 2017, 2018, and 2019 resulted in 42% AHE Index weighting and 58% Alberta CPI weighting. EWSI's proposed weighting for the water utility resulted in 38% AHE Index weighting, rounded to 40%, and a 62% Alberta CPI weighting, rounded to 60%. Rounding our recalculation ultimately generates the same weighting as what EWSI is proposing in the Water 2022-2026 PBR. However, the forecasted operational costs used in EWSI's calculation would include forecast inflationary increases to those costs to calculate the weighting. This may result in a weighting that is not accurate due to the annual inflationary adjustments for actual inflation made during the PBR term.

As we have noted in our observations, there have been changes in the inflation factor methodology proposed by EWSI in the current PBR applications. We recommend that the proposed bylaws be updated to include clarity regarding EWSI's methodology for developing the inflation factor weighting for each utility. We also recommend EWSI continue to use historical costs to ensure the weighting methodology applied remains consistent across all past and future PBR terms, and that forecast inflationary increases are not incorporated into the weighting calculation.

6.4 Findings and observations

- We reviewed the two data series of the Alberta CPI and AHE Index from Conference Board of Canada published in November 2020, the tables prepared by EWSI in GT-EWSI-6, and compared those to the inputs EWSI used to calculate the inflation factor forecast in each application and found no material discrepancies;[188]
- EWSI's methodology to calculate the inflation factor is consistent with the methodology used in the previous PBR term, with the following exceptions:
    - EWSI changed the weighting to perform the inflation calculation on a standalone utility basis (i.e. splitting water and wastewater), and

[185] Water and Wastewater Treatment PBR 2017-2021 Appendix E: Page 1, Paragraph 2
[186] Water PBR 2022-2026: Page 58, Paragraph 190; Wastewater PBR 2022-2024: Page 55, Paragraph 173; Drainage PBR 2022-2024: Page 82, Paragraph 209
[187] AUC's Rate Regulation Initiative – Distribution Performance-Based Regulation Page: 45, Paragraph 213 and 214; Page 47, Paragraph 226; Page 48, Paragraph 227
[188] Table 4.2.1-1 of the Water PBR 2022-2026, Table 4.2.1-1 of the Wastewater PBR 2022-2024, and Table 5.2.1-1 of the Drainage PBR 2022-2024

- EWSI used actual labour costs relative to all other costs in the 2017-2021 PBR Filing, whereas they are proposing to use forecast labour costs relative to all other forecast costs in the current Applications.

- EWSI has changed their methodology when determining the inflation factor weighting of labour costs relative to all other costs. The Company has shifted from applying historical costs as the assessment of cost weightings to an approach of considering forecasted costs. Using forecasted costs would reflect proposed inflationary increases that would be adjusted annually for actual inflation during the PBR term. In this instance, the methodology change does not result in a material impact on the calculation, however, we recommend EWSI continue to use historical costs to ensure the methodology applied remains consistent across all past and future PBR terms; and

- We recommend EWSI updated the proposed bylaws for each utility to clearly state the inflation factor weighting methodology using historical operating costs.

7 Performance measures

7.1 Objectives and approach

We have reviewed the proposed performance measures under the Water PBR 2022-2026, Wastewater PBR 2022-2024, and Drainage PBR 2022-2024 by conducting a high-level assessment of EWSI performance in comparison to the performance measure standards with suggestions for future consideration. During our assessment we:

- reviewed current performance measures and standards;
- reviewed proposed performance measures and standards;
- considered EWSI's rationale for any changes; and
- considered relevant supporting materials where required.

In each application, EWSI states they have prepared their proposed performance measure bylaw sections in accordance with *EPCOR Rates Procedure Bylaw No. 12294*, as amended, ("Rates Procedure Bylaw") Subsections 5 (e) and 5 (f), and that methodology has been consistently applied since the first PBR term, 2002-2006.[189]

7.2 Application specific observations

The performance measures were addressed in each of the PBR applications by EWSI as summarized below.

7.2.1 Water PBR 2022-2026 observations

In the Water PBR 2022-2026, the Company has proposed changes to performance measures indices and penalties weightings, as indicated in Table 13.1.2-1.[190] The weighting change is supported by stakeholder feedback as reported in *Appendix K: Stakeholder Engagement Report* ("Appendix K").[191] This feedback indicated the most valued performance priority to be quality, and the least valued priority to be both environment and customer service.

Since the first PBR term, EWSI has exceeded their total aggregate performance measures and standards each year for the water utility, apart from 2002 where they earned 99.4 points.[192]

Further, we noted that the 2017, 2018, and 2019 PBR Progress Reports prepared by EWSI provide detail into the Company's performance measure results and total actual points earned. For the water utility's total actual points earned, our observations noted performance in certain areas are above the standards assigned to them, and in some instances are almost double the standard. Specifically, we noted the following:

[189] Water PBR 2022-2026: Page 176, Paragraph 555; Wastewater PBR 2022-2024: Page 159, Paragraph 453; Drainage PBR 2022-2024: Page 208, Paragraph 555
[190] Water PBR 2022-2026: Page 178, Table 13.1.2-1
[191] Appendix K: Page 6 of 57
[192] Water PBR 2022-2026: Page 179, Table 13.1.3-1

- The System Reliability and Optimization Index total actual points earned was 31.6 in 2017, [193] 30.9 in 2018, [194] and 30.9 in 2019.[195] The maximum standard, including bonus points, is 28.5 each year;
- The Environmental Index total actual points earned was 20.7 in 2017,[196] 16.8 in 2018,[197] and 18.9 in 2019.[198] The maximum standard, including bonus points, is 16.5 each year; and
- Safety Index total actual points earned was 25 in 2017,[199] 24.7 in 2018,[200] and 31.2 in 2019.[201] The maximum standard, including bonus points, is 16.5 each year.

A summary of the three-year (2017-2019) actual water performance metrics has been provided below:

Table 24: Water Performance Measure Standards and Actuals Comparison

Index •Sub-indices	A 2017-2021 Standard	B 2017 Actual	C 2018 Actual	D 2019 Actual	E 2022-2026 Standard*
Water Quality Index	≥ 99.7%	99.8%	99.8%	99.8%	≥ 99.7%
Total Index Points (including bonus points)	**25.5**	**25**	**25**	**25**	**30**
Customer Service Index					
• Post Service Audit	≥ 74.9%	72.5%	71.3%	74.5%	≥ 75%
• Home Sniffing	≥ 94.4%	94.5%	92.8%	95.5%	≥ 94.4%
• Response Time	≤ 25	18.3	20.7	20.4	≤ 25
• Planned Construction Impact	≥ 95.8%	93.3%	96.2%	97.1%	≥ 95.8%
Total Index Points (including bonus points)	**23**	**21.1**	**20.6**	**21**	**17.25**
Reliability & Optimization Index					
• Main Break	≤ 419	256	345	298	≤ 365
• Water Main Repair Duration	≥ 93.7%	95.7%	96%	95.2%	≥ 95.4%
• Water Loss	≤ 2	1.06	0.9	1.19	≤ 1.23
• System Energy Efficiency	≤ 309	263	257	250	≤ 281
Total Index Points (including bonus points)	**28.5**	**31.6**	**30.9**	**30.9**	**28.25**
Environmental Index					
• Water Conservation	≤ 17.2	16.1	15.8	15.3	≤ 16.8
• Environment Incident	≤ 6	3	4	3	≤ 5
• Solids Residual Mgt.	≥ 120	129	95.8	79	≥ 120

[193] Appendix E: 2017 PBR Progress Report: Page 29, Table 2.5.3
[194] Appendix E: 2018 PBR Progress Report: Page 26, Table 2.5.3
[195] Appendix E: 2019 PBR Progress Report: Page 29, Table 2.5.3
[196] Appendix E: 2017 PBR Progress Report: Page 30, Table 2.5.4
[197] Appendix E: 2018 PRR Progress Report: Page 27, Table 2.5.4
[198] Appendix E: 2019 PBR Progress Report: Page 30, Table 2.5.4
[199] Appendix E: 2017 PBR Progress Report: Page 31, Table 2.5.5
[200] Appendix E: 2018 PBR Progress Report: Page 28, Table 2.5.5
[201] Appendix E: 2019 PBR Progress Report: Page 31, Table 2.5.5

Table 24: Water Performance Measure Standards and Actuals Comparison					
Index •Sub-indices	A 2017-2021 Standard	B 2017 Actual	C 2018 Actual	D 2019 Actual	E 2022-2026 Standard*
Total Index Points (including bonus points)	**16.5**	**20.7**	**16.8**	**18.9**	**17.25**
Safety Index					
• Near Miss Reporting	≥ 550	1119	855	894	≥ 550
• Worksite Inspections/ Observations	≥ 1032	2036	2720	3217	≥ 1032
• Lost Time Frequency	≤ 0.57	0.38	0.38	0	≤ 0.4
• All Injury Frequency	≤ 1.54	1.33	1.72	0.97	≤ 1
Total Index Points (including bonus points)	**16.5**	**25**	**24.7**	**31.2**	**17.25**
Total Points Earned (including bonus points)	**110**	**123.4**	**118**	**127**	**110**

**The standards indicated in column E are proposed.*

Note – green cells are metrics that exceeded standards (excluding total available bonus points) in the performance period and red cells indicate metrics that were not met in the period.

EWSI is proposing changes to a select few of the above indices, which can be noted when comparing column A to column E in Table 24. EWSI has indicated that these indices are set based on industry benchmarking and 10-year historical averages, when available. However, it is unclear what industry benchmarks EPCOR has considered in the context of each individual performance standard.

EWSI's proposed changes are outlined in *Appendix A: Summary of Bylaw and Key Changes* ("Appendix A") which provides an overview of the current standard, proposed standard, and reasoning for the change or continuation of the standard.[202] We do note that EWSI is proposing to remove bonus points from the Water Quality Index, which is currently 0.5 bonus points specifically allocated to the Index, stating the following:

> *Bonus points will no longer be applied to the Water Quality Index to clarify that points earned from other performance metrics cannot be used to offset water quality performance that is below the prescribed standard for any given year.*[203]

We have considered EWSI's rationale above and do not conclude that removing the bonus points specifically allocated to the Water Quality Index relates to the rational provided. Noted in the Water PBR 2022-2026 relating to the Water Quality Index, EWSI further states:

> *EWSI has not identified cost-effective initiatives to increase the index score further.*[204]

Our analysis of their rationale provided in both the Water PBR 2022-2026 and Appendix A relating to the standards proposed for the Water Quality Index conclude that EWSI is not able to incorporate cost-effective initiatives to increase the performance of this Index, resulting in the Company's inability to utilize available bonus points specifically assigned to this Index. As such, they are proposing to assign those bonus points to other indices. Considering the bonus points are minimal (0.5), we don't believe the reallocation of these bonus points will provide significant effects, or distortion, to the other indices.

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[202] Appendix A: Page 23-27
[203] Appendix A: Page 24
[204] Water PBR 2022-2026: Page 186, Paragraph 576

Additionally, the City of Edmonton requested clarification on how the performance metrics currently established in Schedule A of the 2017-2021 Fire Hydrant Service Agreement are reflected in the Water Services PBR 2022-2026 in IR-COE-16, and EWSI's response captured in COE-EWSI-16 is as follows:

> *Under the terms of the current Fire Hydrant Services Agreement, EWSI currently provides reporting directly to Edmonton Fire Services. It is EWSI's intent to continue to provide this reporting over the 2022-2026 term directly to Edmonton Fire Services. This reporting tends to be operational in nature and not of the scope generally seen in PBR metrics. As a result, EWSI is not proposing to add fire protection related metrics to the Water PBR metrics program. A similar approach is used in other EWSI areas where operationally focused metrics are maintained (and often reported to external agencies) but are not tracked as specific PBR metrics.*[205]

We have considered EWSI's response to this question and have concluded that given the operational focus of this agreement, reporting no further performance metrics directly through the water utility's performance measures are in place at this time. While this is not unreasonable, we would encourage the City and EWSI to continually consider if adopting PBR metrics become appropriate in the future.

7.2.2 Wastewater PBR 2022-2024 observations

In the Wastewater PBR 2022-2024, the Company proposed changes to performance measures indices and penalties weightings, as indicated in Table 13.1.2-1.[206] The weighting change is supported by stakeholder feedback as reported in Appendix K.[207] This feedback indicated the most valued performance priority to be quality, and the least valued priority to be both environment and customer service.

Since the first Wastewater PBR term (2012-2016), EWSI has exceeded their performance measure points earned each year for the wastewater utility, and has achieved the maximum standard of 110, including bonus points, since 2014.[208]

Further, we noted that the 2017, 2018, and 2019 PBR Progress Reports prepared by EWSI provide detail into the Company's performance measure results and total actual points earned.[209] For the wastewater utility's total actual points earned, our observations noted performance in certain areas are above the standards assigned to them, and in some instances are more than double the standard. Specifically, we noted the following:

- The Water Quality and Environmental Index total actual points earned was 126.6 in 2017,[210] 165.8 in 2018,[211] and 122.1 in 2019.[212] The maximum standard, including bonus points, is 60.5 each year;
- The Customer Service Index total actual points earned was 40.4 in 2017,[213] 30.04 in 2018,[214] and 25.5 in 2019.[215] The maximum standard, including bonus points, is 16.5 each year;

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[205] COE-EWSI-16
[206] Wastewater PBR 2022-2024: Page 161, Table 13.1.2-1
[207] Appendix K: Page 6 of 57
[208] Wastewater PBR 2022-2024: Page 162, Table 13.1.3-1
[209] Appendix E: 2017-2019 PBR Progress Reports
[210] Appendix E: 2017 PBR Progress Report: Page 49, Table 3.5.1
[211] Appendix E: 2018 PBR Progress Report: Page 43, Table 3.5.1
[212] Appendix E: 2019 PBR Progress Report: Page 47, Table 3.5.1
[213] Appendix E: 2017 PBR Progress Report: Page 50, Table 3.5.2
[214] Appendix E: 2018 PBR Progress Report: Page 44, Table 3.5.2
[215] Appendix E: 2019 PBR Progress Report: Page 48, Table 3.5.2

- The System Reliability and Optimization Index total actual points earned was 18.4 in 2017,[216] 17.6 in 2018,[217] and 18.4 in 2019.[218] The maximum standard, including bonus points, is 16.5 each year; and
- The Safety Index total actual points earned was 16.7 in 2017,[219] 23.1 in 2018,[220] and 24.9 in 2019.[221] The maximum standard, including bonus points, is 16.5 each year.

Our high-level assessment observed the consistently high performance, and total actual points earned, for Water Quality/Environmental Index. Specifically, we have noted the following:

- Wastewater Quality ("WELPI") Factor has a 10-year average of 23.2%.[222] EWSI has proposed a standard of 26% in the 2022-2024 PBR term.[223] EWSI's rationale for proposing a less stringent standard than the 10-year average is based on noting that external factors which are out of the Company's control should be considered when setting the standard for this metric. Given that the external factors EWSI refers to would have been presumed to have an impact or played a factor in their historical actual performance, we would have expected that the 10-year average of 23.2% is a reasonable basis for setting the performance standard for this metric. Furthermore, this approach would be consistent with the approach used by EWSI in other metrics where the 10-year average is available, and the flexibility provided by the bonus point program should alleviate pressure from EWSI in years when they are unable to meet the 10-year average.
- Environmental Incident Results have exceeded the metric standard in all years of the 2017-2021 PBR term (set at 10), specifically reporting 3 incidents in 2017, 2 incidents in 2018, and 3 incidents in 2019.[224] The incidents captured in this measure include EWSI demonstrating that they took all reasonable measures to prevent the incident from occurring.[225] The proposed standard in the 2022-2024 term for this metric is 5.[226]

Based on historical performance in both the WELPI Factor and the Environment Incidents Results, and reviewing proposed standards for both metrics, EWSI has assigned standards that are generally more stringent than the 2017-2021 PBR term for these two metrics, including reducing the standard for the Environmental Incident Factor by half. The historical performance of the Water Quality/Environmental Index, as described in the bullet points above, demonstrate that in 2017, 2018, and 2019 EWSI has achieved total actual points of more than double the standard (including bonus points) in each year.

In Table 25 below, we have summarized total actual points earned in each year for wastewater each metric and index, over the 2017-2019 period:

[216] Appendix E: 2017 PBR Progress Report: Page 51, Table 3.5.3
[217] Appendix E: 2018 PBR Progress Report: Page 45, Table 3.5.3
[218] Appendix E: 2019 PBR Progress Report: Page 49, Table 3.5.3
[219] Appendix E: 2017 PBR Progress Report: Page 52, Table 3.5.4
[220] Appendix E: 2018 PBR Progress Report: Page 45-46, Table 3.5.4
[221] Appendix E: 2019 PBR Progress Report: Page 50, Table 3.5.4
[222] Wastewater PBR 2022-2024: Page 167, Table 13.2.1.1-1
[223] Wastewater PBR 2022-2024: Page 167, Paragraph 472
[224] Wastewater PBR 2022-2024: Page 169, Table 13.2.1.2-1
[225] Wastewater PBR 2022-2024: Page 168, Paragraph 477
[226] Wastewater PBR 2022-2024: Page 169, Paragraph 479

Table 25: Wastewater Performance Measure Standards and Actuals Comparison					
Index •Sub-indices	**A 2017-2021 Standard**	**B 2017 Actual**	**C 2018 Actual**	**D 2019 Actual**	**E 2022-2026 Standard***
Water Quality/Environmental Index					
• WELPI Factor	≤ 28%	22%	27.2%	25.3%	≤ 26%
• Environmental Incident Factor	≤ 10	3	2	3	≤ 5
Total Index Points (including bonus points)	**60.5**	**126.6**	**165.8**	**122.1**	**49.5**
Customer Service Index					
• H2S – 1 Hour Exceedances Factor	≤ 6	1	2	0	≤ 4
• H2S – 24 Hour Exceedances Factor	≤ 2	0	0	0	≤ 1
• Scrubber Uptime % Factor	≥ 90%	97.4%	90.8%	98.8%	≥ 96%
Total Index Points (including bonus points)	**16.5**	**40.4**	**30.04**	**25.5**	**16.5**
Reliability & Optimization Index					
• Enhanced Primary Treatment Factor	≥ 80%	100%	98.7%	100%	≥ 94%
• Bio-solids Inventory Reduction (in 2017-2021, known as Biogas Utilization Factor) **	≥ 60%	84.2%	75.6%	84.2%	1.05**
• Energy Efficiency Factor	≤ 514	497	503.6	500	≤ 508
Total Index Points (including bonus points)	**16.5**	**18.4**	**17.6**	**18.4**	**27.5**
Safety Index					
• Near Miss Reporting Factor	≥ 220	327	241	241	≥ 220
• Worksite Inspections/ Observations	≥ 919	1088	971	1061	≥ 919
• Lost Time Frequency Factor	≤ 0.75	0	0	0	≤ 0.75
• All Injury Frequency Factor	≤ 1.5	1.92	0	0.63	≤ 1
Total Index Points (including bonus points)	**16.5**	**16.7**	**23.1**	**24.9**	**16.5**
Total Points Earned (including bonus points)	**110**	**202.1**	**236.54**	**190.9**	**110**

** The standards indicted in column E are proposed.*

***The Biogas Utilization Factor was changed in 2020 to the Bio-solids Inventory Reduction which to assesses relative tonne reduction relative to inflow. The Biogas Utilization Factor assessed utilization determined by the gigajoules (GJ) of biogas used as a percentage of total biogas and natural gas used (GJ).*

Note – green cells are metrics that exceeded standards (excluding total available bonus points) in the performance period and red cells indicate metrics that were not met in the period.

As outlined in Table 25, the proposed standards for these metrics are generally more stringent that the 2017-2021 PBR term. However, the results from 2017-2019 demonstrate EWSI's ability to significantly exceed standards. We are of the opinion that EWSI is making progress and setting standards that increase their motivation to improve the organization and ultimately improve the services provided to the ratepayer,

although it is important to monitor EWSI's actual performance achieved each year to identify any standards that are being exceeded by significant margins and adjust them accordingly. If EWSI continues to exceed standards, alternative methods of setting those standards may be warranted. We discuss this further in the general observations section below.

7.2.3 Drainage PBR 2022-2024 observations

In the Drainage PBR 2022-2024, EWSI is proposing to largely maintain the performance measures that were introduced in January of 2020 because they have not completed a full reporting cycle yet.[227] The Company noted one exception, which is an expansion of the Sewer Renewal Metric to include renewal programs introduced since the initial approval of drainage performance measures by City Council in February of 2020.[228]

In the Drainage PBR 2022-2024, Table 14.1.2-1 demonstrates EWSI's proposed change in weightings for drainage performance measures indices and penalties from the 2020-2021 term.[229] The weighting change is supported by stakeholder feedback as reported in Appendix K.[230] The rationale for the change in weightings is congruent with the rationale for weighting changes applied to both the water and wastewater utilities.

The weightings described in Table 14.1.2-1 of the Drainage PBR 2022-2024 relating to the 2020-2021 period, however, does not agree with the weightings approved by Edmonton City Council on February 19, 2020. The weightings approved by City Council on February 19th, 2020 were as follows:[231]

- Environmental Index: 30%
- Customer Service Index: 20%
- System Reliability/Optimization Index: 35%
- Safety Index: 15%

We sent a follow-up question to EWSI and they were able to confirm that the weightings in column A of Table 14.1.2-1 in the Drainage 2022-2024 PBR were incorrect. This finding has no impact on the proposed performance measures but we believe it was important to highlight to ensure factual information was reflected in our review process.

Due to the timing of this report, and EWSI's timing of their 2020 PBR Progress Report, we are unable to comment on EWSI's performance measure results for the drainage utility. However, we note the changes to existing standards as explained in Appendix A establishes progressively higher standards in each year of the 2022-2024 PBR term.[232]

In our initial review of the Drainage PBR 2022-2024, we noted the drainage utility has an Environmental Incident Factor that is ten times the level set for the water and wastewater utilities. EWSI's response in GT-EWSI-07 noted the following:

> *The Drainage Services metric is based on reporting this total number of reportable incidents. Water and Wastewater Services have an additional criteria where incidents in the measure are not only*

[227] Drainage PBR 2022-2024: Page 208-209, Paragraph 558
[228] Drainage PBR 2022-2024: Page 208-209, Paragraph 558
[229] Drainage PBR 2022-2024: Page 210, Table 14.1.2-1
[230] Appendix K: Page 6 of 57
[231] https://pub-edmonton.escribemeetings.com/filestream.ashx?DocumentId=4489
[232] Appendix A: Page 42-43

determined as reportable, but are also deemed preventable (preventable and non-preventable are subsets of the total incidents).[233]

EWSI recognizes that the underlying composition of this measure is different than the water and wastewater utilities, and noted the following:

It is EWSI's intent to move Drainage Services to a reportable and preventable metric in the next PBR. At the present time, Drainage Services does not have a sufficient historic record to allow an accurate projection under such an incident classification system.[234]

For ESWI to achieve their intent to move this metric to a reportable and preventable metric, they stated the following:

… EWSI has limited historic data upon which to project total incidents nor the data to categorize incidents as preventable and nonpreventable as is currently done in Water and Wastewater Treatment. As a result, EWSI has proposed to establish the Drainage Metric on a total incident basis while establishing the internal processes and track record to move to a reportable and preventable basis in the future.[235]

EWSI also noted this standard was approved by City Council in February of 2020, and was established using 2018 actual results and projected year end results for 2019, as follows:

The 50 target was proposed as part of the introduction of PBR style metrics in late 2019 and was based on both the 2018 actual results as well as the projected year end results for 2019. EWSI has recently completed the audit of 2020 results and recorded 34 environmental incidents. Variation in total incidents does fluctuate year over year given the impact of weather and other non-controllable factors. As a result, this level may not be sustainable over an extended period.[236]

For clarity, the 2018 actual results were 41 and 2019 actual results were 48.[237]

Due to the nature of the drainage utility compared to water and wastewater, EWSI also addressed that there will likely always remain a discrepancy for the Environmental Incident Factor metric when comparing to the water and wastewater utilities in GT-EWSI-07. Building off of EWSI's response, which indicates the Company's intent to move to a reportable and preventable basis for this metric in the future, we recommend EWSI set a deadline to establish internal processes and track record for the Environmental Incident Factor. This will provide EWSI the historical data required to effectively move to a reportable and preventable basis for the Environmental Incident Factor by the new PBR term. We also recommend EWSI establish a mechanism to reduce the standard of 50 over time to reflect historical average performance, and such a mechanism doesn't have to be limited to waiting until the next PBR term before its changed.

In GT-RFI-2021-08, we asked for background regarding the Stormwater Flow Monitoring performance measure. Their response in GT-EWSI-08 provides clarity to our understanding of how the metric was established, the limitations and impact of factors outside of EWSI's control that contribute to the formulation of this metric, and the 2020 actual results of 65.3% which is aligned with the proposed standard of 63%. Further, EWSI addressed if they expect to see an improvement of performance on this metric as they continue to develop this service area, noting the following:

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[233] GT-EWSI-07
[234] GT-EWSI-07
[235] GT-EWSI-07
[236] GT-EWSI-07
[237] GT-EWSI-07

It is conceivable that the metrics would be increased in the next PBR once a track record of actual performance has been developed.[238]

Similar to our analysis and conclusions to the Environmental Incident Factor above, we recommend EWSI establishes a mechanism to reduce the standard of 63% over time to reflect historical average performance, and such a mechanism may include EWSI having a specified number of years operating the drainage utility that triggers reducing this metric. This mechanism doesn't have to be limited to waiting until the next PBR term before its changed. We also recommend that EWSI endeavor to perform additional benchmarking to inform the evaluation of their performance in the initial years of operating these assets.

7.3 General observations

7.3.1 Framework for performance measures observations

EWSI's performance measures, as noted in the previous sections of our report above (Tables 24 and 25), are categorized into indices, with sub-indices that compose the overall index. Each index is allocated bonus points, with the exception of the proposed Water Quality Index standard for the water utility. The methodology for calculating total performance measure points for each utility includes 100 base points available if all standards in each index are achieved, with the availability of 10% in additional bonus points to be divided across the indices.[239] [240] Each index is measured independently on a point basis proportionate to the weightings assigned to each index.[241] For each full point scored below 100 base and bonus points, EWSI is subject to financial penalties which vary across the three utilities and penalties are weighted using the weightings established for each index.[242]

In our 2017-2021 PBR Review, we noted the following observation in our performance measure section:

> *In regards to the above weightings and bonus points, it was noted in our report 'EPCOR Water Services Inc - Review of the 2012-2016 PBR Proposal', "… that the weighting of the different indices and the available bonuses being aggregated in the final benchmark result could have a distortion effect. For example, one of the indices having an easier target could mask the result of another index which did not reach its target and still have an aggregated result above the 100 points."*[243]

EWSI addressed this issue specifically relating to the Water Quality Index in the previous PBR term. This statement, however, still holds true for all other indices across the three utilities.

EWSI has reported on their performance measure results as stated in their Annual Reports for 2017, 2018, and 2019, which we have utilized in Tables 24 and 25 above. EWSI calculated each index separately by calculating the ratio between the standard for each sub-index (i.e. metric) compared to the actual results. This calculation determines a total ratio (labelled as an "index") for each metric, then averages those results. The average "index" is then multiplied by the index standard points to determine the total actual points. For

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[238] GT-EWSI-08
[239] EPCOR Water Services Revised Bylaw 19626: Schedule 3, Page 10; EPCOR Drainage Services and Wastewater Treatment Bylaw 19627: Schedule 3, Page 11 and 33
[240] EPCOR Water Services Revised Bylaw 19626: Schedule 3, Page 10; EPCOR Drainage Services and Wastewater Treatment Bylaw 19627: Schedule 3, Page 11 and 33
[241] Water PBR 2022-2026: Page 180, Table 13.2-1; Wastewater PBR 2022-2024: Page 164, Table 13.2-1; Drainage PBR 2022-2024: Page: 212, Table 14.2-1
[242] Water PBR 2022-2026: Page 178, Table 13.1.2-1; Wastewater PBR 2022-2024: Page 161, Table 13.1.2-1; Drainage PBR 2022-2024: Page: 210, Table 14.1.2-1
[243] 2017-2021 PBR Review: Page 105

clarity, we have replicated Table 2.5.3 on page 29 of the 2017 PBR Progress Report that demonstrates this process relating to the water utility's System Reliability and Optimization Index, with the exception of adding in an "Index Cap" column, which will be further explained below:

Table 2.5.3 System Reliability and Optimization Index, 2017 PBR Progress Report[244]

Index Component	PBR Performance Measure	Standard	Actual Score	Index	Index Cap*
Water Main Break Factor	The number of water main breaks that occurred in the reporting period.	419	256	1.389	1.1*
Water Main Break Repair Duration Factor	The percentage of water main breaks repaired and confirmed by EWSI within 24 hours from the time that the flow of water is shut off, excluding main breaks on arterial or collector roads	93.7%	95.7%	1.022	1.022*
Water Loss Factor	The Infrastructure Leakage Index, a performance indicator quantifying how well a water distribution system is managed for the control of "real" water losses (i.e. leakage).	2.0	1.06	1.470	1.1*
System Energy Efficiency Factor	The energy used at all water facilities in kWh divided by the average annual water production per residential customer account (ML/kWh/customer).	309	263	1.175	1.1*
			Average index	1.264	1.081*
			Index Standard Points	25.0	25.0*
			Total Actual Points	31.6	27.0*
			Maximum Available Points Including Bonus Points	28.5	28.5*
			Total Points Earned	**28.5**	**27.0***

**Column and contents added and calculated by Grant Thornton.*

The table above demonstrates that EWSI was able to achieve total actual points for the System Reliability and Optimization Index in 2017 of 31.6 due to the "Average Index" line multiplied by the "Index Standard Points" line (31.6 = 1.264 x 25). As reflected in Tables 24 and 25 in the water and wastewater observation sections above, EWSI's ability to score total actual points above the index standard plus bonus points is not isolated to the System Reliability and Optimization Index in 2017.

We conducted an exercise to demonstrate a possible example to limit the total actual points from exceeding (and in some cases doubling) the maximum available standard points including bonus points. We did this by incorporating an "Index Cap" column to EWSI's table above, which caps the "Index" column points at 1.1 where the threshold of 1.1 has been exceeded. The purpose of this exercise was to demonstrate a possible example that would reduce the distortion effect of bonus points to the components that calculate the total

[244] 2017 PBR Progress Report: Page 29, Table 2.5.3

actual points line, and thus the total points earned line. As demonstrated above, this methodology has reduced EWSI's total points earned from 28.5 to 27.

While the exercise demonstrates a reduction in the bonus points distortion effect for this isolated index in 2017, it does not capture the root cause of consistently exceeding performance standards and bonus points. To provide context, we have replicated Table 2.5.5 on page 31 of the 2017 PBR Progress Report that demonstrates the water utility's Safety Index, including adding in an "Index Cap" column:

Table 2.5.5 Safety Index, 2017 PBR Progress Report[245]

Index Component	PBR Performance Measure	Standard	Actual Score	Index	Index Cap*
Near Miss Reporting Factor	The number of near miss reports entered in the ESS system.	550	1,119	2.035	1.1*
Work Site Inspections and Observations Factor	Number of Work Site Inspections and observations completed per year.	1,032	2,036	1.973	1.1*
Lost Time Frequency Factor	The actual lost time frequency rate.	0.57	0.38	1.500	1.1*
All Injury Frequency Factor	The actual all injury frequency rate	1.54	1.33	1.158	1.1*
			Average index	1.666	1.1*
			Index Standard Points	15.0	15.0*
			Total Actual Points	25.0	16.5*
			Maximum Available Points Including Bonus Points	16.5	16.5*
			Total Points Earned	**16.5**	**16.5***

**Column and contents added and calculated by Grant Thornton.*

In the 2017 Safety Index example above, there has been no impact to the total points earned due to EWSI far exceeding each standard. This further demonstrates the root cause of the bonus point distortion effect. We would like to caution that the 2017 tables are only isolated examples. We did not conduct a benchmarking analysis for performance measure methodologies used by other utilities as it was out of our scope of work, and this includes the "Index Cap" methodology applied to the 2017 tables above.

In order for EWSI to have a clearly defined and established performance standard methodology, we recommend the following:

[245] 2017 PBR Progress Report: Page 31, Table 2.5.5

- We are of the opinion that EWSI's bonus point allocation system should be analyzed further, and EWSI should adopt a mechanism that identifies the impact of bonus points on metrics that are mostly or entirely within EWSI's control.
- There should be consistent application of benchmarking and the historical 10-year average, when available, across all metrics. If EWSI believes the 10-year average isn't challenging due to adjustments in the information/technology that feeds into a particular metric, a standard more stringent than the 10-year average may be warranted.
- We recommend that EWSI conducts an analysis similar to Table 24 and 25 that clearly states historical performance, is colour coded (did not meet, met, exceeded), and is included each Annual Report. We believe this will provide clear communication of which standards EWSI continues to exceed each year and will also notify the City of significant overperformance.
- In order to ensure standards become increasingly stringent over time, we recommend that EWSI reduce standards they have consistently out performed within a reasonable timeframe, and not limited to waiting until the next rate setting period.
- EWSI should examine what performance metrics hold more weight, or provide more value to performance assessment, and adjust the weighting of those metrics within an index accordingly. We recommend this examination to be incorporated to a benchmarking assessment prior to adoption.
- Establish a performance measure methodology that is clearly stated and described in the applicable governing bylaws relating to EWSI's utilities. This includes how bonus points can and can't be allocated to other metrics or indices to offset poor performance in certain areas, the benchmarking used to establish the standard, and assigning a reasonable timeframe to update standards to become more stringent when EWSI has consistently outperformed metrics.
- Lastly, EWSI should conduct a performance measure methodology benchmarking assessment of other utilities in North America to understand and adopt best practices, including mechanisms to reduce the bonus point distortion effect and consideration for which metrics within an index hold more weight. The benchmarking assessment should be presented to the City prior to the next PBR term (2024), and any decision or changes required to the bylaws should be incorporated and updated.

Furthermore, EWSI has historically revised or introduced new performance metrics in each PBR period. For the current PBR terms (Water PBR 2022-2026 and Wastewater PBR 2022-2024) EWSI is proposing to limit any changes to performance metrics, as follows:

> *…EWSI is proposing to limit the number of changes to the overall metrics program. Given the focus on moderating rate increases through reductions in capital programs and other means, maintaining a relatively consistent metrics program from the current term will enable stakeholders to be assured that service levels are being maintained despite the reductions.*[246]

As we have noted above in our water and wastewater observations for performance measures, EWSI has historically exceeded their performance measure standards. EWSI has incorporated proposed standards for

[246] Water PBR 2022-2026: Page 176-177, Paragraph 558; Wastewater PBR 2022-2024: Page 159-160, Paragraph 456

each utility that are generally more stringent than the 2017-2021 PBR term and EWSI has noted that they receive no financial reward for exceeding performance standards.[247]

7.3.2 Assessment of performance observations

EWSI is proposing to change the auditor for performance measures. Historically, performance measure audits were conducted by an external accounting firm. EWSI is proposing to engage EPCOR's Internal Audit Department and no longer engage an external auditor.[248]

In GT-RFI-2021-09, we asked for further explanation and clarification regarding the reasoning for switching from an external auditor to an internal auditor, as well as if EPCOR's Internal Audit Department has appropriate measures in place to ensure independence when conducting these audits. ESWI's response noted in GT-EWSI-09 is as follows:

> *The rationale for the planned change is simply that the EPCOR Internal Audit group can complete this function in a much more cost effective manner than an external provider. The audit of both rates and performance measures is very straight forward and is generally a replication of prior years. Despite this, EWSI has experienced cost increases from the external providers for this function over a number of years. A change to the internal provider is seen as providing better value for ratepayers.*[249]

Further, EWSI commented on their Internal Audit Department's ability to fulfill the performance measure audit, as follows:

> *EPCOR Internal Audit will conduct its work in alignment with bylaw requirements, underpinned by their professional integrity and responsibilities to ensure independence. EPCOR Internal Audit is experienced at providing independent audits of EPCOR operations on a variety of topics. For work performed for EPCOR's Board of Directors, at the conclusion of an audit, a report is prepared and presented to the EPCOR Board of Directors, similar to the process that would be used for the rate filing and performance metrics. EPCOR Internal Audit will provide assurance at a level consistent with past external opinions. In addition, EWSI has reviewed this change with City Administration and they did not have concerns.*[250]

EWSI reiterated Bylaw 17698, which governs and regulates the rules around performance measure audits, does not stipulate that an external auditor is required to provide this function.

While EWSI's rationale has the potential to provide a more economic solution to the ratepayer, we believe it is important to highlight the potential impact this decision may have to the City's Administration. As the regulator of EWSI's utilities, the City, ultimately, must be comfortable with the level of assurance being provided. As a best practice, the City Administration should consider implementing a defined method to confirm that the opinion provided by EPCOR's Internal Audit Department is on an independent basis. It is possible that the outcomes of the City's defined method may result in additional work for them as the regulator.

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[247] Water PBR 2022-2026: Page 178, Paragraph 561; Wastewater PBR 2022-2024: Page 161, Paragraph 459; Drainage PBR 2022-2024: Page: 210, Paragraph 562
[248] Water PBR 2022-2026: Page 177 Paragraph 560; Wastewater PBR 2022-2024: Page 160 Paragraph 458; Drainage PBR 2022-2024: Page 209 Paragraph 561
[249] GT-EWSI-09
[250] GT-EWSI-09

7.3.3 Performance measures benefit to ratepayers' observations

To understand the benefit to ratepayers and ensure the proposed performance measures are reasonable, we asked EWSI to justify their proposed standards to understand if there is a reasonable degree of continuous improvement in GT-RFI-2021-10. EWSI's response in GT-EWSI-10 is as follows:

> *Standards of performance do generally reflect increasing levels of performance from one PBR term to another as they are typically based on the prior 10 year average of actual performance. This allows the standards to reflect on-going operational improvements. However, there are some metrics where the standards may not be adjusted from one PBR term to another. This occurs when an increased level of performance is not warranted from a customer service and cost/benefit perspective.*[251]

We also inquired about historical incremental costs associated with exceeding their performance measures, and if those costs have contributed to benefiting the ratepayer. EWSI informed that they have not historically attempted to determine the costs of exceeding performance metrics, with further rationale as follows:

> *EWSI is of the view that such a study is cost prohibitive given the need to assess and quantify a multitude of underlying factors that vary both from metric to metric and with numerous external factors (weather, growth in the population, consumption patterns, etc.).*[252]

Responding to our final question listed in GT-RFI-2021-10 regarding how incremental costs have contributed (or will contribute) to EWSI providing a benefit to the ratepayers, EWSI concluded in GT-EWSI-10 what the benefit a PBR metric program provides to the ratepayer, as follows:

> *The benefit that ratepayers receive from the PBR metrics programs is the level of assurance they provide in establishing a standard of performance and then ensuring that that level is maintained over the PBR term. The metrics are designed to cover a wide range of considerations (Water Quality, System Reliability, Safety, Environment, etc.) that are reviewed by rate payers as part of the PBR stakeholder engagement review. As noted in the stakeholder research contained in the PBR applications, stakeholders believe the metrics program assesses what is important to them. Moreover, the weighting of the reporting categories has been adjusted for the 2022-2024/2026 term based on customer feedback in order to ensure even greater alignment with ratepayer expectations.*[253]

While a PBR metric program does benefit ratepayers as EWSI noted above, it remains unclear how exceeding performance standards impacts rate payers. We would expect that exceeding performance standards requires increased investment of resources from EWSI which in turn results increased costs being borne by ratepayers, however, EWSI was unable to quantify this impact.

7.4 Findings and observations

Based on our review of the proposed performance measures in the Applications, we note the following:

- Nothing has come to our attention to suggest limiting the number of changes to the overall metrics program in the 2022-2026 and 2022-2024 PBR terms is unreasonable;

[251] GT-EWSI-10
[252] GT-EWSI-10
[253] GT-EWSI-10

- Proposed weightings for the water and wastewater performance measures indices have been supported by stakeholder feedback. Nothing has come to our attention to suggest that these weightings are unreasonable;
- EWSI has proposed to largely maintain the drainage utility's the performance measures that were introduced in January of 2020. These measures were approved by the Utility Committee and City Council in February 2020 and have not completed a full reporting cycle at the time of their application. Our observations have not brought anything to our attention that suggest this rationale is unreasonable; and
- EWSI confirmed Table 14.1.2-1 of the Drainage PBR 2022-2024 weightings for 2020-2021 were incorrect and stated the correct weightings were listed in the signed Bylaw 19137, signed by Edmonton City Council on February 19, 2020.

7.4.1 Findings and observations for immediate consideration

- Our analysis of the wastewater utility's methodology and EWSI's rationale used for WELPI Factor's proposed standard of 26% concludes that EWSI should use the 10-year average of 23.2% for the WELPI Factor standard;
- Nothing has come to our attention to suggest switching performance measure audits from an external auditor to EPCOR's Internal Audit Department is unreasonable. However, as the regulator of EWSI's utilities, the City must be comfortable with the level of assurance being provided by EPCOR's Internal Audit Department. As a best practice, the City Administration should consider implementing a defined method to confirm that the opinion provided by EPCOR's Internal Audit Department is on an independent basis; and
- We do not believe that EWSI has provided sufficient rationale regarding removing bonus points available to the Water Quality Index as outlined in Appendix A. Our review concluded that due to EWSI's inability to utilize the bonus points assigned to the Water Quality Index, they are proposing to assign those bonus points to other indices. Considering the bonus points are minimal (0.5), we don't believe the reallocation of these bonus points will provide significant effects, or distortion, to the other indices.

7.4.2 Findings and observations to be addressed prior to the next PBR term (2024)

- We are of the opinion that EWSI's bonus point allocation system should be analyzed further, and EWSI should adopt a mechanism that identifies the impact of bonus points on metrics that are mostly or entirely within EWSI's control;
- We recommend that EWSI conducts an analysis similar to Table 24 and 25 regarding how their performance measures are presented that clearly states historical performance, is clearly labeled and/or colour coded (did not meet, met, exceeded), and is included each Annual Report. We believe this will provide clear communication of which standards EWSI continues to exceed each year and will also notify the City of significant overperformance;
- EWSI should conduct a performance measure methodology benchmarking assessment of other utilities in North America to understand and adopt best practices, including mechanisms to reduce the bonus point distortion effect and consideration for which metrics within an index hold more weight. The benchmarking assessment should be presented to the City prior to the next PBR term (2024), and any decision or changes required to the bylaws should be incorporated and updated;
- EWSI should examine what performance metrics hold more weight, or provide more value to performance assessment, and adjust the weighting of those metrics within an index accordingly.

We recommend this examination to be incorporated to a benchmarking assessment and presented to the City prior to adoption; and

- For the Drainage PBR 2022-2024 regarding the Environmental Incident Factor and Stormwater Flow Monitoring, we recommend EWSI conduct the following prior to the next PBR term:
    - We agree with EWSI's intent to move the drainage utility's Environmental Incident Factor to a reportable and preventable metric in the next PBR, as well as incorporate internal tracking to ensure enough data is captured over the 2022-2024 PBR term. We recommend EWSI set a deadline to establish internal processes to establish a track record for the Environmental Incident Factor and that EWSI establishes a mechanism to reduce the standard of 50 over time to reflect historical average performance. EWSI doesn't have to be limited to waiting until the next PBR term before to change the standard of 50; and
    - We recommend EWSI establishes a mechanism to reduce the Stormwater Flow Monitoring standard of 63% over time to reflect historical average performance, and that this mechanism may include EWSI having a specified number of years operating the drainage utility that triggers reducing this metric. This mechanism doesn't have to be limited to waiting until the next PBR term before its changed. We also recommend that EWSI endeavor to perform additional benchmarking to inform the evaluation of their performance in the initial years of operating these assets.

7.4.3 Findings and observations for future consideration

- There should be consistent application of benchmarking and the historical 10-year average, when available, across all metrics. If EWSI believes the 10-year average isn't challenging due to adjustments in the information/technology that feeds into a particular metric, a standard more stringent than the 10-year average may be warranted;
- In order to ensure standards become increasingly stringent over time, we recommend that EWSI reduce standards they have consistently outperformed within a reasonable timeframe, and not limited to waiting until the next rate setting period;
- We recommend EWSI establish a performance measure methodology that is clearly stated and described in the applicable governing bylaws relating to EWSI's utilities. This includes how bonus points can and can't be allocated to other metrics or indices to offset poor performance in certain areas, the benchmarking used to establish the standard, and assigning a reasonable timeframe to update standards to become more stringent when EWSI has consistently outperformed metrics;
- EWSI has provided reasoning as to why the performance measures outlined in Schedule A of the 2017-2021 Fire Hydrant Service Agreement are not included in the water utility's proposed performance measures for the 2022-2026 period. We note that while EWSI's rationale not unreasonable, we would encourage EWSI to continually consider if adopting PBR measures become appropriate in the future; and
- In our analysis of performance measures, we would expect that exceeding performance standards requires increased investment of resources from EWSI which in turn results in increased costs being borne by ratepayers. EWSI was unable to quantify this impact and we are unable to conclude how exceeding performance measures benefits the ratepayer. We recommend for EWSI to estimate the costs of this study and present it to the City for the Administration to determine if it is, in fact, cost prohibitive.

7.5 Assumptions and limitations

Grant Thornton was limited to the scope of work when conducting our review of performance measures. The City assigned the following scope of work:

> *g) a high-level assessment of how EWSI met its performance metrics with potential suggestions for future consideration.*

We did not conduct an in-depth review, nor did we exhaustively review all supporting materials such as performance measure methodology design, available industry benchmarking materials, previous PBR applications, City of Edmonton Council meeting videos and supporting documentation regarding motions approved relating to EWSI's performance measures, City of Edmonton Utility Committee meeting videos and supporting documentation related to performance measures, and other materials not included in EWSI's current application.

8 Regulatory benchmarking

8.1 Industry scan objectives and approach

We performed an industry scan to assess how other regulators have approached rate setting during this time of extreme uncertainty due to the impacts of the COVID-19 global pandemic and the resulting economic volatility. Knowledge of activity in other jurisdictions provides an evidence base and precedents for consideration to inform the City's decision-making process regarding rate setting and regulatory oversight. Overall, the objective of the industry scan is to provide the City with insights from other jurisdictions to consider when determining if modifications to its regulatory approach in light of the current situation is warranted.

Our approach included a scan of publicly available information from other Canadian regulators who completed regulatory procedures during the COVID-19 pandemic and/or published guidance during this period.

Specifically, we have performed the following procedures:

- Collected information from North American regulators, with respect to their rate approval processes for during the COVID-19 pandemic;
- Reviewed accompanying commentary provided regarding the appropriateness of five-year PBR applications (for those regulators and utilities who use PBR over cost of service rate setting approaches) considering the uncertainty facing the current economic environment;
- Performed a jurisdictional analysis regarding regulators' assessments and approvals of customer and utility expense deferral accounts resulting from the COVID-19 pandemic; and
- Completed a benchmarking analysis to assist the City with understanding precedents set by other regulators and identified trends in regulatory changes.

8.1.1 Regulator selection and criteria

Our industry scan includes samples of utility regulators in the water, wastewater and electricity sectors. The scan evaluates regulators in provinces across Canada, as well as several Jurisdictions in the United States. The evidence base for the themes and observations that follows in this section captures findings from where information was available from these regulators. If a regulator was not mentioned within the findings, it was either not applicable, or information was not publicly available. Table 26 below details the regulators that have been used in the sample. It also highlights the relevancy and limitations for making comparisons (e.g. many of the regulators provide oversight to utilities in the electricity generation and distribution sectors, however, there are relevant observations that remain applicable to the municipal water, wastewater and drainage sectors as well). We also included examples from other regulators based on our prior project experiences.

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Table 26: Regulator Selection and Criteria			
Regulators	**Brief Description**	**Relevancy**	**Limitations**
Alberta Utilities Commission ("AUC") [254]	The Alberta Utilities Commission regulates municipally owned electric utilities (transmission and distribution) as well as all investor-owned water, gas and electric utilities in the province.	The AUC uses PBR regulation mechanisms for the following utilities; Natural gas – Apex Utilities, and Atco Gas and Pipelines. Electric; Fortis Alberta Inc. Enmax Power, ATCO Electric and EPCOR Distribution and Transmission.	Focus on gas and electric utilities.
British Columbia Utilities Commission ("BCUC") [255]	BCUC regulates all of BC's energy utilities. They also regulate rates for insurance, interprovincial pipeline and electrical utilities in the province.	BCUC currently has PBR regulation in place for FortisBC and Fortis Energy.	Focus on gas and electric utilities.
Manitoba Public Utilities Board ("MPUB")[256]	MPUB is responsible for the regulation of rates for all water and wastewater in the province (with the exception of Winnipeg)	Water and wastewater regulation.	MPUB requires utilities to remain self-sustaining, with no deficit budgeting in a single fiscal year.
Ontario Energy Board ("OEB")[257]	OEB regulates all the province's natural gas and electrical utilities.	OEB has had PBR regulation in place since 2001.	Focus on gas and electric utilities.
Nova Scotia Utility and Review Board ("NSUARB")[258]	The NSUARB regulates electric, water and natural gas utilities for the province.	Regulates some water utilities.	One of the largest water utilities, Halifax Water, is regulated under cost of service rate structure.

[254] *Source: AUC, Bulletin 2021-04, March, 2021.*
[255] *Source: BCUC, FortisBC Energy Inc. and FortisBC Inc. Application for Approval of a Multi-Year Rate Plan for the Years 2020 through 2024, June, 2020.*
[256] *Source: Manitoba PUB, Approval of Municipal Deficits, April, 2020.*
[257] *Source: OEB, Overview of the electricity distribution rate regulation framework, March, 2000.*
[258] *Source: NSUARB, schedule of rates. Rules & regulations for water, wastewater, and stormwater services, July, 2019*

Table 26: Regulator Selection and Criteria			
Regulators	**Brief Description**	**Relevancy**	**Limitations**
City of Toronto [259]	The City of Toronto, through Toronto Water, provides stormwater management, wastewater collection and treatment, and drinking water supply and treatment services to the City.	Water, stormwater, and wastewater regulation.	Regulated under cost of service rate structure.
Island Regulatory and Appeals Commission ("IRAC")	IRAC is an independent tribunal that regulates electric utilities, certain water and wastewater utilities, the petroleum industry, and automobile insurance rates in Prince Edward Island. IRAC hears and considers appeals from decisions or orders of the regulated industries, land use, property and revenue (sales) tax, unsightly premises, and the Director of Residential Rental Property (Rentalsman).	Relevant regulatory oversight.	Maritime Electric Company Limited ("MECL") is regulated under cost of service rate structure. [260]
Utility Regulators in the United States [261]	The California Public Utility Commission ("CPUC") regulates privately owned water, electric and natural gas utilities in the state; regulators in Idaho, Indiana, and Wisconsin.	These regulators have taken a variety of approaches to track costs (and accompanying carrying costs) associated with the COVID-19 pandemic.	Great degree of privately-owned utilities, with different regulatory and legal regimes.

[259] *Source: Toronto Water, City of Toronto 2021 rate-supported budget for Toronto Water, November, 2020.*
[260] *Source: Maritime Electric, Maritime Electric Order – General Rate Application, Aug 6, 2019.*
[261] *Source: USA, California's AB913 Permits Securitization For Recovery Of COVID-19 Electric Utility Under collections, September, 2020.*

8.2 Findings and observations

Theme 1: Impacts of COVID-19 Pandemic and Economic Uncertainty on Regulators and Utilities

Observation 1.1: While regulators acknowledge shifts in customer demand patterns, some regulators state that the utilities sector has been relatively insulated from the COVID-19 pandemic's impact, through continued operations as an essential business.

Evidence Base:

OEB

- Based on a report prepared for the OEB, by London Economics International, it was noted that *"in spite of revenue and cost pressures, the utilities sector as a whole has been comparatively insulated from the pandemic's impact, through continued operations as essential businesses during the heights of the economic downturn."* [262]
- Recorded a decrease in both residential and commercial electricity consumption in April 2020 ranging between 8% - 16% from normal levels. The Board also noted that the decline in commercial consumption is directly related to the reduction in commercial revenues, which is not consistent with the residential side. As residential consumption increases, residential revenues did not increase for those with fixed billing determinants.[263]
- Board documented what long-term effects there could be from the shift in consumer class demand. With people now predominantly working from home the increase in residential consumption has increased, while the commercial demand has decreased.[264]
- This may impact long/short term debt, interest rates, bad debts, deferral accounts/repayment. When adjusting back to life after the pandemic there might be a need for utilities to implement changes to their operating systems, as there is likely to be a potential change of expectations from employees finding balance in their work and home lives. [265]

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While EWSI has noted a decline in customer water consumption and has made other adjustments to its operations as a result of the COVID-19 pandemic, EWSI, as a utility, was relatively insulated from the pandemic's impacts. Nonetheless, given the unprecedented shifts in customer demands, EWSI and the City as its regulator, should continue to consider the impacts (and resulting regulatory mechanisms available) if customer demands do not return to pre-pandemic levels. It should also be noted that the resulting macro-economic changes of the COVID-19 pandemic, have also brought potential benefits for the utility industry, such as lower than forecast short term interest rates. As such, any regulatory mechanisms used by the City to accommodate uncertainty and risk faced by EWSI, should also consider potential favorable impacts to EWSI caused by the same level of uncertainty.

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[262] *Source: OEB, A report on regulatory principles, policies, and accounting treatments applied in other jurisdictions in response to COVID-19, December, 2020.*
[263] *Source: OEB, A report on regulatory principles, policies, and accounting treatments applied in other jurisdictions in response to COVID-19, December, 2020.*
[264] *Source: OEB, A report on regulatory principles, policies, and accounting treatments applied in other jurisdictions in response to COVID-19, December, 2020.*
[265] *Source: OEB, A report on regulatory principles, policies, and accounting treatments applied in other jurisdictions in response to COVID-19, December, 2020.*

Observation 1.2: Many regulators have approved deferral accounts specifically for tracking COVID-related costs. In most cases, these accounts will be temporarily in place for the duration of the pandemic.

Evidence Base:

OEB

- The Board has temporarily approved all utilities in the province to start tracking any costs associated with the pandemic, by creating deferral accounts for billing and system changes, lost revenues, bad debt.[266]

BCUC

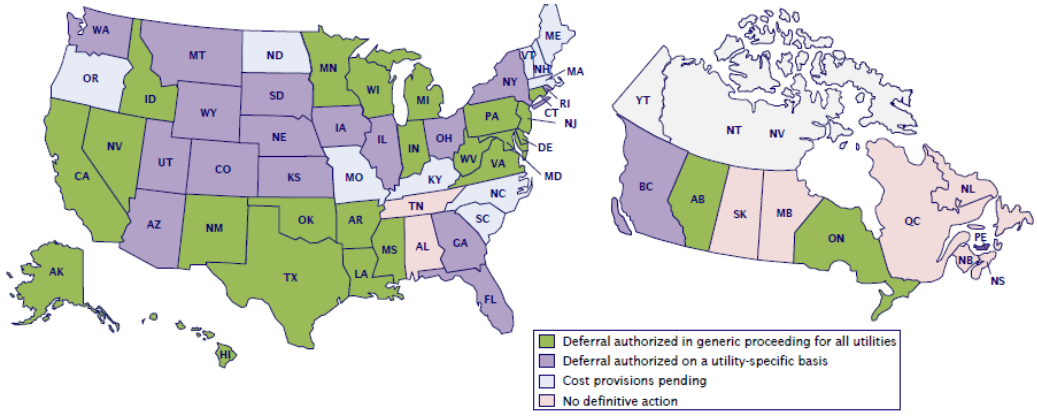
- The Board has approved a deferral account for Creative Energy Vancouver Platforms Inc., recording 2020 lost load variances in water costs due to the implications of the pandemic.
- FortisBC Energy Inc. and FortisBC Inc. were approved for the Implementation of deferral account to track costs relating to COVID-19 (i.e. flow-through account).[267]

Other Regulators

- Some regulators have approved COVID-19 related deferral accounts as part of their generic proceedings, while others have approved them on an application specific basis. Typically, these accounts are used to track billing and system changes, lost revenues, and bad debts associated with COVID-19. Regulators who have approved the use of these accounts, are noted to evaluate them for potential future returns to ratepayers. Figure 2 illustrates the COVID-19 related recovery provisions used across Canada and the United States. [268]
- While most regulators have implemented COVID-related deferral accounts, many do not have specific breakdowns of the types of expenses that are allowable in these accounts. Examples of COVID-specific allowable items within certain jurisdictions included:
    - **Direct Costs:** PPE and sanitation supplies for staff, increased technology costs associated with working from home, government mandated screening and testing of employees, overtime and training related increases.
    - **Indirect Costs:** Increased bad debt/uncollectable, lost revenues due to business closures, lost loads, and savings and offsets (e.g. Postponed capital expenditures, and disconnection mandates).[269]

[266] *Source: OEB, Annual-Report-2019, June, 2020*
[267] *Source: BCUC, 2021RRAfor the core steam system application, March, 2021.*
[268] *OEB/LEI, Consultation on the Deferral accounts – Impacts Arising from the COVID-19 Emergency, January, 2021.*
[269] *Source: OEB, A report on regulatory principles, policies, and accounting treatments applied in other jurisdictions in response to COVID-19, December, 2020.*

Figure 2: COVID-19 Cost Recovery Provisions by State/Province (as of October 2020)[270]



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Most regulators have allowed utilities to utilize deferral accounts to track COVID-related costs for the duration of the pandemic. These appear to be temporary, and only to be used for the duration of the pandemic's impact. Because EWSI has access to a special rate adjustment mechanism that may be used to address such issues during a PBR term, the City should consider the benefits and drawbacks of introducing an additional temporary mechanism for COVID-related costs. Furthermore, considerations should be given to the impacts and stage of the COVID-19 pandemic, and whether any additional efforts made at this time will achieve their desired effects.

Observation 1.3: Provided utilities are allowed a reasonable opportunity to recover their costs from ratepayers (including customer payment deferrals), many regulators do not view additional risk to the utility sector as a result of the COVID-19 pandemic.

Evidence Base:

AUC

- The commission requires utilities to provide monthly reports on enrolled and departed customers in the Utility Billing Deferral Program, including dollar amounts associated with these customers. [271]

OEB

- The Board notes that it has several risk mitigations strategies in place that are designed to buffer utilities from risk. These include non-volumetric based rates, and partial compensation for energy efficiency volume losses. The Board has qualifiers and evaluation criteria in place for bad debt to compare to historic levels[272]

[270] *OEB/LEI, Consultation on the Deferral accounts – Impacts Arising from the COVID-19 Emergency, January, 2021.*
[271] *Source: AUVC, AUC Utility Payment Billing Deferral Program Manual. May, 2020.*
[272] *Source: OEB, A report on regulatory principles, policies, and accounting treatments applied in other jurisdictions in response to COVID-19, December 2020.*

MPUB

- The MPUB provides examples of how deficits may be managed by regulators including rate increases, rate rider surcharges, accumulated surplus, grant monies or tax levies. However, most utilities require Board approval for deficits as well as evidence for recovery methodology. [273]

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Given the impact of the COVID-19 pandemic to utilities, and mechanism available for utilities to pass on increased costs of rate payers, there was not sufficient evidence found to suggest that there have been adjustments to regulated returns on equity as a result of the COVID-19 pandemic. It is unreasonable for utilities to expect both an increased equity return and have the financial consequences of the associated risks eliminated. Though EWSI has not requested an adjustment to its return on equity as a result of the COVID-19 pandemic, this concept remains important for the City to consider as it evaluates EWSI's proposed ROE.

Observation 1.4: Several jurisdictions introduced a form of a customer payment deferral program and have limited rate increases (although some utilities cannot since they are unable to incur deficits due to legislative restrictions).

Evidence Base:

The following table detailed the customer deferral payment program by regulator. This is followed by examples of deferred rate increases to customers.

Table 27: Customer Payment Deferral Programs

Deferral Program by Regulator	Description	Start date/End date
Alberta Utilities Commission ("AUC") Alberta Utility Payment Deferral Program Act[274]	Deferral program implemented for regulators and utilities on electricity bills. The Commission introduced a balancing pool, for which electric utilities can apply for interest free funding to compensate for short falls in ratepayers differed bill payments. (This is subject to a funding agreement approved by the Commission).	May 6, 2020 - June 18, 2020
California Public Utility Commission ("CPUC") Assembly bill 913[275]	Customer payment deferrals are temporarily permitted in the state. Implemented a financing order to assist utilities in the securitizing and recovering of revenue shortfalls, in the 2020 calendar year, due to consumers	September 4, 2020 – Through 2020

[273] *Source: Manitoba, regulatory requirements - rate setting, Required due to adoption of the public sector accounting board accounting standards for local governments, June, 2009*
[274] *Source: AUC, Utility Payment Deferral Program Act, May, 2020.*
[275] *Source: California Legislative Information. Assembly Bill No. 913 (Chapter 253). September 30, 2020.*

Table 27: Customer Payment Deferral Programs		
Deferral Program by Regulator	**Description**	**Start date/End date**
	unpaid bills and declining sales relating to COVID-19. The stabilization aspect of this account allows for gradual rate increases over longer time periods.	
British Columbia Utilities Commission ("BCUC") FortisBC [276]	Temporary COVID-19 rate relief for residential and small commercial customers. Costs associated with COVID-19 are captured in the utility expense deferral account and will be subject to approval in subsequent proceedings.	Fiscal year 2020
MPUB No COVID-19 deferral account implemented [277]	In Manitoba utilities are not allowed to incur deficits, by enacted law. Though utilities can offer revised payment schedules for customers.	N/A

The following list provides examples of customer rate change deferrals:

IRAC / Maritime Electric

- On December 21, 2020, IRAC approved MECL's general rate application to be effective January 1, 2021, and to remain in effect until February 28, 2022. The rate increase was scheduled to take into effect in 2020 but was delayed to January 1, 2021 due to the COVID-19 pandemic.[278]

The City of Toronto / Toronto Water

- Reduced their 2021 rate increases in half, from three percent, down to one and a half percent, to assist their consumers during the economic downturn. This increase was managed through adjustments to efficiencies and offsets as well as adjustments to the operating budget. [279]

OEB

- In Ontario, rates were due to increase for certain utilities on May 1, 2020. Regulators allowed the utilities the option to postpone the rate changes until November 1, 2020.[280]

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[276] *Source: BCUC, FortisBC Energy Inc. and FortisBC Inc. (collectively "FortisBC") Multi-Year RatePlan Application for 2020 to 2024 ~ Project No. 1598996 - Final Submission, January, 2020.*
[277] *Source: Manitoba PUB, Report on Efficiency Manitoba's 2020/21 to 2022/23, February, 2020.*
[278] http://www.irac.pe.ca/orders/Electric/2020/Order-UE20-06.pdf
[279] *Source: Toronto Water, City of Toronto 2021 rate-supported budget for Toronto Water, November, 2020.*
[280] *Source: OEB, There are a number of measures being taken in response to the COVID-19 pandemic, March, 2020*

NSUARB

- In response to the pandemic the Board approved Halifax Water's application for no rate increases in water for their 2-year GRA period, as well no rate increases to wastewater through April 1, 2021. This was to help ease burdens on ratepayers due to economic instability .[281]

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The Provincial customer rate deferral program in Alberta, which EWSI had implemented, aligned with other jurisdictions. While some regulators have requested that their utilities defer rate increases as well, this is likely not possible for EWSI. There would likely be consequences to fund rate shortfalls either from other sources, or in the future, which would only defer the rate increase required to the future. EWSI has included a ramp up period for its ROE for Drainage which, in effect, limits rate increases for a period of time.

Observation 1.5: Some regulators have yet to approve the use of carrying costs, however, for those who have, they allow utilities to apply their approved WACC on carrying costs.

Evidence Base:

AUC

- In order for a utility to recover any costs not recovered from deferred bills, the commission must approve an application for rate rider. Determination of carrying costs for items in the account are subject to WACC (Weighted Average Cost of Capital). [282]

Idaho and Indiana

- Regulators in these two jurisdictions have not approved carrying costs on deferral accounts.

Wisconsin

- Utilities in this jurisdiction are approved for carrying costs. Investor owned utilities can accrue carrying costs at the their most recently approved short-term rates, and Municipalities can accrue at the 4.9% benchmarking rate.

Other regulators

- Based on a study of North American regulators, by LEI, it is said that 22% of North American jurisdictions have proceedings confirming the use or disuse of carrying costs. The majority of North American regulators are yet to provide full guidance on the issue. have yet to decide (January 14, 2021).[283]
- IRAC ordered Maritime Electric to continue to calculate the interest on the Rate of Return Adjustment ("RORA") deferral account balance using MECL's short term borrowing rate (December 21, 2020).[284]
- Board of Commissioners of Public Utilities ordered Newfoundland and Labrador Hydro to apply an updated WACC rate in 2019 related to the rate stabilization plan instead of the 2019 text year WACC. Furthermore, to correct this error in applying the incorrect WACC rate Newfoundland and

[281] *Source: NSUARB, Water Utility Accounting and Reporting Handbook, April, 2007*
[282] *Source: AUVC, AUC Utility Payment Billing Deferral Program Manual. May, 2020*
Source: AUC, ENMAX Power, 2020 Annual Performance-Based Regulation Rate Adjustment, December, 2019
[283] *Source: OEB, A report on regulatory principles, policies, and accounting treatments applied in other jurisdictions in response to COVID-19, December, 2020*
[284] *Source: IRAC Order UE20-06: Page 27, Paragraph 30; December 2020*

Labrador Hydro proposed a one-time adjustment to each customer groups rate stabilization plan current plan, which was approved by the Board of Commissioners.[285]

Grant Thornton Perspectives for City

EWSI's application of a WACC on their carrying cost associated with the customer payment deferral program appears to be consistent with most other regulators. However, in circumstances where refunds to customers are made, it is reasonable for EWSI to also refund similarly calculated carrying costs as well. It is suggested to use a consistent approach both for the inclusion of a WACC on carrying costs as well as any funds that ultimately are returned to rate payers.

Observation 1.6: Generally, regulators have taken a status quo approach (e.g. interim changes rather than updating for new term) by limiting regulatory process changes, streamlining regulatory proceedings, temporarily decreasing reporting requirements and frequencies from utilities, and/or deferring major decisions to a later date.

Evidence Base:

OEB

- The Board was set to update their PBR terms in 2019, however they have not implemented any major changes, and the 2018 parameters will be in place in the interim.
- Historically, utilities were required to report any information relating to variance or commodity deferral accounts on a quarterly basis. OEB has simplified this process and now only requires annual reports of findings. Typically, OEB would require hard copies as well as electronic submissions when filing regulatory proceedings. The Board has waived the need for a hard copy. They have also extended annual filing deadlines for natural gas utilities and licensees that are required for record keeping (Reporting and Record-Keeping Requirements).
- Due to COVID-19, regulators such as OEB have been more diligent in evaluating any impacts on economic factors that may affect utilities operational and financial position.
- Annual review and updates are completed as necessary to adjust to the uncertainty of the economy, and its effects on the utilities cost of capital.[286]
- If a utility requires extensions for items such as rate studies or directive due dates, or if they require deferrals of rate riders, they are still required to provide an application, with explanations, to the Board for approval. The Board also stated that the formula for calculating cost of capital parameters has not been affected by the pandemic and is reflective of the current market conditions.[287]

AUC

- The AUC has decided it is not a good time to update their PBR process in its entirety and have no immediate plan to implement any major restructuring. The input of stakeholders is crucial in this

[285] Board Order No. P.U. 30 (2019), Page 4

[286] *Source: OEB, 2021 Cost of Capital Parameters, November, 2020*

[287] *Source: OEB, Rate Setting Parameters and Benchmarking under the Renewed Regulatory Framework for Ontario's Electricity Distributors, December, 2014*
Source: OEB, A report on regulatory principles, policies, and accounting treatments applied in other jurisdictions in response to COVID-19, December, 2020.
Source: OEB, Updated Filing Requirements Process for 2019 Incentive Regulation Mechanism (IRM) Distribution Rate Applications, July, 2018.

time of uncertainty, so the traditional review approach will be bypassed for a more streamlined approach.

- The AUC has recently introduced an expert committee in order to improve rate applications processes. This committee was implemented based on need due to the changing economic landscape but also due to stakeholder input that the rate application process takes too long and is not as efficient as it could be. The AUC has reduced their panel size and will look to adjust processes involving hearing length/focus, narrowing of issues with more focus on outcomes, as well as a focus on reduction in information requests.[288]

MPUB

- The Board has transitioned application processes, Board hearings, and most correspondence to video platforms. Adjustments have typically been implemented in order to minimize disruption to both utilities and ratepayers.[289]

Ontario Clean Water Agency ("OCWA")

- The OCWA stated they may not reach forecasted growth targets, due to water and wastewater projects being delayed.

BCUC

- FortisBC was approved by the Board to update their capital expenditure calculation for the three-year period 2020-2022. The dead band approach has been eliminated and a simplified approach was introduced to create incentives for utilities to be more efficient. These efficiencies are then passed on to ratepayers.

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Given that the COVID-19 pandemic has had varying impacts on jurisdictions across North America, there have been a variety of approaches taken by regulators regarding their regulatory process and decision making. There may be correlation between the severity of impact on the jurisdiction as a result of the COVID-19 pandemic, and the direction given to utilities to update their forecasts for regulating proceedings. Nonetheless, the majority of regulators have taken a status quo approach, and some have deferred major regulatory decisions. While EWSI has proposed shorter PBR terms (e.g. three year term for the drainage utility), the PBR process continues to be used as applied as it has in the past for the water and wastewater utilities. Moreover, though there is a larger degree to uncertainty regarding customer demand, overall consumption and the number of customers, there also may be a higher level of predictability for the City of Edmonton, as compared to larger geographic areas, which may have varying degrees of post pandemic recoveries.

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[288] *Source: AUC, Enmax Formula-Based Ratemaking Transmission Tariff Re-opener, April, 2019.*
Source, AUC, 2018-2022 Performance-Based Regulation Plans for Alberta Electric and Gas Distribution Utilities, February, 2017.
Source, AUC, AUC creates independent, expert committee to assist in improving efficiency of rates proceedings, May, 2020.

[289] *Source: Manitoba PUB, An order respecting water and/or wastewater, COVID-19 pandemic response, April, 2020.*

Theme 2: Deferral accounts are used to address uncertainty

Observation 2.1: The degree of management control and uncertainty are often considered when assessing the use of deferral accounts. In addition, regulators balance the use deferral accounts to reduce/eliminate risk with incentives to lower utility costs (i.e. deferral accounts provide certainty of cost recovery for the utilities but results in less incentive for cost reduction).

Evidence Base:

BCUC

- The Board has methodologies in place for utilities to determine what is an 'acceptable' revenue costs for deferral account, to flow-through to customer rates. The Board's evaluation criteria is based on whether the item is considered 'reasonably' within the control of management, and the degree of uncertainty forecasted for the item.
- The Board places importance on finding a threshold for what is an 'acceptable' revenue costs for deferral account, to flow-through to customer rates and balance between incentives/ risks and rewards. Allowance of too many "acceptable" costs in deferral account can adversely affect overall returns and reduce efficiency incentives.
- The Board recognizes that there are many uncertainties that may be difficult for utilities to manage and predict, however the Board bases its decisions on the evidence provided by the utilities in the proceedings. It is important for the utilities to provide evidence that the items tracked in deferral accounts were unprecedented, or out of management control, as not all items applied for will be approved by the Board.[290]

Grant Thornton Perspectives for City

Based on the evidence base gathered, deferral accounts are commonly used in the utility industry. As such, EWSI and the City can consider the use of deferral accounts as means to address uncertainty. There are, however, several factors to consider when implementing the use of deferral accounts. This includes:

- The relationship between a deferral account and the existing special rate adjustment mechanism available to EWSI.
- The criteria for when deferral accounts can be used (with accompanying thresholds) and ensure the efficiency factor remains intact and used to drive cost savings, for the areas that EPCOR has more direct control.
- The threshold required for when deferral accounts are used.
- The governance for the use of funds accumulated in a deferral account.
- The determination of the return of unallocated amounts in a deferral accounts back to rate payers (and associated carry costs impacts).

Observation 2.2. Most regulators require utilities to provide a detailed report to analyze variances and increasingly, regulators are opting for shorter review periods when assessing results associated with deferral accounts.

Evidence Base:

AUC

[290] *Source: BCUC, FortisBC Energy Inc. and FortisBC Inc. (collectively "FortisBC") Multi-Year Rate Plan Application for 2020 to 2024 ~ Project No. 1598996 - Final Submission, January, 2020.*

- The commission requires financial statements with rate rider applications, for any potential recovery from lost costs due to consumer bill deferrals.
- The commission requires applications for items in deferral Flow-through accounts to be submitted throughout the year as required.
- The commission requires utilities to provide invoices for the customers whose payments are being deferred. A breakdown of number of customers and their invoices including amounts of energy used, administration, transmission and distribution charges, and GST amounts, are to be provided.[291]

BCUC

- The BCUC has approved FortisBC Energy Inc. and FortisBC Inc. temporary COVID-19 deferral accounts. It is required that utilities provide a detailed report analyzing variances on these items on an annual basis.
- Any interest variances in items in these accounts that are subject to the flow-through mechanism may be flown-through to ratepayers.[292]

OEB and other regulators

- OEB and many regulators have delayed identifying certain accounting treatments on deferral accounts entirely during the pandemic, however, some require their utilities to provide quarterly reporting on costs that are incurred as well as savings realized in these accounts.
- The Board is diligent on keeping current with new performance and financial reporting requirements. The pandemic has increased expectations of transparency in reporting and financial information accuracy. The Board places importance on ensuring internal controls are operating efficiently, and reviews are done regularly.[293]

Grant Thornton Perspectives for City

Should the City approve the use of deferral accounts as a means to address uncertainty, it is suggested to have more frequent reporting and established criteria for when deferral accounts are no longer required, and if applicable, balances returned to rate payers. This allows for timely review and evaluation to help mitigate risk and allow for the utilities to remain sustainable. For its PBR application, EWSI provides annual update to its PBR application to the City, which is also consistent with industry standards and suggested practice to continue in the future.

Theme 3: Impacts to PBR regulatory regimes

Observation 3.1: A 5-year term appears to be the most commonly implemented PBR term.

Evidence Base:

OEB

[291] *Source: AUVC, AUC Utility Payment Billing Deferral Program Manual. May, 2020.*
[292] *Source: Fortis Inc. 2019 Annual Report, Jan 2019*
[293] *Source: OEB/LEI, Consultation on the Deferral accounts – Impacts Arising from the COVID-19 Emergency, January, 2021.*

- PBR structure since 2001 - OEB current PBR terms were set to expire in 2019. Due to uncertainty in the economy, they opted for some interim changes to processes, instead of updating the entire PBR for 5 more years. (Postponed major changes for a year)[294]

AUC

- The Commission has approved performance-based regulation for 2018-2022 for the following utilities: natural gas – Apex Utilities, and Atco Gas and Pipelines. Electric; Fortis Alberta Inc. Enmax Power, ATCO Electric and EPCOR Distribution and Transmission.[295]

BCUC

- The Board has approved the application for a 5-year PBR/MRP term for FortisBC and Fortis Energy Inc. (2020-2024).[296]

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While EPCOR has proposed shorter PBR terms in order to stagger future application reviews, ESWI is proposing five-year term in the future. This is aligned with the industry benchmarking completed.

Observation 3.2: While some regulators have postponed major changes, there was no evidence to suggest a cost of service approach or shorter PBR terms is being favored.

Evidence Base:

BCUC - FortisBC (PBR/Multi-year Rate Plan 2020-2024)

- The BCUC Board finds that there is no evidence to support that a COS approach to rate setting is fairer or more accurate than the proposed, and now approved PBR/MRP mechanism. The Board has compared the pros and cons between a 5-year or shorter period for the PBR term and have concluded that a 5-year term is most applicable, and most commonly implemented length of term.
- The length of term is beneficial for long term strategy realization/evaluation and resources are not as tied down. Historically PBR has more overall cost savings than COS results. Conducting annual reviews helps to ensure timely resolution of issues. The 5-year length of the term allows for the Board the time it requires to see if efficiencies/incentives are feasible, long-term. Service quality criteria are evaluated by the Board on an annual basis. ex. Benchmarking and base calculations.[297]

OEB

- The Board's expectation is for utilities to continue to improve on cost reductions and productivity. Quality and reliability for consumers needs to be upheld through regulated performance measures and scorecards. The breakdown of PBR into two generation approach allows for more evaluation and reflection in the second term, which can minimize bad outcomes. A 3-year term – Price cap plan, allowing for rates to be adjusted in years 2 and 3, offers added protection. As well, assessment and review of the first term, including cost of service, (by consumer class) and

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[294] *Source: OEB, Rate Setting Parameters and Benchmarking under the Renewed Regulatory Framework for Ontario's Electricity Distributors, December,2013.*
[295] *Source: AUC, Generic proceeding to review rate treatment of distribution system acquisition costs under Performance Based Regulation, March, 2019*
[296] *Source: BCUC, FortisBC Energy Inc. and FortisBC Inc. (collectively "FortisBC") Multi-Year Rate Plan Application for 2020 to 2024 ~ Project No. 1598996 - Final Submission, January 2020.*
[297] *Source: BCUC, FortisBC Energy Inc. and FortisBC Inc. Application for Approval of a Multi-Year Rate Plan for the Years 2020 through 2024, June, 2020.*

reviewing and establishing standards for quality and reliability are some of the factors that make the PBR a favored approach. [298]

Grant Thornton Perspectives for City

The benefits of a five-year PBR regulatory regime continue to outweigh potential drawbacks over a cost of service approach.

[298] *Source: OEB, Overview of the electricity distribution rate regulation framework, March, 2000. Source: OEB, 2021 Cost of Service Wellington North Power Inc, November 2020.*

Appendix A

Glossary of Terms

General Terms	Description
2012-2016 PBR Report	Grant Thornton's report completed in 2011
2017-2021 PBR Report	Grant Thornton's report completed in 2016
AHE	Average Hourly Earnings
Alberta CPI	Alberta Consumer Price Index
Appendix A	Appendix A: Summary of Bylaw and Key Changes
Appendix K	Appendix K: Stakeholder Engagement Report
AUC	Alberta Utilities Commission
AWWA	American Water Works Association
Bylaw 17698	EPCOR Water Services and Wastewater Treatment Bylaw
COE	City of Edmonton
Drainage PBR 2022-2024	2022-2024 Performance Based Regulation Drainage Application
Edmonton	The City of Edmonton
EUI	EPCOR Utilities Inc.
EWSI	EPCOR Water Services Inc.
February Filing	The Applications filed on February 16, 2021
Grant Thornton	Grant Thornton LLP
GT	Grant Thornton LLP
HDR	HDR Engineering Inc.
IRs	Information Requests
LRT	Light Rail Transit
NEB	National Energy Board
PBR	Performance Based Regulation
Rates Procedure Bylaw	EPCOR Rates Procedure Bylaw No. 12294
ROE	Return on equity
The 2012 Decision	AUC's Rate Regulation initiative – Distribution Performance-Based Regulation
The Administration	The City of Edmonton
The Applications	2022-2026 Performance Based Regulation Water Application, 2022-2024 Performance Based Regulation Wastewater

General Terms	Description
	Application, and 2022-2024 Performance Based Regulation Drainage Application
The City	The City of Edmonton
The Company	EPCOR Water Services Inc.
U of A	University of Alberta
Us	Grant Thornton LLP
Wastewater PBR 2022-2024	2022-2024 Performance Based Regulation Wastewater Application
Water PBR 2022-2026	2022-2026 Performance Based Regulation Water Application
We	Grant Thornton LLP
WEF	Water Environment Federation
WELPI	Wastewater Quality