

EPCOR PBR APPLICATIONS
REASONABLENESS REVIEW BY ADMINISTRATION

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A. OVERVIEW

In accordance with the regulatory process approved by City Council, Administration has undertaken a reasonableness review of the performance based rates (PBR) applications submitted by EPCOR Water Services Inc. (EWSI) to establish new customer rates and terms and conditions of service for Water Services for the five year period April 1, 2022 to March 31, 2027 (“2022-2026”), and for each of Wastewater Treatment and Drainage Services for the three year period April 1, 2022 to March 31, 2025 (“2022-2024”).

Administration engaged an external consultant to assist with the review, with the scope of the engagement focussing on certain key technical regulatory aspects including the return on equity, inflation and efficiency factors, cost of service and rate design, and performance measures. The consultant, Grant Thornton LLP, is a global consulting firm with an extensive background in utility rate setting. The report from Grant Thornton on its review of the EWSI rates applications is provided in Attachment 4 of report FCS00624.

Given the regulatory framework and assumptions are generally consistent among the three EWSI rates applications, Administration has summarized its review of the Water Services, Wastewater Treatment and Drainage Services applications collectively below. The summary includes:

- an assessment of the overall PBR framework and methodology in light of the current economic uncertainty and impacts of the COVID pandemic;
- a review of the 2017-2021 PBR plans and financial results to confirm the PBR framework continues to work as intended and the costs incurred by EWSI are reasonable and prudent; and
- an analysis of each of the major components of the proposed 2022-2026 and 2022-2024 PBR plans including revenue requirement, capital programs, cost of service and rate design, and performance measures.

An overview of cost of service and performance based regulation has also been included in Attachment 2 of report FCS00624.

On an overall basis, Administration considers the Water Services (2022-2026), Wastewater Treatment (2022-2024) and Drainage Services (2022-2024) rates applications to be reasonable. The applications follow the Minimum Filing Requirements, which together with written responses to questions provided in report

FCS00623, has resulted in an extensive and comprehensive level of detail being provided in support of the proposed rates under performance based regulation. EWSI has also provided a PBR Readers Guide to further assist City Council, Administration and the public in their understanding of the customer rate impacts, operating and capital expenditures, and key initiatives included in the three applications.

Notwithstanding this, Administration and Grant Thornton have highlighted certain areas below that the Utility Committee and City Council may wish to consider further to determine if certain adjustments are warranted. These include:

- a potential 0.15% decrease in the requested return on equity from 9.95% to 9.80%, as a result of updating the formula used by EWSI to calculate the requested 9.95% to be based on the final return on equity approved by Council for the 2017-2021 PBR term of 10.175% (10.175% - 0.38% change in bond yield = 9.80%);
- a further potential 0.25% decrease in the requested return on equity given an evaluation of the risks for EWSI relative to the Alberta Utilities Commission (AUC) benchmark of 8.50% and the impact on EWSI's risk if a water consumption deferral account is implemented (along with a shift in customer rates to collect more revenue from fixed charges and less based on consumption charges);
- a potential increase in the efficiency factor from 0.25% to 0.50% for Drainage Services based on the continued transition to performance based regulation following the transfer from the City of Edmonton in 2017;
- a potential smoothing of the customer rates increases over the five year PBR term (2022-2026) for Water Services and over the three year PBR term (2022-2024) for Wastewater Treatment and Drainage Services, consistent with the direction provided by the Utility Committee for the EWSI 2017-2021 rates applications;
- a further assessment of the accuracy of the water consumption forecast based on the historic impact of weather and the added uncertainty due to COVID-19, and whether an annual update to the forecast or a deferral account should be implemented to adjust customer rates annually for the difference between the forecast and actual water consumption (similar to ATCO Gas);
- confirmation of the overall capital program including a reduction in reliability and life cycle improvement capital expenditures for Water Services in 2022-2026 based on the new risk assessment methodology adopted by EWSI, and the continued scheduling and rollout in 2022-2024 for two key initiatives (Stormwater Integrated Resource Plan and Corrosion and Odour Reduction);
- a potential increase in funding for City-Initiated Capital Projects to align the EWSI and City of Edmonton capital programs and work plans in the 2023-2026 budget cycle. Alternatively, a deferral account could be

implemented (that would be flowed-through to customer rates) to true up the difference between the forecast and actual capital expenditure costs incurred by EWSI to align its capital projects annually to the City of Edmonton's work plan;

- a potential adjustment to the "in service date" for the Aurum property (Real Estate Consolidation project) to mid 2022 from January 1, 2022 based on employees moving into the facility in the 1st quarter of 2022, resulting in a reduction in depreciation expense, return on equity, and cost of debt in 2022;
- a potential adjustment to reimburse utility customers for valve casings and service box replacements included as operating costs in the 2020 (\$2.9 million) and 2021 (\$3.0 million) Water Services revenue requirements but capitalized for both financial statement and regulatory accounting purposes beginning in 2020;
- a potential reduction to the Water Services 2022-2026 revenue requirements to carry forward differences between amounts approved (\$4.1 million) and actual/forecast amounts incurred (\$2.6 million) as part of the 2017-2021 Special Rate Adjustment for the North Saskatchewan River Monitoring project;
- potential adjustments to refund or carry forward differences between amounts approved and actual/forecast amounts incurred for non-routine adjustments during the 2017-2021 PBR term (\$5.6 million in total, excluding any further potential amounts for the Corrosion and Odour non-routine adjustment, as detailed in Table 6); and
- a further review of amounts included in the determination of the actual/ forecast Corrosion and Odour non-routine adjustment (\$14.8 million) in comparison to the adjustment approved during the 2017-2021 PBR term (\$10.8 million). EWSI has included an additional \$66.5 million of capital costs related to EWSI's new CORE Large Trunk Rehabilitation Program in the non-routine adjustment calculation because these projects target rehabilitation of large trunks with high levels of corrosion in emerging odour areas in the network (Table 7).

Given the compressed schedule and timelines for the regulatory review and approval of the three EWSI comprehensive rates applications, ***Administration also identified certain areas that may warrant a further review in advance of the next rates applications being submitted by EWSI to establish new customer rates for Drainage and Wastewater Treatment services effective April 1, 2025.*** These include:

- additional reporting of changes in accounting and capitalization policies and treatment;
- tracking and reporting of full-time equivalents;
- a review of the determination of the cost of debt; and
- a further review of the methodology used to establish performance measures.

B. PBR FRAMEWORK AND METHODOLOGY

The Water Services, Wastewater Treatment and Drainage Services rates applications follow the same performance based regulation framework and methodology approved by City Council in prior EWSI rates applications. Water Services was first regulated under performance based regulation beginning in 2002, with Wastewater Treatment beginning in 2012, and Drainage Services beginning in 2018 with the transfer of the utility from the City of Edmonton to EWSI. As discussed at the October 2, 2020 Utility Committee meeting (report CR_8146), adopting a five year PBR term for Water Services (2022-2026) and three year PBR terms for Wastewater Treatment (2022-2024) and Drainage Services (2022-2024) will allow for future regulatory applications and proceedings for the three utilities to be staggered, thereby reducing future regulatory burden.

Administration requested that Grant Thornton complete a scan of approaches currently being used by other regulators in North America to approve rates given the impacts of COVID and the ongoing economic uncertainty. As discussed further in Attachment 4, utilities and regulators have largely continued to submit and approve regulatory applications in the normal course of business. However, certain utilities and regulators have also adopted additional measures, such as customer deferral payment plans (similar to the 90 day utility bill payment deferral plan adopted by EWSI) and postponement of major projects and initiatives, in light of the current economic environment and COVID-19.

Accordingly, Administration considers the continued adoption of the previously approved performance based regulation framework and methodology to be appropriate for the three EWSI rate applications effective April 1, 2022. However, given the extended PBR terms of three to five years with the potential continuing impacts of COVID-19, and the historical forecasting accuracy of EWSI for certain items as discussed further below, consideration should be given to implementing limited additional measures, such as deferral accounts, to address certain material items with increased uncertainty and risk (i.e water consumption forecast).

C. 2017-2021 PBR PLAN AND FINANCIAL RESULTS

As part of the assessment of the 2022-2026 and 2022-2024 rates applications, Administration reviewed the financial performance, capital program and performance measures for the utilities over the 2017-2021 PBR term.

Based on the review, Administration considers that the overall PBR framework continues to work as intended, with EWSI earning a reasonable margin of profit (see Table 1 below for return on equity), customers receiving safe and reliable utility services (see Table 2 below for performance measures), and operating efficiencies realized by EWSI in the 2017-2021 PBR term being passed onto customers when rates are reset in the next PBR term.

Table 1: Financial Performance 2017-2019 (Table. 1.1 of EWSI 2019 Progress Report)

		2017-2019 PBR Approved (Note 1)	2017-2019 Actual	Return on Equity Variance
In City Water (2017-19)	Revenues - \$mm	\$593.9	\$571.2	
	Return on Equity - \$mm	\$117.1	\$110.2	\$(6.9)
	Return on Equity - %	10.175%	9.61%	
Wastewater (2017-19)	Revenues - \$mm	\$297.4	\$286.0	
	Return on Equity - \$mm	\$53.0	\$58.5	\$5.5
	Return on Equity - %	10.175%	11.84%	
Drainage (2018-19)	Revenues - \$mm	\$399.0	\$393.6	
	Return on Equity - \$mm	\$58.9	\$61.4	\$2.5
	Return on Equity - %	5.21%	5.21%	

Note 1 - since Drainage Services does not have an approved PBR forecast, Drainage has compared its results against EPCOR's budget for 2018 and 2019 following the transfer of the Utility from the City of Edmonton.

Table 2: Performance Measures 2017-2019 (Tables 2.2.2-1 of Rates Applications)

		Standard Points	2017 Actual	2018 Actual	2019 Actual
In City Water	Total Points Earned in 5 Indices	100	107.6	107.1	107.5
Wastewater	Total Points Earned in 4 Indices	100	110	110	110

Note 1 - Pursuant to City Council's approval of amendments to EPCOR Drainage Services Bylaw 18100 on February 19, 2020, EWSI introduced new PBR performance metrics, scoring and penalties beginning in 2020 for Drainage Services.

Administration completed a review of the capital expenditures incurred during the 2017-2021 PBR term to confirm that the costs should be added to rate base and recovered through customer rates in future years (i.e depreciation, interest expense and and return on equity). **Administration considers the overall capital expenditures incurred in 2017-2021 to be reasonable and comparable to amounts forecast in the 2017-2021 PBR applications.**

Notwithstanding this, Administration notes there were variances in individual capital programs for Drainage Services as shown in Table 7.1-1 of the rates application that Utility Committee may wish to assess further. Administration also notes that EWSI provided additional context for the purchase of the Aurum property, as part of the real estate consolidation project, which was not forecast in the 2017-2021 PBR applications (COE-EWSI-11.a).

Table 3: EWSI 2017-2021 Net Capital Expenditures - \$ millions (Tables 6.1-1/7.1-1 of Rates Applications)

	2017-21 PBR Approved	2017-21 NRA's	2017-21 PBR Total	2017-21 Actual/ Forecast	Variance
Water (2017-2021)	\$475.7	\$39.5	\$515.2	\$577.1	\$(61.9)
Wastewater (2017-2021)	235.4	-	\$235.4	\$245.1	\$(9.7)
Drainage (2018-2021)	\$667.4	\$121.8	\$789.2	\$736.4	\$52.8

Administration also reviewed the financial results during the 2017-2021 PBR term to assist in assessing the overall credibility and methodology used to forecast amounts in the 2022-2026 and 2022-2024 rates applications.

Administration notes that although EWSI was able to achieve earnings over the 2017-2019 timeframe comparable to amounts approved as part of the 2017-2021 PBR applications (PBR Progress Report), there were significant variances in two areas in particular, with unfavorable revenues due to lower water consumption being primarily offset by significant reductions in operating costs. Administration notes that similar variances also occurred during the 2012-2016 PBR term. The implications of these variances on amounts that may be approved for the 2022-2026 and 2022-2024 applications are discussed further below, including the potential need for certain deferral accounts.

1. 2017-2021 Changes in Accounting Treatment

Administration notes that EWSI capitalized certain costs that were approved as operating costs in the 2017-2021 rates applications, which contributed in part to the reduction in EWSI's 2017-2021 operating costs. As an example, in response to COE-EWSI-7a, EWSI indicated that the costs for valve casings and service box replacements were capitalized beginning in 2020 in accordance with International Financial Reporting Standards (IFRS).

Table 4: EWSI 2017-2021 Valve Casings and Service Box Replacements - \$ millions (COE-EWSI-7)

	2017 Actual	2018 Actual	2019 Actual	2020 Forecast	2021 Forecast
PBR Approved Revenue Requirement (as Operating Costs)	2.8	2.8	2.9	2.9	3.0
EWSI Recorded as Operating Costs	3.0	2.7	3.4		
EWSI Recorded as Capital Costs				4.2	4.2

As a regulated utility EWSI is required to maintain two sets of accounting records. IFRS financial records are used for external financial reports, with regulatory accounting being used to determine the revenue requirement and utility customer rates. IFRS is used as the starting point or basis for regulatory accounting with limited additional regulatory accounting treatment changes being made in addition to IFRS. However, Administration notes that the impact of the capitalization of certain costs under IFRS without any further regulatory adjustments is that customers may pay twice for these costs through utility rates, once in 2017-2021 as an operating expense and then again in future years as the capitalized costs are depreciated and included in future revenue requirements. Therefore, Administration recommends:

- ***a potential regulatory adjustment be considered for the accounting treatment of valve casing and service box replacements to reimburse utility customers for amounts included as operating costs in the 2020 (\$2.9 million) and 2021 (\$3.0 million) Water Services revenue requirements but capitalized for both financial statement and regulatory accounting purposes beginning in 2020; and***
- ***further consideration should be given to additional reporting of changes in accounting policies and accounting treatment (including capitalized overhead) in future EWSI rates applications, and whether regulatory adjustments should be made to ensure customers only pay once for significant costs through utility rates.***

2. 2017-2021 Special Rate Adjustments for Environmental Initiatives

Administration has reviewed the 2017-2021 Special Rate Adjustments for Environmental Initiatives, with the following matter being noted that Utility Committee and City Council may wish to consider further:

- ***2017-2021 Special Rate Adjustments for Environment Initiatives - a potential reduction be considered to the Water Services 2022-2026 revenue requirements to carry forward differences between amounts approved (\$4.1 million) and actual amounts incurred (\$2.6 million) as part of the 2017-2021 Special Rate Adjustment for the North Saskatchewan River Monitoring project.***

Two special rate adjustments for environmental initiatives were approved by City Council as part of EWSI's 2017-2021 Water Services PBR Application. As noted in paragraph 47 of EWSI's 2017-2021 Water Services Application "The River Monitoring Project is a \$1.0 million per year program to regularly monitor, evaluate and report on a number of water quality variables from several sampling sites in the river for 2018-2021. The Green

Power Initiative is intended to align with the City’s “The Way We Green” strategy to increase the proportion of EWSI’s energy from locally produced renewable sources. Under this initiative, EWSI will obtain 1 MW, approximately 10% of its total power volumes, from a renewable energy source for an estimated \$1.9 million per year. In setting rates for EWSI’s 2017-2021 PBR term, the incremental cost of these initiatives is separately charged to EWSI’s customers through a special rate adjustment for environmental initiatives beginning in 2017”.

In response to COE-EWSI-4, EWSI provided a reconciliation of the actual amounts incurred versus the amounts approved/collected as well as a description of the work and accomplishments achieved for the two initiatives.

- a) For the Green Power Initiative, EWSI noted “For the 2022-2026 PBR term, EWSI has treated the revenue collected through the 2017-21 Green Power Initiative Special Rate Adjustment as a contribution towards the capital costs associated with the solar farm project. This contribution will reduce the revenue requirement and the bill impacts associated with the solar farm project over the 2022-2026 PBR term. In the 2022-2026 PBR term, EWSI is forecasting \$26.1 million in capital additions for this project which is net of grant funding from Natural Resources Canada for BESS and net of \$6.5 million in contributions from the SRA”.
- b) For the River Monitoring Project, EWSI projected that \$2.6 million of costs would be incurred in 2017-2021 versus the \$4.1 million approved as part of the special rate adjustment. EWSI noted that “EWSI funding was used to purchase the necessary monitoring equipment and related infrastructure, and to pay for specialized services necessary for sample station installation and for analytical lab services for samples collected by AEP. The pace of the work, therefore, and the resulting expenses was limited by Alberta Environment and Parks (AEP) capacity to complete the necessary field work. This was especially evident in 2020 when AEP staff were restricted from completing field work for several months of the year. EWSI is confident this issue will be resolved once COVID restrictions are lifted in the province....EWSI intends to continue the North Saskatchewan River Monitoring Program in the 2022-2026 PBR term. The goals of the program are to understand the drivers of water quality and quantity including the effects of continued land use change, climate change, and population growth pressures and to inform planning at the regional and municipal scale....Now that the system of monitoring stations has been built and is operational, the forecast expenditures have been reduced to \$500 thousand per year”.

Table 5: EWSI 2017-2021 Special Rate Adjustments - \$ millions (COE-EWSI-4)

	2017-21 PBR Approved	2017-21 Actual/ Forecast	Variance
North Saskatchewan River Monitoring Costs	\$4.1	\$2.6	\$1.4

Administration agrees with the proposed treatment by EWSI to carry forward amounts received but not incurred under the Special Rate Adjustment for the Green Power Initiative in 2017-2021 to fund the initiative in 2022-2026 as part of the E.L. Smith Solar Farm project. Unlike the normal operating and capital expenses included in the forecast revenue requirement that are subject to “I-X” under performance based regulation (and therefore subject to stronger incentives to improve efficiencies with certain programs being higher than forecast and other programs being lower than forecast), the environmental special rate adjustment provides funding for a specific program outside of the “I-X” formula. To the extent the approved funds for the specific program are not spent in the 2017-2021 term, it would be reasonable to either refund these unspent amounts to utility customers (if the program is finished) or to carry forward the unspent amounts to the next PBR term to continue to fund the program.

Therefore, consistent with the treatment for the Green Power Initiative, Administration recommends that consideration be given to carrying forward the \$1.4 million variance between amounts approved and incurred in 2017-2021 for the River Monitoring project to fund the initiative in 2022-2026 (with estimated costs of \$0.5 million per year).

3. 2017-2021 Non-Routine Adjustments

Administration has reviewed the 2017-2021 non-routine adjustments approved for Water, Wastewater Treatment and Drainage Services, with the following matters being noted that Utility Committee and City Council may wish to consider further:

- **2017-2021 Non-Routine Adjustments - consideration be given to potential reductions to the Water Services 2022-2026 and Wastewater Treatment and Drainage Services 2022-2024 revenue requirements to refund or carry forward differences between amounts approved and actual amounts incurred for non-routine adjustments during the 2017-2021 PBR term; and**

- **2017-2021 CORe Non-Routine Adjustment - a further review be completed of the capital and operating amounts classified by EWSI as part of the 2017-2021 CORe non-routine adjustment.**

The EPCOR Water Services and Wastewater Treatment Revised Bylaw 17698 and the EPCOR Drainage Services Bylaw 18100 allow for non-routine adjustments to water, wastewater treatment and drainage customer rates for items that are unusual, significant in size or nature, and beyond the scope of control of EWSI. The annual revenue requirement impact of the non-routine adjustment must be greater than \$500,000 or greater than \$1 million cumulatively to be eligible, with City Manager approval required where the annual adjustment is less than \$3 million and City Council approval required where the annual adjustment is \$3 million or more. The rate impact of non-routine adjustments will be calculated and added to the Fixed Monthly Service Charge and allocated on a proportionate basis to customers.

In response to COE-EWSI-19, EWSI provided a reconciliation of the amounts approved versus incurred for each of the non-routine adjustments in 2017-2021 as well as a description of the work and accomplishments achieved. Prior to 2017, EWSI had not applied for a non-routine adjustment under performance based regulation.

Table 6: 2017-2021 Non-Routine Adjustments (COE-EWSI-19)

Revenue Requirement \$mm		2017-21 PBR Approved	2017-21 Actual/Forecast	Variance
Water (2017-2021)	Corporate Cost Reduction Refund	\$(11.4)	\$(12.6)	\$1.2
	Lead Mitigation Strategy	\$3.4	\$1.5	\$1.9
	LRT Relocations	\$1.5	\$1.6	\$(0.1)
	Leduc County Annexation	\$2.2	\$1.6	\$0.6
Wastewater (2017-2021)	Corporate Cost Reduction Refund	\$(4.2)	\$(3.8)	\$(0.4)
Drainage (2017-2021)	LRT Relocations	\$5.3	\$3.2	\$2.1

	SIRP	\$8.3	\$8.0	\$0.3
NRA's - Excluding CORE				\$5.6
Drainage (2017-2021)	Corrosion & Odour (note 1)	\$10.8	\$14.8 (note 1)	\$(4.0)

Note 1 - \$66.5 million of additional capital expenditures and related costs have been allocated to the Corrosion and Odour NRA by EWSI as discussed further in response to COE-EWSI-19 (see Table 7 below).

Administration recommends that a further review be completed of the capital and operating amounts classified by EWSI as part of the CORE non-routine adjustment. Paragraph 423 of the Drainage Application provides an explanation regarding “a \$66.5 million increase for EWSI’s new CORE Large Trunk Rehabilitation Program. The large trunk projects are now included under the CORE because these projects target rehabilitation of large trunks with high levels of corrosion in emerging odour areas in the network. The CORE Large Trunk Rehabilitation Program includes projects such as the large trunk project at 151 Street and 99 Avenue forecast at \$26.8 million which is phase 2 of the West Jasper Place project. Phase 1 of the project was included in the previous City Large Trunk Program (LTP) and was completed in 2018 under the Drainage System Rehabilitation category. However, phase 2 had not yet been approved at the time of Drainage transition and, as such, is not included in the 2018-2021 City LTP amounts. Other significant projects in the CORE Large Trunk Rehabilitation Program include the Clareview Sanitary Rehabilitation Project (\$7.5 million), the Gold Bar Utilidor Rehabilitation Project (\$7.3 million), NL1 Chamber Rehabilitation Project (\$4.8 million), Lauderdale Project (\$6.5 million) and unplanned reactive emergency projects at San 11, Rhatigan Road and Trestle 7 (\$4.1 million)”.

Table 7: NRA Corrosion & Odour Capital Expenditures - \$ millions (Table 7.1-1 of Application)

NRA Corrosion & Odour Capital Expenditures - \$ millions	2018-21 NRA Approved	2018-21 Actual/ Forecast	Variance
- Large Trunk Rehabilitation	\$0.0	\$66.5	\$(66.5)

- CORE Access Manhole Program	\$20.0	\$13.8	\$6.2
- CORE Drop Structure Modification	\$19.4	\$10.2	\$9.2
- CORE Projects < \$10 million	\$14.3	\$7.6	\$6.7
Total	\$53.7	\$98.1	\$(44.4)

Notwithstanding the appropriate classification of costs for inclusion in the CORE non-routine adjustments (NRA), **Administration recommends that the Utility Committee consider the merits of carrying forward amounts received but not incurred for the 2017-2021 non-routine adjustments for Water, Wastewater Treatment and Drainage Services.** Unlike the normal operating and capital expenses included in the forecast revenue requirement that are subject to “I-X” under performance based regulation (and therefore subject to stronger incentives to improve efficiencies with certain programs being higher than forecast and other programs being lower than forecast), a non-routine adjustment provides funding for a specific initiative outside of the “I-X” formula and “beyond the scope of control of EWSI”. To the extent the approved funds for the specific initiative are not spent in the 2017-2021 term, it may be reasonable to either refund these unspent amounts to utility customers (if the program is finished) or to carry forward the unspent amounts to the next PBR term to continue to fund the program.

Administration notes that non-routine adjustments have not been requested by EWSI prior to the 2017-2021 PBR term. In reviewing and approving these non-routine adjustments, the focus was primarily on the prudence of these initiatives with limited information and questions directed at the forecast costs and revenue requirement impacts. Administration also notes that the EPCOR Water Services and Wastewater Treatment Revised Bylaw 17698 and the EPCOR Drainage Services Bylaw 18100 indicate that “Where a non-routine adjustment is very significant in size, it may be charged to the Adjustment Deferral Account. EWSI will determine a reasonable time frame over which to recover/credit the balance of the account. Carrying costs will be calculated on the Adjustment Deferral Account balance”. Administration notes that a deferral account is routinely used by the AUC to true-up the difference between forecast and actual costs for material, unusual items that are outside the control of the Utility and not reasonably forecastable. Therefore, Administration recommends that consideration be given to either refunding the differences between amounts approved and incurred in 2017-2021 for non-routine adjustments or carrying forward the variances to continue to fund the initiatives in 2022-2026 (and 2022-2024).

D. 2022-2026 AND 2022-2024 PBR PLANS

The forecast revenue requirements for Water Services (2022-2026), Wastewater Treatment (2022-2024), and Drainage Services (2022-2024) are summarized in Table 8 below. The revenue requirements are comprised of operating costs, franchise fees and property taxes, depreciation, cost of debt, and return on equity which are discussed further below.

Table 8: Revenue Requirement - \$ millions (Schedules 3.1, 3.2 of Water, Wastewater, Drainage Applications)

Revenue Requirement - \$mm	2021 PBR	2021 Forecast	2022 PBR	2023 PBR	2024 PBR	2025 PBR	2026 PBR
In City Water Services	\$215.2	\$199.5	\$211.1	\$218.8	\$224.8	\$228.4	\$232.5
Fire Protection Services (note 1)	\$15.3	\$14.8	\$21.2	\$21.8	\$22.3	\$22.8	\$23.3
Wastewater Treatment (note 2)	\$113.7	\$108.9	\$122.6	\$128.9	\$134.5	n/a	n/a
Drainage Services							
- Sanitary & Stormwater	n/a	\$209.6	\$207.4	\$214.5	\$230.4	n/a	n/a
- Drainage CORe	n/a	\$5.8	\$14.2	\$15.2	\$20.4	n/a	n/a
- Drainage SIRP	n/a	\$4.1	\$12.0	\$19.8	\$26.4	n/a	n/a
Total Drainage Services	n/a	\$219.5	\$233.6	\$249.5	\$277.2	n/a	n/a

Note 1 - as explained in response to COE-EWSI-16a, the increase in the revenue requirement for fire protection services to \$21.2 million in 2022 is driven by four main factors: higher hydrant related operating costs (\$2.1 million); the addition of franchise fees to the Fire Protection Services revenue requirement starting in April 2022 (\$1.0 million); higher than forecast hydrant rate base creating higher depreciation (\$0.7 million) and a higher return on rate base (\$2.5 million).

Note 2 - as explained in Paragraph 20 of the Wastewater Treatment rates application, the increase in the revenue requirement in 2022 to \$122.6 million is mainly due to the transfer of biosolids management to Wastewater Treatment from Drainage Services in 2022 (\$12.6 million).

In the PBR Readers Guide, EWSI summarized the average annual water cycle utility bill changes for residential (3.5%) and commercial (7.6%) customers for 2022-2024 based on the requested rate increases for Water, Wastewater Treatment and Drainage Services combined.

Table 9: Average Customer Water Cycle Utility Bill Increase (Tables 4 and 5 of PBR Readers Guide)

	2021 Forecast	2022 PBR	2023 PBR	2024 PBR
Residential Bill - \$	\$101.86	\$108.60	\$111.29	\$116.29
Residential Bill - % increase	n/a	6.62%	2.48%	4.49%
Commercial Bill - \$	\$558.86	\$632.86	\$679.65	\$732.28
Commercial Bill - % increase	n/a	13.24%	7.38%	7.76%

Grant Thornton also provided a further analysis of the proposed rate increases in Section 1.4 of Attachment 4 noting: *“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”.*

As part of the review and approval of the 2017-2021 Water and Wastewater Treatment rates applications, Utility Committee directed EWSI to smooth the customer rate increases over the five year PBR period. ***Likewise, Utility Committee and City Council may wish to give further consideration to:***

- ***a potential smoothing of the customer rates increases over the five year PBR term (2022-2026) for Water Services and over the three year PBR term (2022-2024) for Wastewater Treatment and Drainage Services, consistent with the direction provided by the Utility Committee for the EWSI 2017-2021 rates applications.***

1. Operating Costs

Administration reviewed the forecast operating costs for 2022-2026 (2022-2024), along with variance explanations provided in the applications and responses from EWSI to written questions (COE-EWSI-6 and 8), and did not identify any significant concerns.

Although EWSI did realize significant operating cost reductions relative to amounts forecast and approved in the past two PBR terms (2012-2016, 2017-2021), Administration notes that the forecast operating costs increases have been limited to approximately 1% per year in 2022-2024 (PBR Readers Guide) and incorporate the operating efficiencies realized in prior years.

Table 10: 2022-2026 Operating Costs - \$ millions *(Table 2 of PBR Readers Guide)*

Operating Costs - \$mm	2021 Forecast	2022 PBR	2023 PBR	2024 PBR	2025 PBR	2026 PBR
In-City Waste Services	\$103.3	\$103.7	\$106.8	\$109.2	\$111.3	\$114.0
Wastewater Treatment	\$55.7	\$70.8	\$77.8	\$77.4	n/a	n/a
Drainage Services	\$127.7	\$110.6	\$105.6	\$108.4	n/a	n/a
Total	\$286.7	\$285.1	\$290.2	\$295.0	\$111.3	\$114.0

Administration has identified the following Full-Time Equivalents matter that Utility Committee and Council may wish to consider further:

- ***Full-Time Equivalents - a review should be completed (in advance of the next rates applications being submitted by EWSI to establish new customer rates for Drainage and Wastewater Treatment services effective April 1, 2025) for the need and format of reporting full-time equivalents (FTEs) in future EWSI rates applications. Providing a breakdown of actual and forecast FTEs is a typical information request in regulatory proceedings in order to properly assess the size and composition of the workforce.***

EWSI noted in its PBR Readers Guide (pg.19) that “Staff costs and employee benefits are the largest operating expense for the water-cycle utilities, and more than three-quarters of all staff are union employees. Personnel costs are 54% of Drainage operating costs, 30% in Water and 25% in Wastewater”. Administration requested a breakdown of the actual and forecast FTEs for water, wastewater treatment and drainage to assess the reasonableness of staff costs. However, EWSI noted in response to COE-EWSI-17 that “EWSI’s internal reporting system is setup to track the information required to complete the MFR Schedules and PBR Progress Reports. EWSI does not actively track full time equivalents, and is unable to provide a breakdown of full time equivalents by operational function”.

With staff costs being the largest component of the operating costs for the EWSI utilities and the number of employees being the primary driver for staff costs, EWSI should be required to track and report on FTEs in order to allow the Utility Committee and Council to assess the reasonableness of these requested amounts. Administration notes that providing a breakdown of actual and forecast FTEs is a typical request in regulatory proceedings in order to properly assess the size and composition of the workforce.

2. Depreciation Expense

Administration has reviewed the depreciation rates as detailed in Financial Schedule 12-2 of the Water, Wastewater Treatment and Drainage applications, and considers the slight changes in the overall composite depreciation rates for 2022-2026 in comparison to 2017-2021 to be reasonable (Water Services - 2.03% vs 1.91%; Wastewater Treatment - 3.04% vs 2.74%; Drainage Services - 1.89% vs 2.0%). Appropriate

explanations have been provided in the applications for minor changes in depreciation rates including new asset categories such as the Solar Power Farm (35 years) and the Battery Energy Storage Systems (10 years).

The Water and Wastewater Treatment depreciation rates continue to be based on the depreciation study completed by Gannett Fleming for the 2017-2021 rates applications, with the Drainage depreciation rates based on the previous rates used for the drainage utility prior to the transfer to EWSI in 2017. Administration considers this overall approach to be reasonable since there are no factors that would indicate a significant change in the estimated useful lives of the assets. As noted by EWSI and recommended by Administration, updated depreciation studies should be completed for each of the next water, wastewater treatment and drainage performance based rates applications.

As noted in paragraph 237 of the Water Services application “beginning in 2020 EWSI began to capitalize on a go forward basis, certain operating activities related to valves and services. These costs are more appropriately amortized over their useful life rather than expensed as operating expenses”. Administration considers the capitalization of these costs as part of the 2022-2026 rates application to be reasonable. However, as discussed above further consideration of the appropriate regulatory treatment of the 2020 and 2021 capitalized costs may be warranted given customer rates will have already funded approximately \$2.9 million and \$3.0 million respectively of these costs as an operating expense for 2020 and 2021.

3. Cost of Debt

Administration and Grant Thornton have reviewed EWSI’s forecast cost of new debt issuances of 3.5% for Water (2022-2026), and Wastewater Treatment and Drainage Services (2022-2024) based on a stand alone debt rating of A (low), and have concluded it is reasonable based on current and forecast Government of Canada debt rates and recent EWSI debt issuances.

Administration also reviewed whether a deferral account is warranted to adjust customer rates for the difference between the forecast and actual debt rates issued in 2022-2026 given the historical differences in the prior two PBR terms for 2012-2016 and 2017-2021 (COE-EWSI-1d). Although a similar deferral account has been implemented by the AUC for certain regulated utilities in Alberta, Administration does not consider a deferral account is warranted at this time for EWSI given the significant decrease in the forecast cost of new debt issuances from 4.82% forecast for the 2017-2021 rates applications to 3.5% for 2022-2026 PBR term, and the potential

negative impact a deferral account may have on the incentive for EPCOR Utilities Inc. to continue to access the financial markets on the most favorable terms and rates.

In responding to Administration's questions (COE-EWSI-1.b.iii) regarding how the debt rates for EWSI are calculated and flowed through from EPCOR Utilities Inc., ***EWSI noted that it had inadvertently calculated the actual interest rates for EWSI based on a stand alone credit rating of BBB+ rather than A (low). EWSI will be reducing the debt costs by \$0.5 million per year from 2022-2026 for Water Services and by \$0.4 million per year from 2022-2024 for Wastewater Treatment*** in its updated rates applications ("compliance filing") following the Utility Committee meeting on June 25, 2021 and in advance of final approval by City Council in August 2021.

In response to COE-EWSI-1.b.ii, EWSI clarified that EPCOR Utilities Inc. calculates the debt rate for EWSI based on market conditions rather than flowing through (or mirroring) the actual cost of debt issued by EPCOR Utilities Inc. Administration notes that these debt calculations are currently not subject to ongoing regulatory review by the Utility Committee or Administration (unlike the AUC that may require utilities to file applications requesting approval for each respective debt issue and associated debt rate).

Therefore, Administration recommends that:

- ***a further review should be completed of how debt costs are calculated in advance of the next rates applications being submitted by EWSI to establish new customer rates for Drainage and Wastewater Treatment services effective April 1, 2025.***

4. Return on Equity

Grant Thornton and Administration have completed an overall assessment of the requested Return on Equity of 9.95% included in the EWSI rates applications. The Utility Committee and City Council may wish to give further consideration to:

- ***a potential 0.15% decrease in the requested return on equity from 9.95% to 9.80%, as a result of updating the formula used by EWSI to calculate the requested 9.95% to be based on the final return on equity approved by Council for the 2017-2021 PBR term of 10.175% (10.175% - 0.38% change in bond yield = 9.80%).***

- ***a further potential 0.25% decrease in the requested return on equity given an evaluation of the risks for EWSI relative to the AUC benchmark of 8.50% and the impact on EWSI's risk if a water consumption deferral account is implemented along with an increased shift in customer rates from variable to fixed.***

a) Formulaic Calculation for 2022-2026 Return on Equity

As part of the 2017-2021 Water and Wastewater Treatment applications, EWSI proposed a reduction in the approved return on equity from 10.875% for the 2012-2106 PBR term to 10.50% for 2017-2021 (with no change in the capital structure of 60% debt and 40% common equity).

The 10.50% was based on a technical Cost of Capital report prepared for EWSI by an external consultant. Utility Committee and Council ultimately approved a return on equity of 10.175% for 2017-2021, based in part on the recommendations of Grant Thornton (external consultant engaged by Administration) that the Utility Committee consider a reduction to the proposed cost of equity in the range of 8 to 38 basis points to 10.12% to 10.42%.

For the 2022-2026 and 2022-2024 rates applications, EWSI has proposed a return on equity of 9.95% (capital structure remaining at 60% debt and 40% common equity) based on updating the previous recommendations by Grant Thornton for 2017-2021 by a "formulaic extension".

As explained by EWSI in Appendix D - Return on Equity Memorandum of the rates applications, with the onset of the global COVID-19 pandemic and the associated impact on financial markets, EWSI determined that traditional approaches to determining a return on equity were not appropriate. Instead a formulaic extension of Grant Thornton's previous analysis is the most straightforward approach and best aligns with the City's desire to determine a risk premium to the AUC's generic cost of capital to derive the allowed rate of return on equity for EWSI.

EWSI also provided commentary in Section 3.0 of Appendix D to document the differences in the risk profile of EWSI's businesses in relation to those regulated by the AUC to justify the risk premium over the AUC generic allowed return on equity (includes public health risk of consumable product, health and environment risk, revenue risk, capital recovery risk, contributed asset risk, and fixed return on equity and cost of debt risk).

As shown in Table 4.4-1 of Appendix D, EWSI has calculated the 9.95% proposed return on equity by adjusting (1) Grant Thornton's 2017-2021 estimated premium above the AUC approved generic rate of return (calculated to be 1.83% above the AUC approved return of 8.5%, based on the range provided by Grant Thornton as explained by EWSI in COE-EWSI-2a) by (2) the reduction in bond yields in recent years prior to the impact of the pandemic.

Administration considers the proposed formulaic approach by EWSI to be reasonable in light of the current economic conditions and COVID-19 pandemic. However, Administration questions (COE-EWSI-2a) why the 10.175% approved return on equity approved for the 2017-2021 PBR term is not the appropriate starting point for updating the requested return on equity for 2022-2026, resulting in a requested return on equity of 9.80%. Administration notes that for 2017-2021, Grant Thornton provided a range for the appropriate return on equity (10.12%-10.42%) with Council approving the bottom end of the range of 10.175%.

Table 11: EWSI Requested 2022-2026 Return on Equity

	EWSI Requested 2022-2026 ROE	2022-2026 ROE Based on 10.175%	Difference
Council Approved EWSI 2017-2021		10.175%	
AUC 2019 Approved Generic ROE	8.50%		
Grant Thornton Average Risk Premium	1.83%		
ROE Before Decrease in Bond Yields	10.33%	10.175%	(0.15)%
Change in ROE due to Lower Bond Yields	(0.38%)	(0.38%)	
Proposed EWSI 2022-2026 ROE	9.95%	9.80%	(0.15)%

The return on equity approved by Council for EWSI since 2012 in comparison to the generic return on equity approved by the AUC for regulated utilities in Alberta is provided in Table 12 below.

Table 12: EWSI and AUC Approved Return on Equity

	2012-2016 PBR Plan	2017-2021 PBR Plan	2022-2026 PBR Plan (Requested)
EWSI - Approved Return on Equity	10.875%	10.175% <i>(10.5% Requested)</i>	9.95%
AUC Decisions - Generic Return on Equity	8.75% 2012 8.30% 2013-2015 8.30% 2016	8.5% 2017 8.5% 2018-2020 8.5% 2021	TBD

b) Grant Thornton Review of EWSI Risks and Proposed Return on Equity

Grant Thornton completed a review of EWSI's proposed cost of capital for the 2022-2026 and 2022-2024 rates applications including the proposed capital structure (40% equity and 60% debt), return on equity (9.95%), company specific risk factors compared to the AUC generic cost of capital, and benchmarking against other jurisdictions. As summarized by Grant Thornton in Section 4.1 of Attachment 4:

- 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;
- 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; and
- ***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.***

Administration has proposed implementing an annual update to the water consumption forecast or a deferral account to true up the difference between the water consumption forecast and actual amounts (see Water Consumption Forecast below). Administration notes that this proposed measure, along with the change proposed by EWSI to recover additional amounts through fixed versus variable customer rates for the 2022-2026 PBR term, would reduce the forecasting risk to EWSI for the impacts of water consumption.

Therefore, the Utility Committee and Council may wish to consider a further potential 0.25% decrease in the requested return on equity given an evaluation of the risks for EWSI relative to the AUC benchmark of 8.50% and the impact on EWSI's risk if a water consumption deferral account is implemented along with an increased shift in customer rates from variable to fixed.

5. Capital Program

A breakdown of the historical and forecast net capital expenditures for Water, Wastewater Treatment and Drainage Services is provided below in Tables 13 to 15.

Table 13: Water Services 2022-2026 Net Capital Expenditures - \$ millions (Tables 6.1-1, 6.2-1)

	2017-21 PBR Total	2017-21 Actual/ Forecast	2022-2026 PBR	2022-26 PBR vs 2017-21
Water Services:				
- Reliability & Life Cycle (includes Accelerated Programs)	\$330.2	\$347.2	\$229.0	\$(118.2)
- Other Capital Expenditures	\$185.0	\$229.9	\$200.3	\$(29.6)
Total Net Capital Expenditures	\$515.2	\$577.1	\$429.3	\$(147.8)

Table 14: Wastewater Treatment 2022-2024 Net Capital Expenditures - \$ millions (Tables 6.1-1, 6.2-1)

	2017-21 PBR Total	2017-21 Actual/ Forecast	2019-21 Actual/ Forecast	2022-2024 PBR	2022-24 PBR vs 2019-21
Wastewater Treatment:					
- Reliability & Life Cycle	\$203.4	\$211.8	\$127.0	\$141.4	\$14.4
- Other Capital Expenditures	\$32.0	\$33.2	\$18.8	\$30.3	\$11.5
Total Net Capital Expenditures	\$235.4	\$245.0	\$145.8	\$171.7	\$25.9

Table 15: Drainage Services 2022-2024 Net Capital Expenditures - \$ millions (Tables 7.1-1, 7.2-1)

	2018-21 COE Plan	2018-21 Actual/ Forecast	2019-21 Actual/ Forecast	2022-2024 PBR	2022-24 PBR vs 2019-21
Drainage Services:					
- Neighborhood Renewal	\$175.8	\$122.2	\$96.2	\$76.5	\$(19.7)
- System Rehabilitation	\$119.2	\$214.7	\$172.8	\$166.0	\$(6.8)
- SIRP & Flood Mitigation	\$254.7	\$114.5	\$100.9	\$239.6	\$138.7
- COR	\$53.7	\$98.1	\$96.4	\$180.4	\$84.0
- Other Capital Expenditures	\$185.8	\$186.9	\$166.2	\$91.8	\$(74.4)
Total Net Capital Expenditures	\$789.2	\$736.4	\$632.5	\$754.3	\$121.8

On an overall basis, Administration considers the forecast capital expenditures for the 2022-2026 and 2022-2024 PBR terms for Water, Wastewater Treatment and Drainage Services to be reasonable in providing safe and reliable service.

Notwithstanding this Administration has identified the following capital program matters that Utility Committee and Council may wish to consider further:

- ***Overall Capital Program - confirmation of the overall capital program including a reduction in reliability and life cycle improvement capital expenditures for Water Services in 2022-2026 based on the new risk assessment methodology adopted by EWSI, and the continued scheduling and rollout in 2022-2024 for two key initiatives (Stormwater Integrated Resource Plan and Corrosion and Odour Reduction).***

As explained by EWSI in paragraphs 451-452 of the Water Services Application “In order to minimize rate increases over the 2022-2026 term, significant capital constraints were applied in forecasting capital expenditures. \$114.8 million was reduced from Distribution and Transmission Mains alone. A new Risk Based Renewals Program is introduced, which combines accelerated, proactive and reactive work into a single program, enabling consistent risk-ranking to ensure that the limited funding is directed toward the Distribution main assets with the highest risk. On the transmission side, a new Critical Pipeline Inspection Program will enable EWSI to inspected and repaired for less than 5% of the cost of full replacement. Consistent with the 2017-2021 PBR term, EWSI continues to place significant focus for this PBR term on projects and programs related to reliability and life-cycle replacements. As illustrated in Figure 6.2-1, the reliability category represents 53% of planned spending over the PBR term, which is very similar to the 55% allocated to reliability in the 2017-2021 PBR term”.

Administration also notes that the average annual water cycle utility bill increases of 3.5% for residential customers and 7.6% for commercial customers over the 2022-2024 timeframe are being driven in part by significant multiyear initiatives including the Stormwater Integrated Resource Plan (SIRP) and the Corrosion and Odor Plan (COR) (EPCOR PBR Readers Digest), that Utility Committee and Council may wish to reaffirm with EWSI the required scheduling and rollout of these previously approved programs.

- ***City-Initiated Capital Projects - potential increase in funding for City-Initiated Capital Projects to align the EWSI and City of Edmonton capital programs and work plans in the 2023-2026 budget cycle. Alternatively, a deferral account could be implemented to true up the difference between the forecast and actual capital expenditure costs incurred by EWSI to align its capital projects annually to the City of Edmonton's work plan.***

Administration submitted questions (COE-EWSI-20) to EWSI to gain clarity on the dollar amounts included in the rates applications and the analysis and factors considered by EWSI in determining when it is appropriate to replace its water or drainage infrastructure as part of projects being undertaken by the City under its neighborhood renewal programs. Administration notes that the forecast capital expenditures included in the EWSI rates applications for City Initiated Capital Projects have been significantly reduced from the 2017-2021 program (COE-EWSI-20a). However, the City of Edmonton's scale of roadway renewal will be significantly increased in the 2023-2026 budget, including approximately 40 km per year of alley renewal. Administration therefore recommends that the EWSI capital programs for City Initiated Capital projects be adjusted to align with the City of Edmonton's 2023-2026 budget cycle in order to ensure the work plans and scheduling are coordinated, and the overall costs to residents of the City of Edmonton and utility ratepayers are minimized.

- ***Real Estate Consolidation Project - potential adjustment to the "in service date" for the Aurum property (Real Estate Consolidation project) to mid 2022 from January 1, 2022 based on employees moving into the facility in the 1st quarter of 2022, resulting in a reduction in depreciation expense, return on equity, and cost of debt in 2022.***

Administration submitted questions (COE-EWSI-11) to EWSI regarding the need and prudence of the Real Estate Consolidation project. Based on the business case and written responses, Administration considers the relocation and consolidation of the water and drainage workforce into the new Aurum property to be reasonable. However, Administration has concerns with the assumption used in the applications as to when the Aurum property will be in service and "used and useful".

As noted by EWSI in response to COE-EWSI-11c, a full year of depreciation and cost of capital has been included in the 2022 revenue requirement for Aurum property, based in part on all forecast capital

expenditures on the property being completed by the end of 2021 (property is “in-service” by the end of 2021). However, Administration considers that a 2022 in-service date for the Aurum property is more appropriate given EWSI indicates employees are moving into the facility in the 1st quarter of 2022 (and 2022 is when the Aurum property will be “used and useful”). Therefore, Administration recommends that the EWSI rates applications be adjusted to only include a half year rather than a full year of depreciation and cost of capital in the 2022 revenue requirements.

6. Cost of Service and Rate Design

Grant Thornton and Administration completed an assessment of the cost of service and rate design for Water Services, Wastewater Treatment and Drainage Services, and on an overall basis have concluded they are reasonable.

As summarized by Grant Thornton in Section 3.0 of Attachment 4:

- EWSI’s cost of service models are consistent with best practice frameworks (i.e. American Water Works Association (AWWA) and Water Environment Federation (WEF) frameworks) and have incorporated the methodologies of the HDR Cost of Service Study (HDR COSS);
- 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 allocate the public fire protection revenue requirement between customer classes, which appears to be reasonable based on our review;
- 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 EWSI’s 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; and
- ***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*** (see Water Consumption Forecast below).

In addition, EWSI has proposed an increase to the Monthly Service Connection Fee for Water Services, with a corresponding decrease in the variable fees, effective April 1, 2022. The rationale for this change is described in the Special Rate Adjustments section below.

7. Water Consumption Forecast

Administration has completed a review of the methodology and assumptions used by EWSI to determine the water consumption forecast included in the Water, Wastewater Treatment, and Drainage rate applications.

- ***Administration is unable to gain a sufficient level of comfort as to the reasonableness of the water consumption forecast for 2022-2026 based on the historic impact of weather, the added uncertainty due to COVID-19, and the relatively conservative forecasts EWSI has included for 2022-2026 (2022-2024). As an alternative, Administration is proposing, for the Utility Committee and Council's consideration, an annual update to the water consumption forecast or a deferral account to true up the difference between the water consumption forecast and actual amounts.***

Over the past two PBR terms, EWSI has incurred significant unfavorable revenue variances due in large part to lower than forecast water consumption (as discussed further in the EWSI Progress Reports). The EWSI rates applications contain a number of references regarding the historic ability for EWSI to accurately forecast water demand due to changing weather conditions, and that this risk is borne by EWSI under performance based regulation (e.g. Water Services Paragraph 137 - “The total annual water demand varies with changing weather conditions, which are very difficult to predict”. Paragraph 139 - “Under EWSI’s PBR structure, the consumption

forecast risk is entirely borne by EWSI and variations from forecast within the 5-year PBR term are not passed on to EWSI's customers.”)

The rates applications also contain a number of references to the added complexities of the COVID-19 pandemic and the ability for EWSI to rely on historic consumption to forecast trends for 2022 to 2026 (e.g. Water Services Paragraph 262 - “The second change to the methodology for the Commercial class forecast relates specifically to 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.”)

As noted in Paragraph 252 regarding the impact of COVID-19, “EWSI is forecasting a return to long term trends in customer count and consumption per customer for all rate classes by 2023. The exception is commercial consumption per customer, which is forecast to return to the long term trend line by 2024”. Although the assumption by EWSI for water consumption to return to long term trends over the 2022-2026 time frame is not unreasonable, it is uncertain to Administration whether the return may be sooner or later than 2023/2024 and the magnitude of the impact. Administration also notes that EWSI has forecast significant fluctuations within certain years as a result of the impact of COVID-19 rather than being able to rely on historic trends (e.g. Water Services paragraph 272 - “Historically over the years 2009-2019 commercial consumption per customer has been declining at a rate of 3.10% annually. Based on observations of the impact of the COVID-19 pandemic on EWSI's commercial customer base, EWSI's forecast reflects a decline in 2020 of 24.05% in commercial consumption per customer.”).

EWSI has implemented enhancements to the methodologies used to forecast water consumption for the 2022-2026 (2022-2024) term, including for residential and commercial customer counts and residential consumption per customer. However, based on the limited information provided by EWSI in the applications, Administration is unable to comment on the effectiveness of these enhancements relative to the increased forecast risk due to the uncertainty of COVID-19. Administration also notes that the customer count and consumption per customer assumptions EWSI has used for the 2022-2026 timeframe appear to be on the whole more conservative than historical trends.

Therefore, given the potential impact of the pandemic and other economic factors on the ability to accurately forecast consumption volume and customer count for a five year PBR term, Administration requested EWSI to comment on possible alternatives for minimizing the forecasting risk (COE-EWSI-3b). EWSI noted that either an

annual update to the consumption forecast or a deferral account to true up the difference between forecast and actual water consumption may increase the accuracy of consumption amounts embedded in customer rates. However, this approach would result in the forecast risk being passed onto customers and also decrease rate stability as adjustments are made annually to customer rates.

EWSI also stated a deferral account is not appropriate since “Philosophically and practically, the use of deferral accounts blunts the very purpose and incentives for which PBR was created in the first place. The danger in departing from these overarching goals and selectively instituting deferral accounts is that parties to the regulatory process are then encouraged to “cherry pick” based on whether they believe that outcomes will benefit utilities or customers; and utilities will be encouraged to spend fewer resources on superior performance in areas where deferral accounts exist and focus instead on superior performance in areas where they are placed fully at risk. In short, the use of deferral accounts for all but the most extraordinary risks is philosophically antithetical to the goals and objectives of performance-based regulation.

Administration agrees that deferral accounts should be used in very limited situations where there are material amounts that are outside the control of the company and not reasonably forecastable, which in this case may apply to the water consumption forecast for the reasons previously discussed. **Administration also notes that a similar deferral account mechanism has been in place for a number of years by ATCO Gas as approved by the AUC for the impacts of weather on revenue.** As noted on the ATCO website for natural gas rates “The Weather Deferral Account was created to account for the effect of temperature fluctuations on billings to customers. Rider W is applied because the actual natural gas delivery revenue was lower (higher) than the normal natural gas delivery revenue, due to warmer (colder) than expected temperatures”.

8. Annual Adjustments to Customer Rates

Under Performance Based Regulation, annual adjustments to customer rates are based on a predefined formula for the term of the plan. The annual adjustments for the EWSI Water, Wastewater Treatment and Drainage Services plans include an Inflation factor (“I”), an Efficiency factor (“X”) and special rate adjustments as discussed further below. The basic PBR formula adjusts customer rates annually by a rate of inflation (“I”) that reflects the increased cost of labour and non-labour inputs the Utility uses, less an Efficiency factor (“X”) to reflect the productivity improvements the Utility can be expected to achieve during the PBR period.

a) Inflation Factor (“I”)

Grant Thornton and Administration completed an assessment of the Inflation factors (“I”) proposed for Water Services, Wastewater Treatment and Drainage Services, and on an overall basis have concluded they are reasonable.

EWSI is proposing to use the same overall methodology to calculate the Inflation factors (“I”) for Water (2.31%), Wastewater Treatment (2.26%) and Drainage Services (2.33%) as was previously approved for the 2017-2021 PBR term (2.27%). The Inflation factors are based on the weighted average forecast inflation rates for non-labour and labour costs. The non-labour component is based on the Alberta Consumer Price Index (“CPI”) with the labour component based on the Alberta Average Hourly Earnings (“AHE”) index provided by Statistics Canada.

Table 16: Forecast Inflation Factors (Tables 4.2.1-1, 5.2.1-1 of Rates Applications)

	Forecast CPI (Non-labour)	CPI Weighting	Forecast AHE (Labour)	AHE Weighting	Weighted Average Inflation (I)	2017-2021 Inflation Factor (I)
Inflation Factor (“I”):						
Water (2022-2026)	2.2%	60%	2.5%	40%	2.31%	2.27%
Wastewater (2022-2024)	2.2%	65%	2.4%	35%	2.26%	2.27%
Drainage (2022-2024)	2.2%	40%	2.4%	60%	2.33%	n/a

The CPI and AHE weightings in Table 16 above are based on the forecast non-labour and labour costs for each of the three utilities over the PBR term (2017-2021 methodology was previously based on the prior years’ actual non-labour and labour costs as discussed further in Section 6 of the Grant Thornton report). EWSI has provided a further breakdown of these forecast weightings in COE-EWSI-5.

EWSI has incorporated the forecast Inflation factors of 2.31%, 2.26% and 2.33% respectively into each of the Water (2022-2026), Wastewater (2022-2024) and Drainage Services (2022-2024) PBR applications and requested customer rates. Once an actual calendar year is complete within the 2022-2026 (2022-2024) period and the actual

rates of inflation for that year are known, the customer rates for the following year will include an adjustment to correct for the difference between the forecast and actual Inflation factors.

b) Efficiency Factor (“X”)

Grant Thornton and Administration have completed an assessment of the Efficiency factors (“X”) proposed in the EWSI rates applications, and consider the continued Efficiency factor of 0.25% for Water Services and Wastewater Treatment to be reasonable. However, Utility Committee and City Council may wish to give further consideration to:

- ***a potential increase in the proposed efficiency factor from 0.25% to 0.50% for Drainage Services based on the continued transition to performance based regulation following the transfer of the Drainage Utility from the City of Edmonton in 2017.***

It is common practice under performance based regulation for the efficiency factor approved for the initial PBR terms to be reduced in subsequent terms. A decreasing efficiency factor recognizes that a Utility should be able to identify and implement more significant operating and capital efficiencies in the earlier years with the adoption of performance based regulation. As an example the Alberta Utilities Commission approved a decrease in the Productivity Factor (including stretch) from 1.16% for the first PBR term (2013-2017) to 0.3% for the second PBR term (2018-2022) for Gas and Electric Utilities operating under PBR in Alberta. In approving the 0.3% productivity factor, ***the AUC noted that it used a combination of judgement and expertise in weighing the evidence since the productivity factor cannot with certainty be identified as a single value but as falling within a reasonable range of values (Decision 20414-D01-2016, paragraph 169).***

Table 17: EWSI Efficiency Factors

	2002-2006 PBR Plan	2007-2011 PBR Plan	2012-2016 PBR Plan	2017-2021 PBR Plan	2022-2026 Proposed
Water (2022-2026)	0.50%	0.25%	0.25%	0.25%	0.25%
Wastewater (2022-2024)	n/a	n/a	0.25%	0.25%	0.25%
Drainage (2022-2024)	n/a	n/a	n/a	n/a	0.25%

As shown in Table 17 above, a similar approach has also been implemented by City Council for the EWSI utilities operating under PBR, with the efficiency factor for Water Services having initially been approved at 0.50% for 2002-2006 and then adjusted to 0.25% thereafter. Administration considers the continued adoption of 0.25% for Water Services (2022-2026) and Wastewater Treatment (2022-2024) to be reasonable, and notes the 0.25% is in line with the 0.30% approved by the AUC for the 2nd PBR term. However, Administration considers that a 0.50% efficiency factor for Drainage Services for the 2022-2024 PBR term may be more appropriate for the following reasons:

- The Drainage Services rates application for 2022-2024 is the first application submitted by EWSI under the approved PBR methodology (e.g. I-X) that provides the comprehensive level of information and EWSI operating and capital forecasts required under the PBR minimum filing requirements. Therefore, similar to the 2002-2006 PBR term for Water Services, a higher efficiency factor of 0.5% would be expected to be realized in the initial PBR terms for Drainage Services. And as noted by Grant Thornton in Attachment 4 *“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...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”*.
- EWSI has realized significant operating cost reductions relative to amounts forecast and approved over the 2012-2016 and 2017-2021 PBR terms for Water and Wastewater Treatment (6.25% to 10.43% reductions per Table 22 of the Grant Thornton report in Attachment 4). Therefore, based on EWSI’s historic operating costs relative to amounts forecast, it would not be unreasonable to expect additional operating reductions to be realized by EWSI for the 2022-2024 Drainage PBR term.
- Drainage Services was transferred to EWSI effective September 1, 2017 and has been operating under the EPCOR Drainage Services Bylaw 18100 with rates being increased 3% annually based on the commitments in the Letter of Intent for Drainage transfer (transitioning to PBR methodology using I-X for 2022-2024). As noted by Grant Thornton in its review of the Drainage Transfer (report FCS00626 Attachment 1 Section 3.1.3.2): *“EWSI does appear to have generated a degree of operational efficiencies. Because the Letter of Intent does not specify a target for the operational efficiencies, we can conclude that EWSI satisfied this*

requirement. However, given the previous references to a 5% target, 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. Specifically, the Grant Thornton PBR Report suggests that the City consider efficiency factors for EWSI's Drainage Utility within a range 0.25% to 0.50%".

c) Special Rate Adjustments

Administration has reviewed the proposed Special Rate Adjustments for each of Water, Wastewater Treatment and Drainage Services as discussed further below, and on an overall basis considers the adjustments reasonable.

- **Water Services**

EWSI is proposing the following four Special Rate Adjustments (SRA) for Water Services as part of the 2022-2026 PBR plan; (i) SRA for Rebasing; (ii) SRA to increase the Monthly Service Connection Fee; (iii) SRA for the 90 Day Bill Payment Deferral Program; and (iv) SRA for Public Fire Protection costs.

The SRA for Rebasing accounts for the difference between EWSI's revenue requirement forecast for the 2022-2026 PBR period and the revenue that would be collected by limiting annual rate increases to inflation less the productivity factor. The intent of the SRA Rebasing is to provide sufficient funding to EWSI for any significant capital expenditures or operating programs over the PBR term that would not be captured by simply inflating annual revenue by the PBR formula for inflation less efficiency (I-X). A Rebasing SRA was approved in EWSI's 2017-2022 PBR plan. That SRA is to be replaced by the proposed Rebasing SRA for the 2022-2026 PBR period. Through the Rebasing SRA, EWSI is proposing to collect a revenue shortfall of approximately \$81.9 million from customers over the 2022 to 2026 PBR period. Administration has reviewed the calculation of the Rebasing SRA and has concluded that it is reasonable.

EWSI has proposed three new SRA's in its 2022-2026 PBR plan. The first new proposed SRA is to increase the Monthly Service Connection Fee, with a corresponding decrease to variable fees, to better reflect the underlying Water Services cost structure which, EWSI estimates, is approximately 85 percent fixed costs. Over the 2017-2022 PBR term, EWSI estimates that approximately 15 percent of Water Services revenue

collected from customers is generated from the Monthly Service Connection (i.e. fixed) fee. The proposed fixed fee increase would result in an increase in the revenue collected from customers via the Monthly Service Connection fee to 25 percent.

From the perspective of an average residential customer, the increase to the Monthly Service Connection Fee would increase the fixed portion of the bill from the current 19 percent to 31 percent. EWSI provides Table 12.2.2-2 comparing residential water bills in ten communities across western Canada showing the percentages of the bill due to the fixed charges and due to the variable charges. The fixed portion of the bill for customers in these communities ranges from a low of zero percent to a high of 45 percent, with five communities having a higher fixed share of the monthly bill than EWSI's proposed 31 percent. Administration believes this SRA is reasonable as it better aligns the fixed customer charges with EWSI's underlying cost structure while still being in the middle of the range of the fixed share of the water bill for water customers in other communities across western Canada.

EWSI's second proposed new SRA is to recover \$1.3 million in forecast incremental bad debt expenses, administration costs and carrying costs associated with the Bill Deferral Program that was established, at the request of City Council, for the 90 day period from March 18, 2020 to June 18, 2020. This program was similar to the programs developed in the regulated electricity and gas utility industries and was implemented in order to give customers who were experiencing financial hardship related to the Covid-19 pandemic the ability to defer the payment of utility bills until June 19, 2020 without any late fees or added interest charges. This SRA will add \$0.29 to the average residential water customer bill in 2022 and will subsequently be removed in 2023. EWSI proposes to adjust its final rate in the 2022 Annual Rate Filing to reflect the actual costs incurred for this program.

The third proposed new SRA is to recover the public fire protection revenue requirement through water rates, as directed by City Council on February 22, 2021. EWSI is proposing to recover \$12.4 million each year (as per the 2021 Fire Hydrant Agreement) over the five year PBR term and an additional \$5.1 in franchise fees over that period for a total of \$67.3 million over the 2022-2026 PBR period.

EWSI had two SRAs approved for the 2017-2021 PBR term, one for Accelerated Programs and the other for Environmental Initiatives, which have both been discontinued beginning April 1, 2022.

- **Wastewater Treatment**

EWSI is proposing two SRAs for Wastewater Treatment as part of the 2022-2024 PBR plan; (i) SRA for Rebasing; (ii) SRA for the 90 Day Bill Payment Deferral Program.

The Rebasing SRA accounts for the difference between EWSI's revenue requirement forecast for the 2022-2024 PBR period and the revenue that would be collected by limiting annual rate increases to inflation less the productivity factor. A Rebasing SRA was approved in EPCOR's 2017-2022 Wastewater PBR plan and that SRA is to be replaced by the proposed Rebasing SRA for the 2022-2024 PBR period. Through the Rebasing SRA, EPCOR is proposing to recover a revenue shortfall amount of approximately \$51.9 million from customers over the 2022 to 2024 PBR period. The largest component of this revenue shortfall is due to the transfer of the Biosolids Management Program from Drainage Services. Administration has reviewed the calculation of the Rebasing SRA and has concluded that it is reasonable.

Similar to Water Services, EWSI's second proposed SRA for Wastewater Services is to recover \$0.6 million in forecast incremental bad debt expenses, administration costs and carrying costs associated with the Bill Deferral Program. This SRA will add \$0.15 to the average residential water customer bill in 2022 and will subsequently be removed in 2023. EPCOR proposes to adjust its final rate in the 2022 Annual Rate Filing to reflect the actual costs incurred for this program.

- **Drainage Services**

EWSI is proposing the following three Special Rate Adjustments (SRA) for Drainage Services as part of the 2022-2024 PBR plan; (i) SRA for Rebasing; (ii) SRA for the 90 Day Bill Payment Deferral Program; and (iii) SRA for the Stormwater Integrated Resource Plan (SIRP) and the Corrosion and Odour Reduction Strategy (CORE) costs.

The Rebasing SRA accounts for the difference between EWSI's revenue requirement forecast for the 2022-2024 PBR period (excluding SIRPv and CORE) and the revenue that would be collected by limiting annual rate increases to inflation less the productivity factor. Through the Rebasing SRA, EWSI is proposing to refund approximately \$30.7 million to customers over the 2022 to 2024 PBR period. The largest component of this refund amount is due to the transfer of the Biosolids Management Program to Wastewater Treatment. Administration has reviewed the calculation of the Rebasing SRA and has concluded that it is reasonable.

Similar to Water and Wastewater Treatment, EWSI's second proposed SRA for Drainage Services is to recover \$1.6 million in forecast incremental bad debt expenses, administration costs and carrying costs associated with the Bill Deferral Program. This SRA will add \$0.32 to the average residential water customer bill in 2022 and will subsequently be removed in 2023. EWSI proposes to adjust its final rate in the 2022 Annual Rate Filing to reflect the actual costs incurred for this program.

The third proposed SRA for Drainage Services is to recover the revenue requirement related to the SIRP and CORE programs. A total of \$58.2 million in costs related to the SIRP program are to be recovered through the SRA applied to the Stormwater Rate, with a total of \$49.8 in costs related to the CORE program to be recovered through the SRA applied to the Sanitary monthly variable charge.

9. Environmental Initiatives

EWSI has identified capital investment in environmental initiatives, growth and regulatory compliance for i) targeted citywide investment in flood mitigation; ii) replacing lead service lines; iii) increasing odour control at the wastewater treatment plant and reducing sewer odours in the community; and iv) cost sharing fire protection infrastructure improvement with infill developers.

The flood mitigation work is a key pillar of work under the City's Climate Resilient Edmonton: Adaptation Strategy and Action Plan. To support this implementation EWSI received \$82 million in grants from provincial and federal funding related to flood mitigation, which has reduced the investment required in the capital plan in this and future PBR periods. In addition to community flood mitigation, EWSI is studying the potential impacts of extreme weather events and is implementing actions to improve the resilience of their utility infrastructure (however, Administration has noted that they have not identified which future climate scenarios they are planning for or if they are also exploring the slow-onset impacts of climate change).

EWSI has identified operational investment in the PBR Application for Green Power for all three water cycle utilities to reduce greenhouse gas emissions or offset 100% of the greenhouse gas emissions from Edmonton water cycle utility operations. EWSI is planning on reducing its total GHG footprint within Edmonton by 70% by 2025 and 85% by 2035. This includes using 100% green electricity for Edmonton operations by 2025, which makes up approximately 70% of their greenhouse gas emission profile. ***The GHG targets and green power approach is in***

general alignment with the City's updated Energy Transition Strategy (however Administration has noted that EWSI have not set a net-zero emission target date as of yet).

10. Service and Performance Measures

Grant Thornton completed a review of the Service and Performance Measures proposed for the Water, Wastewater Treatment and Drainage Services rates applications. Grant Thornton has identified certain observations and findings in Section 7 of Attachment 4 that Utility Committee and Council may wish to consider further, either as part of the 2022-2026 and 2022-2024 rates applications or in advance of future rates applications. These include the following:

- ***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;***
- ***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;***
- ***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; and***
- ***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.***

EWSI has proposed to continue to use the same **categories** to group the performance measures for the 2022-2026 and 2022-2024 rates applications for each of Water, Wastewater Treatment and Drainage Services (e.g. water quality, customer services, system reliability and optimization, environment, and safety). EWSI has proposed minor changes to the **performance measure weightings** within the categories based on stakeholder engagement surveys completed by EWSI. These include: increasing the Water Quality Index from 25 percent to 30 percent and decreasing the Customer Services index from 20 percent to 15 percent (Water Services), increasing the System Reliability/Optimization Index from 15 percent to 25 percent and decreasing the Water Quality Environmental Index from 55 percent to 45 percent (Wastewater Treatment), and increasing the System Reliability/Optimization Index

from 25 percent to 30 percent and decreasing the Environmental Index from 40 percent to 35 percent (Drainage Services). EWSI has also proposed changes to the standards for some of the Water Services and Wastewater Treatment **individual performance measures**, (noted in Table 13.2-1 of the Water Services Application and Wastewater Treatment Application), based primarily on EWSI performance trends over a period of time or the established level of performance as reviewed by external stakeholders.