Request: **GT-EWSI-1**

Topic: **Cost of Service**

Reference: **Drainage Application, Page Reference: 193, Paragraph Reference: 529**

Preamble: *Page 193 of the Drainage Application EWSI noted that "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 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."*

a. Please describe how EWSI determined that rebalancing would have very little impact on customer bills.

b. If available, please provide a 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.

EWSI RESPONSE:

a. EWSI modeled 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-1 shows 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.

Table GT-EWSI-1.a-1
Revenue to Cost Ratios
Before and After Rebalancing Sanitary and Stormwater Rates

		A	B	C	D	E	F
	Revenue to Cost Ratios	**Per PBR Application**			**Rebalanced Rates**		
		2022 F	**2023 F**	**2024 F**	**2022 F**	**2023 F**	**2024 F**
	Sanitary Utility						
1	Residential	125.3%	125.6%	122.5%	116.0%	109.7%	105.2%
2	Multi-Res	109.0%	112.3%	109.2%	101.7%	99.5%	95.4%
3	Commercial	121.9%	123.7%	119.7%	113.3%	109.0%	103.9%
4	Large Wholesale (U of A)	56.7%	58.6%	57.2%	53.0%	52.0%	50.1%
5	Total Sanitary Utility	120.3%	121.5%	118.3%	111.6%	106.6%	102.1%
	Stormwater Utility						
6	Residential	81.2%	80.9%	80.6%	86.9%	93.6%	100.0%
7	Multi-Residential	81.2%	80.9%	80.6%	86.9%	93.6%	100.0%
8	Commercial	81.4%	80.8%	80.1%	87.2%	93.7%	99.8%
9	Total Stormwater Utility	81.3%	80.9%	80.4%	87.1%	93.6%	100.0%
	Combined Revenue to Cost Ratio						
10	Residential	105.3%	104.4%	102.5%	102.7%	102.0%	102.7%
11	Multi-Residential	102.7%	104.7%	102.3%	98.4%	98.0%	96.5%
12	Commercial, including U of A	93.0%	92.7%	91.2%	94.0%	96.9%	99.6%
13	Total Drainage Services	101.2%	100.7%	98.9%	99.5%	99.9%	101.0%

b. 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-1 below. 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.

Table GT-EWSI-1.b-1
Average Monthly Residential Drainage Bills
Before and After Rebalancing Sanitary and Stormwater Rates
($ per customer per month)

		A	B	C	D	E	F	G	H
		Per Application				Rebalanced			
	Average Monthly Residential Bill	**2022**	**2023**	**2024**	**Avg**	**2022**	**2023**	**2024**	**Avg**
1	Base – excluding SIRP, Odour & COVID	36.94	38.15	39.38		35.45	37.08	39.63	
2	Monthly bill increase - $	(1.58)	1.21	1.23		(3.07)	1.62	2.56	
3	Monthly bill increase - %	-4.1%	3.3%	3.2%	0.7%	-8.0%	4.6%	6.9%	1.0%
4	Total – including SIRP, Odour & COVID	42.37	43.85	47.15		40.88	42.79	47.43	
5	Monthly bill increase - $	2.15	1.48	3.30		0.66	1.91	4.64	
6	Monthly bill increase - %	5.4%	3.5%	7.5%	5.4%	1.6%	4.7%	10.8%	5.7%

Request: **GT-EWSI-2**

Topic: **Cost of Service**

Reference: **Drainage Application, Page Reference: 3 and 4**

Preamble: *On page 3 and 4 of the Drainage Application it is noted that "EWSI is also supporting the City's LRT 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."*

a. How are the costs associated with relocating infrastructure due to LRT funded (i.e. do they form part of the revenue requirement to be funded by rate payers)?

b. If so, has any funding been provided by the City of Edmonton to recoup these costs (or are they entirely to be funded by rate payers)?

EWSI RESPONSE:

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

b. 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.

Request: **GT-EWSI-3**

Topic: **Cost of Service**

Reference: **Wastewater Application, Page Reference: 149**

Preamble*:* *On page 149 of the Wastewater Application EWSI notes "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 class of service are within a reasonable range of their cost of service. HDR recommended that EWSI should examine this more closely".*

a. Please explain EWSI's review of the issue raised by HDR regarding overstrength class of service.

b. Please explain EWSI's plan to address this commentary to better assure that these costs are the sole responsibility of these customers.

EWSI RESPONSE:

a. HDR's 2020 Wastewater Treatment Cost of Service Study dated January 2021 is included as Appendix N1 to EWSI's PBR Application. 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:

   i. A cost of service analysis is a dynamic analysis and the results change over time as costs change and as customer usage changes;

   ii. 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

iii. 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.

b. Please see response to (a.) above.

Request: **GT-EWSI-4**

Topic: **Cost of Service**

Reference: **Wastewater Application, Page Reference: 149, Paragraph Reference: 430**

Preamble: *On page 149 of the Wastewater Application EWSI notes HDR's review does not include costs associated with the Biosolids Management Program and Dewatering Facility.*

Please explain how EWSI is addressing cost of service for these two programs during the 2022-2024 PBR term while the updated cost of service study is being undertaken to reflect these programs.

EWSI RESPONSE:

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. 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.

Request: **GT-EWSI-5**

Topic: **Cost of Service**

Reference: **Water Application, Page Reference: 161, Paragraph Reference: 515. On page 161 of the Water Application EWSI references three alternatives for fire protection rate design.**

a. Please provide the fire protection rates similar to Table 11.4.2-1 for each of the three methodologies (i.e. single fixed rate per customer class, volumetric rate, and rate per equivalent meter).

b. Furthermore, please elaborate on why EWSI's position is that "the use of equivalent meters provides the most equitable method"?

EWSI RESPONSE:

a. Tables GT-EWSI-5.a-1 to GT-EWSI-5.a-3 provide the 2022 fire protection rates calculated using the single fixed rate per customer class, volumetric rate, and rate per equivalent meter methodologies.

Table GT-EWSI-5.a-1
2022 Fire Protection Rate
Single Rate Per Class
($ per month)

	Meter Size	A Residential	B Multi-Residential	C Commercial
1	15 mm (5/8")	2.62	11.80	15.72
2	20 mm (3/4")	2.62	11.80	15.72
3	25 mm (1")	2.62	11.80	15.72
4	40 mm (1.5")	2.62	11.80	15.72
5	50 mm (2")	2.62	11.80	15.72
6	75 mm (3")	2.62	11.80	15.72
7	100 mm (4")	2.62	11.80	15.72
8	150 mm (6")	2.62	11.80	15.72
9	200 mm (8")	2.62	11.80	15.72
10	250 mm (10")	2.62	11.80	15.72
11	300 mm (12")	2.62	11.80	15.72

Table GT-EWSI-5.a-2
2022 Fire Protection Rate
Volumetric Rate
($ per m³)

		A **Residential**	B **Multi-Residential**	C **Commercial**
1	All Consumption	0.2023	0.0306	0.1629

Table GT-EWSI-5.a-3
2022 Fire Protection Rate
Equivalent Meter
($ per month)

	Meter Size	A **Residential**	B **Multi-Residential**	C **Commercial**
1	15 mm (5/8")	2.59	2.54	5.87
2	20 mm (3/4")	3.88	3.81	8.81
3	25 mm (1")	6.47	6.36	14.68
4	40 mm (1.5")	12.95	12.72	29.36
5	50 mm (2")	20.72	20.34	46.97
6	75 mm (3")	38.84	38.15	88.07
7	100 mm (4")	64.74	63.58	146.78
8	150 mm (6")	129.48	127.15	293.55
9	200 mm (8")	207.16	203.44	469.68
10	250 mm (10")	297.80	292.45	675.17
11	300 mm (12")	437.11	429.26	991.03

b. 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 coffee shops, 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.

Table GT-EWSI-5.b-1 shows the impact that each methodology would have on four different commercial customers.

- **Single fixed rate per customer class** – Using this methodology all commercial customers would pay the same monthly charge of $15.72 for fire protection. A 1,500 square foot coffee shop would pay the same monthly fire protection charge as a 500,000-600,000 square foot shopping centre or warehouse. In the event of a fire the shopping centre or warehouse would place larger demand on the water system.

- **Volumetric rate** – Using this methodology all commercial customers would pay \$0.1629 per m^3 of consumption for fire protection. Under this methodology high consumption customers (restaurants, breweries, shopping centres, food processors, etc.) would be penalized as their higher water consumption may not be an accurate representation of the demand the customer would place on the water system in the event of a fire. As shown in Row 6 of Table GT-EWSI-5.b-1 under this methodology a 1,500 square foot coffee shop would pay a \$16.29 monthly fire charge while a 20,000 square foot retail store would only pay \$4.20 per month. A large shopping centre would pay \$879.84 per month, while a large warehouse with low consumption would only pay \$48.88 per month.
- **Rate per equivalent meter** – Under this methodology a customer's fire protection charge would be based on the size of the customer's water service. During construction a customer's water service size is determined based on building codes (number of fixtures in building, diameter and length of piping in building). As shown in Row 7 of Table GT-EWSI-5.b-1 using the rate per equivalent meter methodology provides the most equitable method of distributing the fire protection charge among commercial customers.

Table GT-EWSI-5.b-1
2022 Commercial
Fire Protection Example
($ per month)

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

(1) Medium Retail represents a medium size standalone retail store without a food court or restaurant, such as a Shoppers Drug Mart, Rexall Store, Best Buy, Golf Town, etc.
(2) Building square footage was estimated using online aerial maps.
(3) Based on 2019 average consumption.

The use of a single rate per customer class or a volumetric rate would create inequity within the Multi-Residential and Commercial Customer classes, with either small customer or high consumption customers subsidising large or low consumption customers. Based on data currently available in EWSI's billing system the use of equivalent meters provides the most equitable method of allocating the fire protection charge.

Request: **GT-EWSI-6**

Topic: **Inflation Factor Forecast**

Reference: **All Applications, Water Application Page Reference: 58, Paragraph Reference: 191; Wastewater Application Page Reference: 55 and 56, Paragraph Reference: 173; Drainage Application Page Reference: 82, Paragraph Reference: 210**

Preamble: *EWSI notes that they purchased a 5-year forecast 2020 to 2025 for the two data series (i.e. CPI and AHE) from the Conference Board of Canada in November 2020. This information formed an input into EWSI's inflation factor forecasted in the Water Application in Table 4.2.1-1, the Wastewater Application in Table 4.2.1-1, and the Drainage Application in Table 5.2.1-1.*

Please provide the EWSI calculation and the underlying evidence i.e. copies of the Conference Board of Canada data to support these tables.

EWSI RESPONSE:

Tables GT-EWSI-6-1 to GT-EWSI-6-3 provide the calculations used to determine the Water Services, Wastewater Treatment, and Drainage Services inflation factors. Columns A and C include the forecast data that was provided by The Conference Board of Canada on November 10, 2020.

The Conference Board of Canada forecast is included in GT-EWSI-6_Attachment1.

Table GT-EWSI-6-1
Water Services
Inflation Factor Calculation

		A	B	C	D	E
		CPI		**AHE**		
		Conference Board Forecast	**Percent Increase**	**Conference Board Forecast**	**Percent Increase**	**Total**
1	2021	147.81		$42.37		
2	2022	151.24	2.32%	$42.98	1.45%	
3	2023	154.26	2.00%	$44.20	2.83%	
4	2024	157.65	2.20%	$45.52	3.00%	
5	2025	160.95	2.09%	$46.85	2.92%	
6	Average		2.15%		2.55%	
7	Weighting		60.00%		40.00%	
8	**Result**		**1.29%**		**1.02%**	**2.31%**

Table GT-EWSI-6-2
Wastewater Treatment
Inflation Factor Calculation

		A	B	C	D	E
		CPI		**AHE**		
		Conference Board Forecast	**Percent Increase**	**Conference Board Forecast**	**Percent Increase**	**Total**
1	2021	147.81		$42.37		
2	2022	151.24	2.32%	$42.98	1.45%	
3	2023	154.26	2.00%	$44.20	2.83%	
4	2024	157.65	2.20%	$45.52	3.00%	
5	Average		2.17%		2.43%	
6	Weighting		65.00%		35.00%	
7	**Result**		**1.41%**		**0.85%**	**2.26%**

Table GT-EWSI-6-3
Drainage Services
Inflation Factor Calculation

		A	B	C	D	E
		CPI		**AHE**		
		Conference Board Forecast	**Percent Increase**	**Conference Board Forecast**	**Percent Increase**	**Total**
1	2021	147.81		$42.37		
2	2022	151.24	2.32%	$42.98	1.45%	
3	2023	154.26	2.00%	$44.20	2.83%	
4	2024	157.65	2.20%	$45.52	3.00%	
5	Average		2.17%		2.43%	
6	Weighting		40.00%		60.00%	
7	**Result**		**0.87%**		**1.46%**	**2.33%**

EPCOR Water Services Inc.

2022-2024 and 2022-2026 PBR Applications

GT-EWSI-6

Attachment 1

The Conference Board of Canada
November 10, 2020 forecast
Alberta

	Consumer Price Index		Average hourly earnings (including overtime) for salaried employees, industrial aggregate	
	2002=100	% change	AHE	% change
1987	66.3			
1988	68.1	2.7		
1989	70.9	4.2		
1990	75.0	5.7		
1991	79.4	5.8	18.75	
1992	80.6	1.5	19.26	2.7
1993	81.4	1.1	19.54	1.5
1994	82.6	1.5	19.73	1.0
1995	84.5	2.3	20.04	1.6
1996	86.4	2.2	20.78	3.7
1997	88.1	2.1	21.33	2.6
1998	89.2	1.2	21.99	3.1
1999	91.4	2.5	22.25	1.2
2000	94.5	3.5	23.04	3.6
2001	96.7	2.3	23.85	3.5
2002	100.0	3.4	24.49	2.7
2003	104.4	4.4	25.12	2.6
2004	105.9	1.4	26.28	4.6
2005	108.1	2.1	27.13	3.2
2006	112.3	3.9	28.14	3.7
2007	117.9	4.9	29.74	5.7
2008	121.6	3.2	31.68	6.5
2009	121.5	-0.1	32.65	3.1
2010	122.7	1.0	34.45	5.5
2011	125.7	2.4	35.4	2.8
2012	127.1	1.1	36.23	2.3
2013	128.9	1.4	37.26	2.8
2014	132.2	2.6	39.03	4.8
2015	133.7	1.2	39.76	1.9
2016	135.2	1.1	40.04	0.7
2017	137.3	1.5	40.47	1.1
2018	140.6	2.5	40.32	-0.4
2019	143.1	1.7	41.29	2.4
2020	144.8	1.2	42.30	2.5
2021	147.8	2.1	42.37	0.1
2022	151.2	2.3	42.98	1.5
2023	154.3	2.0	44.20	2.8
2024	157.6	2.2	45.52	3.0
2025	160.9	2.1	46.85	2.9

Sources:

Consumer price index historical data, 1980m1 to 2020M6, from Statistics Canada Table:
18-10-0004-01. All items, average of months, not seasonally adjusted.
Average hourly earnings, history from 1992 to 2019, from Statistics Canada Table 14-10-0210-01
Shaded area represents forecast generated by The Conference Board of Canada.

Request: **GT-EWSI-7**

Topic: **Performance Measures**

Reference: **Drainage Application, Page Reference: 215, Paragraph Reference: 578**

Preamble: *EWSI has proposed Water and Wastewater Treatment Environmental Incident Factors targets of 5. However, on page 215 of the Drainage Application proposes a Drainage Environmental Incident Factor target of 50 "based on an exploration of recent incidents."*

Please provide a further explanation of what is meant by recent incidents, and how that would result in an Environmental Incident Target which is 10 times the level set for Water and Wastewater.

EWSI RESPONSE:

The difference in the proposed target performance between Drainage Services and Water Services/Wastewater Treatment for the Environmental Incident performance measure stems from the fact that the underlying composition of the measure is different. All measures are based on reportable incidents which are determined on the same basis across the three utilities. 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 determined as reportable, but are also deemed preventable (preventable and non-preventable are subsets of the total incidents).

More specifically, preventable Incidents are those incidents that involve a failure to meet performance limits, or failure to follow procedures or take reasonable measures to prevent an incident. Examples are incidents involving:

- administrative contravention (missed or failed tests, failure to report on time or meet an administrative requirement);
- failure to follow procedure;
- inadequate or no procedure;
- equipment failure (where EWSI maintains the equipment);
- lack of training/awareness; and

- lack of appropriate change management.

Non-Preventable incidents are those incidents where the root cause is not within EWSI's control. Examples include:

- incidents caused by extreme weather events;
- incidents cause by 3rd parties (members of the public, organizations not contracted by EWSI); and
- incidents where root cause is related to a 3rd party's infrastructure (i.e., loss of power at an industrial site).

In addition to the preventable/non preventable distinction resulting from EWSI processes, the non-preventable category includes incidents caused by or influenced by 3rd parties. These types of incidents are excluded from the water and wastewater treatment metrics as they are non-preventable by EWSI. Conversely, Drainage Services' metric does include incidents where the source or influence of 3rd parties (members of the public, and contractors not contracted by Drainage Services) and/or are related to 3rd party infrastructure. The inclusion of this category of incidents also contributes to higher PBR target for Drainage Services.

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. The data tracking for all incidents from when Drainage Services was with the City, irrespective of their underlying cause, are unusable due to the differences between the respective classifications, criteria for reporting and other limitations of the data. In addition, the "ownership" of events within the City does not appear to be clearly defined and, as a result, Drainage Services historic data contains incidents that likely belong to other City departments. As a result, EWSI has limited historic data upon which to project total incidents nor the data to categorize incidents as preventable and non-preventable 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.

It should also be noted that there will likely always remain a discrepancy between Drainage and the Water and Wastewater Treatment utilities in the target for this metric, even with a totally common metric. EWSI experience indicates that a distributed system (such as water distribution and transmission or drainage services) is exposed to a higher potential of environmental incidents than is seen in a plant environment (this is masked in the water metric as it is a combination of water treatment plant and distribution and transmission incidents). Specifically, the number of reportable environmental incidents in Drainage Services (and Water D&T) are highly influenced by seasonal and extreme weather events. The large geographical influence of weather events on the dispersed storm and sanitary collection systems with a multitude of unmonitored entry points directly results in higher incidents per year in comparison with a water or wastewater treatment plant.

A proposed target of 50 incidents per year has been proposed for 2022-2024 for Drainage Services. As noted, this is based on recent incidents which, more definitively, was 41 incidents in 2018 and 48 incidents in 2019. 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.

Request: **GT-EWSI-8**

Topic: **Performance Measures**

Reference: **Drainage Application, Page Reference: 213, Paragraph Reference: 571 to 573**

Preamble: *In Section 14.2.1.1 of the Drainage Application the performance measure for Stormwater Flow Monitoring states it was established in 2019 and, due to the limited historical performance, the Company is proposing a performance measure of 63%, which is what was actually achieved in 2019.*

a. How did EWSI evaluate the 2019 performance of this metric (i.e. did the Company benchmark this result against other utilities/jurisdictions and regulating bodies)?

b. Please provide justification and rationale for continuing to hold this performance target at 63%.

c. Do you expect an improvement in performance on this metric as EWSI continues to develop this service area over the current PBR period?

EWSI RESPONSE:

a. As this was a new metric for 2019, the proposed standard was developed using the current level of monitoring in the City of Edmonton. The metric is not comparable to other jurisdictions as each determines the degree and process for monitoring based on their system configurations as well as relevant regulation in that jurisdiction. The 2020 performance of the metric was 65.3% and aligned with the proposed target.

b. This metric is based on the hectares monitored as a percentage of the total qualifying area. The total qualifying area increases each year as a result of the development of new qualifying areas in the city. With the increase to the areas monitored, maintaining the metric at the proposed standard ensures that monitoring is maintained at least at the current level even with the growth in the City. Moreover, the standard is aligned with both the capital plan and planned private development. The target is held at 63% due to both ensuring that capital is prudently expended. Installing monitors on some outfalls must be carefully considered due to location and configuration challenges. Additionally, there is uncertainty with the proposed and planned private development that are not in the control of EPCOR.

c. As noted above, this metric is dependent on third party developer programs so improvement from one year to the next is difficult to project. As an example, for 2021, there are 6 locations scheduled for construction with the installation of permanent instrumentation and infrastructure to monitor 6 new outfalls. These projects are in the permitting phase and nearing tender and are currently scheduled for completion in October 31, 2021. Based on the outcomes of permitting and project management stage gates, EWSI will finalize the construction plan and timelines for the 6 new monitoring sites. However, this will depend upon the developers receiving all required permits and maintaining their schedules. Given the uncertainty in this situation, EWSI has proposed maintaining the current level of monitoring as the standard. It is conceivable that the metrics would be increased in the next PBR once a track record of actual performance has been developed .

Request: **GT-EWSI-9**

Topic: **Performance Measures**

Reference: **All Applications, Water Application Page Reference: 177, Paragraph Reference: 560; Wastewater Application Page Reference: 160, Paragraph Reference: 458; Drainage Application Page Reference: 209, Paragraph Reference: 561**

Preamble: *Historically we noted that EWSI's external assurance provider reviewed EWSIs calculated Performance Measures. We have noted a change in the assurance report on these metrics in all three applications. As an example, on page 177 of the Water Application EWSI notes that "for the 2022 to 2026 period, EWSI is proposing that the EPCOR Internal Audit Department conducts these audits."*

a. Please provide an explanation for why EWSI is proposing a change of assurance on Performance Measures from an external assurance provider to the internal audit department.

b. Has this been communicated with the internal audit team? If so, does Internal Audit expect the level of assurance that is provided to remain consistent with the past external opinion?

c. What processes, procedures or safeguards will be in place to ensure independence when conducting these audits?

EWSI RESPONSE:

a. Historically, EWSI has contracted an external provider to provide assurance on the annual rate filing and performance metrics. The Bylaw does not, however, stipulate that an external provider is required to provide this function. In the EPCOR Water Services and Wastewater Treatment bylaw (Bylaw 17698), Schedule 3, clause 7, Reporting and Filing Requirements, it indicates that:

An accountant will review the *Annual Water Rate and Wastewater Treatment Rate Filing*, conduct an audit and prepare an audit report in accordance with the recommendations contained within Section 5805 of the Canadian Institute of

Chartered Accountants Handbook. The audit report will address whether the water rates and wastewater treatment rates are calculated and presented in accordance with the requirements of this Bylaw.

This clause has been carried forward into the proposed new bylaws for Water Services and Drainage/Wastewater Treatment for the 2022-2024/2026 terms.

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.

b. EPCOR Internal Audit is aware of this change.

c. 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.

Request: **GT-EWSI-10**

Topic: **Performance Measures**

Reference: **Water and Wastewater Applications. Water Application Page Reference: 179, Table Reference: 13.1.3-1; Wastewater Application Page Reference: 162, Table Reference: 13.1.3-1.**

Preamble: *In both the Water and Wastewater applications, Table 13.1.3-1 indicates EWSI's Actual Water Total Performance Measure Results and Actual Wastewater Total Performance Measure Results. Every year, with the exception of EWSI's first PBR year in 2002, EWSI has exceeded performance measures. As an example, Wastewater has achieved 110% in actual total performance measures each year since 2014, the maximum performance measure result that is allowed by the Company. EWSI, when available, uses benchmarking against other jurisdictions to assist in understanding best practices for these performance measures, but due to the unique nature of EWSI's operations and infrastructure, there are minimal utilities that use similar performance measures. This causes EWSI to establish performance measures based on EWSI's historical results.*

a. To understand the benefit to ratepayers and ensure the proposed performance measures are reasonable, can EWSI justify that its performance measure targets include a reasonable degree of continuous improvement, which may justify more stringent performance targets?

b. Further, can EWSI estimate the historical incremental costs associated with exceeding performance targets?

c. Please explain how these incremental costs have contributed (or will contribute) to EWSI providing a benefit to the ratepayers.

EWSI RESPONSE:

a. The performance metrics detailed within this and prior PBR applications are established to ensure that a "standard" level of performance is maintained and not to incent increasing levels of performance (note - the expected level of performance in the PBR applications are generally referred to as "standards" rather than targets – although the more conventional term "target" is occasionally used as it is the more common reference). Under the constructs of the PBR, it would be theoretically possible for EWSI to lessen levels of operational performance and accrue any associated cost saving to itself, at least until the next PBR term where costs as rebased. Standards of performance have been established to prevent this from occurring rather than to drive increasing levels of performance within a PBR term. In addition to being the established historic practice for EWSI's PBR, this approach also aligns with AUC Rule 002 which similarly sets "minimum service quality" measures for utilities under PBR. The AUC has noted:

> AUC: Decision 2012-238…Having considered both the advantages and disadvantages of the two mechanisms proposed, the Commission finds that adopting AUC Rule 002 to determine performance standards and targets, and applying penalties in the event of non-compliance with the performance targets established, is the best approach for ensuring that the companies have an adequate incentive to maintain service quality under PBR.
> https://www.auc.ab.ca/Pages/rules/Rule002.aspx

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. As an example, water quality far exceeds all public health guidelines and increasing levels beyond the current levels is costly and would provide no material benefits to consumers. There are also instances, such as with response time metrics, where customers have expressed no concerns with the current standard and the underlying factors make achieving the current standard more difficult over time without adjusting the actual standard (e.g. response times are increasingly challenging due to growth in the city and increased traffic congestion). The costs of adding additional crews and equipment to improve response times is seen as very costly and not warranted based on customer services considerations.

A second consideration in this discussion is related to the potentially contrary aspects of the financial impact of achieving higher levels of performance within a PBR term and the financial impact of the productivity factor in the annual rate increases. In the majority of the PBR metrics, achieving increased levels of operational performance necessitates increased costs for additional resources or equipment (the noted exception to this are the efficiency metrics). EWSI, however, is subject to a productivity factor that is applied to rates irrespective of whether efficiencies are achieved or not. Moreover, EWSI is also subject to annual financial penalties if the metrics standards are not maintained. It would therefore seem somewhat incongruent to establish higher levels of operational performance with associated financial penalties if they are not met and at the same time, impose financial incentives to increase efficiency which acts as an imposed cost reduction.

b. EWSI has not historically attempted to determine the costs of exceeding performance metrics. 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.).

c. 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.

As noted above, EWSI cannot comment on incremental costs as this research has not been completed.

Request: **GT-EWSI-11**

Topic: **Efficiency Factor**

Reference: **Drainage Application. Page Reference: 14, Paragraph Reference: 43 and 44**

Preamble: *On page 14, paragraph 43 of the Drainage Application, the Company notes an efficiency factor generally declines over successive PBR terms but the rational for the initial efficiency factor of 0.25% is due to the "aggressive efficiency expectations" as per the City's drainage transfer requirements. However, in paragraph 44 it also states the Company believes that an efficiency factor higher than 0.25% will move "the risk/return profile for Drainage beyond an acceptable level."*

a. Given this is a first generation PBR term, and given the assumption that those "aggressive efficiency expectations" have been met, at what point does the efficiency factor move the risk/return beyond an acceptable level?

b. Please elaborate on why the 0.25% efficiency factor is proposed in the Drainage's initial PBR.

c. As this is a more recently transferred service to EPCOR, please explain the rationale for setting the efficiency factor consistent with EPCOR's more mature operations in Water and Wastewater Treatment (i.e. please explain why no further efficiencies can be gained from a service offering that is still relatively new in comparison)?

EWSI RESPONSE:

a. 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[1]. 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.

   The addition of the Drainage utility to EWSI's portfolio of operations has resulted in an increase to its overall business risk[2]. 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.

b. Refer to Section 1.7.2 of the Drainage Application and EWSI's response to GT-EWSI-11.a above.

c. EWSI disagrees with the suggestion that no more efficiencies can be gained from the Drainage operations. EWSI is making a significant effort to achieve operating and capital efficiencies in its Drainage operations. EWSI's efforts to achieve future savings through the following initiatives are described in detail in section 2.3.9 "Future Operating Efficiencies"[3] and in section 3.3 "Future Challenges and Opportunities (2022-2024 and beyond)" of the Drainage Application:

[1] Refer to paragraph 10 and section 5.3.1 of the Drainage Application.

[2] Refer to paragraph 16 and footnote 19 of Appendix D.

[3] Refer to Section 2.3.9 of the Drainage Application.

- realignment of work responsibilities and methods;
- Integrated Watershed Management Strategy;
- One Water Planning;
- Drainage Operational Efficiency Review
- Drainage Construction Strategy
- Implementation of GeoFit
- synergies with Water Services largely facilitated through the Real Estate Consolidation Project

Not only is EWSI making significant efforts to achieve these savings, but some have already been reflected in customers' rates by reducing forecast operating costs. Reductions to operating costs as a result of the Real Estate Consolidation Project are reflected in the operating cost forecasts for 2022 and 2023 as described in Section 6.2 of the Drainage PBR Application. These savings amount to $2.7 million in 2022 and an additional $0.9 million in 2023.

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.

EWSI's explanation for setting the efficiency factor at 0.25% for the 2022-2024 PBR term is provided in its response to GT-EWSI-11.a above.

Request: **GT-EWSI-12**

Topic: **Rates**

Reference: **All Applications. Water Application Page Reference: 79 and 81, Paragraph Reference: 255 an d262; Wastewater Application Page Reference: 79 and 78, Paragraph Reference: 234 and 241; Drainage Application Page Reference: 105 and 106, Paragraph Reference: 269 and 276**

Preamble: *Throughout the three PBR applications EWSI referenced the use judgement in their forecast. Some examples have been provided at the page and paragraph referenced in this table. Furthermore, due to the impacts of COVID-19 EWSI has noted the "need for more weight placed on judgement about the future rather than historical trending".*

a. Please provide further explanation and rationale on the "judgement" used when calculating both residential and commercial customer count forecasts for each application.

b. Please provide more specific examples of where judgement was applied in the forecast and supporting evidence for the basis of that judgement (i.e. supporting assumptions and documentation in their native form or direct us to the area in your financial models).

c. If scenario/sensitivity analyses have been prepared to determine the impact of judgment used on revenue requirement, please share them.

d. What is impact on the revenue requirement (in terms on materiality/size of impact, and variability/range of impact) regarding potential changes in customer count (e.g. a one percent change in customer count, has a resulting X% in revenue requirement)?

e. What is impact on the revenue requirement (in terms on materiality/size of impact, and variability/range of impact) regarding potential changes in consumption volumes?

EWSI RESPONSE:

a. As stated in paragraph 255 of the Water Application, EWSI has adopted a new forecast methodology for residential customer count. While the methodology applied in the 2017-2021 PBR Application did rely on judgement, the new methodology does not. The revised methodology for forecasting residential customer count, further described in paragraph 256 of the Water Application, relies on external forecasts of housing starts.

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, 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.

b. 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.

c. Scenario analysis was not conducted to determine the impact of judgement.

d. Changes in the number of customers have only minimal impacts on revenue requirements. As discussed in Section 12.2.2 (page 170, paragraph 542) of the Water Application, EWSI's utility operations are capital intensive, so the majority of its revenue requirements, not just depreciation and return on rate base, but also operations, maintenance, operational support services and EWSI shared services, are essentially fixed over the PBR term. Even expenditures such as power and chemicals do not necessarily vary with the level of water production. Chemical usage is more closely related to raw water quality than water production volumes and chemical costs are also subject to foreign exchange risk, so chemical costs can also be considered to be largely fixed. About one-half of EWSI's power expenditures are wires costs, which are essentially fixed. The remainder, energy costs, are affected by Edmonton's large geographic area and relatively low population density (i.e. distance), as well as volume. Therefore, the revenue requirement impacts of a one percent change in the number of customers would be limited to:

i. Billing and collection costs, which are charged to EWSI on a per bill basis. Therefore a one percent change in the number of customers results in a one percent change in billing and collections costs, an aggregate amount of approximately $0.3 million annually for the Water, Wastewater Treatment and Drainage operations;

ii. Franchise fees, which are directly related to revenue. Assuming consumption per customers remains constant, a one percent change in the number of customers results in a one percent change in In-City Water, Wastewater and Sanitary Utility revenues and, therefore, a one percent change in franchise fees, an aggregate amount of approximately $0.4 million annually for the Water, Wastewater Treatment and Drainage operations; and

iii. Corporate shared services costs, where revenue is a component of the corporate allocation factor. This impact is more difficult to calculate, since different allocators are used to allocate corporate services. If the change in customers affects EDTI, as well as EWSI, so each subsidiary's proportion of total EPCOR revenue is unchanged, then it is possible that there would be no change in corporate shared service cost allocations. At the other extreme, if the change affected only EWSI, then a one percent change in the number of customers, resulting in a one percent change in revenue could have a maximum of one-third of one percent change in corporate shared service costs, an aggregate amount of approximately $0.1 million annually for the Water, Wastewater Treatment and Drainage operations.

e. Assuming no change in the number of customers, a change in the consumption would have a smaller impact on revenue requirements than a change in customers. There would be no change in billing costs, since bills are a function of the number of customers. Further, since 25% of wastewater and In-City water revenues, and 30% of Sanitary Utility revenues are derived from fixed monthly charges, any changes to franchise fees and corporate shared service costs would also be 25-30% less than for a change in customers.

Request: **GT-EWSI-13**

Topic: **Return on Equity**

Reference: **Wastewater and Drainage Applications**

How has EWSI factored in a shorter PBR term (three vs five years) as part of its risk analysis for Drainage and Wastewater and the resulting impact on its ROE?

EWSI RESPONSE:

EWSI concludes that the overall risks facing the Wastewater Treatment business have not changed materially since the City considered the 2017 – 2021 PBR application. EWSI did not own the Drainage business in 2016. Therefore, EWSI's applied-for rate of return in 2016, the 2016 Grant Thornton Report and the City's Decision respecting capital structure and rate of return did not reflect the presence of the Drainage business. For reasons discussed in the Appendix D of the Application and in EWSI's responses to COE-EWSI-02, the Drainage business is exposed to greater risk than either the Water Services or Wastewater Treatment businesses. Even so, by using the 2016 capital structure and rate of return on common equity as the point of departure for arriving at the currently-applied-for equity ratio and common equity rate of return, no recognition has been given to the greater risks of the Drainage business.

Conceptually, a shorter term over which forecast risks are assumed would normally be associated with lesser risk, all things equal. This phenomenon is observable by the fact that yields curves for Government of Canada securities are normally "upward-sloping" – i.e., long-term bonds tend to have higher yields than shorter-term obligations. Because Wastewater Treatment operations were subject to a five-year PBR in 2017 – 2021, it could be fairly inferred that, all things equal, Wastewater Treatment is subject to lesser risks in 2021, because the next PBR term will only be three years (i.e., 2022 – 2024). But this broad conclusion focuses on only one aspect of forecast risk and fails to consider: (i) changes in the overall forecast environment; and (ii) the prominence of business-specific factors that may make financial performance more or less sensitive to a particular forecast error at one time but not at another.

As described in EWSI's response to City Information Request 1(d), it is extraordinarily difficult to quantify the impact of specific risk factors on risk premia and required rates of return.

Nevertheless, an effort was made to provide some quantification on the specific matter of debt cost rate forecasting risk; and these studies illustrate how an exclusive focus on the length of PBR periods can lead to erroneous conclusions.

Table GT-EWSI-13-1 shows the impact of creating a Wastewater debt cost rate deferral account to mitigate forecasting risk using data from 2016 and the method of analysis described in the Response to City Information Request 1(d)(v).

Table GT-EWSI-13-1
Impact of Short- and Long-Term Debt Cost Forecasting Errors · Wastewater Treatment 2016
Short-Term Debt Cost Rate Required Risk Margin = 1.54%
Long-Term Debt Cost Rate Required Risk Margin = 0.15%

		A **2017**	B **2018**	C **2019**	D **2020**	E **2021**	F **Average**
1	Short-Term Debt Mid-Year Balance ($) · Schedule 17-2, Line 9	35.0	31.1	32.8	35.2	35.1	33.8
2	New Long-Term Debt Issues ($) · Schedule 17-3	40.0	30.0	20.0	25.0	5.0	24.0
3	Short-Term Interest Required Risk Margin ($)	0.5	0.5	0.5	0.5	0.5	0.5
4	Cumulative Long-Term Interest Required Risk Margin ($)[1]	0.1	0.1	0.1	0.1	0.1	0.1
5	Total Interest Required Risk Margin ($)	0.6	0.6	0.6	0.6	0.6	0.6
6	Common Equity Return ($) · Schedule 14-1, Line 15	16.1	17.8	19.2	20.6	21.7	19.1
7	*Plus:* Total Interest Required Risk Margin ($)	0.6	0.6	0.6	0.6	0.6	0.6
8	Adjusted Common Equity Return With Risk Margin ($)	16.7	18.4	19.8	21.2	22.3	19.7
9	Mid-Year Rate Base ($) · Schedule 14-1, Line 5	395.1	437.3	470.8	506.2	534.1	468.7
10	Deemed Common Equity at 40% of Rate Base ($)	158.0	174.9	188.3	202.5	213.6	187.5
11	Adjusted Common Equity Return With Risk Margin ($)	16.7	18.4	19.8	21.2	22.3	19.7
12	*Divided by:* In-City Deemed Common Equity at 40% of Rate Base ($)	158.0	174.9	188.3	202.5	213.6	187.5
13	Adjusted Common Equity Rate of Return (%)	10.57%	10.52%	10.52%	10.47%	10.44%	10.50%
14	Applied-For Common Equity Rate of Return (%)	10.18%	10.18%	10.18%	10.18%	10.18%	10.18%
15	*Less:* Adjusted Common Equity Rate of Return (%)	(10.57)	(10.52)	(10.52)	(10.47)	(10.44)	(10.50)
16	Downward Adjustment for Absence of Required Risk Margin (%)	(0.39%)	(0.34%)	(0.34%)	(0.29%)	(0.26%)	(0.32%)

[1] The calculation is cumulative, because each year's error is carried forward to the end of the PBR period when forecast cost rates are adjusted to actual rates that are then used to develop debt costs in the next PBR period.

The data in Table GT-EWSI-13-1 suggest that the compensation Wastewater Treatment would have received in 2016 for debt cost forecast risk was approximately 32 basis points. The fact that the PBR period was five years has an impact on that conclusion; however, the length of the PBR period is only one of many other factors that influence the final result.

For example, the Required Risk Margins in GT-EWSI-13-1 were based on averages and standard deviations of One-, Two-, Three-, Four- and Five-Year forecast errors developed from 2000 – 2015 yields on one-year Treasury bills and long-term Government of Canada bonds. Thus, the Required Risk margins from 2016 reflect the general level of uncertainty in the overall environment *at that time*. Moreover, the quantities of debt being issued, the timing of the forecast issues, rate base growth and other company-specific variables also contributed to the final 32 basis points conclusion.

Now consider the circumstances of 2021 and the three-year PBR period 2022 - 2024. Table GT-EWSI-13-2 shows the updated analysis using three years in the PBR period.

Table GT-EWSI-13-2
Impact of Short- and Long-Term Debt Cost Forecasting Errors · Wastewater Treatment 2021
Short-Term Debt Cost Rate Required Risk Margin = 1.67%
Long-Term Debt Cost Rate Required Risk Margin = 0.26%

		A **2022**	B **2023**	C **2024**	D **Average**
1	Short-Term Debt Mid-Year Balance ($) · Schedule 17-2, Line 5	38.4	36.2	35.2	36.6
2	New Long-Term Debt Issues ($) · Schedule 17-3	30.0	40.0	10.0	26.7
3	Short-Term Interest Required Risk Margin ($)	0.6	0.6	0.6	0.6
4	Cumulative Long-Term Interest Required Risk Margin ($)[2]	0.1	0.2	0.2	0.2
5	Total Interest Required Risk Margin ($)	0.7	0.8	0.8	0.8
6	Common Equity Return ($) · Schedule 14-1, Line 15	21.7	21.9	23.9	22.5
7	*Plus:* Total Interest Required Risk Margin ($)	0.7	0.8	0.8	0.8
8	Adjusted Common Equity Return With Risk Margin ($)	22.4	22.7	24.7	23.3
9	Mid-Year Rate Base ($) · Schedule 14-1, Line 5	546.2	550.6	600.9	565.9
10	Deemed Common Equity at 40% of Rate Base ($)	218.5	220.2	240.4	226.4
11	Adjusted Common Equity Return With Risk Margin ($)	22.4	22.7	24.7	22.5
12	*Divided by:* Deemed Common Equity at 40% of Rate Base ($)	218.5	220.2	240.4	226.4
13	In-City Adjusted Common Equity Rate of Return (%)	10.25%	10.31%	10.27%	10.28%
14	Applied-For Common Equity Rate of Return (%)	9.95%	9.95%	9.95%	9.95%
15	*Less:* Adjusted Common Equity Rate of Return (%)	(10.25)	(10.31)	(10.27)	(10.28)
16	Downward Adjustment for Absence of Required Risk Margin (%)	(0.30%)	(0.36%)	(0.32%)	(0.33%)

[2] The calculation is cumulative, because each year's error is carried forward to the end of the PBR period when forecast cost rates are adjusted to actual rates that are then used to develop debt costs in the next PBR period.

The indicated risk compensation based on 2021 data is 33 basis points compared to the 32 basis points from 2016. Notwithstanding the shorter PBR period in 2021, the indicated risk compensation is not materially different. Why does this happen?

First, the uncertainty in the general forecasting environment has increased. The Required Risk Margins in 2021 are higher than the Required Risk Margins in 2016.

Second, the timing and sizes of new debt issues, rate base growth and other factors are somewhat different in 2021 compared to 2016; and all of these factors enter into the final result.

Tables GT-EWSI-13-1 and GT-EWSI-13-2 illustrate quantitatively how the isolated impact of a shortened PBR period can be offset by other considerations which ultimately lead to the conclusion that there is no meaningful overall risk difference from moving the forecast period forward by five years and shortening the PBR period. Similar considerations apply to other forecasts. EWSI notes that the presence of potentially-offsetting considerations to PBR term is supported by the fact that the AUC awarded the same equity ratios and common equity rates of return to EDI (with a five-year PBR term) and ETI (with a two- or three-year test period).

Request: **GT-EWSI-14**

Topic: **Return on Equity**

Reference: **Drainage Application. Page Reference: 4, Paragraph Reference: 10**

Please elaborate on why CORE (sanitary) and SIRP (stormwater) are excluded from the ramped-up ROE.

EWSI RESPONSE:

Refer to paragraph 240 of the Drainage Application (provided below).

> *The proposed return on equity for the SIRP and CORe revenue requirements is 9.95%. EWSI is proposing 9.95% return on equity for these major strategic initiatives which will require significant capital expenditures for which EWSI must receive a fair return and be in a financial position to obtain debt financing at reasonable terms. In an effort to moderate Drainage rate increases for the 2022-2024 PBR term, EWSI proposes that the equity rate of return for sanitary excluding CORe and stormwater excluding SIRP revenue requirements be reduced from the fair rate of return of 9.95%. This reduced rate of return will be established at 5.50% for 2022 and "ramped up" to 9.95% in a linear fashion over a five-year period from 2022 to 2026. EWSI recognizes the current economic climate is creating financial hardship for many customers and is voluntarily reducing the applied-for rate of return for Drainage Services in this Application.*

On a voluntary basis, EWSI elected to accept a return below the fair return for "base" Drainage operations for the period 2022-2026. As EWSI is not obligated to provide any such reduction, it was determined on the basis that would meet internal financing requirements in addition to benefitting ratepayers. This will benefit Edmonton ratepayers by reducing total rates collected by over $66 million for the 2022-2024 PBR term and will provide additional savings for ratepayers into 2025 and 2026.

The reduced return on equity is not applied to the SIRP and CORe capital expenditures because these programs represent large initiatives incremental to the base Drainage operations. These two initiatives involve some new capital programs and in some cases new technologies which would be considered to have more risks relative to the base Drainage programs. EWSI notes that this is consistent with the treatment of the SIRP and CORe expenditures approved for Non-Routine Adjustments for the 2017-2021 PBR term. The approved Non-Routine Adjustments for SIRP and CORe programs were premised on EWSI earning its approved rate of return of 10.175%. For these reasons, EWSI considered that it would be more appropriate to apply the full fair return on equity to the SIRP and CORe capital expenditures.

Request: **GT-EWSI-15**

Topic: Return on Equity

Reference: **Water Application. Page Reference: 14, Paragraph Reference: 43**

Preamble: *"Based EWSI's 2020 water rates, fixed service charges make up 19% of an average residential bill. The proposed increase to the monthly service connection fee will increase the fixed portion to 31% of the average residential bill, which is comparable to other communities in western Canada."*

Given water consumption risk is used to inform the EPCOR's risk premium, how has the move to greater fixed rate recovery been factored into EPCOR's ROE risk premium above the AUC generic cost of capital?

EWSI RESPONSE:

Refer to EWSI's response to UA-EWSI-8.

Request: **GT-EWSI-16**

Topic: Return on Equity

Reference: **All Applications**

Preamble: *It is our understanding that in decision 24110-D01-2020 the Alberta Utilities Commission set out the return on equity (ROE) of 8.5 per cent and deemed equity ratio of 37 per cent (39 per cent for AltaGas Utilities Inc.) for 2021.This effectively extends the previously agreed upon Generic Cost of Capital rate until the end of 2021.*

a. While this may be considered comparable to EWSI's request to extend the previously agreed upon methodology, please explain why EWSI believes that this approach would be reasonable to set the ROE for a multi-year PBR?

b. What are the advantages and drawbacks from EWSI's perspective of pegging to potential forthcoming changes in the Generic Cost of Capital rate during the upcoming PBR term?

EWSI RESPONSE:

a. The 8.5% is the best evidence that is presently available respecting appropriate rates of return for the Alberta gas and electric utilities; and the 8.5% was originally derived from pre-pandemic data and conditions. Hopefully, pre-pandemic conditions will return sooner rather than later in the 2022 – 2026 Water Services PBR period and the 2022 – 2024 Wastewater Treatment PBR period.

The timing of future Generic Cost of Capital hearings and decisions is uncertain and may depend, in part, on the resolution of health concerns. Moreover, suppose that the AUC uses 2020 data affected by pandemic conditions to determine, say, a 2022 rate of return. Reliance on these data may be appropriate for 2022 if the pandemic continues but may be inappropriate for a five-year PBR period if pandemic conditions are expected to dissipate in, say, 2024. But the basis on which the AUC might establish the next generic cost of capital is speculative at this time; and it may even emerge that the 8.5% pre-pandemic rate of return will be more relevant in the present context than whatever the AUC may decide in 2021 or 2022.

EWSI therefore considers that the City would be ill-advised to either wait for a new Generic Cost of Capital Decision to fix the appropriate PBR period rate of return for EWSI or agree to an automatic adjustment to reflect a future Generic Cost of Capital finding without knowing the basis for the finding and therefore its appropriateness as a point of departure for determining EWSI's common equity rate of return. Considerations of rate stability also support the desirability of making an informed rate of return decision for the entirety of the 2022 – 2026 and 2022 – 2024 PBR periods without interim adjustments.

b. Refer to EWSI's response to GT-EWSI-16.a above.

Request: GT-EWSI-17

Topic: Revenue Requirement

Reference: **Drainage Application. Page Reference: 9, Table Reference: 1.5-1**

Preamble: *Sanitary operating costs decline from 68.5M in 2021 to 45.9M in 2024.*

What are the largest contributors to the reduction in operating costs, and are there any resulting impacts on EWSI's other business lines?

EWSI RESPONSE:

The $22.6 million reduction in the O&M expenses allocated to the Sanitary Utility is primarily due to the transfer of the Biosolids management function to Wastewater Treatment. The transfer resulted in a $16.9 million decrease in Drainage Operations expenses. The transfer also resulted in a $4.6 million decrease in Drainage Services Administration and Corporate Shared Services (“Administration”) costs allocated to the Sanitary Utility. These costs, which are incurred at a Drainage Services level, are allocated between the Sanitary and Stormwater Utilities based on each utility’s O&M expenses before Administration. The Biosolids management transfer reduced the Sanitary Utility’s allocation from 57.4% of Administration costs in 2021 to 46.0% in 2022, declining to 42.4% in 2024. The remaining $1.1 million difference is due to real estate synergies and other efficiencies that more than offset the inflationary increases in the forecast.

Request: **GT-EWSI-18**

Topic: University of Alberta

Reference: **Drainage Application. Page Reference: 185, Paragraph Reference: 502**

Preamble: *On page 185 of the Drainage Application EWSI notes "the University of Alberta, while actually part of the commercial class has unique characteristics including its collections system".*

Please elaborate on the unique characteristics of the customer and compare those characteristics of the broader commercial class of customers.

EWSI RESPONSE:

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.

Request: **GT-EWSI-19**

Topic: **University of Alberta**

Reference: **Drainage Application. Page Reference: 106, Paragraph Reference: 275**

Preamble: *EWSI has indicated that they changed the forecasting methodology for commercial customers to separate out the University of Alberta.*

a. Please describe how the direct costs associated with servicing the U of A were identified and allocated and how this forecast overall was prepared.

b. Please direct us to the area in your financial model.

EWSI RESPONSE:

a. 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.

b. The consumption forecasting methodology is described in paragraphs 275 to 279 of Section 5.8.2 of the Drainage 2022-2024 PBR Application. Forecast consumption for the U of A is shown in worksheet I-2 of the Financial model with the calculation of sanitary utility revenue from the U of A shown on worksheet S-1.

Request: **GT-EWSI-20**

Topic: **University of Alberta**

Reference: **Water Application. Page Reference: 165, Paragraph Reference: 528**

Preamble: *On page 165 of the 2022-2026 PBR Water Application EWSI referenced the Distribution Ride Agreement between EWSI and the University of Alberta dated July 1, 2017.*

a. Please provide a copy of this agreement.

b. Also, please direct us to the underlying calculation supporting the reduction in your financial model.

EWSI RESPONSE:

a. The Distribution System Rider Agreement between EWSI and the University of Alberta dated July 1, 2017 is included in GT-EWSI-20-Attachment 1

b. The current Distribution System Rider Agreement between EWSI and the University of Alberta sets the Distribution System Rider at $0.05 per cubic meter from July 1, 2017 to March 31, 2022. In 2021, EWSI will need to work with the University of Alberta to update the Agreement and determine an updated Distribution System Rider for the 2022-2026 period. As EWSI is not expecting any significant changes to the Agreement or rider, EWSI has continued to use the existing Distribution System Rider of $0.05 per cubic meter in the 2022-2026 Water PBR Application Model.

EPCOR Water Services Inc.
2022-2024 and 2022-2026 PBR Applications

GT-EWSI-20
Attachment 1

THIS DISTRIBUTION SYSTEM RIDER AGREEMENT entered into effective the 1st day of April, 2012.

BETWEEN:

EPCOR WATER SERVICES INC.
A corporation incorporated under the *Business Corporations Act* of Alberta
("EWSI")

-and-

UNIVERSITY OF ALBERTA
("Customer")

WHEREAS:

A. The Customer holds water account number 1231919 through which the Customer obtains water services from EWSI;

B. The Customer privately owns and operates a substantial underground water distribution system that provides service at multiple delivery points and is greater than 1 (one) kilometer in length;

C. The Customer has requested a Distribution Rider in accordance with EPCOR Water Services and Wastewater Treatment Bylaw 17698 ("Bylaw 17698"), Schedule 1, Part II "Distribution System Rider";

D. EWSI and the Customer entered into a Distribution System Rider Agreement effective April 1, 2012 for a period of five years;

E. EWSI and the Customer desire to enter into a new Distribution System Rider Agreement (the "Agreement"), effective July 1, 2017, for the water account number specified herein; and

F. The parties hereto wish to formalize such arrangement, all in accordance with the terms and conditions set forth in this Agreement.

NOW THEREFORE THIS AGREEMENT WITNESSES that in consideration of the mutual covenants herein contained, EWSI and the Customer covenant and agree with each other as follows:

1. SCHEDULES

1.1. The following schedules are hereby incorporated into and form a part of this Agreement:

1.1.1. Schedule "A" - Distribution System Rider;
1.1.2. Schedule "B" - Monthly Billings to Customer
1.1.3. Schedule "C" - Addresses for Notice;
1.1.4. Schedule "D" - Dispute Resolution Process.

1.2. Except as otherwise expressly provided for in the schedules, any conflict between the provisions in the body of this Agreement and the provisions in the schedules shall be resolved in favour of the provisions in the schedules.

2. DISTRIBUTION SYSTEM RIDER

2.1. Subject to the terms of this Agreement, EWSI hereby accepts the Customer's request for a Distribution System Rider as defined in Schedule 1, Part II "Distribution System Rider" of Bylaw 17698 with the Customer having been considered by EWSI to meet the applicability criteria outlined in Bylaw 17698.

2.2. The Distribution System Rider shall be applied to the water consumption associated with water account number 1231919 and as measured by the three water meters belonging to the Customer which are located in Edmonton, Alberta at:

2.2.1. 11102 Saskatchewan Drive NW;
2.2.2. 9199 – 116 Street NW; and
2.2.3. 11199S – 83 Avenue NW.

2.3. The Distribution System Rider shall provide a discount from the regular water rate category of the Customer pursuant to Bylaw 17698, Schedule 1, Part I".

2.4. During the term of this Agreement, EWSI shall calculate the Distribution System Rider in accordance with Schedule "A", and EWSI shall apply such Distribution System Rider as a credit to the Customer's monthly invoice and shown as a line item denoted as "Adjustments" as illustrated in Schedule B.

2.5. All other provisions of Bylaw 17698 and any related bylaws continue to apply in respect of the Customer, including, without limitation, Schedules 2 and 3 of Bylaw 17698.

3. CONFIRMATION OF ANNUAL DISTRIBUTION SYSTEM RIDER

On March 1st of each year, EWSI will provide to the Customer a letter outlining the calculation of the annual Distribution System Rider, as set out in Schedule "A", to be effective on April 1st.

4. TERM

4.1. This Agreement shall commence on July 1, 2017 and shall expire on March 31, 2022 (the "Term"), unless earlier terminated as provided herein, save for any obligations which are intended by the parties to survive the expiry of this Agreement, including, without limitation, the reporting requirements contemplated by Section 3.1.

5. TERMINATION

5.1. This Agreement shall terminate:

5.1.1. upon mutual written agreement of both parties; or

5.1.2. immediately upon the discretion of the non-defaulting party if the other party defaults in the observance or performance of any obligation on its part under this Agreement and does not cure that default within thirty (30) days after receiving written notice thereof from the non-defaulting party, or if any such default cannot reasonably be cured within the thirty (30) day notice period, within such other length of time as agreed to by the parties.

6. CONFIDENTIAL INFORMATION

6.1. EWSI shall provide the Customer at the Customer's request, all data, information and material that EWSI may have which the Customer deems necessary to ensure the accuracy of the calculation of the Distribution System Rider. Notwithstanding the foregoing in this Section 6.1, and except as contemplated herein, neither party shall have any obligation to disclose to the other any particular data, information or material which is considered by the former to be exempt or confidential, including, without limitation, any particular data, information or material which is exempt under the *Freedom of Information and Protection of Privacy Act*, R.S.A. 2000, c. F-25 ("FOIPP"),

6.2. The Customer and EWSI acknowledge and agree that in adherence to the FOIPP, both the Customer and EWSI are required to comply with the provisions of FOIPP pertaining to all information and records disclosed under this Agreement. With respect to this Agreement, "record" means a record of information in any form, including books, documents, maps, drawings, photographs, letters, vouchers and papers and any other information that is written, photographed, recorded or stored in any manner, but does not include software or any mechanism that produces records.

6.3. For the purposes of this Agreement, "Confidential Information" shall mean information that is considered proprietary or confidential by either party and which is delivered or disclosed under or pursuant to this Agreement, whether or not such information is marked "confidential" or is otherwise identified as being confidential at the time of disclosure, and includes all material, data and information (regardless of form and whether or not patentable or protectable by copyright) which is not available to the public. "Confidential Information" shall not include any information that:

6.3.1. is now in or subsequently enters the public domain through means other than by the direct or indirect disclosure by either party hereto in violation of the terms of this Agreement;

6.3.2. is already in the possession of the party receiving that information free of any obligation of confidence to the other party;

6.3.3. is lawfully communicated to the party receiving the information by a third party, free of any confidential obligation, subsequent to the time of communication thereof by, through or on behalf of the other party;

6.3.4. is developed independently by employees of the party receiving that information not in contravention of this Agreement;

6.3.5. the party disclosing that information has received prior written approval from the other party to disclose; or

6.3.6. either party is required to disclose pursuant to any law or order of the Court.

6.4. Each party shall make all reasonable efforts to maintain in confidence the Confidential Information of the other. Without limiting the generality of the foregoing in this Section 6.4, each party shall make all reasonable efforts to keep, file and store all Confidential Information, together with any notes or other material incorporating or relating to the Confidential Information, in a manner consistent with its confidential nature and to take all reasonable action, whether by instruction, agreement or otherwise, to ensure that its directors, officers, employees, agents and sub-contractors do not disclose or use the Confidential Information of the other party directly or indirectly, for any purpose other than to perform its obligations under this Agreement. Notwithstanding the obligations in this Section 6.4, either party may disclose Confidential Information required to be disclosed by Applicable Laws, providing, however, that the party making that disclosure shall use its best efforts to limit that disclosure, and in any event, shall make that disclosure only to the extent so required.

6.5. Each of EWSI and the Customer shall limit the provision of Confidential Information to those of its employees and subcontractors in its business or organization, as applicable, who are required to have knowledge of the Confidential Information as a result of their participation in the provision or receipt of Services. Each party shall inform its employees and subcontractors involved in the provision or receipt of Services of the confidential nature of the information provided under this Agreement and shall require those employees and subcontractors to comply with the terms under this Agreement relating to confidentiality to the same extent as a party hereto.

6.6. Nothing contained in this Agreement shall be construed as granting a right to a recipient of Confidential Information, by license or otherwise, to disseminate any Confidential Information to any third party.

6.7. The obligations of confidentiality herein imposed upon a recipient of Confidential Information shall continue for a period of three (3) years from the date of termination, or expiry of the Term of this Agreement.

6.8. The parties acknowledge that improper disclosure or use of any Confidential Information may cause irreparable harm to a party, which harm may not be adequately compensated by damages. As a result, in addition to all other remedies either party may have and not in derogation thereof, either party may seek and obtain from any court of competent jurisdiction injunctive relief in respect of any actual or threatened disclosure or use of any Confidential Information contrary to the provisions of this Agreement.

7. DISPUTE RESOLUTION

7.1. EWSI and the Customer both desire that any disputes concerning the interpretation of this Agreement be resolved in an amicable and confidential manner. Therefore, the parties shall comply with the dispute resolution process described in Schedule "D" attached hereto to resolve any and all disputes arising out of or in relation to this Agreement.

7.2. Nothing in this agreement, including subsection 7.1 above, shall restrict the Customer's right to appeal the rates established pursuant to this Distribution System Rider Agreement to the Alberta Utilities Commission under section 43 of the *Municipal Government Act,* R.S.A. 2000, c. M-26.

8. NOTICES

8.1. A notice in writing or other correspondence required or permitted to be given by one party to the other party pursuant to this Distribution System Rider Agreement shall be sufficiently given:

8.1.1. when transmitted by facsimile (addressed as if to be mailed in the manner hereafter provided) and transmitted to the facsimile number of the party identified in Schedule "C"; or

8.1.2. when personally delivered or mailed by registered mail, postage prepaid, addressed to the party at the address identified in Schedule "C".

8.2. Any notice transmitted by facsimile or delivered or mailed shall be deemed to have been received by the addressee on the day of actual facsimile transmission or delivery (if a business day) or the first business day after actual facsimile transmission or delivery (if facsimile transmission or delivery is not on a business day) and, when mailed, on the fifth (5th) business day following the date of mailing except in the case of a postal strike or disruption of postal services in which case the deemed time of service shall be extended one (1) week past the resumption of normal postal services.

8.3. Any facsimile number or any address for giving notice to any party may be changed from time to time by that party by notice given as herein before provided.

8.4. If EWSI together with The City of Edmonton intends to amend Bylaw 17698, EWSI shall notify the Customer so that the Customer and EWSI may consider proposing amendments to Bylaw 17698 or, if necessary, this Distribution System Rider Agreement.

9. GENERAL PROVISIONS

9.1. Whole Agreement

9.1.1. No terms, conditions, warranties, promises or undertakings of any nature whatsoever, express or implied, exist between the parties with respect to this Agreement except as herein set forth. This Agreement may be amended, changed or modified only by further written agreement between the parties. .

9.2. Waiver

9.2.1. A waiver by either party of the strict performance by the other of any covenant or provision of this Distribution System Rider Agreement shall not constitute a waiver of any subsequent breach of such covenant or provision or of any other covenants, provisions or terms of this Distribution System Rider Agreement..

9.3. Partial Invalidity

9.3.1. If any term, condition or provision of this Agreement or the application thereof to any person or circumstance shall to any extent be invalid or unenforceable, the remainder of this Agreement or the application of that term, condition or provision to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby and each term, condition or provision shall be separately valid and enforceable to the fullest extent permitted by law.

9.4. Further Assurances

9.4.1. Each of the parties to this Agreement shall at the request of the other party hereto, execute and deliver any further documents and do all acts and things as that party may reasonably require to carry out the full intent and meaning of this Agreement.

9.5. Governing Law

9.5.1. This Agreement shall be governed by and construed in accordance with the laws in force in the Province of Alberta and the laws of Canada applicable therein. The courts of the Province of Alberta shall have exclusive jurisdiction with respect to any question of law arising from this Agreement.

9.6. Governing Legislation, Regulation, and Bylaws

9.6.1. This Agreement shall be amended to comply with new legislation, regulation, or bylaws when changes to legislation, regulation or bylaws have a material impact on the terms and conditions of this Agreement.

9.7. Permitted Assignment

9.7.1. The rights and obligations of the parties under this Agreement may not be assigned, in whole or in part, by either party without the prior written consent of the other party hereto, which consent shall not be unreasonably withheld.

9.8. Force Majeure

9.8.1. If the Customer or EWSI is delayed in the performance of or is unable to perform any part of its respective obligations hereunder due to labour disputes, strikes, walkouts, fire, unusual delay by common carriers, unavoidable catastrophes, extreme weather conditions, explosion, flood, acts of God or public enemy, war, acts of terrorism, government regulation, any law, act or order of any court, government body or regulator or circumstances of any kind beyond the reasonable control of EWSI or the Customer, then EWSI or the Customer, as the case may be, shall be excused from the performance of those obligations to the extent that the performance is prevented, hindered or delayed by those causes and EWSI or the Customer, as the case may be, shall not be liable hereunder to the other party during the period and to the extent of the inability to perform. Upon the occurrence of any of the events referred to above, the party unable to perform shall immediately notify the other party of the inability and the extent of any delay or inability to perform its obligations and shall use its reasonable efforts to remedy the delay or failure to perform as soon as reasonably possible.

9.9. Enurement

9.9.1. This Agreement shall be binding upon and enure to the benefit of the Customer and EWSI and upon their respective successors and permitted assigns. .

IN WITNESS WHEREOF the parties have duly executed this Distribution System Rider Agreement as of the date first above written.

EPCOR WATER SERVICES INC.

Per: ______________________________
Signature of Authorized Officer

THE UNIVERSITY OF ALBERTA

Per: ______________________________
Signature of Authorized Officer

Print Name of Authorized Officer	Print Name of Authorized Officer
Position of Authorized Officer	Position of Authorized Officer

SCHEDULE "A"

DISTRIBUTION SYSTEM RIDER

1. APPLICABLE

   1.1. To University of Alberta water consumption measured at the water meters described in Article 1.2 of this Agreement.

2. DISTRIBUTION SYSTEM RIDER

   2.1. Commencing July 1, 2017 and for each subsequent year for the term of the Distribution System Rider Agreement, the Distribution System Rider will be applied as a reduction from the regular water rates applicable to the Customer's water consumption pursuant to Bylaw 17698, Schedule 1, Part II.

   2.2. The Distribution System Rider shall be applied to the water consumption associated with water account number 1231919 and as measured by the three water meters belonging to the Customer which are located in Edmonton, Alberta at:

      2.2.1. 11102 Saskatchewan Drive NW;
      2.2.2. 9199 – 116 Street NW; and
      2.2.3. 11199S – 83 Avenue NW

   2.3. The Distribution System Rider shall be set at an amount of $0.05 per cubic metre, commencing on July 1, 2017 and shall remain at this amount for the term of this Agreement.

SCHEDULE "B"

MONTHLY BILLINGS TO CUSTOMER

1. CREDIT TO MONTHLY BILL

   The Distribution System Rider will be applied as a credit to the Customer's monthly invoice and displayed as a line item denoted as "Adjustments" as shown below:

Here's what you owe *For details, please turn over*

Amount of your last bill	$302,458.28
Payments we processed Thank you	- 302,458.28
New charges	332,848.52
Adjustments	24,166.32 CR
Water/wastewater	254,098.50
Drainage services	102,916.34
Total payment now due	**$332,848.52**
Payment due after April 11, 2017	$332,848.52

HIGHLIGHTS OF THIS BILLING

- Number of days in the period: 32
  Total electricity you used: 0.00 kWh
  Your average daily electricity cost: $0.00
- **LATE PAYMENT CHARGE**
  We charge a one-time late payment charge of 2.5% on amounts outstanding after the due date shown.

SCHEDULE "C"

ADDRESSES FOR NOTICE

For the University of Alberta

Address: University of Alberta - Utilities
4th Floor, General Services Building
Edmonton, Alberta
T6G 2H1

Attention:

Facsimile: ______________________________

For EPCOR Water Services Inc.

Address: EPCOR Water Services Inc.
2000, 10423 101 Street NW
Edmonton, Alberta
T5H 0E8

Attention: Director, Regulatory and Shared Services

Facsimile: ______________________________

SCHEDULE "D"

DISPUTE RESOLUTION PROCESS

The Customer and EWSI acknowledge that in any business relationship a difference of opinion or interpretation or a divergence of interest may arise. The Customer and EWSI are committed to resolving any disputes in a non-adversarial, informal and cost-efficient manner. Therefore the Customer and EWSI agree as follows:

1.0 Negotiation

The parties shall attempt to resolve by discussion and negotiation any dispute (a "Dispute") which may arise between them regarding any matters arising out of this Agreement, including any Dispute as to the interpretation, application or operation of this Agreement or of any of the provisions hereof.

2.0 Dispute Resolution

Except as otherwise specifically provided herein, every Dispute not resolved by discussion and negotiation shall be resolved by arbitration in accordance with the following provisions:

2.1.1 The party desiring to refer the Dispute for arbitration (the "Notifying Party") shall notify the other party (the "Notified Party") in writing (the "Notice") of the nature of and the matters alleged by the Notifying Party to be in dispute;

2.1.2 Within fourteen (14) days of the receipt of the Notice, the Notified Party, by written notice (the "Notice Back"), may notify the Notifying Party of all matters in the Notice which are in dispute;

2.1.3 If the Notified Party does not send a Notice Back to the Notifying Party as contemplated in Subsection 2.1.2, the Notified Party shall be deemed to have admitted or accepted responsibility or liability for all matters alleged by the Notifying Party to be in dispute in the Notice;

2.1.4 The Notified Party shall be deemed to have admitted or accepted responsibility or liability for all matters alleged by the Notifying Party to be in dispute and which the Notified Party has not disputed in the Notice Back;

2.1.5 The terms of reference for arbitration shall be only those matters in the Notice which remain in dispute and are described, as such, in the Notice Back;

2.1.6 Within seven (7) days of the establishment of the terms of reference pursuant to Subsection 2.1.5, the parties shall appoint a single arbitrator to decide the Dispute, failing which, within a further five (5) days, they shall each appoint an arbitrator, and within seven (7) days from the date that the last of them appointed an arbitrator, the two (2) arbitrators shall appoint a third arbitrator and the three (3) arbitrators shall comprise the arbitration committee (the "Committee");

2.1.7 The arbitrator appointed by the two (2) arbitrators shall be the "chair" of the Committee, provided further, that if the two (2) arbitrators fail to appoint a third arbitrator, then both parties or either of them may apply to a Justice of the Court of Queen's Bench of Alberta to have the third arbitrator appointed;

2.1.8 If either party fails to appoint an arbitrator within the five (5) day period described in Subsection 2.1.6, the arbitrator appointed by the other party shall be deemed to be the Committee and the decisions of that arbitrator on the Dispute shall be binding upon the parties;

2.1.9 Within thirty (30) days of the establishment of the Committee, or such further period as may be agreed upon by the parties, the Committee shall hear and endeavour to resolve the Dispute in accordance with the terms of reference;

2.1.10 The decision of the majority of the Committee shall be the decision of the Committee provided that if no majority decision is reached, the decision of the chair shall be deemed to be the decision of the majority of the Committee;

2.1.11 The decision of the Committee on the Dispute shall be final and binding upon the parties;

2.1.12 The cost of the arbitration shall be borne by the party against which the decision is made, provided however, that if neither party is entirely successful in that decision, at the discretion of the Committee, the cost of the arbitration may be apportioned between the parties in any manner the Committee finds equitable in the circumstances;

2.1.13 If, within thirty (30) days of the date:

2.1.13.1. On which the Notified Party is deemed to have admitted or accepted responsibility or liability for any matters alleged by the Notifying Party to be in dispute; or

2.1.13.2. Of a decision of the Committee;

The Notified Party or the party against whom a decision of the Committee is made (the "Defaulting Party"), as the case may be, fails to remedy the matter or comply with the terms of the decision of the Committee, the Notifying Party or the party in whose favour a decision of the Committee is made, as the case may be, may apply ex parte, to a Justice of the Court of Queen's Bench of Alberta for a judgment against the Defaulting Party; and

2.1.14 Except as hereby modified, the provisions of the *Arbitration Act* (Alberta), as amended shall apply to the arbitration procedure.

9.6.1. This Agreement shall be amended to comply with new legislation, regulation, or bylaws when changes to legislation, regulation or bylaws have a material impact on the terms and conditions of this Agreement.

9.7. Permitted Assignment

9.7.1. The rights and obligations of the parties under this Agreement may not be assigned, in whole or in part, by either party without the prior written consent of the other party hereto, which consent shall not be unreasonably withheld.

9.8. Force Majeure

9.8.1. If the Customer or EWSI is delayed in the performance of or is unable to perform any part of its respective obligations hereunder due to labour disputes, strikes, walkouts, fire, unusual delay by common carriers, unavoidable catastrophes, extreme weather conditions, explosion, flood, acts of God or public enemy, war, acts of terrorism, government regulation, any law, act or order of any court, government body or regulator or circumstances of any kind beyond the reasonable control of EWSI or the Customer, then EWSI or the Customer, as the case may be, shall be excused from the performance of those obligations to the extent that the performance is prevented, hindered or delayed by those causes and EWSI or the Customer, as the case may be, shall not be liable hereunder to the other party during the period and to the extent of the inability to perform. Upon the occurrence of any of the events referred to above, the party unable to perform shall immediately notify the other party of the inability and the extent of any delay or inability to perform its obligations and shall use its reasonable efforts to remedy the delay or failure to perform as soon as reasonably possible.

9.9. Enurement

9.9.1. This Agreement shall be binding upon and enure to the benefit of the Customer and EWSI and upon their respective successors and permitted assigns. .

IN WITNESS WHEREOF the parties have duly executed this Distribution System Rider Agreement as of the date first above written.

EPCOR WATER SERVICES INC.

Per: ______________________________
Signature of Authorized Officer

THE UNIVERSITY OF ALBERTA

Per: ______________________________
Signature of Authorized Officer

John Elford
Print Name of Authorized Officer

Senior Vice President, Water Canada
Position of Authorized Officer

M. Kohlenberg
Print Name of Authorized Officer

Associate Vice President, Utilities
Position of Authorized Officer

SCHEDULE "C"

ADDRESSES FOR NOTICE

For the University of Alberta

Address: University of Alberta - Utilities
4th Floor, General Services Building → 115 University Campus NW
Edmonton, Alberta
T6G 2H1 → T6G 2N7

Attention: Utility Services Manager (I & CS)

Facsimile: 780-492-0699

For EPCOR Water Services Inc.

Address: EPCOR Water Services Inc.
2000, 10423 101 Street NW
Edmonton, Alberta
T5H 0E8

Attention: Director, Regulatory and Shared Services

Facsimile:

Request: **GT-EWSI-21**

Topic: **Return on Equity**

Reference: **Appendix D, Page Reference: 9, Table Reference: 3.1**

Please provide the percentage of fixed revenue for water, wastewater, and drainage forecast for the next PBR term (inclusive of proposed rate structure changes).

EWSI RESPONSE:

Table GT-EWSI-21 provide the percentage of fixed revenue for Water, Wastewater Treatment, and Drainage Services' forecasts for the 2022-2024 and 2022-2026 PBR terms.

Table GT-EWSI-21
Forecast Percentage of Fixed Revenue
2022-2026

		A **2022F**	B **2023F**	C **2024F**	D **2025F**	E **2026F**
1	Water Services	23.2%	25.0%	25.1%	25.5%	25.9%
2	Wastewater Treatment	18.3%	18.2%	18.3%	N/A	N/A
3	Drainage Services	58.2%	59.3%	59.3%	N/A	N/A
4	**Average**	**33.3%**	**34.2%**	**34.2%**	**N/A**	**N/A**

Request: GT-EWSI-22

Topic: Return on Equity

Reference: Appendix D, Page Reference: 9, Table Reference: 3.1

Please provide the supporting information / model used to calculate the percentage of fixed revenue percentage for the electric and gas utilities listed.

EWSI RESPONSE:

Unfortunately, the annual Finance and Operations Filings (Rule 005), completed by the other Alberta utilities, do not include a breakdown of fixed vs variable revenue. EWSI used the data available through multiple AUC proceedings (rate filings) to calculate each utilities percentage of fixed revenue. Table GT-EWSI-22-1 summarizes that data from the other Alberta utilities 2015 or 2016 rate filings, this data was used to populate the years 2014-2017 in Appendix D Table 3.1.3-1. Table GT-EWSI-22-2 summarizes that data from other Alberta utilities 2018 or 2019 rate filings, this data was used to populate the years 2018-2019 in Appendix D Table 3.1.3-1.

Table GT-EWSI-22-1
Alberta Utilities - Percentage of Fixed Revenue
2015 or 2016 Proceedings
($ millions)

	Revenue Type	A EPCOR E-Dis	B ATCO E-Dis	C Enmax E-Dis	D Fortis E-Dis	E Atco Gas	F Alta Gas
1	Customer, Facility, Demand, Capacity Revenue (Fixed)	136.2	291.1	148.6	465.9	421.5	39.1
2	Variable Revenue	50.7	102.2	54.2	75.4	170.2	31.6
3	Power Factor, Other Rate Revenue (Variable)	-	5.3	-	(0.2)	-	-
4	**Total Rate Revenue**	**187.0**	**398.6**	**202.8**	**541.0**	**591.7**	**70.6**
5	Customer, Facility, Demand, Capacity Revenue (Fixed)	72.9%	73.0%	73.3%	86.1%	71.2%	55.3%
6	Variable Revenue	27.1%	25.6%	26.7%	13.9%	28.8%	44.7%
7	Power Factor, Other Rate Revenue (Variable)	0.0%	1.3%	0.0%	0.0%	0.0%	0.0%
8	**Total**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source:

EPCOR E-Dis

AUC Proceeding: 20821-A001

Description: EPCOR Distribution & Transmission Inc. 2016 PBR Annual Rate Adjustment Filing

File Name: AppendixB-2016PBRRateCalculation_0011.xlsx

Worksheet: 1.0 2016 PBR Rates

ATCO E-Dis

AUC Proceeding: 20822-A001

Description: Enclosed for consideration by the Alberta Utilities Commission is ATCO Electric's 2016 PBR Annual Filing Application, for rates effective January 1, 2016. ATCO Electric respectfully requests the Commission's approval by December 17, 2015.

File Name: 08AE2016PBRApplicationAppendixG_RateCalc_0007.xlsx

Worksheet: D.7

Enmax E-Dis

AUC Proceeding: 1610874-1

Description: EPC 2015 Interim Distribution and Transmission Tariff Application

File Name: Appendix 1_0005.xlsx

Worksheet: 1.5

Fortis E-Dis

AUC Proceeding: 20818-A001

Description: 2015-09-10 FortisAlberta 2016 Annual Rates Filing

File Name: Schedule41A-I2016RevenueandRateDesign_0008.xlsx

Worksheet: 4.1-H1 2016 D-Rev 2016 PBR

Atco Gas

AUC Proceeding: 20820-A001

Description: ATCO Gas 2016 Performance Based Regulation (PBR) Application

File Name: AppendixB-2016PBRSchedule_0002.xls

Worksheet: Schedule 5.1.2 and Schedule 5.2.2

Alta Gas

AUC Proceeding: 20823-A001

Description: AUI 2016 Annual PBR Filing September 10 2015

File Name: 2016PBRAnnualRateFilingSchedulesSeptembe_0002.xlsx

Worksheet: 2.1 2016 Revenue@2016 Rates

Table GT-EWSI-22-2
Alberta Utilities - Percentage of Fixed Revenue
2018 or 2019 Proceedings
($ millions)

	Revenue Type	A EPCOR E-Dis	B ATCO E-Dis	C Enmax E-Dis	D Fortis E-Dis	E Atco Gas	F Alta Gas
1	Customer, Facility, Demand, Capacity Revenue (Fixed)	172.5	592.1	169.4	468.1	395.5	45.9
2	Variable Revenue	56.8	267.3	53.9	89.9	162.2	35.5
3	Power Factor, Other Rate Revenue (Variable)	-	5.4	-	(0.2)	-	-
4	**Total Rate Revenue**	**229.3**	**864.9**	**223.3**	**557.9**	**557.8**	**81.4**
5	Customer, Facility, Demand, Capacity Revenue (Fixed)	75.2%	68.5%	75.9%	83.9%	70.9%	56.4%
6	Variable Revenue	24.8%	30.9%	24.1%	16.1%	29.1%	43.6%
7	Power Factor, Other Rate Revenue (Variable)	0.0%	0.6%	0.0%	0.0%	0.0%	0.0%
8	**Total**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source:

EPCOR E-Dis

AUC Proceeding: 23896-A001

Description: EDTI 2019 Annual PBR Rates Adjustment Filing

File Name: 23896_X0003_AppendixB-2019PBRRateCalculation_0003.xlsx

Worksheet: 1.0 2019 PBR Rates

ATCO E-Dis

AUC Proceeding: 23895-A001

Description: ATCO Electric 2019 Performance Based Regulation Application

File Name: 23895_X0007_AppendixF-ATCOElectricRateCalculations_0007.xlsx

Worksheet: D.7

Enmax E-Dis

AUC Proceeding: 23892-A001

Description: ENMAX Power Corporation 2019 PBR Rate Adjustment Application

File Name: 23892_X0005_Appendix5-RateSchedule_0005.xlsx

Worksheet: 10.0

Fortis E-Dis

AUC Proceeding: 23893-A001

Description: FortisAlberta 2019 Annual Rate Adjustment Filing for interim rates effective January 1, 2019

File Name: 23893_X0017_Schedule4.1AtoH2019RevenueandRateDesign_0025.xlsx

Worksheet: 4.1-G1 2019 D Interim 2019 PBR

Atco Gas

AUC Proceeding: 23355-F0010

Description: ATCO Gas Second Compliance Filing and 2018 PBR Rates

File Name: 23355_X0015_AppendixF-ATCOGas2018PBRRateCalculations_0017.xls

Worksheet: Schedule 8.1.2 and Schedule 8.2.2

Alta Gas

AUC Proceeding: 23898-A001

Description: 2019 AUI Annual PBR Rate Adjustment Filing

File Name: 23898_X0003_AppendixF-2019AnnualPBRRateFilingSchedul_0003.xlsx

Worksheet: 2.1 2019 Revenue@2019 Rates

Request: **GT-EWSI-23**

Topic: **Return on Equity**

Reference: **Appendix D, Page Reference: 26, Table Reference: 4.5-1**

In calculating the indicated common equity rate of return in Table 4.5-1 on page 26 of Appendix D, please explain why the 2.3% yield on long-term government of Canada bonds is used to assess bond yield change as opposed to the 2.64% bond yield that underpinned in the cost of equity in the 2017 PBR?

EWSI RESPONSE:

As noted in Appendix D, the Commission's generic cost of capital decision which established the 8.5% return on equity was predicated on a 2.3% yield on long-term Government of Canada bonds (see Decision D22570-D01-2018, paragraph 299, page 65). EWSI uses this historical yield and compares it to the 2019 (pre-pandemic) yield on long-term Government of Canada bonds of 1.8% to determine the required adjustment of 0.5% to the 8.5% common equity rate of return reflecting the change in bond yields during this time period. This analysis is shown in Table 4.4-1 of Appendix D.

The 2.64% bond yield that underpinned EWSI's cost of equity in the 2017-2021 PBR is not relevant as this was determined in 2016 and does not reflect the bond yield that underpinned the AUC's generic cost of capital decision that established the 8.5% return on equity in 2018.

Request: **GT-EWSI-24**

Topic: **Return on Equity**

Reference: **Drainage Application, Page Reference: 4, Paragraph Reference: 10**

Please describe EWSI's commitment regarding how Drainage rates would be informed/changed following the 3% annual rate increase period from 2017-21 (please provide any supporting documentation, is applicable).

EWSI RESPONSE:

For the period beyond 2018-2021, EWSI committed to establishing sanitary and stormwater rates under the same performance based regulation framework that is currently applied to EWSI's water and wastewater treatment operations.

This commitment was reported on page 7 of Grant Thornton's 2016 Report "EPCOR Proposal for Drainage Transfer Analysis", dated October 5, 2016

> *For the purposes of its forecast, EPCOR has used Drainage's 10 year revenue forecast that assumes the 3.0% annual increase in monthly rates. As part of its Proposal, EPCOR has committed to hold this rate increase between 2017 to 2021, and then proposes to submit a Performance Based Regulation (PBR) application for new rates over the 2022 to 2026 period.*

The PBR approach was further explained on page 9 of Grant Thornton's 2016 Drainage Transfer Analysis Report.

> *The regulatory and governance structure for the proposed Drainage transfer would mirror that used for Water Services and Wastewater Treatment, with extra provision for development and monitoring through the Stormwater Integrated Resource Plan (SIRP). This means EPCOR would utilize the same PBR-like approach to rate setting and performance management, with enhanced involvement and reporting to the Utility Committee in the short-term.*

The PBR approach was further explained on page 58 of Grant Thornton's 2016 Drainage Transfer Analysis Report.

> *EPCOR has committed to hold the 3.0% annual rate increase between 2017 to 2022, followed by a PBR application for new rates over the 2022 to 2026 period. While this initial five years of 3.0% rate increase will benefit ratepayers, after five years EPCOR's PBR application will include a regulated ROE that will be included in its revenue requirement. This will have an impact to Drainage utility rates*

Request: **GT-EWSI-25**

Topic: **Return on Equity**

Reference: **Drainage Application, Page Reference: 4, Paragraph Reference: 10**

Please further explain how the 4.38% return on equity (combined for the sanitary and stormwater utilities) was determined.

EWSI RESPONSE:

The calculation of the return on equity for the stormwater and sanitary utilities is shown in Table 10.1-1 of the PBR application. The 2021 forecast combined rate of return on equity of 4.38% is calculated as the sum of the forecast returns for the sanitary and stormwater utilities, divided by the sum of the forecast equity-financed portion of the rate bases for the utilities. This calculation is shown on Table GT-EWSI-25, below:

Table GT-EWSI-25
PBR Application Table 10.1-1
Return on Equity
($ millions)

		A	B	C	D	E
		2021 Forecast				
		Sanitary Utility excl CORE	**CORE**	**Stormwater Utility excl SIRP**	**SIRP**	**Combined**
1	Return on rate base financed by equity	33.3	(0.5)	(5.8)	0.1	27.0
2	Rate base	762.6	54.8	713.8	-	
3	Equity portion of capital structure	40.21%	40.00%	40.21%	-	
4	Rate base financed by equity	306.3	21.9	287.0	-	615.5
5	**Rate of return on equity**	**10.84%**	**-2.24%**	**-2.03%**	**-**	**4.38%**