2012 PROGRESS REPORT

EPCOR WATER SERVICES INC.

2012 - 2016 PERFORMANCE BASED REGULATION

MAY 2013

PROVIDING MORE EPCOR

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Executive Summary

This report provides an annual update to The City of Edmonton (the City) regarding the operational and financial results for the year ended December 31, 2012 for EPCOR Water Services Inc. (EWSI) water services and wastewater treatment provided within Edmonton. These services are provided pursuant to Bylaw 15816, the EPCOR Water Services and Wastewater Treatment Bylaw (the Bylaw). The Bylaw prescribes Performance Based Regulation (PBR) for water services within Edmonton ("Water") for the 2012-2016 PBR term and, for the first time, extends PBR to wastewater treatment ("Wastewater").

In 2012, EWSI exceeded the operating performance standards for both Water and Wastewater. Under the PBR framework, EWSI is awarded bonus points for performance above the PBR standard of 100 points, allowing Water to earn **106.4 points** and Wastewater to earn **109.3** points.

Water and Wastewater's combined net income for 2012 was **$26.6 million**, $6.9 million less than in the PBR forecast. Water and Wastewater's combined Return on Equity ("ROE") was **7.20%,** 1.57% below their combined approved ROE of 8.77%.

On an individual basis, Water's 2012 net income was **$22.2 million**, $7.6 million less than in the PBR forecast, providing Water with an ROE of **8.46%**, 2.42% less than its approved ROE of 10.875%. Wastewater's net income in 2012 was **$4.4 million**, $0.7 million greater than in the PBR forecast, providing Wastewater with an ROE of **4.07%**, 0.62% greater than its approved ROE of 3.45%.

Declining consumption, especially in the Residential Customer class, continues to be the single most important challenge facing Water and Wastewater. As capital-intensive utilities, most of Water and Wastewater's costs are fixed. At the same time, Water and Wastewater's rates are structured so that revenues vary with the level of consumption. Although this rate structure provides strong incentives for EWSI's customers to use water efficiently, relatively small changes in consumption can have significant impacts on EWSI's revenue and, therefore, its ability to earn its approved rate of return. This challenge is clearly illustrated by Water's 2012 results when a 3% difference between actual and PBR forecast water consumption resulted in a 6% decrease in Water's revenue and a 26% decrease in its net income.

1 Overview

1.1 Operational Performance Summary

1.1.1 Water

Under PBR, Water's operational performance is evaluated using the five performance measure indices prescribed in the Bylaw. In 2012, Water exceeded target performance standards for four of the performance indices, with only the Safety Index below target performance standards (see Table 1.1.1). Section 3.1 provides detailed discussions of the performance measures making up each of the indices, highlights of Water's operational performance, as well as planned process improvements.

Table 1.1.1
2012 Performance Measures
Water System Service Quality Standards

	A	B	C
Performance Measure Index	**Target Points**	**Actual Points Earned**	**Actual Outcome**
System Reliability Index	25.0	28.5	Exceeded target
Water Quality Index	25.0	25.1	Exceeded target
Customer Service Index	20.0	22.5	Exceeded target
Environmental Index	15.0	16.2	Exceeded target
Safety Index	15.0	14.1	Below target
Aggregate Points Earned (sum of all indices)	**100.0**	**106.4**	**Exceeded target**

1.1.2 Wastewater Treatment

Wastewater's operational performance is evaluated on a similar basis to Water, except that the individual performance measures making up each performance index are tailored to wastewater treatment operations. In 2012, Wastewater met or exceeded the performance standards for all five performance measure indices (see Table 1.1.2). A detailed discussion of Wastewater's performance measures is provided in Section 3.2.

Table 1.1.2
2012 Performance Measures
Wastewater Treatment Service Quality Standards

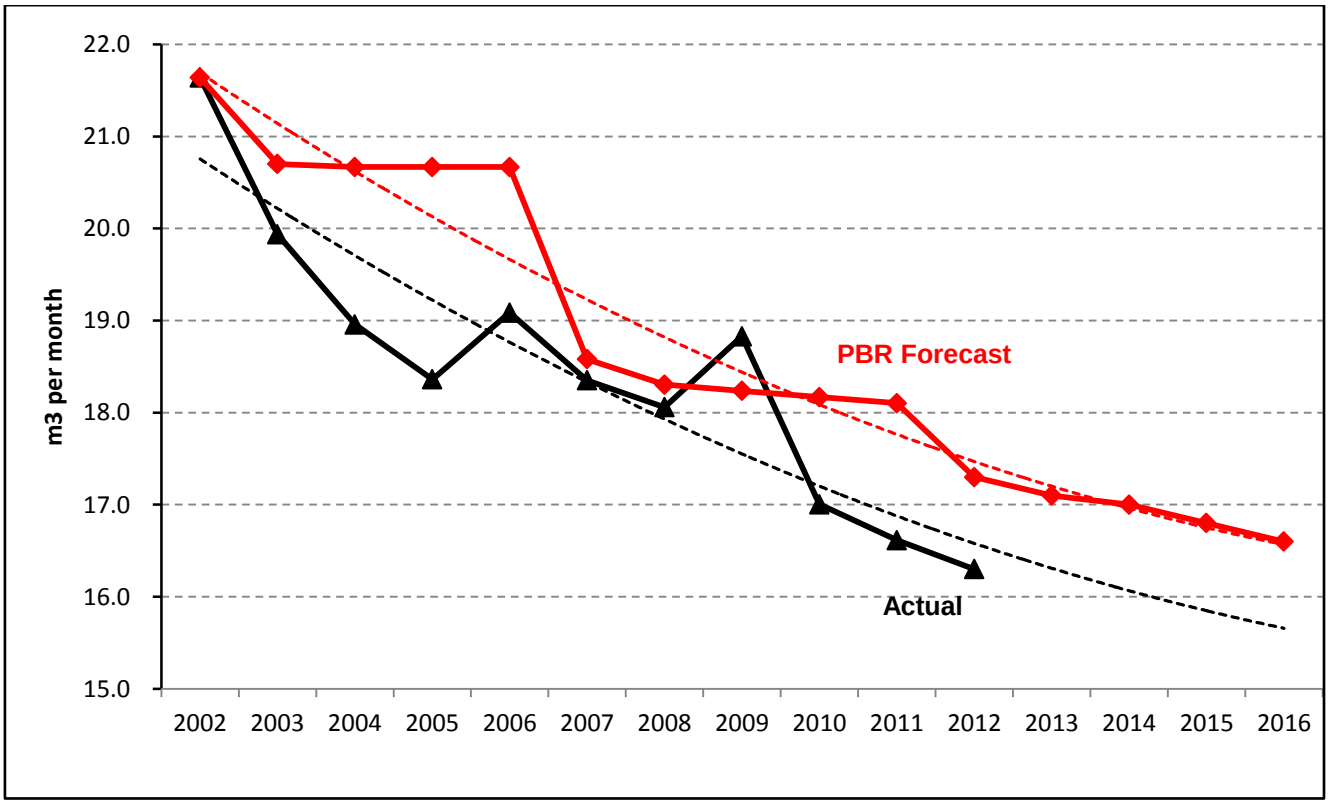
	A	B	C
Performance Measure Index	**Target Points**	**Actual Points Earned**	**Actual Outcome**
System Reliability Index	15.0	16.0	Exceeded target
Water Quality Index	40.0	44.0	Exceeded target
Customer Service Index	5.0	5.0	Met target
Environmental Index	20.0	21.3	Exceeded target
Safety Index	20.0	23.0	Exceeded target
Aggregate Points Earned (sum of all indices)	**100.0**	**109.3**	**Exceeded target**

1.2 Consumption and Customer Count Summary

1.2.1 Average Monthly Consumption per Customer

Declining consumption per customer in the Residential customer class is the single most important challenge facing EWSI. Although weather can have significant impacts on short-term consumption, over the longer term, the decline in Residential per customer consumption is driven by changes in technology, such as the use of water-efficient appliances, price signals prompted by the use of an inclining rate structure tied to individual metering and promotion of conservation initiatives. This decline is clearly illustrated in Chart 1.2.1. Over the past ten years, Water's Residential consumption per customer has declined at an average rate of 2.5% per year (illustrated by the dotted lines in Chart 1.2.1). Although EWSI has reflected an adjustment for this decline in its PBR forecasts, the actual effects of the decline in Residential consumption per customer have been greater than anticipated**.**

Chart 1.2.1
Average Monthly Consumption per Residential Customer
2002 to 2012



In 2012, average monthly consumption for Residential Water and Wastewater customers was 6% lower than in the PBR forecast (see Table 1.2.1), reflecting the long-term decline in consumption discussed above.

Average monthly consumption for Multi-residential and Commercial customers has not shown the same decline as for Residential customers and, in 2012 (see Table 1.2.1), did not vary significantly from the PBR forecast. These results are not unexpected; Multi-residential and Commercial customers tend to have constant consumption throughout the year, so changes in per customer consumption for these customer classes are longer term, usually related more to technological change or changes in customer mix.

Table 1.2.1
Average Monthly Consumption per Customer
(m^3 per customer per month)

		A	B
Customer Class		2012	
		Actual	PBR Forecast
1	**Water**		
2	Residential	16.3	17.3
3	Multi-Residential	413.4	410.0
4	Commercial	136.2	134.0
5	**Wastewater**		
6	Residential	15.6	16.6
7	Multi-Residential	414.4	409.9
8	Commercial	138.8	135.6

1.2.2 Average Monthly Customer Counts

Actual average monthly customer counts for both Water and Wastewater in 2012 were 1% less than in the PBR forecast. This difference, shown in Table 1.2.2 below, was concentrated in the Residential customer class, reflecting marginally slower than anticipated economic growth in 2012.

Table 1.2.2
Average Monthly Customer Counts

		A	B
Customer Class		2012	
		Actual	PBR Forecast
1	**Water**		
2	Residential	221,444	224,213
3	Multi-Residential	3,407	3,413
4	Commercial	17,597	17,774
5	**Total**	**242,448**	**245,400**
6	**Wastewater**		
7	Residential	221,170	224,080
8	Multi-Residential	3,406	3,414
9	Commercial	15,231	15,285
10	**Total**	**239,807**	**242,779**

1.2.3 Consumption by Customer Class

In 2012, total actual consumption for both Water and Wastewater was 3% lower than in the PBR forecasts. Lower-than-forecast consumption was limited to the Residential customer class (7% lower than in the PBR forecasts); actual to PBR forecast variances for Multi-Residential and Commercial customer classes were not significant. The decreases in Residential consumption were primarily attributable to lower than forecast consumption per Residential customer (see Section 1.2.1), with lower than expected growth in customer counts (see Section 1.2.2), having a secondary impact. The net effect of the decline in Residential consumption, as illustrated in Table 1.2.3 was that the Residential customer class accounted for less than half of EWSI's consumption volumes in 2012.

Table 1.2.3
Total Consumption by Customer Class
(thousands of m^3 – ML)

		A	B	C	D
Customer Class		**2012 Actual**		**2012 PBR Forecast**	
		ML	**%**	**ML**	**%**
1	**Water**				
2	Residential	43,317	49%	46,552	51%
3	Multi-Residential	16,900	19%	16,794	18%
4	Commercial	28,768	32%	28,582	31%
5	**Total**	**88,985**	**100%**	**91,928**	**100%**
6	**Wastewater**				
7	Residential	41,346	49%	44,594	51%
8	Multi-Residential	16,936	20%	16,795	20%
9	Commercial	25,378	31%	24,871	29%
10	**Total**	**83,660**	**100%**	**86,260**	**100%**

1.3 Net Income Summary

1.3.1 Water

In 2012, Water's net income was $7.6 million less than the PBR forecast of $29.8 million. As Table 1.3.1 shows, the decrease in net income is almost entirely related to the decrease in revenue, reflecting lower than forecast consumption in the Residential customer class (see Section 1.2.1) and a rate structure with a high proportion (86% in 2012) of consumption-driven revenues. Net income components are analyzed in detail in Section 4.1.

Table 1.3.1
Water – Net Income
($ millions)

		A	B
Net Income Component – Water		**2012**	
		Actual	**PBR Forecast**
1	Revenue	$ 150.4	$ 159.4
2	Operating costs	(90.3)	(91.6)
3	Depreciation	(17.2)	(17.3)
4	Interest Expense	(20.7)	(20.7)
5	**Net Income**	**$ 22.2**	**$ 29.8**

1.3.2 Wastewater

In 2012, Wastewater's net income was $0.7 million greater than the PBR forecast of $3.7 million. Although revenue was less than forecast, operating cost savings, combined with lower interest costs, enabled Wastewater to exceed its net income forecast. These results are summarized on Table 1.3.2 below and detailed analysis of net income components is provided in Section 4.2.

Table 1.3.2
Wastewater – Net Income
($ millions)

		A	B
Net Income Component - Wastewater		**2012**	
		Actual	**PBR Forecast**
1	Revenue	$ 61.1	$ 64.3
2	Operating costs	(40.2)	(43.9)
3	Depreciation	(9.2)	(9.1)
4	Interest Expense	(7.3)	(7.6)
5	**Net Income**	**$ 4.4**	**$ 3.7**

1.4 Capital Expenditures Summary

In 2012, Water and Wastewater's combined capital expenditures were $11.8 million less than the PBR forecast of $107.7 million. The major factors contributing to the decrease in Water's capital expenditures related to delays in capital spending on the Rossdale Water Laboratory and Office and the Rossdale Sodium Hypochlorite project, which were partially offset by realignment and advancement of construction on projects planned for 2013 and future years (see Section 4.3.1). Wastewater's lower than PBR forecast capital expenditures reflect the results of a comprehensive review and re-optimization of its capital plan undertaken in 2012. This review resulted in a reallocation of capital expenditures from 2012 to future years. EWSI expects that Water and Wastewater's total capital expenditures over the 2012-2016 PBR term will not vary significantly from the PBR forecast.

Table 1.4
Capital Expenditures Summary
($ millions)

		A	B
Capital Expenditure		**2012**	
		Actual	**PBR Forecast**
1	Water	$ 84.1	$ 89.1
2	Wastewater	11.8	18.6
3	**Total Capital Expenditures**	**$ 95.9**	**$ 107.7**

Sections 4.3.1 and 4.3.2 provide more detailed information on EWSI's capital program.

1.5 Rate Base and Return on Equity

Table 1.5 compares actual to forecast rate base and return on equity (ROE) for Water and Wastewater. Overall, Water earned an 8.46% ROE, 2.42% less than its approved ROE, reflecting lower than forecast net income and a slightly lower than forecast equity ratio. Wastewater's ROE of 4.07% was 0.62% higher than the PBR forecast, reflecting both a lower rate base and higher net income. On a combined basis, Water and Wastewater's ROE was 7.20%, 1.57% less than in the PBR forecast.

Table 1.5
Water and Wastewater Treatment Services
Rate Base and Return on Equity (ROE)
($ millions)

		A	B
	Rate Base and ROE	**2012**	
		Actual	**PBR Forecast**
1	Water – Rate Base (In-City)	$ 651.3	$ 652.1
2	Water – Equity Ratio	40.35%	42.05%
3	Water – ROE (%)	8.46%	10.875%
4	**Water – ROE ($)**	**$ 22.2**	**$ 29.8**
5	Wastewater – Rate Base	$ 263.2	$ 270.5
6	Wastewater – Equity Ratio	40.51%	40.09%
7	Wastewater – ROE (%)	4.07%	3.45%
8	**Wastewater – ROE ($)**	**$ 4.4**	**$ 3.7**
9	Combined Water & Wastewater – ROE (%)	7.20%	8.77%
10	**Combined Water & Wastewater – ROE ($)**	**$ 26.6**	**$ 33.5**

Section 1.3 provides a more detailed analysis of net income and Section 4.4 provides more detailed information on the Water and Wastewater rate bases.

1.6 Non-Routine Adjustment Summary

Under the PBR framework, EWSI may request adjustments to Water and Wastewater's rates for Non-Routine Adjustments (NRAs) from the City. NRAs are defined in the Bylaw as "items which are unusual, significant in size or nature and beyond the scope of control of EWSI". Requests for NRAs are provided to either the City Manager or City Council, depending on the impact of the NRA on Water and Wastewater's revenue requirements.

In review of its operations, EPCOR did not identify any NRAs that met the criteria outlined in Bylaw 15816, Schedule 3, Section 5.0 for 2012 which would either increase or decrease water or wastewater treatment rates.

2 PBR Framework

The PBR conceptual framework encompasses PBR rates, performance measures and return on equity. EWSI operates within this PBR framework over a five year term as approved by City Council, ensuring capital and operating cost decisions provide a balance with operational performance and return on equity.

- **PBR Rates.** Under the PBR framework for 2012-2016, water and wastewater treatment rate increases are limited to inflation, less a 0.25% efficiency factor. For PBR purposes, inflation is weighted 65% on a Consumer Price Index (CPI) component and 35% on a Labour Cost component, where the CPI component is measured by Statistics Canada's Annual Growth in All Items CPI for Alberta (CANSIM series V41694625) and the Labour Cost component is measured by Statistics Canada's Annual Growth in Average Hourly Earnings (AHE) for Alberta (CANSIM Series V1603533).

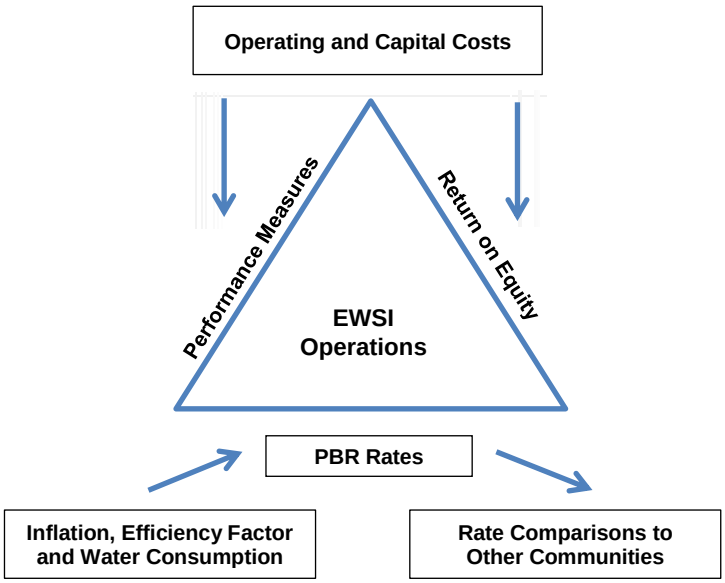
  EWSI also undertakes annual bill comparison surveys with various cities and local communities to ensure that the City's water and wastewater treatment rates are reasonable and competitive. Additional details of the survey results are provided in Sections 5.5 and 5.6.

- **Performance Measures.** EWSI's PBR framework includes performance criteria which provide assurance to customers that water and wastewater treatment system service quality will not be sacrificed to keep rates low. EWSI faces financial penalties if performance measures are not met. EWSI's 2012 performance measures and results are provided in detail in Section 3. EWSI's results on the performance criteria for 2012 are audited by an independent accounting firm.

- **Return on Equity.** The regulated rates for In-City customers are designed to allow EWSI to recover costs and earn a fair return on its investment as approved by City Council.

Figure 2 below illustrates how the various components of the PBR conceptual framework inter-relate.

Figure 2
PBR Conceptual Framework



PBR Principles

The PBR Principles are reflected in the following value statements:

- **Health, Safety & Environment**
  - Health and safety of the public and employees is paramount
  - Water quality remains significantly better than regulatory standards
  - Full compliance with environmental protection regulation

- **Customer Focus**
  - Service is reliable, demonstrable and performance based
  - Rate structure and customer bills are transparent and predictable
  - Rate increases are managed and phased
  - Basic water needs are affordable

- **Financial**
  - Full cost accounting of the water utilities
  - Customer classes allocated charges based on cost of service
  - Return on equity comparable to other utilities with similar risks

3 PBR Operating Performance Measures

3.1 Water PBR Performance Measures

Water System Service Quality is measured by the results of five indices prescribed in the Bylaw. Performance under each index is measured independently on a point basis with 100 base points available if the standards for all five performance measure indices are achieved. Bonus points are available for performance above standards and financial penalties are applied if EWSI does not meet the 100 base point standard. For some performance measures, such as main breaks, a lower-than-standard score represents performance above standards. For other measures, such as the Planned Construction Factor, a higher score indicates better performance. Accordingly, to provide for greater clarity, actual outcomes have been noted as "Exceeded Standard" if the actual outcome was better than the standard or "Below Standard", if the actual outcome was worse than the standard.

3.1.1 System Reliability Index

The System Reliability Index is a measure of the confidence that customers can place in the reliability of the waterworks system. In 2012, Water earned the maximum number of System Reliability Index points and exceeded standards in all categories.

Performance Measure	PBR Measure	Standard	Actual Score	Actual Outcome	Available Points	Actual Points
Water Main Break Factor	The number of water main breaks that occurred in the reporting period.	574	370	Exceeded standard	5.0	6.78
Water Main Break Duration Factor	The percentage of water main breaks repaired within 24 hours from the time the water is shut off.	93.7%	94.6%	Exceeded standard	5.0	5.05
Planned Construction Factor	The number of times that EWSI Water complies with required construction notification procedures as a percentage of the total planned construction events.	95%	95.6%	Exceeded standard	5.0	5.03
Water Pressure Factor	The number of incidents per year where the water pressure is below 20 psi for two or more consecutive 15-minute periods.	5	1	Exceeded standard	5.0	5.80
Water Loss Factor (ILI)	The ILI is a performance indicator quantifying how well a water distribution system is managed for the control of real (leakage) water losses.	3.0	1.46	Exceeded standard	5.0	7.57
				Index Standard Points	25.0	
				Available Bonus Points	3.5	
				Maximum Available Points	**28.5**	
				Total Actual Points		30.2
				Total Points Earned		**28.5**

2012 Highlights

- The application of established criteria for replacing water mains based on main break history has resulted in a long-term decline in the number of water main breaks. On a short term basis, weather conditions may result in substantial variations between the number of expected main breaks and the number of actual main breaks. In 2012, favourable weather conditions contributed to a relatively low number of main breaks, enabling EWSI to exceed the PBR standard for this performance measure.

- There was only one instance in 2012 where water pressure dropped below 20 psi (140 kPa) for longer than 30 minutes, well below the standard of five incidents. EWSI continues to evaluate pressure monitoring sites to ensure that they are situated in optimum locations and relocates or adds sites as needed.

- In the 2012-2016 PBR term, the Water Loss Factor is measured by the Infrastructure Leakage Index (ILI). ILI is a new industry standard used in more than fifty countries. ILI measures how well a distribution system is managed for the control of real losses (leakage), with lower measures indicating better management. Water's ILI standard of 3.0 was derived from the Water Research Foundation's guidelines for setting a target ILI based on financial, operational and water resource considerations. In 2012, EWSI's ILI of 1.46 was well below the standard of 3.0 and exceeded the Water Loss Factor performance standard.

3.1.2 Water Quality Index

The Water Quality Index is calculated as the percentage of water quality test results that meet or exceed EWSI Water's internal water quality standards. At a minimum, these standards are equal to the standards set out in the Alberta Environment and Sustainable Resource Development (AESRD) Standards and Guidelines for Waterworks Systems, and Schedule 3 of Water's Approval to Operate issued by the AESRD. In 2012, Water met the Water Quality Index standards.

Performance Measure	PBR Measure	Standard	Actual Score	Actual Outcome	Available Points	Actual Points
Water Quality Index	The percentage of Edmonton water quality tests that meet EWSI Water's internal standards and regulatory measures.	99.6%	99.84%	Exceeded standard	25	25.1
				Index Standard Points	25.0	
				Available Bonus Points	0.5	
				Maximum Available Points	**25.5**	
				Total Actual Points		25.1
				Total Points Earned		**25.1**

2012 Highlights

In 2012, EWSI met Guidelines for all Canadian Drinking Water Quality health-based limits for radiochemical, chemical and physical parameters and out of 50,907 applicable laboratory tests, 50,827 tests met EWSI's internal quality standards. Of the 80 water quality tests that did not meet EWSI's internal water quality standards, only two tests did not meet AESRD and Approval to Operate standards. These two tests included:

- A single instance of coliform bacteria from a sample collected in the distribution system that was handled improperly. Properly handled re-samples were negative for coliform bacteria. These results were a significant improvement over the sixteen incidents involving total coliform positive samples that occurred in 2011.

- Degradation of chlorine residual associated with new development areas in Southwest Edmonton regions with low water turnover. A study on chlorine decay will be completed in 2013 to develop corrective measures (such as flushing) for areas with low water turnover. Increased monitoring of chlorine residuals in problem areas will also continue.

3.1.3 Customer Service Index

The Customer Service Index is a measure of the level of satisfaction that customers place in Water's overall level of service. In 2012, Water was slightly below standard for the Post Service Audit Factor but exceeded the standard for all other performance measures.

Performance Measure	PBR Measure	Standard	Actual Score	Actual Outcome	Available Points	Actual Points
Post Service Audit Factor	The percentage of surveyed customers who rated their service experience with Water Dispatch personnel and/or field staff as "very satisfied" or "completely satisfied".	74.0%	72.3%	Below standard	6.66	6.51
Response Time Factor	The average number of minutes to confirm a water main break once a call is received by the dispatch office.	25	16	Exceeded standard	6.67	9.07
Home Sniffing Factor	The percentage of volunteer community members who favourably assess drinking water odour during the spring run-off season.	93.8%	97.0%	Exceeded standard	6.67	6.90
				Index Standard Points	20.0	
				Available Bonus Points	3.0	
				Maximum Available Points	**23.0**	
				Total Actual Points		22.5
				Total Points Earned		**22.5**

2012 Highlights

- In 2012, EWSI required an average of 16 minutes to confirm main breaks, well below the 25 minute Response Time Factor standard. This result reflects a change in dispatch processes so "every break is treated as a main break", as well as the relatively low number of main breaks in 2012, which meant that more EWSI personnel were available for initial responses.

- In 2012, average customer satisfaction, as measure by the Home Sniffing Factor, received the highest rating in five years. This result reflects a slightly milder than usual spring runoff and more effective use of carbon dosing to improve the taste and odour of treated water.

Areas of Improvement:

In 2012, follow-up interviews with EWSI Water Emergency Line customers identified several opportunities for improving Post-Service Audit Factor results. The resulting process improvements, including: warm call transfers, so that calls would not be dropped; keeping customers informed of the status of all water outages exceeding twenty hours; and changes to post-flood site clean-ups, contributed to better results for the Post-Service Audit Factor in the latter part of 2012. The impact of these initiatives is expected to continue and further improve results for 2013.

3.1.4 Environment Index

The Environmental Index measures Water's efforts to limit its impact on the environment and contributes to the City's ten year strategic goal to "Preserve and Sustain Edmonton's Environment". In 2012, Water exceeded the overall Environmental Index standard.

Performance Measure	PBR Measure	Standard	Actual Score	Actual Outcome	Available Points	Actual Points
Emergency Response Training	The number of practice exercises undertaken in the year.	4	5	Exceeded standard	3.75 (0.75 available bonus point)	4.50
Completeness and timeliness of Reporting	The percentage of incident reports completed	100%	92.1%	Below standard	3.75	3.45
Environment Incident Management	The number of reportable and preventable environmental incidents.	7	5	Exceeded standard	3.75	3.75
Water Conservation Factor	The average monthly water consumption in m^3 per Edmonton residential household.	19.0	18.2	Exceeded standard	1.5	1.50
Watershed Program Activity	# of deliverables completed	5	7	Exceeded standard	2.25 (0.75 available bonus point)	3.00
				Index Standard Points	15.0	
				Available Bonus Points	1.5	
				Maximum Available Points	**16.5**	
				Total Points Earned		**16.2**

2012 Highlights

A new Watershed Program Activity (WPA) measure was included in the 2012-2016 PBR Performance measures. This measure recognizes that source water and watershed protection programs are essential components of a multi-barrier approach to protection of public health in drinking water supply. Seven key deliverables were identified for this measure with the PBR standard based on completing five of these deliverables. In 2012, EWSI was able to complete all seven deliverables, enabling it to earn maximum bonus points for this performance measure. EWSI supported these initiatives through representation on Alberta Water Council teams, direct and in-direct financial support to watershed planning and advisory groups, development of strategic plans for watershed and source water protection and support of groups that focus on reducing agricultural and In-City impacts on the watershed, as well as promoting public education.

Areas of Improvement:

Although all reports required for Completeness and Timeliness of Reporting were completed and submitted, several monthly reports were submitted on the last day of the month, rather than on the 30th day of the following month as required under PBR. For months with 31 days, this resulted in a variance from the performance expectation. Background and Reporting Guideline documents have now been reviewed, updated and communicated to ensure reporting requirements are clear.

3.1.5 Safety Index

The Safety Index measures Water's progress towards its commitment of achieving a zero injury culture and encouraging staff awareness and engagement in safety activities. The Safety Index includes both activity-based performance measures (safety meetings, safe work plans, first aid training, inspections and observations) and outcome-based performance measures (lost time frequency, injury frequency and injury severity).

Performance Measure	PBR Measure	Standard	Actual Score	Actual Outcome	Available Points	Actual Points
Safety Meetings	Number of safety meetings conducted during the year.	36	36	Met standard	1.5	1.50
Formal Safe Work Plans (SWP)	Number of Formal Safe Work Plans each calendar year to identify, control and communicate hazards.	3,100	12,863	Exceeded standard	3.75	3.75
First Aid Training	Percentage of permanent employees at year-end who hold a valid Standard First Aid Certificate.	33%	66.6%	Exceeded standard	3.0	3.00
Work Site Inspections / Observations	Number of Work Site Inspections / Observations each calendar year to find problems and assess accidents before other losses occur.	800	1,127	Exceeded standard	3.0	3.00
Lost Time Frequency Rate	A measure of the effectiveness of a safety program – the frequency of injury rate per unit of exposure.	0.59	0.96	Below standard	0.75 (0.375 available bonus point)	0.461
Injury Frequency Rate	A measure of the frequency of disabling injuries and medical aid injuries per unit of exposure.	2.40	1.68	Exceeded standard	1.5 (0.562 available bonus point)	2.062
Injury Severity Rate	A measure of the seriousness of injuries and illnesses – ratio number of disability days to the number of employee exposure hours in a calendar year.	8.92	40.80	Below standard	1.5 (0.562 available bonus point)	0.328
				Index Standard Points	15.0	
				Available Bonus Points	1.5	
				Maximum Available Points	**16.5**	
				Total Points Earned		**14.1**

2012 Highlights

In 2012, Water met or exceeded the standards for all activity-based performance measures, including: Safety Meetings; Formal Safe Work Plans; First Aid Training; and Work Site Inspections and Observations, reflecting EWSI's commitment to support progress toward a zero injury culture.

Areas of Improvement:

- Although the Injury Frequency Rate exceeded the PBR standard, meaning that the actual number of incidents was less than the PBR standard, the Lost Time Frequency Rate and Injury Severity Rate were below PBR standard. These results are largely attributable to a single event, where an employee sustained a broken leg as a result of a fall on an icy surface adjacent to a roadway, requiring 145 days for recovery. Following review of this incident, ice melt processes were enhanced and ice cleats were made available for employees to wear in icy conditions.

- EWSI will continue to implement new safety initiatives and tools to support and communicate a zero injury workplace culture to ensure the well-being of its employees.

3.2 Wastewater PBR Performance Measures

Similar to Water, under PBR Wastewater's operation performance is measured by the results of five indices prescribed in the Bylaw. Performance under each index is measured independently on a point basis with 100 base points available if the standards in all five areas are achieved. Bonus points are available for performance above standards. The following sections summarize 2012 actual results for each index.

3.2.1 System Reliability Index

The System Reliability Index is a measure of the confidence that customers can place in the reliability of the wastewater treatment system. In 2012, EWSI exceeded the System Reliability standard and earned the maximum number of System Reliability Index points.

Performance Measure	PBR Measure	Standard	Actual Score	Actual Outcome	Available Points	Actual Points
Enhanced Primary Treatment (EPT)	EPT performance, measured in percent, where the EPT facility operated during wet weather events when the influent flow rate exceeded the EPT event threshold.	75.0%	91.8%	Exceeded standard	15.0	18.36
				Index Standard Points	15.0	
				Available Bonus Points	1.0	
				Maximum Available Points	**16.0**	
				Total Points Earned		**16.0**

2012 Highlights

Wastewater's System Reliability is measured by the performance of Wastewater's Enhanced Primary Treatment (EPT) process. During wet weather periods, combined sewers often capture more runoff than they can handle. Wastewater's EPT facilities allow it to take in and treat seasonal overflows diminishing the amount of untreated overflow entering the North Saskatchewan river. Wastewater's

tank cleaning, inspection and maintenance programs ensure that EPT is operational when flows exceed the flow threshold and its operational strategies, standard operating procedures and training ensure that EPT operates when and as required.

3.2.2 Wastewater Quality Index

The Wastewater Quality Index is a measure of the percentage of the Gold bar wastewater treatment plant's actual final effluent quality relative to its discharge limits for five parameters. In 2012, EWSI exceeded the Water Quality Index standards, earning the maximum number of bonus points for this index.

Performance Measure	PBR Measure	Standard	Actual Score	Actual Outcome	Available Points	Actual Points
Wastewater Effluent Limit Performance Index (WELPI)	The percentage of the discharge limit for five parameters in the Gold Bar wastewater treatment plant's final effluent.	46.0%	20.7%	Exceeded standard	40.0	88.9
				Index Standard Points	40.0	
				Available Bonus Points	4.0	
				Maximum Available Points	**44.0**	
				Total Points Earned		**44.0**

2012 Highlights

EWSI consistently exceeded the standard for the Wastewater Effluent Limit Performance Index (WELPI) throughout 2012. Solids handling process optimization was a key factor that led to process stability during both dry and wet weather operation. Significant improvements were made to solids handling processes, including:

- Thickening solids feeding the digestion process;
- Stabilizing fermentation of solids to produce carbon for phosphorus removal; and
- Eliminating solids recycle streams within the plant.

3.2.3 Customer Service Index

The Customer Service Index is a measure of the level of satisfaction that customers place in Wastewater's overall level of service. In 2012, Wastewater exceeded the Customer Service Index standard.

Performance Measure	PBR Measure	Standard	Actual Score	Actual Outcome	Available Points	Actual Points
Customer Inquiries Responses	Percentage of customer issues responded to within 24-hours of receipt by EPCOR.	90.0%	96.4%	Exceeded standard	5.0	5.36
				Index Standard Points	5.0	
				Maximum Available Points	**5.0**	
				Total Points Earned		**5.0**

2012 Highlights

EWSI identified improvement initiatives to better identify and track customer issues in 2012, focusing its efforts on responses to odour complaints at the Gold Bar Wastewater Treatment Plant. EWSI will continue to evaluate, assess and enhance its customer issue identification, tracking and response processes in 2013.

3.2.4 Environment Index

The Environmental Index measures Wastewater's activities for limiting its impact on the environment. In addition, the Environmental Index contributes to the City's measure of progress towards its ten-year strategic goal to "Preserve and Sustain Edmonton's Environment". In 2012, Wastewater met the Environmental Index standard.

Performance Measure	PBR Measure	Standard	Actual Score	Actual Outcome	Available Points	Actual Points
Emergency Response Training	The number of Emergency Response Training exercises with an environmental component conducted in each calendar year.	1	2	Exceeded standard	6.66 (2.0 available bonus points)	8.66
Completeness and Timeliness of Reporting	Achievement in meeting report submission deadlines and complete report submissions	100%	88.9%	Below standard	6.67	5.93
Environment Incident Management	The number of reportable and preventable environmental incidents.	18	7	Exceeded standard	6.67	6.67
				Index Standard Points	20.0	
				Available Bonus Points	2.0	
				Maximum Available Points	**22.0**	
				Total Points Earned		**21.3**

2012 Highlights

- EWSI continued to focus on emergency response training to ensure appropriate preparation in the event of an emergency. EWSI exceeded the standard by conducting an additional emergency response training exercise above what was required by the standard.

- EWSI had less than one-half of the number of environmental incidents established as the PBR standard for Environmental Incident Management. The Incident Management System implemented across EPCOR in 2010 continued to assist in raising awareness of the importance of reporting incidents and conducting root cause analysis.

Areas of Improvement:

- Although all reports required for Completeness and Timeliness of Reporting were completed and submitted, several monthly reports were submitted on the last day of the month, rather than on the 30th day of the following month as required under PBR. Background and Reporting Guideline documents have now been reviewed, updated and communicated to ensure reporting requirements are clear and that reporting follows these guidelines going forward.

3.2.5 Safety Index

The Safety Index measures Wastewater's progress towards achieving a zero injury culture and encouraging staff awareness and engagement in safety activities. The Safety Index includes both activity-based performance measures (safety meetings, safe work plans, first aid training, inspections and observations) and outcome-based performance measures (lost time frequency, injury frequency and injury severity). In 2012, Wastewater met or exceeded all standards included in the Safety Index.

Performance Measure	PBR Measure	Standard	Actual Score	Actual Outcome	Available Points	Actual Points
Safety Meetings	Number of safety meetings conducted during the year.	12	12	Met standard	2.0	2.0
Formal Safe Work Plans (SWP)	Number of Formal Safe Work Plans each calendar year to identify, control and communicate hazards.	1,100	7,283	Exceeded standard	5.0	5.0
First Aid Certified.	Percentage of permanent employees at year-end who hold a valid Standard First Aid Certificate.	33.0%	59.4%	Exceeded standard	4.0	4.0
Work Site Inspections / Observations	Number of Work Site Inspections / Observations each calendar year to find problems and assess accidents before other losses occur.	270	960	Exceeded standard	4.0	4.0
Lost Time Frequency Rate	A measure of the effectiveness of a safety program – the frequency of injury rate per unit of exposure.	0.81	0.00	Exceeded standard	1.0 (0.6 available bonus points)	1.6
All Injury Frequency Rate	A measure of the frequency of disabling injuries and medical aid injuries per unit of exposure.	2.42	0.94	Exceeded standard	2.0 (1.2 available bonus points)	3.2
Injury Severity Rate	A measure of the seriousness of injuries and illnesses – ratio number of disability days to the number of employee exposure hours in a calendar year.	8.88	0.00	Exceeded standard	2.0 (1.2 available bonus points)	3.2
				Index Standard Points	20.0	
				Available Bonus Points	3.0	
				Maximum Available Points	**23.0**	
				Total Points Earned		**23.0**

2012 Highlights

- Wastewater met or exceeded all of the performance measure targets for the year and had no Lost Time injuries in 2012, earning it maximum bonus points.

- Senior leadership took an active role in worksite observations and inspections, learning directly from employees at the work area about barriers to workplace safety and of improvements needed to support progress towards a zero injury culture.

4 Financial Performance

4.1 Water Net Income

As noted in the Executive Summary, Water refers to the provision of In-City Water Services. Besides these services, EWSI also provides water services to the Regional Water Customers Group (RWCG) under bulk water sales agreements with each RWCG member and Fire Protection services to The City of Edmonton under a service agreement. In this report, Water's Net Income (see Section 1.3.1) represents the Revenues, Operating Costs, Depreciation and Interest Expense derived solely from the provision of In-City Water Services.

Since EWSI operates a fully integrated water network where In-City Water Services, the RWCG and Fire Protection share facilities and services, the components of net income, including Operating Costs, Depreciation and Interest Expense, are presented and analyzed on a total system basis. The In-City share of each income statement component is shown as a separate line item on each applicable schedule. Capital Expenditures and the Water Rate Base are presented and analyzed on a similar basis.

4.1.1 Water Revenue

In 2012, EWSI's revenues derived from its In-City customers were $9.0 million less than in the PBR forecast, with a $9.1 million decrease in water revenue, slightly offset by a $0.1 million increase in non-rate revenue (e.g. service charges and late payment fees).

Table 4.1.1.1
Water Revenue by Customer Class
($ millions)

		A	B
	Revenue by Customer Class – Water	**2012**	
		Actual	**PBR Forecast**
1	**Consumption Revenue**		
2	Residential	$ 73.9	$ 82.4
3	Multi-Residential	22.4	22.9
4	Commercial	29.4	29.1
5	**Total Consumption Revenue**	**125.6**	**134.4**
6	**Fixed Charge Revenue**		
7	Residential	17.7	18.0
8	Multi-Residential	0.8	0.8
9	Commercial	2.6	2.6
10	**Total Fixed Charge Revenue**	**21.1**	**21.4**
11	**Total Water Revenue**	**146.7**	**155.7**
12	**Non-Rate Revenue**	**3.7**	**3.6**
13	**Total Revenue**	**$ 150.4**	**$ 159.4**

EWSI has a high proportion of consumption-based water revenue, so small changes in consumption can have disproportionate impacts on revenue. In 2012, 86% of EWSI's water revenues were consumption-based. Accordingly, a 3% decrease in water consumption resulted in a 6% decrease in water revenue. The decrease in consumption was almost entirely related to the Residential customer

class (see Section 1.2), resulting in an $8.8 million variance in Residential revenues. Variances in other revenues from other customer classes were not significant, amounting to only $0.2 million.

Under the PBR framework (see Section 2), EWSI Water and Wastewater's annual rate increases are limited to inflation less a 0.25% efficiency factor. As Table 4.1.1.2 shows, the impact of inflation on 2012 rates was 2.18%, 0.09% less than in the PBR forecast. Actual weighted inflation, however, was 0.77% less than in the 2012 rate filing, reflecting lower than anticipated economic growth. Since actual inflation is not known until after the year end, the impact of the actual to rate filing difference will be reflected in 2013 rates.

Table 4.1.1.2
Inflation Impacts on 2012 Water and Wastewater Treatment Rates

		A	B	C	D
PBR Inflation		**Weight**	**2012**		
			Actual	**Rate Filing**	**PBR Forecast**
1	CPI Component	65%	1.10%	1.90%	1.96%
2	Labour Cost Component	35%	2.20%	2.90%	3.56%
3	Total	100%			
4	**Weighted Inflation before Efficiency Factor**		**1.49%**	**2.26%**	**2.52%**
5	Less: Efficiency Factor		(0.25%)	(0.25%)	(0.25%)
6	**Weighted Inflation**		**1.24%**	**2.01%**	**2.27%**
7	2011 Actual to forecast inflation Adjustment		n/a	0.17%	0.00%
8	**PBR Inflation**		**n/a**	**2.18%**	**2.27%**

4.1.2 Water Operating Costs by Cost Category

Total operating costs for 2012 were $0.6 million (less than 1%) lower than in the PBR forecast. Actual and PBR forecast costs by cost category are summarized in the following table:

Table 4.1.2
Water Operating Costs by Cost Category
($ millions)

		A	B
Cost Category – Water		**2012**	
		Actual	**PBR Forecast**
1	Salaries and Benefits	$ 44.5	$ 42.2
2	Power	7.6	7.0
3	Chemical	4.6	6.9
4	Contractors and Consultants	5.8	5.6
5	Materials and Supplies	3.0	3.0
6	Vehicles	1.7	2.1
7	Customer Billing	7.9	7.4
8	Franchise Fees	11.6	12.5
9	Corporate Service Charges	20.3	19.5
10	Other	2.1	3.5
11	**Total System Operating Costs**	**$ 109.1**	**$ 109.7**
12	**In-City Share (%)**	**83%**	**83%**
13	**In-City Share ($)**	**$ 90.3**	**$ 91.6**

Significant differences between 2012 actual and PBR forecast costs include:

- **Salaries and Benefits** ($2.3 million (6%) greater than in the PBR forecast). This variance can be attributed to three factors:
  - Employee incentive plan costs were $1.9 million greater than in the PBR forecast. In the PBR forecast, the incentive portion of EWSI compensation was based on median levels of incentive payments. Strong performance in Operational Efficiency, Safety Measures and Customer Service Measures, enabled EWSI to exceed incentive plan targets, resulting in a $0.4 million adjustment to 2011 incentive costs and $1.5 million increase in 2012 incentive costs.
  - Unanticipated benefits costs resulted in charges of $0.9 million. The majority ($0.8 million) of this amount related to an actuarial increase in EWSI's supplemental pension plan obligation, with the remainder consisting of third party benefits administration charges.
  - These increases were partially offset by initiatives to optimize staffing levels that resulted in net savings of $0.5 million in 2012.

- **Power** ($0.6 million (9%) greater than in the PBR forecast). This variance is a more a function of power prices, rather than power consumption. Although EWSI negotiated favourable contract rates for power purchases, higher than forecast rate riders and demand charges, combined with lower than expected power pool credits increased power costs by $0.8 million.

- **Chemical** ($2.3 million (33%) less than in the PBR forecast). This variance is primarily attributable to lower than forecast chemical use, resulting from chemical optimization and changes in processes, including:
  - Favourable raw water conditions allowed EWSI to extend the use of direct filtration from mid-February until the end of March and to start this process in September rather than later in the fall. Direct filtration is a modification of the conventional filtration process that has significant environmental benefits, allowing EWSI to reduce the alum dose significantly and, therefore, reduce the amount of chemical sludge discharged to the North Saskatchewan river during the winter months. Direct filtration has the additional benefit of reducing the use of caustic soda which would otherwise be needed to restore pH levels at the reservoirs. The resulting reductions in alum and caustic soda usage provided savings of $1.4 million.
  - The use of Flavour Profile Analysis to quantify and characterize odours in raw and treated water resulted in a $0.8 million decrease in carbon usage.
  - The remainder of the variance in chemicals is related to lower than forecast price increases.

- **Contractors and Consultants** ($0.2 million (4%) greater than in the PBR forecast). EWSI uses contractors and consultants for a wide variety of services. In 2012, despite achieving savings of $0.6 million through cost containment efforts and re-prioritization of maintenance activities, EWSI required additional hydrovac services when working around congested utilities, additional contract labour to address the increased scope of maintenance needed for E.L. Smith diffuser drain line cleaning, as well as additional accounting and regulatory consulting services.

- **Vehicles** ($0.4 million (19%) less than in the PBR forecast). EWSI's fleet costs are closely tied to the number of main breaks experienced in the year. In 2012, lower than expected main breaks enabled EWSI to focus efforts on capital work (e.g. water main replacements), effectively shifting fleet charges from operating expenses to capital expenditures.

- **Customer Billing** ($0.5 million (7%) greater than in the PBR forecast). EPCOR Energy Alberta Inc. (EEAI) provides billing and customer care services for EWSI. The increase in costs in 2012 relates to additional charges from EEAI related to the costs of relocating its Calgary Customer Contact Centre to Edmonton. This increase represents a one-time cost in 2012 with savings from consolidating the Customer Contact Centre in Edmonton expected to be realized in future years.

- **Franchise Fees** ($0.9 million (7%) less than the PBR forecast). This variance is entirely attributable to lower than forecast revenue.

- **Corporate Service Charges** ($0.8 million (4%) greater than in the PBR forecast). This difference is attributable to a one-time $0.8 million provision for costs allocated to EWSI from EPCOR Utilities Inc. (EUI) for the Line of Business (LOB) corporate reorganization. The LOB organizational structure, implemented early in 2013, embeds specific corporate service functions and resources in the operating business units that they support, including EWSI. The LOB structure gives EWSI the flexibility to manage the level of shared services support that reflects its operating and financial needs, facilitating EWSI's cost management initiatives for administrative and shared service costs.

- **Other** ($1.4 million less than in the PBR forecast). In 2012, the main factors contributing to reductions in the Other Cost category included control of discretionary spending (advertising, promotion, stationery and computer hardware and software), lower prices for natural gas, reductions in training costs and continuing savings from automation of meter reading processes.

In 2012, 83% of water operating costs were allocated to In-City Water, the same percentage as in the PBR forecast.

4.1.3 Water Operating Costs by Operational Function

In addition to analysis of Operating Costs by Cost Category in Section 4.1.2, Water's 2012 Operating Costs are also analyzed on a functional basis, with its operations categorized into eight operational functions:

- **Water Treatment Plants** include the operations, maintenance, monitoring and engineering functions associated with water treatment and production of potable water at EWSI's Rossdale and E.L. Smith water treatment facilities, as well as the cost of chemicals used in water treatment processes.
- **Distribution and Transmission (Water D&T)** includes the functions associated with the design, operation, construction and maintenance of EWSI's distribution and transmission network. In addition to construction, repair and renewal of water mains, Water D&T provides 24/7 response services to water issues through its dispatch centre, schedules and installs water meters, completes hydrant and valve repairs and maintenance and provides technical support to customers. Water D&T also includes power costs for all Water functions.
- **Quality Assurance and Environment (Quality Assurance)** is responsible for monitoring and testing water quality to ensure: that quality standards are maintained; that EWSI reliably supplies potable water; and that water quality meets and exceeds public health protection requirements and aesthetic expectations of customers. Quality Assurance is also responsible for managing the cross-connection control program, watershed program and the environmental programs for the water system.
- **Operations Support Services** ensure that EWSI can efficiently and effectively handle its operations and maintenance functions. These services include: Water Operations Leadership;

Business Process Management; Health, Safety and Environment; Project and Technical Services; Technical Training; Operations Communications; and Inventory Management. Costs associated with property taxes, insurance and transmission charges are also included in Operations Support Services.

- **Administrative Services** refer to EWSI's general administrative functions, including: Executive Leadership; Water Services Finance; Information Technology; Legal Services; Security; Fleet Services; and Human Resources. Incentive compensation is also included in Administrative Services, as are capital and non-utility cost recoveries.
- **Customer Billing, Franchise Fees** and **Corporate Service Charges** refer to the same operating cost categories discussed and explained in Section 4.1.2 above.

Actual and Forecast Operating Costs by Operational Function are summarized on the following table:

Table 4.1.3
Water Operating Costs by Operational Function
($ millions)

		A	B
	Operational Function – Water	**2012**	
		Actual	**PBR Forecast**
1	Water Treatment Plants	$ 20.9	$ 24.1
2	Water D&T	31.3	30.6
3	Quality Assurance	4.5	4.7
4	Operations Support Services	8.0	9.1
5	Administrative Services	4.6	1.9
6	Customer Billing	7.9	7.4
7	Franchise Fees	11.6	12.5
8	Corporate Service Charges	20.3	19.5
9	**Total EWSI Operating Costs**	**$ 109.1**	**$ 109.7**
10	**In-City Share of Operating Costs (%)**	**83%**	**83%**
11	**Total Allocated to In-City only**	**$ 90.3**	**$ 91.6**

Significant differences between 2012 actual and PBR forecast costs by Operational Function include:

- **Water Treatment Plants** ($3.2 million less than in the PBR forecast). The difference between actual and forecast costs reflects lower than forecast chemical costs (see Section 4.1.2 Chemical) which provided savings of $2.3 million, lower natural gas prices (also in Section 4.1.2 Other) which provided savings of $0.3 million and cost containment efforts taken in response to lower than forecast water sales. Cost containment efforts, which included optimization of maintenance work, reduced water treatment costs by $0.6 million from the PBR forecast.

- **Water D&T** ($0.7 million greater than in the PBR forecast). Higher than forecast power costs (see Section 4.1.2 Power) provided $0.6 million of the unfavourable variance in this category. The remainder of the variance in this function was the product of numerous minor factors which, in aggregate, amounted to $0.1 million.

- **Operations Support Services** ($1.1 million less than in the PBR forecast). The variance in this category reflects several key items, including control of discretionary expenses (see Section 4.1.2 Other), impacts from initiatives to reduce third party training costs (see Section 4.1.2 Other) and additional reductions totaling $0.5 million from leaving staff vacancies unfilled.

- **Administrative Services** ($2.7 million greater than in the PBR forecast). In 2012, actual results for EWSI's general administrative functions were very close to the PBR forecast. Instead, the variance in the Administrative Services function is attributable to higher than forecast incentive payments of $1.9 million and higher pension benefits costs of $0.8 million (see Salary and Benefit costs in Section 4.1.2).

- **Customer Billing**, **Franchise Fees** and **Corporate Service Charges** are discussed in Section 4.1.2 above.

4.1.4 Water Depreciation Expense

Overall, in 2012, net depreciation expense for water was $0.2 million, slightly higher than in the PBR forecast (see Table 4.1.4). EWSI had increased depreciation expenses on higher than forecast opening asset balances. Average depreciation and amortization rates were essentially unchanged from the PBR forecast (2.72% actual vs. 2.70% forecast) and did not have significant effects on net depreciation expense.

In 2012, 76% of EWSI's net depreciation expense was allocated to In-City, 2% less than in the PBR forecast. Since the proportionate share of costs is primarily driven by system usage, this result is consistent with a slight decrease in the proportion of In-City consumption relative to RWCG consumption.

Table 4.1.4
Net Depreciation Expense - Water
($ millions)

		A	B
Depreciation Expense - Water		**2012**	
		Actual	**PBR Forecast**
1	Gross Depreciation Expense	$ 30.2	$ 29.7
2	Less: Amortization of Contributions	(7.5)	(7.4)
3	**Net EWSI Depreciation Expense**	**$ 22.5**	**$ 22.3**
4	**In-City Share of Net Depreciation Expense (%)**	**76%**	**78%**
5	**In-City Share of Net Depreciation Expense ($)**	**$ 17.2**	**$ 17.3**

4.1.5 Water Interest Expense and Cost of Debt

In 2012, EWSI's total interest expense was $0.8 million less than in the PBR forecast (see Table 4.1.5). This variance is primarily attributable to lower average cost of debt. Lower debt costs were partially offset by higher than forecast debt issues in 2012 needed to accommodate lower than expected earnings in 2011.

The In-City share of EWSI interest expense was 3% higher than in the PBR forecast. This result reflects the impact of a higher than forecast proportion of debt financing for In-City Water.

Table 4.1.5
Interest Expense and Cost of Debt – Water
($ millions)

		A	B
Interest Expense and Cost of Debt - Water		**2012**	
		Actual	**PBR Forecast**
1	Average Debt Balance ($)	$ 494.2	$ 481.1
2	Average Cost of Debt (%)	5.32%	5.63%
3	**EWSI Interest Expense**	**$ 26.3**	**$ 27.1**
4	**In-City Share of Interest Expense (%)**	**79%**	**76%**
5	**In City Share of Interest Expense ($)**	**$ 20.7**	**$ 20.7**

4.2 Wastewater Net Income

Refer to Section 1.3 for an overview of Actual to PBR forecast net income.

4.2.1 Wastewater Revenue

In 2012, Wastewater's revenue was $3.2 million (5%) less than in the PBR forecast. As Table 4.2.1 shows, lower than forecast consumption revenues (6%) and fixed charge revenues (3%) are consistent with the decreases in customers and consumption discussed in Section 1.2. The unfavourable variances in Consumption and Fixed Charge revenue were partially offset by higher than forecast non-rate revenues, primarily related to wastewater over-strength surcharges. Actual and PBR forecast revenue for 2012 are summarized in the following table:

Table 4.2.1
Wastewater Revenue by Customer Class
($ millions)

		A	B
Revenue by Customer Class - Wastewater		**2012**	
		Actual	**PBR Forecast**
1	**Consumption Revenue**		
2	Residential	$ 24.0	$ 26.7
3	Multi-Residential	9.8	10.0
4	Commercial	13.8	14.0
5	**Total Consumption Revenue**	**47.6**	**50.7**
6	**Fixed Charge Revenue**		
7	Residential	8.1	8.4
8	Multi-Residential	0.1	0.1
9	Commercial	0.6	0.6
10	**Total Fixed Charge Revenue**	**8.8**	**9.1**
11	**Total Consumption and Fixed Charge Revenue**	**56.4**	**59.9**
12	**Non-Rate Revenue**	**4.8**	**4.4**
13	**Total Revenue**	**$ 61.1**	**$ 64.3**

4.2.2 Wastewater Operating Costs by Cost Category

Total operating costs for 2012 were $3.7 million (8%) less than the PBR forecast. Actual and PBR forecast costs by cost category are summarized in the following table:

Table 4.2.2
Wastewater Operating Costs by Cost Category
($ millions)

		A	B
Cost Category – Wastewater		**2012**	
		Actual	**PBR Forecast**
1	Salaries and Benefits	$ 15.2	$ 15.9
2	Power Costs and Other Utilities	4.7	4.9
3	Contractors and Consultants	3.7	3.8
4	Materials and Supplies	2.3	2.8
5	Customer Billing	4.5	4.3
6	Franchise Fee	4.4	4.8
7	Corporate Service Charges	4.4	5.5
8	Other	1.0	1.9
9	**Total Operating Costs**	**$ 40.2**	**$ 43.9**

Significant differences between 2012 actual and PBR forecast costs include:

- **Salaries and Benefits** ($0.7 million (4%) less than in the PBR forecast). Budgeted cost reductions, unfilled vacancies and decreased reliance on contract employees provided cost savings of $1.2 million relative to the PBR forecast. These reductions were partially offset by a $0.5 million increase in incentive costs related to EWSI exceeding incentive plan targets (see Water Section 4.1.2 Salaries and Benefits).

- **Power Costs and Other Utilities** ($0.2 million (4%) less than in the PBR forecast). This result reflects $0.4 million of savings in natural gas costs resulting from increased use of biogas produced by the new digesters, as well as favourable contract rates for natural gas purchases. These savings were partially offset by $0.2 million of additional power costs resulting from higher than forecast power consumption from assets, including the new digesters and new boiler house, placed into service in late 2011.

- **Materials and Supplies** ($0.5 million (18%) less than in the PBR forecast). Dry weather in the spring reduced the need for EPT (see Section 3.2.1), providing cost savings of $0.3 million in chemicals. Additional savings in other materials and supplies resulted from deferral and reprioritization of maintenance activities.

- **Customer Billing** ($0.2 million (5%) greater than in the PBR forecast). Similar to Water, this increase reflects additional charges from EEAI related to the costs of relocating the Calgary Customer Contact Centre to Edmonton.

- **Franchise Fee** ($0.4 million (8%) less than in the PBR forecast). This decrease is attributable entirely to the decrease in revenues.

- **Corporate Service Charges** ($1.1 million (20%) less than in the PBR forecast). In 2012, updated allocation factors and reductions in the pool of allocable costs reduced Corporate Shared Service charges from EUI by $1.5 million from the PBR forecast. These savings were partially

offset by a $0.4 million increase in incentive compensation, as explained in Section 4.1.2 Corporate Shared Services.

- **Other** ($0.9 million less than in the PBR forecast). The majority of this decrease ($0.8 million) is cost recoveries related to non-utility operations. The remainder of the difference is made up of numerous small items, none of which are individually significant.

4.2.3 Wastewater Operating Costs by Operational Function

Similar to Water, Wastewater's operating costs are also analyzed on a functional basis, with Wastewater's operations categorized into the following operational functions:

- **Wastewater Treatment Plant (WWTP)** includes the operations, maintenance and engineering functions associated with the treatment of sanitary and combined sewer wastewater obtained directly from the City of Edmonton Drainage Services' transmission and collection infrastructure that discharges to the Gold Bar WWTP site.

- **Quality Assurance and Environment** includes monitoring and testing treated wastewater to ensure that effluent standards are maintained; auditing operational wastewater quality data; managing EWSI's watershed programs; investigating new regulations and industry concerns; and working with regulators to ensure Gold Bar WWTP's reporting requirements are met.

- **Operations Support Services** refer to activities that directly support Wastewater Treatment, including: Health, Safety & Environment; Project Engineering; Technical Services; Operations Communications; Technical Training; Inventory Management; and Regulatory Services provided by the City.

- **Administration Services** refer to the Gold Bar WWTP's general and administrative functions. Including: Gold Bar Administration; EWSI Executive oversight; Water Services Finance support; Human Resources; Information Technology; Supply Chain Management; and the Centre of Excellence. Incentive Compensation and cost recoveries are also included in this function.

- **Customer Billing, Franchise Fees** and **Corporate Service Charges** are discussed in Section 4.2.2.

The following table summarizes 2012 actual and PBR forecast costs by Operational Function:

Table 4.2.3
Wastewater Operating Costs by Operational Function
($ millions)

		A	B
Operational Function – Wastewater		**2012**	
		Actual	**PBR Forecast**
1	Wastewater Treatment Plants	$ 17.6	$ 19.1
2	Quality Assurance and Environment	2.5	2.7
3	Operations Support Services	3.2	4.3
4	Administration Services	2.8	3.2
5	Customer Billing	4.5	4.3
6	Franchise Fees	4.4	4.8
7	Corporate Service Charges	4.7	5.5
8	**Total Operating Costs**	**$ 40.2**	**$ 43.9**

Significant differences between 2012 actual and PBR forecast operating costs by operational function include:

- **WWTP** ($1.5 million (8%) less than in the PBR forecast). The decrease in WWTP costs includes $0.8 million of cost recoveries from non-utility operations which were applied against WWTP costs. The remainder of the decrease in this function is consistent with the decrease in wastewater consumption, with reductions in Power and Other Utility Costs and Chemical Costs (see Section 4.2.2), as well as unfilled vacancies contributing to lower than forecast costs. These savings were partially offset by higher contractor costs for rescue support and planning and cleaning of scaled piping and equipment.

- **Operations Support Services** ($1.1 million (26%) less than in the PBR forecast). The favourable variance in this function reflects substantial reductions in the costs of Project Engineering and Technical Services. Substantial savings were achieved by moving long-term planning in-house, rather than outsourcing it ($0.3 million) and through cost containment and restructuring activities that led to unfilled vacancies, reducing salary and benefit costs ($0.4 million).

- Actual to PBR forecast variances for **Customer Billing**, **Franchise Fees** and **Corporate Service Charges** are discussed in Section 4.2.2.

- Variances for other operational functions are not significant.

4.2.4 Wastewater Depreciation

In 2012, Wastewater's depreciation expense was $0.1 million, slightly higher than in the PBR forecast. There were no actual to forecast differences for either depreciation rates or asset lives. Therefore, the decrease in depreciation expense can be attributed to slightly lower than forecast opening asset balances and lower capital additions (see Section 4.4.2) which resulted in a decrease in depreciation expense. Actual and PBR forecast depreciation expenses are summarized in the following table:

Table 4.2.4
Wastewater Net Depreciation Expense
($ millions)

		A	B
Depreciation Expense - Wastewater		**2012**	
		Actual	**PBR Forecast**
1	Depreciation Expense	$ 10.1	$ 10.0
2	Less: Amortization of Contributions	(0.9)	(0.9)
3	**Net Depreciation Expense**	**$ 9.2**	**$ 9.1**

4.2.5 Wastewater Interest Expense and Cost of Debt

In 2012, Interest expense, average cost of debt and average debt balances were less than the in PBR forecast. Wastewater had lower than forecast capital expenditures in 2012 (see Section 4.3.2), reducing borrowing requirements, so overall debt levels were slightly less than forecast. Lower-than-forecast debt levels, combined with lower-than-forecast interest rates resulted in lower than forecast interest expense. These results are summarized in Table 4.2.5.

Table 4.2.5
Wastewater Interest Expense and Cost of Debt
($ millions)

		A	B
Interest Expense and Cost of Debt – Wastewater		**2012**	
		Actual	**PBR Forecast**
1	Average Debt Balance ($)	$ 157.4	$ 162.3
2	Average Cost of Debt (%)	4.64%	4.69%
3	Interest Expense	$ 7.3	$ 7.6

4.3 Capital Expenditures

4.3.1 Water Capital Expenditures

In 2012, Water's capital expenditures were $5.0 million less than in the PBR forecast. Actual and PBR forecast capital expenditures are summarized in the following table:

Table 4.3.1
Water Capital Expenditures by Project
($ millions)

		A	B
Capital Project – Water		**2012**	
		Actual	**PBR Forecast**
1	Accelerated Water Main Renewal Program (AWMR)	$ 20.6	$ 20.0
2	Reactive Renewal Program	12.6	12.0
3	Proactive Renewal Program	2.6	2.5
4	Water Service Connections	1.6	0.8
5	Private Development Construction Coordination, Transmission Mains and Water Main Cost Sharing Program	6.0	5.3
6	Rossdale Sodium Hypochlorite	3.2	9.7
7	Meter Change Outs	1.9	2.2
8	Rossdale Water Laboratory and Office	0.4	7.1
9	Projects < $10 Million over the PBR Term	35.1	29.5
10	**Total Capital Expenditures**	**$ 84.1**	**89.1**

Significant Actual to PBR forecast variances for 2012 capital expenditures include:

- **Water Service Connections** ($0.8 million greater than in the PBR forecast). This program is dependent upon growth and redevelopment activity in Edmonton and, in particular, the removal and replacement of lead services, which saw a higher than anticipated level of activity in 2012. EWSI believes that this trend may continue in future years and, following negotiations with AESRD, has shifted funds from blow-off cross connection control projects to lead service removal.

- **Private Development Construction Coordination, Transmission Mains and Water Main Cost Sharing Program** ($0.7 million greater than in the PBR forecast). EWSI and private developers share in the costs of extending EWSI's distribution and transmission network to new subdivisions. The increase in expenditures on these projects in 2012 is consistent with a higher than expected level of construction activity.

- **Rossdale Sodium Hypochlorite** ($6.5 million less than in the PBR forecast). This project involves the installation of an on-site hypochlorite generator at the Rossdale Water Treatment Plant. The reduction in expenditures on this project is primarily timing-related; the project duration was adjusted from 2011 - 2013 to 2011 – 2014. The overall project is expected to come in within or slightly under budget.

- **Meter Change Outs** ($1.0 million less than in the PBR forecast). Lower than forecast expenditures on this program are primarily due to water meter supply delays and re-sourcing. EWSI expects that total expenditures on this program over the 2012-2016 PBR term will be equal to or slightly over PBR forecast expenditures

- **Rossdale Water Laboratory and Office** ($6.7 million less than in the PBR forecast). Work on this project at the Rossdale Water Treatment Plan has been delayed and the completion date moved from 2014 to 2015 for two main reasons:

    - Historical artifacts were discovered on the site prior to the planned start of construction. The resulting excavation and archeological fieldwork delayed preparation and completion of the Historical Resources Impact Assessments (HRIA) Report, resulting in further delays in receiving Approval to Construct from Alberta Culture.

    - Engineering cost estimates were significantly greater than the broader gauge estimates anticipated in the PBR forecast. EWSI delayed construction to identify and assess options for construction and to consider options to accommodate additional staffing movements resulting from the Line of Business Reorganization announced in early 2013. Consideration of these factors may increase cost estimates for the building. However, a portion of these increased costs will likely be offset by future savings in rent at other EPCOR locations.

- **Projects less than $10 million over the PBR Term** ($8.0 million greater than in the PBR forecast). As a result of delays in construction of the Rossdale Water Laboratory and Office and the Rossdale Sodium Hypochlorite project, EWSI realigned and advanced construction on projects which had been planned for 2013 and future years.

4.3.2 Wastewater Capital Expenditures

In 2012, Wastewater's capital expenditures were $6.8 million less than in the PBR forecast. This decrease reflects a comprehensive review of the Wastewater capital program. The need for this review arose early in 2012, when preliminary engineering analysis indicated that the costs of many projects would significantly exceed the PBR forecast amounts. Accordingly, EWSI reviewed its capital program to identify an alternate set of upgrades that would provide needed solids handling capacity to ensure total capital spending remain within the approved 2012-2016 PBR forecast levels. This review and the subsequent optimization of the capital plan contributed to delays in project execution and reductions in capital expenditures during 2012. These results are summarized in Table 4.3.2.

Table 4.3.2
Wastewater Capital Expenditures by Project over $10 million
($ millions)

		A	B
Capital Project – Wastewater		**2012**	
		Actual	**PBR Forecast**
1	Digester Upgrades (1-6)	$ 1.8	$ 3.0
2	Pretreatment Upgrade #1: Grit Tanks 4-7	0.6	6.0
3	Projects < $10 Million over the PBR term	9.4	9.6
4	**Total Capital Expenditures**	**$ 11.8**	**$ 18.6**

Actual capital expenditures in 2012 reflect the optimization of the capital plan. The updated capital plan includes major upgrades to digesters, grit tanks and other components of solids handling systems, resulting in significant reallocations of capital project costs over the 2012-2016 PBR term.

Overall, EWSI is working to ensure capital spending remain within levels approved for the 2012-2016 PBR term. The review undertaken in 2012 has resulted in capital expenditures on Digester Upgrade projects expected to increase by $17 million from $22 million to $39 million, while the costs of solids handling-related projects (Pre-Treatment Upgrades 1, 2 and 3, as well as some less significant projects) are expected to decrease by $19 million from $51 million to $32 million.

4.3.3 City-Driven Capital

City-driven capital includes both construction projects to accommodate private development growth within the city, rehabilitation and revitalization projects driven by City departments, relocation of Transmission and Distribution mains due to LRT or Bridge work, as well as the Accelerated Water Main Renewal (AWMR) program. In 2012, City-driven capital projects, all of which related to Water, amounted to 44% of EWSI's total Water and Wastewater capital expenditures. These projects are summarized in the following table:

Table 4.3.3
City-Driven Capital
($ millions)

		A	B
City-Driven Capital Project		**2012**	
		Actual	**PBR Forecast**
1	Accelerated Water Main Renewal (AWMR) Program	$ 20.6	$ 20.0
2	Distribution System Modifications	0.6	0.6
3	New Water Meter Purchases and Installations	1.2	1.2
4	Private Development Construction Coordination, Transmission Mains and Water Main Cost Sharing Program	6.0	5.3
5	Reactive Renewal	12.6	12.0
6	Water Service Connections	1.6	0.8
7	**Total City-Driven Capital**	**$ 42.6**	**$ 39.9**

City-driven initiatives are expected to continue to have significant impacts on EWSI's operations and capital programs throughout the 2012-2016 PBR term. Major initiatives currently identified include:

- **Neighbourhood Redevelopment.** EWSI's AWMR program supports the City's request for EWSI to replace water mains under roadways that are scheduled to be rehabilitated by the City's Transportation Services department. In 2012, this program was extended in consultation with the

City to include repairs of valves and hydrants prior to paving. Future plans include the review of transmission mains identified as high priority for replacement by EWSI to determine whether paving plans can be adjusted to allow these pipes to be addressed sooner.

- **City Rehabilitation Projects.** EWSI expects that water infrastructure work needed to accommodate requests from the City will continue to be a large component of its capital program. EWSI has developed standardized processes for managing relocation requests and selecting the least-cost options for addressing utility conflicts.

- **Water Main Reconfigurations.** Two transmission mains located on the Walterdale Bridge will be abandoned as part of the City's bridge replacement project. Testing completed in the summer of 2012 confirmed that the waterlines could be abandoned without impacting supply to the Kinsmen sports facility. All approvals have been obtained and the construction activities to complete the abandonment will occur in 2013, aligning with bridge construction and detour schedules.

- **LRT Construction**. EWSI continues to work closely with the City to assess the required relocations of water mains for LRT construction. Significant progress has been made on securing alignments through the downtown core and conflicts are being identified along the alignment towards southeast Edmonton (Millwoods).

- **Blatchford Redevelopment**. EWSI continues to be an active participant in the planning exercises related to this development area. EWSI is taking the lead on completing a Sustainable Return on Investment analysis of the suitability of re-use water in this development, considering environmental benefits, additional energy costs to operate and management of public health risks.

- **Combined Sewer Discharge**. The City will divert more combined sewer overflows to EWSI's Gold Bar wastewater treatment plant where enhanced primary treatment will be used to manage the additional flows. Gold Bar is implementing a revised solids handling capital program that will allow the City to divert combined sewer overflows to Gold Bar earlier than planned in the current PBR period.

4.4 Rate Base and Return on Equity

4.4.1 Water

In 2012, EWSI's net rate base was 1% greater than in the PBR forecast, reflecting higher opening asset balances (see Section 4.2.4) and slightly higher than forecast asset retirements which decreased accumulated depreciation. Working capital was also slightly higher reflecting the impacts of an updated lead-lag study. The In-City Proportion of the rate base was 1% lower than in the PBR forecast, reflecting the decrease in the proportion of In-City consumption relative to RWCG consumption.

In 2012, the total return on Water's rate base was $7.6 million (15%) less than in the PBR forecast. This decrease is entirely related to lower net income (see Section 1.3.1). The Mid-Year Water Rate Base and Return on Rate Base are summarized in Tables 4.4.1.1 and 4.4.1.2.

Table 4.4.1.1
Water Rate Base – Net of Contributions
($ millions)

		A	B
Mid-Year Rate Base – Water		**2012**	
		Actual	**PBR Forecast**
1	Water Gross Property, Plant & Equipment, Opening	$ 1,066.6	$ 1,064.9
2	Additions	76.4	72.2
3	Retirements/Transfers	(5.5)	(3.5)
4	Water Gross Property, Plant & Equipment, Closing	1,137.6	1,133.6
5	Water Accumulated Depreciation, Opening	(273.8)	(274.2)
6	Depreciation Expense	(22.5)	(22.3)
7	Retirements/Transfers	5.7	3.5
8	Water Accumulated Depreciation, Closing	(290.6)	(292.9)
9	Water Mid-Year Gross Property	1,102.1	1,099.2
10	Water Mid-Year Accumulated Depreciation	(282.2)	(283.6)
11	**Water Mid-Year Net Property**	**819.9**	**815.6**
12	Add: Working Capital	14.7	11.4
13	Add: Average Materials and Supplies	2.2	1.9
14	**Mid-Year Rate Base**	**$ 836.8**	**$ 828.9**
15	**In-City Share of Mid-Year Rate Base (%)**	**78%**	**79%**
16	**In City Share of Mid-Year Rate Base ($)**	**$ 651.3**	**$ 652.1**

Table 4.4.1.2
Return on Rate Base - Water
($ millions)

		A	B
Return on Rate Base – Water		**2012**	
		Actual	**PBR Forecast**
1	Mid-year Rate Base Allocated to In-City	$ 651.3	$ 652.1
2	Capital Structure: Debt (%)	59.65%	57.95%
3	Capital Structure: Equity (%)	40.35%	42.05%
4	Cost of Debt	5.32%	5.48%
5	Cost of Equity	8.46%	10.88%
6	**Weighted Average Cost of Capital**	**6.59%**	**7.75%**
7	Return on Mid-year Rate Base Debt Portion (line 1 x line 2 x line 4)	20.7	20.7
8	Return on Mid-year Rate Base Equity Portion (line 1 x line 3 x line 5)	22.2	29.8
9	**Return on Mid-year Rate Base (line 7 + line 8)**	**$ 42.9**	**$ 50.5**

4.4.2 Wastewater

In 2012, Wastewater's mid-year rate base was $7.3 million (3%) less than in the PBR forecast, reflecting lower than forecast opening asset balances and capital additions (see Section 4.3.2).

The total return on the Wastewater rate base was $0.4 million (4%) greater than in the PBR forecast, reflecting higher than forecast net income, partially offset by lower debt costs. These results are summarized on Tables 4.4.2.1 and 4.4.2.2.

Table 4.4.2.1
Wastewater Rate Base – Net of Contributions
($ millions)

		A	B
Mid-Year Rate Base - Wastewater		**2012**	
		Actual	**PBR Forecast**
1	Wastewater Gross Property, Opening	$ 339.4	$ 345.1
2	Additions	12.4	19.4
3	Retirements/Transfers	(0.5)	-
4	Wastewater Gross Property, Closing	351.3	364.5
5	Wastewater Accumulated Depreciation, Opening	(83.1)	(84.9)
6	Depreciation Expense	(9.2)	(9.1)
7	Retirements/Transfers	0.9	-
8	Wastewater Accumulated Depreciation, Closing	91.4	(94.0)
9	Wastewater Mid-Year Gross Property	345.3	354.9
10	Wastewater Mid-Year Accumulated Depreciation	(87.3)	(89.4)
11	**Wastewater Mid-Year Net Property**	**258.0**	**265.4**
12	Add: Working Capital	4.3	4.3
13	Add: Average Materials and Supplies	0.9	0.8
14	**Wastewater Mid-Year Rate Base**	**$ 263.2**	**$ 270.5**

Table 4.4.2.2
Wastewater Return on Rate Base
($ millions)

		A	B
Return on Rate Base - Wastewater		**2012**	
		Actual	**PBR forecast**
1	Mid-year Rate Base	$ 263.2	$ 270.5
2	Capital Structure: Debt (%)	59.49%	59.91%
3	Capital Structure: Equity (%)	40.51%	40.09%
4	Cost of Debt	4.64%	4.69%
5	Cost of Equity	4.07%	3.45%
6	**Weighted Average Cost of Capital**	**4.41%**	**4.19%**
7	Return on Mid-year Rate Base Debt Portion (line 1 x line 2 x line 4)	**7.3**	**7.6**
8	Return on Mid-year Rate Base Equity Portion (line 1 x line 3 x line 5)	**4.4**	**3.7**
9	**Return on Mid-year Rate Base (line 7 + line 8)**	**$ 11.7**	**$ 11.3**

5 Water and Wastewater Treatment Rates and Bill Comparisons

5.1 Water Rates

Water rates consist of consumption charges and fixed monthly service charges. In 2012, EWSI revised its rate structure to better reflect consumption patterns for Residential and Commercial customers and to encourage efficient use of water. Table 5.1.1 shows the 2012 water consumption charges for Residential, Multi-residential and Commercial customer classes, with comparable charges for 2011. The 2011 consumption charges are presented using the 2012 consumption blocks to provide for a better basis for comparison.

In accordance with the Bylaw, the increase in consumption charges between 2011 and 2012 reflects the 2012 forecast inflation adjustment of 2.01% (see Section 4.1.1), the actual to forecast inflation adjustment for 2011 of 0.17%, and Special Rate Adjustments for Rebasing and AWMR. Special Rate Adjustments increased Multi-Residential and Commercial consumption charges by 6.45% and Residential Consumption Charges by 0% at the lowest consumption block to 37.32% at the highest consumption block.

Table 5.1.1
Water Consumption Charges

		A	B
	Consumption Block	**2012 Rate ($/m^3)**	**2011 Rate ($/m^3)**
1	**Residential**		
2	0.0 m^3 to 10.0 m^3	1.6435	1.6084
3	10.0 m^3 to 35.0 m^3	1.7955	1.6084
4	Over 35.0 m^3	2.2691	1.6266
5	**Multi-Residential**		
6	0.0 m^3 to 100.0 m^3	1.5948	1.4680
7	100.1 m^3 to 1,000.0 m^3	1.3343	1.2282
8	Over 1,000.0 m^3	1.1025	1.0149
9	**Commercial**		
10	0.0 m^3 to 25.0 m^3	1.2508	1.1514
11	25.1 m^3 to 100.0 m^3	1.2508	1.1514
13	100.1 m^3 to 1,000.0 m^3	1.1537	1.0620
14	1,000.1 m^3 to 5,000.0 m^3	0.9131	0.8405
15	Over 5,000.0 m^3	0.7351	0.6767

Table 5.1.2 shows the 2012 water fixed monthly service changes by meter size with comparable charges for 2011. Similar to consumption charges, the increase in monthly fixed services charges between 2011 and 2012 reflects PBR inflation and efficiency factors, as well as Special Rates Adjustments. Special Rate Adjustments for fixed monthly service charges relate only to Rebasing and increase fixed monthly service charges by 4.23% for all meter sizes.

Table 5.1.2
Water Fixed Monthly Service Charge

		A	B
	Fixed Rates (based on meter size)	**2012 Rate ($)**	**2011 Rate ($)**
1	15 mm	6.55	6.16
2	20 mm	8.99	8.45
3	25 mm	12.74	11.97
4	40 mm	22.26	20.92
5	50 mm	29.66	27.87
6	75 mm	58.88	55.33
7	100 mm	107.57	101.09
8	150 mm	201.32	189.19
9	200 mm	319.83	300.56
10	250 mm	747.41	702.36
11	300 mm	747.41	702.36
12	400 mm	893.52	839.67
13	500 mm	962.18	904.19

5.2 Water Rate Structure by Customer Class

5.2.1 Residential

Residential customers are charged based on an inclining rate structure with three consumption blocks. The inclining rate structure is intended to promote water conservation and provide incentives for residential customers to use water efficiently.

5.2.2 Multi-Residential

Multi-residential customers are charged based on a declining rate structure with three consumption blocks. EWSI has found that the cost to provide water to Multi-residential customers is not the same as to Residential and Commercial customers. Multi-residential customer consumption does not have the same seasonal variation as Residential customers' consumption patterns, nor do they have the same infrastructure requirements as Commercial customers. As a result, pricing for Multi-residential customers have a unique declining rate structure.

5.2.3 Commercial

Commercial customers tend to have stable consumption patterns, using the same amount of water evenly throughout the year, resulting in efficient use of the water system. Water rates for commercial customers are based on a declining rate structure with five consumption blocks. EWSI set the size of the blocks within the rate structure based on results of a statistical study of water usage by the type of customer within the commercial class.

5.3 Wastewater Treatment Rates

Wastewater rates include consumption charges, fixed monthly service charges and over-strength surcharges. Unlike Water, there are no separate rates for Multi-residential customers. Instead, customers who would be classified as Multi-residential Water customers are included in the Residential customer class.

In accordance with the Bylaw, the increase in Wastewater's rates between 2011 and 2012 includes an inflation adjustment of 2.01% and Special Rate Adjustments of 5.3%. Since 2012 was the first year when Wastewater became subject to PBR, there was no actual to forecast adjustment for 2011 inflation. Therefore, the inflation component of 2012 wastewater treatment rates consists only of the 2012 forecast inflation factor. Table 5.3.1 shows Wastewater's 2011 and 2012 rates for Residential and Commercial customers.

Table 5.3.1
Wastewater Consumption and Fixed Monthly Service Charges

		A	B
	Consumption and Fixed Monthly Service Charges	**2012 Rate ($)**	**2011 Rate ($)**
1	**Consumption Charge per m3**		
2	**Residential**		
3	All consumption	0.5955	0.5526
4	**Commercial**		
5	0.0 m^3 to 10,000.0 m^3	0.5955	0.5526
6	10,000.1 m^3 to 100,000.0 m^3	0.4607	0.4275
7	Over 100,000.0 m^3	0.2403	0.2230
8	**Fixed Monthly Service Charge per Meter**		
9	All Customers	3.12	2.89

In addition to consumption charges and fixed monthly service charges, over-strength and additional over-strength surcharges are applied to each kilogram of surchargeable matter per cubic metre (m^3) of wastewater that exceeds the concentrations shown in Section 4 of Schedule 1 to the Bylaw. Wastewater over-strength charges for 2012, together with comparative charges for 2011 are shown in Table 5.3.2 and additional over-strength Surcharges are shown in Table 5.3.3.

Table 5.3.2
Wastewater Over-strength Surcharges

		A	B
	Surchargeable Matter	**2012 Rate ($/kg)**	**2011 Rate ($/kg)**
1	Biochemical Oxygen Demand (BOD) > 300 mg/L	0.3730	0.3461
2	Chemical Oxygen Demand (COD) > 600 mg/L *	0.3730	0.3461
3	Oil and grease > 100 mg/L	0.3262	0.3027
4	Phosphorous > 10 mg/L	3.1038	2.8800
5	Suspended solids > 300 mg/L	0.3386	0.3142
6	Total Kjeldahl nitrogen (TKN) > 50 mg/L	0.7922	0.7351

* Or twice the BOD concentration in the wastewater, whichever is greater.

Table 5.3.3
Wastewater Additional Over-strength Surcharges

		A	B
	Surchargeable Matter	**2012 Rate ($/kg)**	**2011 Rate ($/kg)**
1	Biochemical Oxygen Demand (BOD) > 3,000 mg/L	0.3730	0.3461
2	Chemical Oxygen Demand (COD) > 6,000 mg/L *	0.3730	0.3461
3	Oil and grease > 400 mg/L	0.3262	0.3027
4	Phosphorous > 75 mg/L	3.1038	2.8800
5	Suspended solids > 3,000 mg/L	0.3386	0.3142
6	Total Kjeldahl nitrogen (TKN) > 200 mg/L	0.7922	0.7351

* Or twice the BOD concentration in the wastewater, whichever is greater.

The increase in rates for wastewater consumption charges, fixed monthly service charges and wastewater over-strength surcharges in 2012 reflects the annual PBR inflation factor of 2.01% and Special Rate Adjustments for Wastewater Treatment Services of 5.3%. Since 2012 is the first year in which Wastewater Treatment is subject to PBR, the inflation component of the 2012 rates consists only of the 2012 forecast inflation factor; there is no 2011 wastewater inflation adjustment factor.

5.4 Wastewater Treatment Rate Structure by Customer Class

5.4.1 Residential

The Residential customer class accounts for 69.6% of Edmonton's wastewater treatment consumption. Rates for the Residential customer class are charged based on a uniform rate with a single consumption block.

5.4.2 Commercial

The commercial customer class comprises 30.4% of Edmonton's wastewater treatment consumption. Commercial customers are charged based on a declining rate structure with three consumption blocks.

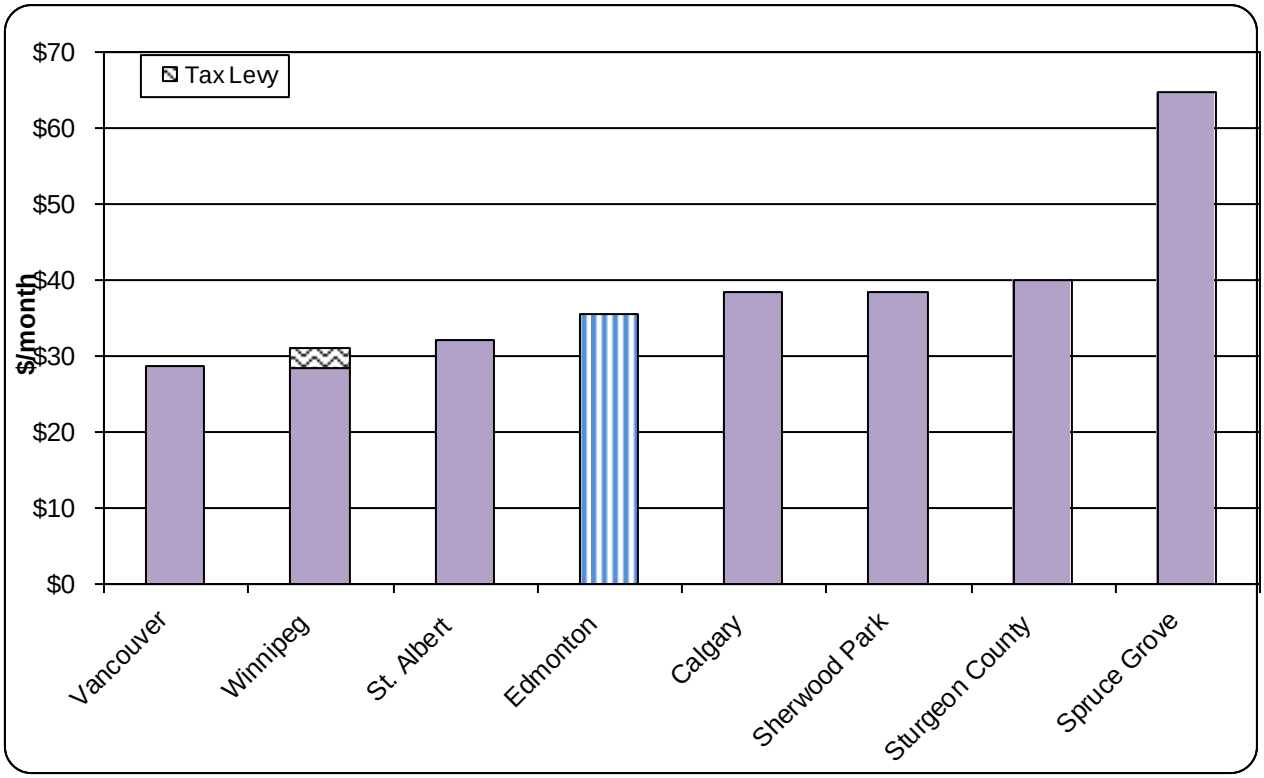
5.5 Water Bill Comparisons to Other Communities

Water bill comparisons for 2012 are based on surveys of Calgary, Vancouver, Winnipeg and local communities within the Alberta Capital Region. These comparisons are based on the total cost to the customer and include fixed charges, consumption charges and any other applicable surcharges.

5.5.1 Residential Water Bills

Figure 5.5.1 provides a comparison of residential household water bills based upon the average Edmonton residential household consumption of 16.6 m^3 per month.

Figure 5.5.1
Average Edmonton Monthly Residential Water Bill in 2012
(16.6 m^3/month)



Edmonton residential water customers' rates are competitive with surrounding communities and other major cities in western Canada. It is important to note that Edmonton has the challenge of a poor raw water source compared to some other cities and must conduct additional treatment.

Vancouver residents have lower water bills because it only disinfects water with chlorine which results in lower water treatment costs. St. Albert's lower water bill is due to the absence of a franchise fee such as EWSI pays to the City.

5.5.2 Commercial Water Bills

Table 5.4.2 provides a comparison of the water bills for four types of commercial customers:

- A retail store consuming 125 m^3 of water per month,
- A car wash consuming 325 m^3 of water per month,
- A hotel, hospital or large shopping centre consuming 6,000 m^3 of water per month.
- An industrial processing plant consuming 20,000 m^3 of water per month.

Overall, in the commercial water segment, water bills for EWSI's commercial customers are at the low end of the range compared to the other surveyed utilities.

Table 5.5.2
Commercial Monthly Water Bill Comparison

		A	B	C	D
Community		**Retail Store**	**Car Wash**	**Hotel / Shopping Centre**	**Industrial/ Processing Plant**
1	**Average Monthly Consumption (m^3)**	**125**	**325**	**6,000**	**20,000**
2	Vancouver[1]	$ 124	$ 301	$ 5,326	$ 17,803
3	Edmonton	**$ 160**	**$ 391**	**$ 5,515**	**$ 15,168**
4	Winnipeg	$ 175	$ 437	$ 7,314	$ 22,994
5	St. Albert	$ 186	$ 470	$ 8,529	$ 28,409
6	Calgary	$ 200	$ 497	$ 6,746	$ 17,363
7	Sturgeon County	$ 244	$ 666	$ 11,040	$ 36,100
8	Sherwood Park	$ 255	$ 654	$ 11,975	$ 39,905
9	Spruce Grove	$ 488	$ 1,269	$ 23,430	$ 78,100

1 Reflects weighted average of seasonal water rates

5.6 Wastewater Bill Comparisons to Other Communities

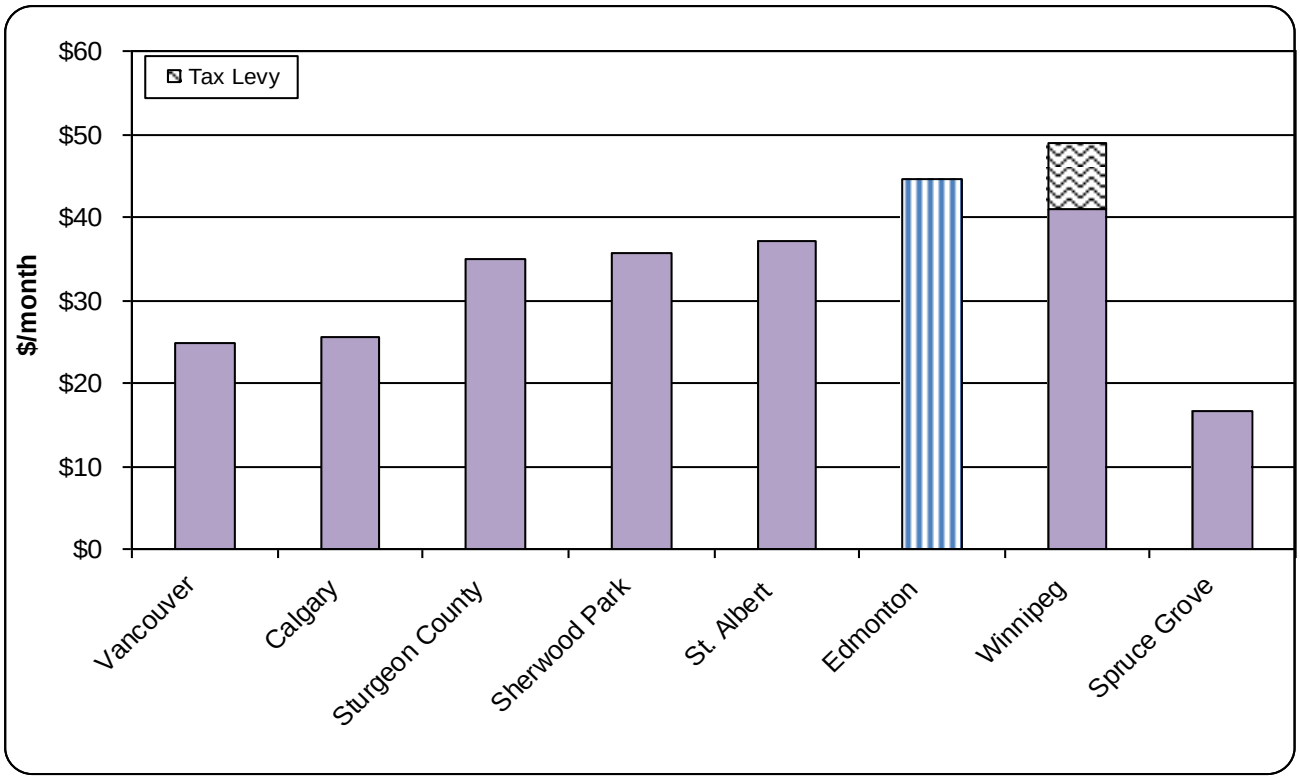
Unlike most communities where drainage and wastewater treatment services are combined, EWSI Wastewater is only responsible for wastewater treatment. Drainage services, including the operations and maintenance of the collection system, are provided by the City. Accordingly, wastewater bill comparisons are based on blended EWSI wastewater treatment and City drainage rates.

The 2012 comparative wastewater rate information is based on surveys of Calgary, Vancouver, Winnipeg and as well as local communities within the Alberta Capital Region. The rate comparisons are based on the total cost to the customer and include fixed charges, consumption charges, plus any surcharges.

5.6.1 Residential Wastewater Bills

Figure 5.5.1 provides a comparison of residential household wastewater bills based upon the average Edmonton residential household consumption of 16.6 m^3 per month. Figure 5.6.1 shows that Edmonton residential customers have higher wastewater bills than most customers in the comparison sample. Edmonton's residential wastewater bill is based on a blended rate consisting of EWSI Wastewater's charge of $13.01 per month and the City's drainage charge of $31.46 per month.

Figure 5.6.1
Average Edmonton Monthly Residential Wastewater Bill
(16.6 m^3/month)



5.6.2 Commercial Wastewater Bills

Table 5.6.2 provides a comparison of the water bills for the four types of commercial customers discussed in Section 5.5.2. Overall, there is substantial variation in monthly wastewater bills for commercial customers. As with Residential bill comparisons, wastewater bill comparisons are based on blended EWSI wastewater treatment and City drainage rates.

Table 5.6.2
Commercial Monthly Wastewater Bill Comparison

		A	B	C	D
	Community	**Retail Store**	**Car Wash**	**Hotel / Shopping Centre**	**Industrial / Processing Plant**
1	**Average Monthly Consumption (m^3)**	**125**	**325**	**6,000**	**20,000**
2	Vancouver	$ 95	$ 225	$ 3,935	$ 13,167
3	Sherwood Park	$ 101	$ 233	$ 3,809	$ 11,910
4	Calgary	$ 115	$ 279	$ 4,932	$ 16,413
5	Sturgeon County	$ 175	$ 431	$ 7,709	$ 25,644
6	St. Albert	$ 181	$ 457	$ 8,288	$ 27,609
7	Edmonton	**$ 265**	**$ 672**	**$ 12,231**	**$ 36,137**
8	Winnipeg	$ 269	$ 688	$ 12,609	$ 42,071
9	Spruce Grove	$ 488	$1,269	$ 23,430	$ 78,100

6 Future Plans and Challenges

The PBR framework provides incentives for EWSI to improve operational performance while achieving cost savings through process improvements and other means. Under this framework, EWSI assumes the risks associated with water consumption and variability in operating, administrative and capital costs. These risks and EWSI's strategies to mitigate them are summarized below.

- **Water Consumption Risk (Short-term)**. Weather conditions have significant impacts on water consumption and water quality. Wet weather can significantly reduce water consumption, affecting both revenues and return. As well, variability in weather conditions affects water quality during spring run-off and storm events, leading to volatility in chemical use. Under PBR, these risks are wholly borne by EWSI.

- **Water Consumption Risk (Long-Term)**. Although the number of Water and Wastewater customers is expected to increase over the 2012-2016 PBR term, average consumption per customer has been declining at a greater rate than forecast (see Section 1.2). This decline exposes EWSI to greater risk in recovering its operational costs through rates which are predominantly consumption-based.

- **Operating Cost Risks**. EWSI strives to minimize fluctuations in input prices. For example, EWSI actively monitors and analyzes the prices of Power and Other Utility costs and uses long-term contracts to provide greater price stability. EWSI also works to mitigate anticipated price increases for treatment chemicals through optimization strategies. In addition, EWSI makes continuous efforts to implement cost reduction strategies in other areas of its operations.

- **Capital Cost Risks.** Water and Wastewater's operations are capital intensive and EWSI faces the ongoing challenges of dealing with replacement of aging infrastructure. Furthermore, in times of high economic activity in Alberta, EWSI's capital programs are subject to labour and material cost escalation that, historically has been higher than PBR inflation rates. To address capital cost risks, EWSI works closely with the City to plan ahead for capital project expenditures. EWSI is able to reduce some of its capital cost risk by utilizing in-house engineering staff at lower rates relative to external engineering resources.

Besides the challenges of working within the PBR framework, EWSI faces both regulatory and financial reporting challenges, including:

- **Dual Regulation.** Although In-City water services are regulated by the City, the Alberta Utility Commission (AUC) has jurisdiction to regulate, on a complaint basis, wholesale water rates charged to the RWCG. EWSI's regulatory processes are designed to accommodate dual regulation, so that financial information is presented in accordance with the appropriate regulatory basis of accounting and that rates and tariffs are developed on a consistent basis.

- **Regulatory Basis of Accounting**. The regulatory basis of accounting used for determining EWSI's water and wastewater treatment rates and for reporting regulatory results differs from the International Financial Reporting Standards (IFRS) used by EWSI for all other financial reporting. Accordingly, EWSI maintains separate IFRS and Regulatory financial records, so that it is able to meet regulatory reporting requirements.

Finally, EWSI faces the challenges associated with operating both water and wastewater treatment utilities. Accordingly, EWSI is undertaking specific initiatives in the areas of water efficiency,

environment and infrastructure investment, ensuring that EWSI is aligned with City-driven initiatives, provincial government initiatives and anticipated changes in provincial and federal regulations. These initiatives are discussed in Sections 6.1 through 6.4 below.

6.1 Conservation Initiatives

EWSI encourages efficient water use by all of its customers. EWSI's conservation initiatives include:

- Providing letters to high-usage customers. In 2012, EWSI contacted multi-residential customers and residential customers with high variance in water usage, directing customers to an interactive, online calculator developed to help customers manage their water consumption. Similar initiatives are intended for 2013 and future years;
- Partnering with government and business to support water efficiency and conservation programs, such as: The Way We Green Speaker Series; City of Edmonton Environment Week; World Environment Day; and a variety of other programs;
- Continuing sponsorship of RiverWatch and the City's River Clean Up project; and
- Promoting conservation and water efficiency through social media channels, including updating efficiency information and tools on EPCOR's website to help customers reduce water wastage.

6.2 Environmental Initiatives

EWSI strives to ensure that it surpasses current and proposed environmental standards. EWSI is a founding member of the North Saskatchewan Watershed Alliance and participates in a multi-stakeholder Integrated Management Plan for the North Saskatchewan River Basin.

EWSI continues to maintain its Champion status under the AESRD's Envirovista Program. Champion status involves a new ten-year outcome-based AESRD Approval-to-Operate (638-03-00) and a ten-year Stewardship Agreement. The Stewardship Agreement outlines a set of environmental initiatives EWSI has committed to, and that go above and beyond the requirements of a typical approval-to-operate for a waterworks system. EWSI released its first report on progress towards its stewardship commitments in June 2012.

6.3 EWSI Infrastructure Investment

Capital expenditures reflect both recurring and non-recurring projects. In the 2012-2016 PBR term, to effectively manage capital investments in Water and Wastewater infrastructure, EWSI categorizes its capital projects as follows:

- **Environmental Regulation.** Projects specifically identified to address current and upcoming regulatory requirements from regulatory bodies such as AESRD (e.g. residuals handling projects). At Rossdale, the de-chlorination project was commissioned in 2012.

- **City Requirements.** Projects necessary to accommodate growth in Edmonton, to relocate water utilities due to changes made by City departments (e.g. Light Rail Transit work, bridge rehabilitation) and to meet any other requirements stipulated in the franchise agreement that EWSI has with the City, such as water service to new customers and fire protection. (see Sections 4.3 and 6.4).

- **Health and Safety.** Projects specifically identified to meet health and safety requirements. The most significant of these is the replacement of the gaseous chlorine chemical system at the Rossdale WTP with an on-site hypochlorite generation system similar to the one installed at the E.L. Smith WTP in 2007.

- **Reliability.** Projects identified to rehabilitate or replace existing assets at the end of their useful life, to improve redundancy and to ensure acceptable risk management is maintained (e.g. water main proactive renewal program, electrical systems, structural and mechanical rehabilitation of plants and reservoirs, water meter change outs, etc.).

- **Efficiency.** Projects which provide a net benefit to customers to improve operational efficiency and lower future costs. Efficiency projects include the distribution cathodic protection projects and energy efficiency projects related to improving the equipment used for the large High-lift pumps at the water plants.

- **General Facilities.** Projects for facilities, buildings and systems that directly affect EWSI staff, most notably the replacement of the Water Quality Assurance Laboratory, which is at the end of its useful life.

6.4 Provincial and Federal Government Initiatives

6.4.1 Water

EWSI is not currently aware of any impending changes or revisions to existing Alberta government or Health Canada guidelines that would significantly impact its water quality index. EWSI would request an adjustment to the index to conform to new requirements as they arise.

6.4.2 Wastewater

EWSI participates in the AESRD's Water Committee (the Committee) for the Industrial Heartland and Capital Region. One of the Committee's initiatives was to address water quantity and quality issues surrounding the use of the North Saskatchewan River from Devon to Pakan, taking into consideration Alberta's economic development, industrial projects currently undergoing regulatory review, and existing industry in the region. EWSI anticipates that its operating approval for the Gold Bar wastewater treatment plant may need to be updated to include different standards related to this initiative when it is renewed in 2015.

Environment Canada issued new Wastewater Systems Effluent Regulations in 2012. EWSI expects that the Gold Bar Wastewater Treatment plant will be able to comply with the new regulations without the requirement of additional capital investment. EWSI will need to ensure, however, that future changes to plant operations that might be required to meet the City`s Combined Sewer Overflow Control Strategy do not conflict with the new federal regulation. In addition, the new Federal Regulation does not address wet weather overflows at the treatment plant (other than the required reporting of such events). Future versions of the regulation may eventually place restrictions on these overflows.

Appendix A: Affiliate Transactions

Appendix A-1: Water Affiliate Transactions Summary

		A
		2012 Actual ($ millions)
1	**Transactions with EUI and its Subsidiaries**	
2	Customer billing services	$ 7.2
3	Meter reading services	4.5
4	Meter reading services recoveries	(1.7)
5	Water sales	(0.3)
6	Hydrovac charges and space rent	3.7
7	Soil/water dumping and locates	0.4
8	Technical training services	0.6
9	Corporate services	23.9
10	Corporate services recoveries	(3.6)
11	Affiliate services recoveries	(3.0)
12	Interest expense	23.9
13	**Total**	**55.6**
14	**Fees for Services Provided by Capital Power Corporation**	
15	Power	7.6
	Total	**7.6**
16	**Taxes and Fees for Services Provided by the City of Edmonton**	
17	Franchise fees	11.6
18	Property and business taxes	0.2
19	Paving and barricades	1.4
20	Customer services	2.0
21	Mobile equipment services	1.3
22	Interest expense*	1.5
	Total	**18.0**
23	**Sales and Recoveries for Services Provided by EWSI to the City of Edmonton**	
24	Water sales	1.9
25	Miscellaneous sales	0.2
26	Meter reading service recoveries	1.7
27	**Total**	**$ 3.8**

* Includes 5 basis point administration fee.

Appendix A-2: Wastewater Affiliate Transactions Summary

		A
		2012 Actual ($ millions)
1	**Transactions with EUI and its Subsidiaries**	
2	Customer billing services	$ 2.6
3	Meter reading services	1.7
4	Water purchases	0.3
5	Maintenance and other services	0.2
6	Interest expense	1.4
7	Corporate services	4.4
8	Affiliate services	0.7
9	**Total**	**11.3**
10	**Fees for Services Provided to the City of Edmonton**	
11	Wastewater sales	0.5
12	Miscellaneous sales and cost recoveries	0.4
13	**Total**	**0.9**
14	**Taxes and Fees for Services Provided by the City of Edmonton**	
15	Franchise fees	4.4
16	Property and business taxes	0.5
17	Power	4.1
18	Regulatory services	0.9
19	Other services	0.2
20	Interest expense*	4.9
21	**Total**	**$ 15.1**

* Includes 5 basis point administration fee.

Appendix B: Summary of Operating Performance Measures

Appendix C: Historical Summary of Financial Performance

Appendix D: Historical Consumption

These appendices are not relevant in the first year of the 2012-2016 PBR Term, since this information is already fully disclosed in the body of the report.