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OPERATING COSTS OVERVIEW

OVERVIEW

This Exhibit provides evidence supporting Operating Costs. These include Operations, Maintenance and Administration ("OM&A") costs; Depreciation and Amortization expenses; Payments in Lieu of Taxes ("PILs"); and Property Taxes.

More particularly, OM&A Operating Costs include: the costs required to operate and maintain Horizon Utilities' distribution system assets; the costs associated with maintaining a reliable supply of electricity to customers and ensuring the safe and efficient performance of the network in compliance with regulatory bodies (e.g. the Board, the Independent Electricity System Operator ("IESO") and the Ontario Power Authority ("OPA"); the costs associated with metering, new customer connection services; customer services including billing and collections; people and administrative management; and external and internal communications. Operating costs for the Test Years range from $90,518,366 in the 2015 Test Year to $99,598,025 in the 2019 Test Year. Within these amounts, OM&A costs range from $62,632,679 in the 2015 Test Year to $69,140,489 in the 2019 Test Year, as shown in Table 4-1**.**

Operating costs for 2011, the last Board-Approved year, are provided on a Canadian Generally Accepted Accounting Principles ("CGAAP") basis. The operating costs for the 2012 and 2013 historical years, the 2014 Bridge Year and the 2015 to 2019 Test Years are provided on a Modified International Financial Reporting Standards ("MIFRS") basis.

This Application is being filed as a Custom IR Application as provided in the Board's Renewed Regulatory Framework for Electricity ("RRFE"). The five Test Years for this Application are 2015-2019.

OM&A Test Year Levels

Table 4-1 – OM&A Levels 2011-2019 (Includes Property Taxes)

Year	Reporting Basis	OM&A
2011 Board-Approved	CGAAP	$ 42,136,201
2011 Actual	CGAAP	$ 41,644,654
2011 Board-Approved	MIFRS	$ 51,281,957
2011 Actual	MIFRS	$ 50,790,410
2012 Actual	MIFRS	$ 51,478,365
2013 Actual	MIFRS	$ 54,516,505
2014 Bridge Year	MIFRS	$ 60,387,369
2015 Test Year	MIFRS	$ 62,632,679
2016 Test Year	MIFRS	$ 64,394,131
2017 Test Year	MIFRS	$ 66,255,827
2018 Test Year	MIFRS	$ 67,708,658
2019 Test Year	MIFRS	$ 69,140,489

The proposed OM&A costs for the Test Years range from $62,632,679 in the 2015 Test Year to $69,140,489 in the 2019 Test Year. These expenditures are necessary to sustain and improve service to Horizon Utilities' customers including: maintaining service reliability within customers' expectations; maintaining business continuity; managing related business risks; investing in employees to deal with upcoming retirements; and safety. Horizon Utilities has maintained a reasonable balance between necessary investments and customer bill impacts in developing its OM&A forecasts for the 2015-2019 Test Years, as evidenced by lower OM&A growth during the Test Years than during the 2012 to 2014 IRM period, when higher growth was experienced to meet business requirements described further in Tab 2, Schedule 2 of this Exhibit.

Overall Trends in Costs

OM&A Trend Analysis

Table 4-2 - OM&A Trend Analysis: Forecast vs. Price Cap provides the following analyses of OM&A from 2011 Board-Approved through to the 2019 Test Year:

i.) Actual and projected Application growth on both a total and per customer basis;

ii.) Projected growth from 2011 Board-Approved under a Price Cap Index approach that incorporates: a) historical, assumed, and forecast wage and price inflation assumptions underlying the application; and b) productivity and stretch factor values based on the *Report of the Board: Rate Setting Parameters and Benchmarking under the Renewed Regulatory Framework for Ontario's Electricity Distributors* dated December 4, 2013 (EB-2010-0379) ("Rate Setting Report");

iii.) "Real" OM&A growth underlying the Application between 2011 Board-Approved and the 2019 Test Year as represented by the difference between (i) and (ii).

Table 4-2 - OM&A Trend Analysis: Forecast vs. Price Cap

		2011 Board Approved MIFRS	2012 Actual MIFRS	2013 Actual MIFRS	2014 Bridge Year MIFRS	2015 Test Year MIFRS	2016 Test Year MIFRS	2017 Test Year MIFRS	2018 Test Year MIFRS	2019 Test Year MIFRS
	OM&A Analysis - Actual and Forecast per Application									
	Total OM&A - MFRS including Smart Meters (A)	$ 51,281,957	$ 51,478,365	$ 54,516,505	$ 60,387,369	$ 62,632,679	$ 64,394,131	$ 66,255,827	$ 67,708,658	$ 69,140,489
	Customer/ Connections Counts (D)	237,161	238,444	240,014	241,573	243,237	245,038	246,941	248,923	250,790
	Total OM&A/ Customer - Application	$ 216 23	$ 215 89	$ 227.14	$ 249 98	$ 257 50	$ 262.79	$ 268.31	$ 272.01	$ 275.69
	Year over Year Change in OM&A/ Customer		$ (0 34)	$ 11 25	$ 22 84	$ 7 52	$ 5 30	$ 5.51	$ 3.70	$ 3.68
	Cumulative/ Permanent Change in OM&A/ Customer Cost Structure		$ (0 34)	$ 10 91	$ 33.74	$ 41 26	$ 46 56	$ 52.07	$ 55.77	$ 59.46
	Customer Growth Rate - Annual		0 54%	0 66%	0 65%	0 69%	0.74%	0.78%	0.80%	0.75%
	OM&A/ Customer Growth Rate per Application									
	Year over Year per Application		-0.16%	5 21%	10 05%	3 01%	2 06%	2.10%	1.38%	1.35%
	Cumulative from 2011 Approved		-0.16%	5 04%	15 60%	19 08%	21 53%	24 08%	25.79%	27.50%
	CAGR - Total Actual OM&A Growth		-0.16%	2.49%	4 95%	4.46%	3 98%	3 66%	3.33%	3.08%
	OM&A Analysis - Price Cap vs. Application									
	Price Cap Index - Actual/ Forecast Inflation									
	Labour Based OM&A (including wage components of Management Fees)		$ 32,500,000	$ 35,100,000	$ 37,800,000	$ 39,100,000	$ 40,600,000	$ 41,800,000	$ 42,600,000	$ 43,800,000
	Non-Labour OM&A		19,000,000	19,400,000	22,600,000	23,500,000	23,800,000	24,500,000	25,100,000	25,300,000
(i)	**Total OM&A (rounded)**		**$ 51,500,000**	**$ 54,500,000**	**$ 60,400,000**	**$ 62,600,000**	**$ 64,400,000**	**$ 66,300,000**	**$ 67,700,000**	**$ 69,100,000**
	Labour OM&A as % of Total OM&A		63.1%	64.4%	62 6%	62 5%	63 0%	63.0%	62.9%	63.4%
	Non-Labour OM&A as % of Total OM&A		36 9%	35 6%	37.4%	37 5%	37 0%	37.0%	37.1%	36.6%
	Labour inflation index (actual and forecast)		2 9%	3.1%	3.1%	2 8%	2 8%	2.8%	2.8%	2.8%
	Non-Labour inflation index (application assumption)		1.7%	2 2%	1.7%	1 5%	1 5%	1.5%	1.5%	1.5%
	Inflation (Actual/ Forecast Combined Labour and Non-Labour Index)		2.46%	2.78%	2 58%	2 31%	2 32%	2 32%	2.32%	2.32%
	Productivity Factor		0 00%	0 00%	0 00%	0 00%	0 00%	0 00%	0.00%	0.00%
	Stretch Factor		-0.40%	-0.40%	-0.15%	-0.15%	-0.15%	-0.15%	-0.15%	-0.15%
	Price Cap Index - Actual/ Forecast + X-Factor		2 06%	2 38%	2.43%	2.16%	2.17%	2.17%	2.17%	2.17%
	Price Cap Index - Adjusted for Customer Growth		2 07%	2.40%	2.44%	2.18%	2.19%	2.19%	2.19%	2.19%
	Price Cap OM&A/ Customer (on 2011 Approved) (E)	$ 216 23	$ 220.71	$ 225 99	$ 231 51	$ 236 55	$ 241.72	$ 247.01	$ 252.40	$ 257.93
	Price Cap OM&A/ Customer Growth (Year over Year)		$ 4.47	$ 5 29	$ 5 52	$ 5 04	$ 5.17	$ 5.29	$ 5.40	$ 5.53
	Price Cap OM&A/ Customer Growth (Cumulative)		$ 4.47	$ 9.76	$ 15 28	$ 20 32	$ 25.49	$ 30.77	$ 36.17	$ 41.70
	Difference - Application vs. Price Cap OM&A (Cumulative)		$ (4 81)	$ 1.15	$ 18.47	$ 20 95	$ 21 07	$ 21.30	$ 19.60	$ 17.76
	CAGR - Price Cap OM&A/ Customer		2 07%	2 23%	2 30%	2 27%	2 25%	2 24%	2.23%	2.23%
	Analysis of OM&A/ Customer Difference under Price Cap vs. 2011									
	Year over Year Change in OM&A/ Customer (Application)		$ (0 34)	$ 10 91	$ 33.74	$ 41 26	$ 46 56	$ 52.07	$ 55.77	$ 59.46
	Less: Net Inflationary Growth (Price Cap)		4.47	9.76	15 28	20 32	25.49	30.77	36.17	41.70
	Real Growth in OM&A/ Customer vs. 2011 Approved		$ (4 81)	$ 1.15	$ 18.47	$ 20 95	$ 21 07	$ 21.30	$ 19.60	$ 17.76
(ii)	**Projected OM&A under Price Cap (B = D * E) (rounded)**		**$ 52,600,000**	**$ 54,200,000**	**$ 55,900,000**	**$ 57,500,000**	**$ 59,200,000**	**$ 61,000,000**	**$ 62,800,000**	**$ 64,700,000**
(iii	**Real OM&A Growth - Application vs. Price Cap (C = A - B) (rounded)**	**51,281,957**	**$ (1,100,000)**	**$ 300,000**	**$ 4,500,000**	**$ 5,100,000**	**$ 5,200,000**	**$ 5,300,000**	**$ 4,900,000**	**$ 4,400,000**

The analysis demonstrates that Horizon Utilities is projecting and requesting real OM&A growth, net of achieved and forecast productivity and inflation, of approximately $4,400,000 from 2011 Board-Approved through the 2019 Test Year ("Real OM&A Growth – Application vs. Price Cap" value for 2019 Test Year). This represents a customer adjusted Compound Annual Growth Rate ("CAGR") during this period, corresponding to real OM&A growth, of 0.85% (3.08% "CAGR – Total" for the 2019 Test Year less 2.23% "CAGR – Price Cap OM&A/ Customer" for the 2019 Test Year).

Table 4-3 provides examples of real OM&A cost increases since 2011 Board-Approved and through the 2019 Test Year that are elaborated further within in the Application (rounded to nearest $100,000 as a result of some complexity in extracting inflationary and productivity components within budgeted values and with recognition that the analysis outcomes are estimates):

Table 4-3 – Real OM&A Cost Increases 2011 - 2019

(Rounded to $00,000)	Value	Application Reference
Drivers of Real Increases in OM&A Costs		
Non-Controllable		
OMERS contribution rate increases	$ 600,000	Employee Compensation, Tab 4, Schedule 2
Postage rate increases	$ 200,000	Customer Service Department, Tab 3, Schedule 3
Insurance Premiums	$ 200,000	Corporate Adminstration, Tab 3, Schedule 3
AMI Licensing	$ 200,000	Customer Service, Tab 3, Schedule 3
Total Non-Controllable	$ 1,200,000	
Regulatory		
Custom R Application Costs	$ 600,000	Regulatory Costs, Tab 4, Schedule 6
Managed		
Transfer Pricing/ Management Fees	$ 300,000	Shared Service and Corporate Cost Allocation, Tab 4, Schedule 3
GIS/ OMS Project - ongoing third party OM&A support costs	$ 500,000	Engineering and Operations, Tab 3, Schedule 3
Change in FTE	$ 2,300,000	Employee Compensation, Tab 3, Schedule 3
Consulting/ contract support in Human Resources and Finance	$ 500,000	Corporate Finance and Human Resources, Tab 3, Schedule 3
Growth in Information Systems Technology third party licensing and support costs	$ 1,200,000	Information Systems and Technology, Tab 3, Schedule 3
Tree trimming	$ 300,000	Construction and Maintenance, Tab 3, Schedule 3
Maintenance - buildings vehicles equipment property utilities	$ 1 800 000	Supply Chain Management, Tab 3, Schedule 3
Total Controllable	$ 6,900,000	
Total - principle drivers of real cost growth 2011 to 2019	$ 8,700,000	

The above list is not an exhaustive list of OM&A growth in real terms provided in this Application. The excess of $8,700,000 in Table 4-3 over the $4,400,000 of projected net real growth computed as "Real OM&A Growth – Application vs. Price Cap" in Table 4-2 represents the amount of productivity achieved and forecast from 2011 Board-Approved through the 2019 Test Year above the amount implicit in the corresponding price cap index analysis. The total

sustained OM&A productivity achievement underlying this Application is forecast at $6,645,000 by the 2019 Test Year as provided and elaborated at Tab 3, Schedule 4 of this Exhibit.

The "Projected OM&A under Price Cap" value of $64,700,000 for the 2019 Test Year represents the amount of OM&A Horizon Utilities would have expected to be approved naturally from 2011 to that year, as the progression to that point would have been largely consistent with IRM based adjustments for inflation less the X-factor value comprising productivity and stretch factors. Horizon Utilities is effectively seeking approval for approximately $4,400,000 of OM&A in excess of this value ($64,700,000) for reasons identified in this Application.

There is urgency to step up OM&A in 2014 and 2015 to address the non-controllable, regulatory, and managed cost drivers that will affect Horizon Utilities in those years and thereafter. The rationale and justification for such managed growth is articulated in the Application and corresponds to themes such as: support for urgent and rising distribution renewal investment and ongoing medium-term growth in maintenance programs; delivery of customer value through information technology investments to enhance distribution system management and monitoring and timely customer access and response; and to provide functional and sustainable office and operating centre work environments.

The value of these real cost drivers exceeds $4,400,000 but achieved and expected productivity mitigates the gross value of real cost increases. Table 4-4 provides a comparison of OM&A levels in this Application with OM&A levels excluding productivity initiatives and efficiencies.

Table 4-4 – Impact to OM&A CAGR Exclusive of Productivity Savings

	2011 Actual - Restated	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year
	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS
OM&A per Application	$ 50,790,410	$ 51,478,365	$ 54,516,505	$ 60,387,369	$ 62,632,679
YOY growth		*1.4%*	*5.9%*	*10.8%*	*3.7%*
Add: Productivity Savings	$ 75,000	$ 1,540,000	$ 3,530,000	$ 4,990,000	$ 6,175,000
OM&A without Productivity	$ 50,865,410	$ 53,018,365	$ 58,046,505	$ 65,377,369	$ 68,807,679
YOY growth		*4.2%*	*9.5%*	*12.6%*	*5.2%*

	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year	CAGR 2011 to 2019	CAGR 2011 to 2015	CAGR 2015 to 2019
	MIFRS	MIFRS	MIFRS	MIFRS			
OM&A per Application	$ 64,394,131	$ 66,255,827	$ 67,708,658	$ 69,140,489			
YOY growth	*2.8%*	*2.9%*	*2.2%*	*2.1%*	*3.9%*	*5.4%*	*2.5%*
Add: Productivity Savings	$ 6,335,000	$ 6,395,000	$ 6,495,000	$ 6,645,000			
OM&A without Productivity	$ 70,729,131	$ 72,650,827	$ 74,203,658	$ 75,785,489			
YOY growth	*2.8%*	*2.7%*	*2.1%*	*2.1%*	*5.1%*	*7.8%*	*2.4%*

Horizon Utilities is experiencing real increases in its capital expenditure and OM&A programs in order to address: renewal of the distribution system and corresponding growth in supportive resource requirements; sustainment based investments and OM&A in Information Technology ("IT") systems, facilities, fleet, and distribution system maintenance; and other requirements as described in this Application. However, Horizon Utilities is prioritizing and pacing this cost growth in order to manage customer rate increases at a graduated pace. Additionally, there has been considerable emphasis and success with respect to productivity initiatives, in order to mitigate and moderate customer rate growth, as elaborated in Tab 3, Schedule 4 of this Exhibit. Productivity initiatives delivered $3,530,000 of savings in 2013 and will continue to deliver $4,990,000 in savings in 2014, thereafter rising to an expected sustained level of $6,645,000 by 2019. In the absence of these savings, OM&A growth during this investment period would be 9.5% and 12.6% in 2013 and 2014 respectively, instead of the lower rates of 5.9% and 10.8%.

Price Cap Index Analysis

The continuing application of a Price Cap Index for a duration such as that provided in Table 4-2 results in OM&A growth expectations indicative of distributors operating in a "steady-state mode" with primarily sustainment investment needs. Distributors with such expectations would generally be expected to file an application under the Annual IR Index approach specified in the *Report of the Board – Renewed Regulatory Framework for Electricity Distributors: A*

Performance-Based Approach dated October 18, 2012 ("RRFE Report"). Based on the expected OM&A growth analysis in Table 4-2, OM&A under Price Cap is projected to be $64,700,000 by 2019.

Within this Application and with reference to corresponding 2011 Board-Approved amounts, Horizon Utilities has provided for capital investment and OM&A that materially exceed historical levels. Such requirements align to the Custom IR method for rate application specified in the RRFE Report. On this basis, the application of a Price Cap Index would not be expected to provide a sufficiency of revenue requirement cash flow to finance such growth in capital investment and OM&A. Table 4-2 demonstrates that OM&A growth to $69,140,489 by the 2019 Test Year is approximately $4,400,000 in excess of "Projected OM&A Growth under Price Cap".

Horizon Utilities recognizes the expectation of the Board for productivity and is committed to delivering such to its customers to provide them with electricity distribution at a reasonable cost. Such expectation has effectively been extracted by the Board from 2012 through 2014 distribution rates through the Total Productivity Factor and Stretch Factor-components of Incentive Rate Mechanism rate adjustment.

The Board-Approved productivity factor applicable to Horizon Utilities for purposes of the 2012 and 2013 IRM rate adjustments was 0.72%. The Rate Setting Report (page 17) identifies that *"The Board believes that setting the productivity factor at zero reflects a reasonable balance of the estimated productivity trend in the sector over the last 10 years and a value that is reasonable to project into the future…"*. Although the Board applied a 0.72% productivity factor to 2012 and 2013 IRM rate adjustments, more current analysis within and underlying the Rate Setting Report clarifies realistic expectations for productivity at 0% for those years. Consequently, Horizon Utilities has used a 0% productivity factor for all years within its price index analysis in Table 4-2.

The Stretch Factors used in the price index analysis in Table 4-2 correspond to historical and current Board-Approved values.

The Board has specified an approach to an inflation factor within the Rate Setting Report. The Board has adopted a 2-factor input price index ("IPI") that includes a labour and non-labour component weighted based on estimates from a review of the cost shares of medium to large

distributors (70% Non-Labour and 30% Labour). Additionally, the Board has adopted the GDP-IPI-FDD as the non-labour input index and the Average Weekly Earnings ("AWE")-All Employees-Ontario as the labour input index.

Horizon Utilities submits that the estimated weightings do not correspond to its actual labour and non-labour weightings for purposes of analyzing an OM&A price index. The direct and indirect (i.e., salary, wages, and benefits component of customer services Management Fee – refer to Tab 4, Schedule 3 of this Exhibit) labour component of OM&A is within a relatively tight range of 62% to 64% of OM&A with the remainder categorized as non-labour. Horizon Utilities has used its actual and forecast weightings in Table 4-2 for purposes of its price cap analysis.

The AWE-All Employees-Ontario index does not adequately correlate to the actual and forecast labour inflation for Horizon Utilities. Labour inflation for Horizon Utilities correlates to: (i) wage increases provided under existing and anticipated bargaining arrangements for its unionized staff; and (ii) market-based changes to non-union wages. Historical and forecast information corresponding to salaries, wages, and benefits is provided in Tab 2, Schedule 2 of this Exhibit.

Horizon Utilities has used a labour inflation index corresponding to (i) and (ii) above for purposes of the price index analysis in Table 4-2. This is appropriate since, as a practical matter, no single distributor can influence the market value for labour. Union contracts are heavily influenced by pattern bargaining within the sector. Non-union wages are determined with respect to independent market based intelligence. Consequently, Horizon Utilities submits that more reasonable expectations for prudently incurred labour costs should correspond to its particular circumstances rather than a non-specific labour index for average weekly earnings for workers in Ontario. Horizon Utilities has used its current collective agreement (expiring May 31, 2015) with the International Brotherhood of Electrical Workers ("IBEW") as the basis of labour inflation for 2012 through 2014.

Horizon Utilities has used the Board-Approved GDP-IPI-FDD index for the non-labour index corresponding to its IRM years 2012 to 2014 and an assumption of 1.5%[1] for 2015 through 2019, which also underlies the non-labour component of OM&A in those Test Years.

Lastly, the Price Cap Index is computed on a customer adjusted basis and applied to 2011 Board-Approved OM&A/ Customer. This is appropriate since OM&A varies with the number of customers. This notwithstanding, Table 4-2 demonstrates that the CAGR impact of customer growth for Horizon Utilities on the Price Cap Index applied to 2011 OM&A/Customer is 0.02% ("Price Cap Index – Adjusted for Customer Growth" of 2.19% less "Price Cap Index – Actual/ Forecast + X-Factor" of 2.17%).

Summary of Operating Costs

Table 4-5 provides a summary of operating costs for the previous Board-Approved Test Year and the relevant historical years, the 2014 Bridge Year and the 2015-2019 Test Years.

Table 4-5 – Summary of Operating Costs 2011-2019

	2011 Board-Approved (CGAAP)	2011 Actual (CGAAP)	2012 Actual (MIFRS)	2013 Actual (MIFRS)	2014 Bridge Year (MIFRS)
OM&A	$ 41,798,401	$ 41,248,557	$ 51,427,791	$ 54,221,726	$ 60,091,615
Less: Property Taxes included in OM&A	$ (422,249)	$ (507,355)	$ (464,197)	$ (501,090)	$ (501,090)
OM&A less Property Taxes	**$ 41,376,152**	**$ 40,741,202**	**$ 50,963,594**	**$ 53,720,636**	**$ 59,590,525**
Total Property Taxes	$ 760,049	$ 903,452	$ 514,770	$ 795,869	$ 796,844
Total OM&A including Property Taxes	**$ 42,136,201**	**$ 41,644,654**	**$ 51,478,365**	**$ 54,516,505**	**$ 60,387,369**
Depreciation and Amortization	$ 28,896,779	$ 26,389,412	$ 19,624,849	$ 20,417,963	$ 22,396,806
PILs (income taxes)	$ 4,634,172	$ 5,924,017	$ 6,573,514	$ 7,604,341	$ 2,228,834
Total Operating Costs	**$ 75,667,152**	**$ 73,958,082**	**$ 77,676,727**	**$ 82,538,809**	**$ 85,013,008**

	2015 Test Year (MIFRS)	2016 Test Year (MIFRS)	2017 Test Year (MIFRS)	2018 Test Year (MIFRS)	2019 Test Year (MIFRS)
OM&A	$ 62,332,489	$ 64,089,438	$ 65,946,564	$ 67,394,756	$ 68,821,878
Less: Property Taxes included in OM&A	$ (508,606)	$ (516,236)	$ (523,978)	$ (531,837)	$ (539,815)
OM&A less Property Taxes	**$ 61,823,883**	**$ 63,573,202**	**$ 65,422,586**	**$ 66,862,919**	**$ 68,282,063**
Total Property Taxes	$ 808,797	$ 820,929	$ 833,241	$ 845,739	$ 858,425
Total OM&A including Property Taxes	**$ 62,632,679**	**$ 64,394,131**	**$ 66,255,827**	**$ 67,708,658**	**$ 69,140,489**
Depreciation and Amortization	$ 24,970,618	$ 26,487,624	$ 26,379,676	$ 25,824,486	$ 26,490,670
PILs (income taxes)	$ 2,915,069	$ 4,289,143	$ 4,473,115	$ 3,952,701	$ 3,966,866
Total Operating Costs	**$ 90,518,366**	**$ 95,170,899**	**$ 97,108,617**	**$ 97,485,845**	**$ 99,598,025**

[1] Consistent with the 2012 Consumer Price Index from Statistics Canada

Associated Cost Drivers and Significant Changes

In addition to the drivers of real increases in OM&A listed in Table 4-3 above which are explained in Tab 2, Schedule 2 of this Exhibit, the other major drivers that produce significant changes in OM&A levels in the Test Years relative to the historical years and the 2014 Bridge Year are as follows:

- The transition to International Financial Reporting Standards ("IFRS"). Horizon Utilities adopted IFRS effective January 1, 2012 and has prepared this Application in accordance with the requirements of the OEB for regulatory accounting, reporting, and filing. Such requirements include certain modified accounting treatments for regulated utilities reporting under IFRS as specified by the OEB in its Report of the Board: *Transition to International Financial Reporting Standards* dated July 28, 2009 ("IFRS Report") (EB-2008-0408). Specifically, the OEB requires MIFRS filings and reporting requirements for utilities that have adopted IFRS. Horizon Utilities has incorporated the MIFRS requirements specified in the IFRS Report within the accounting and reporting components of the Application. The OEB requires distributors adopting IFRS to present one year of comparative information in its first IFRS financial statements for financial reporting purposes. The comparative year for Horizon Utilities is 2011. Horizon Utilities was required to make changes to its capitalization policy as a result of the transition to IFRS which impacted OM&A. IFRS diverges from CGAAP as it does not permit the capitalization of indirect overhead costs as capital. The impact of removing indirect overhead costs from capital as a result of the transition to IFRS is a reduction in Property Plant and Equipment ("PP&E") and a corresponding increase to operating costs (OM&A and depreciation). The transition to IFRS is discussed in further detail in Exhibit 6, Tab 2, Schedule 1 and the change in Capitalization Policy is discussed further in Exhibit 2, Tab 6, Schedule 4;
- The inclusion of Smart Meter costs in OM&A. These costs were excluded from the 2011 Board-Approved OM&A; they were recorded in a deferral account for the period 2006-2011;
- Fees charged by or to Electricity Distribution Operations ("EDO"), as supported by the appended *Transfer Pricing Study: Management Fees charged by or to Electricity*

Distribution Operations and Affiliated Entities ("Transfer Pricing Study") (included in Appendix 4-6.1 to this Exhibit) with related charges effective in 2014;

- New Business Requirements ("NBRs") (initiatives aligned to the strategic objectives of Horizon Utilities).

OM&A cost drivers and their associated impacts are described in further detail in Tab 2, Schedule 2 of this Exhibit.

In addition to OM&A, Operating Costs include Depreciation and Amortization expenses; Payments in Lieu of Taxes ("PILs"); and Property Taxes. These costs are discussed below.

Depreciation and Amortization

Horizon Utilities adheres to IFRS capitalization accounting treatments for rate making and regulatory reporting purposes. Depreciation is computed on a straight-line basis over the estimated useful life of the item of PP&E. The depreciable amount of an asset is determined after deducting its estimated residual value, if material. Horizon Utilities has no items of PP&E with residual values.

Depreciation expense corresponds to: existing assets; annual capital additions; Smart Meters; stranded meters; capital contributions received on/after January 1, 2011; and gains/losses on disposition of assets. These inclusions are described in further detail below.

Horizon Utilities' 2015 Test Year depreciation expense is $24,970,618, a decrease of $3,926,161 or 13.6% from the 2011 Board-Approved amount.

The overall decrease in depreciation expense in 2015 is due to:

a) The extension of useful lives under IFRS; partly offset by

b) An increase in depreciation expense due to: increased capital expenditures; the addition of Smart Meters to capital in 2012 and 2015; and an increase in fleet and stores depreciation under IFRS (such depreciation was previously charged to OM&A or to capital expenditures as an overhead cost under the former CGAAP, but is charged to

depreciation expense under IFRS). The impact on depreciation expense due to the transition to IFRS is discussed in more detail in Tab 5 of this Exhibit.

Depreciation on Smart Meter

Despite its efforts to install Smart Meters at all Time-of-Use ("TOU")-eligible locations, Horizon Utilities had not completed its Smart Meter deployment as of the end of 2011 as a result of access restrictions and metering constraints at certain locations. At page 8 of its Decision on Horizon Utilities' SMPA (EB-2011-0417), the Board acknowledged that further capital costs related to existing Residential and General Service < 50kW customers may be recorded in subaccounts under Account 1555 for future prudence review and disposition. Horizon Utilities anticipates that all remaining Residential and General Service < 50kW legacy Smart Meter installations will be completed as of the end of 2014. Horizon Utilities proposes that Smart Meter additions associated with these installations be removed from Account 1555 and added to rate base in 2015. The impacts to gross assets and accumulated depreciation of these additions in 2015 are increases of $2,231,464 and $250,993, respectively.

Depreciation on Stranded Meters

Horizon Utilities is proposing to leave the stranded meter amounts in rate base until they are fully depreciated. Horizon Utilities has provided further details for this approach in Exhibit 2, Tab 5, Schedule 1.

Capital Contributions

The treatment of capital contributions is discussed in further detail in Exhibit 6, Tab 2, Schedule 1.

PILs

Horizon Utilities is liable for the payment of PILs on its taxable income computed in accordance with Section 93 of the *Electricity Act 1998* (Ontario) as amended. Horizon Utilities is exempt from paying income taxes under the *Income Tax Act* (Canada) and the *Corporations Tax Act* (Ontario). Horizon Utilities' proposed 2015 Test Year PILs are $2,915,069, a decrease of

$1,719,103 or 37.1% as compared to the 2011 Board-Approved allowance for PILs. This reduction is primarily due to significant timing differences between depreciation of assets for accounting purposes and depreciation of assets for income tax purposes (Capital Cost Allowance or "CCA"). Under CGAAP, Horizon Utilities followed the guidance as specified in the Board's Accounting Procedures Handbook. Prior to the adoption of IFRS, Horizon Utilities engaged an external consultant to undertake a study to determine the appropriate useful lives of its assets. The study concluded that the asset lives were longer than the period previously used for depreciation purposes under the former CGAAP. This lowered the amount of depreciation expense to be included in the revenue requirement. There has been no change to the CCA rates used for the calculation of taxable income. Due to significant capital investments in recent years and the material impact of IFRS on reducing depreciation, CCA materially exceeds depreciation creating timing differences which reduces the effective amount of PILs payable on taxable income well below the amount otherwise computed by applying the combined federal and Ontario rates of PILs to regulatory income before PILs. This is further discussed in Exhibit 6, Tab 2, Schedule 1.

Property Taxes

Horizon Utilities pays property taxes to the City of St. Catharines and the City of Hamilton on the facilities that it owns in each city. Property taxes on the administration facilities are recorded in account 6105 Taxes Other Than Income Taxes. All other Property Taxes are allocated to OM&A as an expense to the departments occupying those facilities. Table 4-6 below summarizes the Property Taxes for all of Horizon Utilities' properties:

Table 4-6 – Property Taxes 2011-2019

Cost Centre	Location	OEB #	Account - Account Name	2011 Board Approved	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
651	John St	6105	722000 - Property tax	$ 135,000	$ 192,971	$ 96,612	$ 154,629	$ 155,604	$ 157,938	$ 160,307	$ 162,712	$ 165,153	$ 167,630
654	Vansickle	6105	722000 - Property tax	$ 202,800	$ 203,126	$ (46,038)	$ 140,150	$ 140,150	$ 142,252	$ 144,386	$ 146,552	$ 148,749	$ 150,981
Sub-total				**$ 337,800**	**$ 396,097**	**$ 50,574**	**$ 294,779**	**$ 295,754**	**$ 300,190**	**$ 304,693**	**$ 309,263**	**$ 313,902**	**$ 318,611**
652	Nebo Rd	Various	722000 - Property tax	$ 131,000	$ 131,197	$ 157,439	$ 134,142	$ 134,142	$ 136,154	$ 138,196	$ 140,269	$ 142,373	$ 144,508
653	Stoney Creek	Various	722000 - Property tax	$ 98,000	$ 98,158	$ 83,643	$ 99,656	$ 99,656	$ 101,151	$ 102,668	$ 104,208	$ 105,771	$ 107,357
655	Sub Stations	5012	722000 - Property tax	$ 193,249	$ 278,000	$ 223,114	$ 267,292	$ 267,292	$ 271,302	$ 275,372	$ 279,501	$ 283,694	$ 287,949
Sub-total				**$ 422,249**	**$ 507,355**	**$ 464,197**	**$ 501,090**	**$ 501,090**	**$ 508,606**	**$ 516,236**	**$ 523,978**	**$ 531,837**	**$ 539,815**
TOTAL				**$ 760,049**	**$ 903,452**	**$ 514,770**	**$ 795,869**	**$ 796,844**	**$ 808,797**	**$ 820,929**	**$ 833,241**	**$ 845,739**	**$ 858,425**

Inflation Rate Assumptions

A single rate of inflation has not been used in cost projections due to fundamental differences between labour costs and third-party purchases of goods and services. Inflation for labour is determined by the terms of the Collective Bargaining agreement for unionized employees and an annual study of labour market compensation levels for non-unionized employees, and varies from [redacted] annually. Inflation on third-party purchases is assumed to be 1.5%[2]. The foregoing assumptions apply to the 2014 Bridge Year and each of the Test Years from 2015 to 2019.

Business Environment Changes

There have been no major changes to Horizon Utilities' business environment since the previous Board-Approved Test Year. Horizon Utilities is not aware of any expected changes to the business environment in the Bridge Year and the Test Years covered in this Application.

Summary of Cost Drivers

OM&A Costs

Table 4-7 presents OM&A costs for 2011 through 2019. The 2011 figures (reported under CGAAP) have been restated for consistency with subsequent years under MIFRS, and have been adjusted to include Smart Meters, for ease of comparison with subsequent years. Horizon Utilities has also provided a high-level breakdown of cost drivers for each year.

[2] Consistent with the 2012 Consumer Price Index from Statistics Canada

Table 4-7 – OM&A 2011 – 2019 (with Restated OM&A 2011 Board-Approved and Actual)

	2011 Board-Approved CGAAP	2011 Actual CGAAP	2012 Actual MIFRS	2013 Actual MIFRS	2014 Bridge Year MIFRS
Total OM&A Reported	**$ 42,136,201**	**$ 41,644,654**	**$ 51,478,365**	**$ 54,516,505**	**$ 60,387,369**
Adjusted for:					
CGAAP to MIFRS - Capitalized Overhead [1]	$ 8,377,863	$ 8,377,863			
CGAAP to MIFRS - Depreciation [2]	$ (369,410)	$ (369,410)			
CGAAP to MIFRS - PEB [3]	$ (43,000)	$ (43,000)			
Smart Meter Costs [4]	$ 1,180,303	$ 1,180,303			
Total OM&A - MIFRS including Smart Meters	**$ 51,281,957**	**$ 50,790,410**	**$ 51,478,365**	**$ 54,516,505**	**$ 60,387,369**
Salaries, Wages and Benefits		$ 27,751,037	$ 27,873,703	$ 29,763,913	$ 32,327,066
Non-Labour Expenses		$ 19,280,588	$ 19,532,010	$ 20,048,535	$ 22,548,942
New Business Requirements		$ 690,223	$ 400,733	$ 802,570	$ 1,363,984
Net Management Fees		$ 5,531,918	$ 6,133,665	$ 6,216,842	$ 6,677,964
Distributed Costs		$ (2,463,356)	$ (2,461,746)	$ (2,315,354)	$ (2,530,587)
Total		**$ 50,790,410**	**$ 51,478,365**	**$ 54,516,505**	**$ 60,387,369**

	2015 Test Year MIFRS	2016 Test Year MIFRS	2017 Test Year MIFRS	2018 Test Year MIFRS	2019 Test Year MIFRS
Total OM&A Reported	**$ 62,632,679**	**$ 64,394,131**	**$ 66,255,827**	**$ 67,708,658**	**$ 69,140,489**
Salaries, Wages and Benefits	$ 33,445,459	$ 34,840,031	$ 35,844,178	$ 36,894,949	$ 37,869,820
Non-Labour Expenses	$ 23,201,129	$ 23,946,622	$ 24,496,783	$ 24,981,316	$ 25,414,187
New Business Requirements	$ 1,672,668	$ 1,241,745	$ 1,153,610	$ 1,315,773	$ 1,238,241
Net Management Fees	$ 6,927,618	$ 7,092,946	$ 7,589,085	$ 7,473,430	$ 7,591,196
Distributed Costs	$ (2,614,195)	$ (2,727,214)	$ (2,827,828)	$ (2,956,810)	$ (2,972,955)
Total	**$ 62,632,679**	**$ 64,394,131**	**$ 66,255,827**	**$ 67,708,658**	**$ 69,140,489**

[1] Overhead non-depreciation costs charged to capital under CGAAP and to OM&A under MIFRS

[2] Depreciation of transportation and stores equipment charged to OM&A under CGAAP and to depreciation under MIFRS

[3] Losses for post employment benefits which are recognized in OM&A under CGAAP and Other Comprehensive Income under MIFRS

[4] Recorded to a variance account in 2011 and subsequent to the Smart Meter Prudence Review, is included in OM&A in 2012 and future years.

The high-level cost drivers are as follows:

- Salaries, wages, and benefits include: overtime, incentive based pay, benefits, and employer payroll taxes; net of capitalized labour charges. The primary determinants of changes in labour costs are: annual wage inflation (including that negotiated under the Collective Agreement with union bargaining agents); changes in staffing levels; changes in Ontario Municipal Employees Retirement System ("OMERS") employer contribution rates and other benefit rates; and the extent of labour capitalization which varies based on the annual work plan.
- Non-Labour Expenses include third-party costs for existing core business requirements such as: facilities costs; repairs and maintenance on equipment, fleet and buildings; tree trimming; consulting and outside service provider costs; insurance; computer

maintenance; software licences; and training and development. A detailed listing of Non-Labour Expenses is included in Tab 2, Schedule 2, Table 4-15 of this Exhibit. The primary determinants of changes in Non-Labour Expenses are: an assumed annual level of price inflation of 1.5%; changes in planned maintenance activities for facilities and distribution plant; computer maintenance; outside service providers; and increased property taxes. The above-noted increases in operating costs are discussed in further detail in the Year-over-Year Variance Analysis on OM&A Costs by Program in Tab 3, Schedule 3 of this Exhibit.

- NBRs include incremental costs associated with initiatives aligned to the strategic business objectives of Horizon Utilities. The amount of OM&A for NBRs varies according to the specific initiatives undertaken in each year.

- Net Management Fees include amounts charged to EDO, net of amounts charged by EDO. The Net Management Fee amount in 2011 includes a one-time recovery of the prior year's retailer costs for settlement services which was approved by the Board as part of its Decision in Horizon Utilities' 2011 Cost of Service Application (EB-2010-0130). Other changes in 2012 and 2013 are principally due to inflation. Refinements to the Management Fee introduced in 2014 are consistent with the results of a Transfer Pricing Study conducted in 2013 provided in Appendix 4-6.1.

SUMMARY AND COST DRIVER TABLES

SUMMARY OF RECOVERABLE OM&A EXPENSES

A summary of Horizon Utilities' recoverable OM&A Expenses, excluding property taxes, is provided in Tables 4-8 and 4-9 below. Total recoverable OM&A in the 2015 Test Year is $62,632,679 (MIFRS), an increase of $20,496,478 or 48.6% over the 2011 Board-Approved Year (CGAAP). The increase is $11,350,722 or 22.1%, after adjusting for: (i) 2011 Actual on a comparable basis to MIFRS (increase of $7,965,453); and (ii) the inclusion of Smart Meter costs (increase of $1,180,303). Horizon Utilities has provided comments on the major cost areas following the tables.

Table 4-8 – Chapter 2 Filing Requirement Appendix 2-JA - Summary of Recoverable OM&A Expenses 2011 – 2019

	Last Rebasing Year (2011 Board-Approved)	Last Rebasing Year (2011 Actual)	2011 Actual restated with Smart Meters	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Reporting Basis	CGAAP	CGAAP	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS
Operations	$ 15,787,962	$ 15,431,149	$ 23,396,603	$ 24,353,827	$ 25,708,382	$ 30,423,707	$ 31,084,364	$ 31,890,317	$ 32,645,901	$ 33,529,011	$ 34,181,330
Maintenance	$ 4,514,428	$ 4,222,626	$ 4,222,626	$ 3,400,949	$ 4,219,425	$ 3,352,076	$ 3,486,620	$ 3,613,989	$ 3,708,903	$ 3,808,133	$ 3,903,135
SubTotal	**$ 20,302,390**	**$ 19,653,775**	**$ 27,619,229**	**$ 27,754,776**	**$ 29,927,807**	**$ 33,775,783**	**$ 34,570,984**	**$ 35,504,306**	**$ 36,354,803**	**$ 37,337,143**	**$ 38,084,465**
%Change (year over year)				41 2%	7.8%	12 9%	2.4%	2.7%	2.4%	2.7%	2.0%
%Change (Test Year vs Last Rebasing Year - Actual)							75.9%	80 6%	85.0%	90 0%	93.8%
Billing and Collecting	$ 8,437,861	$ 8,307,921	$ 8,307,921	$ 9,022,692	$ 8,400,090	$ 9,679,875	$ 9,965,710	$ 10,197,508	$ 10,753,379	$ 10,709,232	$ 10,864,119
Community Relations	$ 35,000	$ 0	$ 0	$ (0)	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Administrative and General	$ 12,878,150	$ 13,148,552	$ 14,328,855	$ 14,466,571	$ 15,768,966	$ 16,506,957	$ 17,660,247	$ 18,245,269	$ 18,692,289	$ 19,199,676	$ 19,719,835
SubTotal	**$ 21,351,011**	**$ 21,456,473**	**$ 22,636,776**	**$ 23,489,263**	**$ 24,169,056**	**$ 26,186,832**	**$ 27,625,957**	**$ 28,442,778**	**$ 29,445,668**	**$ 29,908,908**	**$ 30,583,954**
%Change (year over year)				9 5%	2.9%	8 3%	5.5%	3 0%	3.5%	1 6%	2.3%
%Change (Test Year vs Last Rebasing Year - Restated)							22.0%	25 6%	30.1%	32.1%	35.1%
Total	**$ 41,653,401**	**$ 41,110,249**	**$ 50,256,006**	**$ 51,244,039**	**$ 54,096,863**	**$ 59,962,615**	**$ 62,196,942**	**$ 63,947,083**	**$ 65,800,472**	**$ 67,246,052**	**$ 68,668,419**
%Change (year over year)				24.7%	5.6%	10 8%	3.7%	2 8%	2.9%	2 2%	2.1%
Property taxes not included in OM&A	$ 337,800	$ 396,097	$ 396,097	$ 50,574	$ 294,779	$ 295,754	$ 300,190	$ 304,693	$ 309,263	$ 313,902	$ 318,611
Donations (inclusive of LEAP)	$ 145,000	$ 138,308	$ 138,308	$ 183,752	$ 124,863	$ 129,000	$ 135,547	$ 142,354	$ 146,092	$ 148,704	$ 153,459
Total (including Property taxes and LEAP donations	**$ 42,136,201**	**$ 41,644,654**	**$ 50,790,411**	**$ 51,478,365**	**$ 54,516,505**	**$ 60,387,369**	**$ 62,632,679**	**$ 64,394,131**	**$ 66,255,827**	**$ 67,708,658**	**$ 69,140,489**

	Last Rebasing Year (2011 Board-Approved)	Last Rebasing Year (2011 Actual)	2011 Actual restated with Smart Meters	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Operations	$ 15,787,962	$ 15,431,149	$ 23,396,603	$ 24,353,827	$ 25,708,382	$ 30,423,707	$ 31,084,364	$ 31,890,317	$ 32,645,901	$ 33,529,011	$ 34,181,330
Maintenance	$ 4,514,428	$ 4,222,626	$ 4,222,626	$ 3,400,949	$ 4,219,425	$ 3,352,076	$ 3,486,620	$ 3,613,989	$ 3,708,903	$ 3,808,133	$ 3,903,135
Billing and Collecting	$ 8,437,861	$ 8,307,921	$ 8,307,921	$ 9,022,692	$ 8,400,090	$ 9,679,875	$ 9,965,710	$ 10,197,508	$ 10,753,379	$ 10,709,232	$ 10,864,119
Community Relations	$ 35,000	$ 0	$ 0	-$ 0	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Administrative and General	$ 12,878,150	$ 13,148,552	$ 14,328,855	$ 14,466,571	$ 15,768,966	$ 16,506,957	$ 17,660,247	$ 18,245,269	$ 18,692,289	$ 19,199,676	$ 19,719,835
Total	**$ 41,653,401**	**$ 41,110,249**	**$ 50,256,006**	**$ 51,244,039**	**$ 54,096,863**	**$ 59,962,615**	**$ 62,196,942**	**$ 63,947,083**	**$ 65,800,472**	**$ 67,246,052**	**$ 68,668,419**
%Change (year over year)				24.7%	5.6%	10 8%	3.7%	2 8%	2.9%	2 2%	2.1%

Property taxes not included in OM&A	$ 337,800	$ 396,097	$ 396,097	$ 50,574	$ 294,779	$ 295,754	$ 300,190	$ 304,693	$ 309,263	$ 313,902	$ 318,611
Donations (inclusive of LEAP)	$ 145,000	$ 138,308	$ 138,308	$ 183,752	$ 124,863	$ 129,000	$ 135,547	$ 142,354	$ 146,092	$ 148,704	$ 153,459
Total (including Property taxes and LEAP donations	**$ 42,136,201**	**$ 41,644,654**	**$ 50,790,411**	**$ 51,478,365**	**$ 54,516,505**	**$ 60,387,369**	**$ 62,632,679**	**$ 64,394,131**	**$ 66,255,827**	**$ 67,708,658**	**$ 69,140,489**

Table 4-9 – Chapter 2 Filing Requirement Appendix 2-JA - Summary of Recoverable OM&A Expenses 2011 – 2019 Variances

	Last Rebasing Year (2011 Board-Approved)	Last Rebasing Year (2011 Actual)	Variance 2011 BA – 2011 Actual	2011 Actual restated with Smart Meters	Variance 2011 Restated vs 2011 Actual	2012 Actual	Variance 2012 Actual vs. 2011 Restated	2013 Actual	Variance 2013 Actual vs. 2012 Actual	2014 Bridge Year	Variance 2014 Bridge vs. 2013 Actual
Reporting Basis	CGAAP	CGAAP	CGAAP	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS
Operations	$ 15,787,962	$ 15,431,149	$ (356,813)	$ 23,396,603	$ 7,965,454	$ 24,353,827	$ 957,224	$ 25,708,382	$ 1,354,555	$ 30,423,707	$ 4,715,324
Maintenance	$ 4,514,428	$ 4,222,626	$ (291,802)	$ 4,222,626	$ -	$ 3,400,949	$ (821,677)	$ 4,219,425	$ 818,476	$ 3,352,076	$ (867,349)
Billing and Collecting	$ 8,437,861	$ 8,307,921	$ (129,940)	$ 8,307,921	$ -	$ 9,022,692	$ 714,771	$ 8,400,090	$ (622,602)	$ 9,679,875	$ 1,279,786
Community Relations	$ 35,000	$ 0	$ (35,000)	$ 0	$ -	$ (0)	$ (0)	$ -	$ 0	$ -	$ -
Administrative and General	$ 12,878,150	$ 13,148,552	$ 270,403	$ 14,328,855	$ 1,180,303	$ 14,466,571	$ 137,716	$ 15,768,966	$ 1,302,395	$ 16,506,957	$ 737,991
Property taxes not included in OM&A	$ 337,800	$ 396,097	$ 58,297	$ 396,097	$ -	$ 50,574	$ (345,523)	$ 294,779	$ 244,205	$ 295,754	$ 975
Donations (inclusive of LEAP)	$ 145,000	$ 138,308	$ (6,692)	$ 138,308	$ -	$ 183,752	$ 45,444	$ 124,863	$ (58,889)	$ 129,000	$ 4,137
Total OM&A Expenses	$ 42,136,201	$ 41,644,654	$ (491,547)	$ 50,790,411	$ 9,145,757	$ 51,478,365	$ 687,954	$ 54,516,505	$ 3,038,141	$ 60,387,369	$ 5,870,864
Variance from previous year						$ 687,954		$ 3,038,141		$ 5,870,864	
Percent change (year over year)						1 65%		5.90%		10.77%	
Compound Growth Rate (2014 Bridge vs. 2011 Restated)										5 94%	

	2014 Bridge Year	2015 Test Year	Variance 2015 Test vs. 2014 Bridge	2016 Test Year	Variance 2016 Test vs. 2015 Test	2017 Test Year	Variance 2017 Test vs. 2016 Test	2018 Test Year	Variance 2018 Test vs. 2017 Test	2019 Test Year	Variance 2019 Test vs. 2018 Test
Reporting Basis	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS
Operations	$ 30,423,707	$ 31,084,364	$ 660,658	$ 31,890,317	$ 805,953	$ 32,645,901	$ 755,584	$ 33,529,011	$ 883,110	$ 34,181,330	$ 652,319
Maintenance	$ 3,352,076	$ 3,486,620	$ 134,544	$ 3,613,989	$ 127,369	$ 3,708,903	$ 94,913	$ 3,808,133	$ 99,230	$ 3,903,135	$ 95,002
Billing and Collecting	$ 9,679,875	$ 9,965,710	$ 285,835	$ 10,197,508	$ 231,798	$ 10,753,379	$ 555,871	$ 10,709,232	$ (44,147)	$ 10,864,119	$ 154,887
Community Relations	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Administrative and General	$ 16,506,957	$ 17,660,247	$ 1,153,290	$ 18,245,269	$ 585,022	$ 18,692,289	$ 447,019	$ 19,199,676	$ 507,388	$ 19,719,835	$ 520,159
Property taxes not included in OM&A	$ 295,754	$ 300,190	$ 4,436	$ 304,693	$ 4,503	$ 309,263	$ 4,570	$ 313,902	$ 4,639	$ 318,611	$ 4,709
Donations (inclusive of LEAP)	$ 129,000	$ 135,547	$ 6,547	$ 142,354	$ 6,807	$ 146,092	$ 3,738	$ 148,704	$ 2,612	$ 153,459	$ 4,755
Total OM&A Expenses	$ 60,387,369	$ 62,632,679	$ 2,245,310	$ 64,394,131	$ 1,761,452	$ 66,255,827	$ 1,861,696	$ 67,708,658	$ 1,452,831	$ 69,140,489	$ 1,431,831
Variance from previous year		$ 2,245,310		$ 1,761,452		$ 1,861,696		$ 1,452,831		$ 1,431,831	
Percent change (year over year)		3.72%		2.81%		2 89%		2.19%		2.11%	
Percent Change Test year vs. Most Current Actual		14 89%		18.12%		21 53%		24.20%		26 82%	
Simple average of %variance for all years											4 01%
Compound Annual Growth Rate (2019 Test vs 2011 Restated)											3 93%

Note

1 "BA" = Board-Approved
2 If it has been more than three years since the applicant last filed a cost of service application, additional years of historical actuals should be incorporated into the table, as necessary, to go back to the last cost of service application. If the applicant last filed a cost of service application less than three years ago, a minimum of three years of actual information is required.
3 Recoverable OM&A that is included on these tables should be identical to the recoverable OM&A that is shown for the corresponding periods on Appendix 2-JB.

Operations and Maintenance Costs

The increase in Operations and Maintenance costs from 2011 Actual ($27,619,228) to the 2015 Test Year ($34,570,984) is 25.2% when such costs are normalized to adjust for the transition to IFRS, as identified in Table 4-10.

Table 4-10 – Normalized Operations and Maintenance Costs 2011 – 2019

Item	2011 Actual (CGAAP)	2012 Actual (MIFRS)	2013 Actual (MIFRS)	2014 Bridge Year (MIFRS)	2015 Test Year (MIFRS)	2016 Test Year (MIFRS)	2017 Test Year (MIFRS)	2018 Test Year (MIFRS)	2019 Test Year (MIFRS)
O&M Reported	$19,653,775	$27,754,776	$29,927,807	$33,775,783	$ 34,570,984	$35,504,306	$36,354,803	$37,337,143	$38,084,465
FRS Transition	$ 7,965,453	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
O&M Normalized	**$27,619,228**	**$27,754,776**	**$29,927,807**	**$33,775,783**	**$ 34,570,984**	**$35,504,306**	**$36,354,803**	**$37,337,143**	**$38,084,465**
Increase 2015 Test Year vs. 2011 Actual					25.2%				
Increase 2015 Test Year vs. 2013 Actual					15.5%				

The main drivers of the increase in 2015 Test Year from 2011 Actual include: wage inflation; expenditures to enhance asset management activities; consulting costs and contract labour related to the renewal of the Geospatial Information System ("GIS"), including the implementation of an Outage Management System ("OMS"), as detailed in NBRs at Tab 2, Schedule 2 of this Exhibit; an increase in engineering design and drafting resources and training as a result of increasing capital investment in the distribution system that may not be capitalized under IFRS; an increase in vehicle maintenance costs necessary to extend the life of vehicles, which is a more cost effective short-term option than replacing vehicles as further discussed in the Fleet Replacement Plan in Appendix O of the DSP filed as Appendix 2-4 in Exhibit 2; an increase in tree trimming costs; and increased repairs and ongoing maintenance costs associated with severe storms; net of contributions from productivity initiatives explained in Tab 3, Schedule 4 of this Exhibit. The detailed variances in Operations and Maintenance costs are discussed in the Year-over-Year variance analysis by program in Tab 3, Schedule 3 of this Exhibit.

Billing and Collecting

Billing and Collecting costs have increased by $1,662,401 or 20.0% from the 2011 Actual to the 2015 Test Year. The main drivers of the increase were Canada Post postage increases and an overall increase in the allocation of Billing and Collecting costs to EDO. These variances are analyzed and described in more detail in Tab 3, Schedule 3 of this Exhibit. The Management

Fee is further analyzed and described in the Transfer Pricing Study, which is included in Appendix 4-6.1 of this Exhibit.

Administrative and General

The increase in Administrative and General ("A&G") costs from 2011 Actual to the 2015 Test Year is 23.2%, when normalized to adjust for the Smart Meter implementation as illustrated in Table 4-11.

Table 4-11 – Normalized Administrative and General Costs

Item	2011 Actual (CGAAP)	2012 Actual (MIFRS)	2013 Actual (MIFRS)	2014 Bridge Year (MIFRS)	2015 Test Year (MIFRS)	2016 Test Year (MIFRS)	2017 Test Year (MIFRS)	2018 Test Year (MIFRS)	2019 Test Year (MIFRS)
A&G Reported	$13 148 552	$14 466 571	$15 768 966	$16 506 957	$17 660 247	$18 245 269	$18 692 289	$19 199 676	$19 719 835
Smart Meter Implementation	$ 1,180,303	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
A&G Normalized	**$14,328,855**	**$14,466,571**	**$15,768,966**	**$16,506,957**	**$17,660,247**	**$18,245,269**	**$18,692,289**	**$19,199,676**	**$19,719,835**
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Variance to Prior Year		1.0%	9 0%	4.7%	7 0%	3.3%	2.5%	2.7%	2.7%
CAGR 2019 Test Year vs. 2011 Actual									4.1%
CAGR 2018 Test Year vs. 2011 Actual								4.3%	
CAGR 2017 Test Year vs. 2011 Actual							3.9%		
CAGR 2016 Test Year vs. 2011 Actual						4.1%			
CAGR 2015 Test Year vs. 2011 Actual					4 3%				

The main drivers of this increase are:

- Salaries and wages, including pension and benefits;
- Regulatory expenses corresponding to the preparation of the 2015 Custom IR Application;
- Outsourcing of Information Systems Technology ("IST") service management activities corresponding to Industrial and Financial System ("IFS") Enterprise Resource Planning ("ERP") Managed Services Cloud to increase IST operational efficiency and reduce system operating costs. Productivity gains from this initiative are included in Tab 3, Schedule 4 of this Exhibit;
- NBRs relating to cyber security event monitoring and incident response beyond normal business hours (24x7) required to mitigate risk related to potential security threats;
- Building maintenance and repairs; and
- Outside service provider costs associated with the development of Human Resources programs such as learning and leadership development, performance management and attendance management, as further explained in Tab 3, Schedule 3 of this Exhibit. The

productivity benefits related to attendance management are discussed in Tab 3, Schedule 4 of this Exhibit.

These costs are analyzed and described in detail in the “Program Delivery Costs with Variance Analysis” in Tab 3, Schedule 3 of this Exhibit.

OM&A COST DRIVERS

Horizon Utilities has provided its OM&A Cost Drivers. Table 4-12 (corresponding to the Board's Appendix 2-JB) summarizes the cost drivers into five main categories: Salaries, Wages, and Benefits; Non-Labour Expenses; NBRs; Net Management Fees; and Distributed Costs. Tables 4-13 to 4-18 provide further detail on the cost drivers associated with Salaries, Wages, and Benefits; Non-Labour Expenses; and Net Management Fees. The closing balance for each year becomes the opening balance for the following year for purposes of assessing incremental cost drivers.

Table 4-12 – Chapter 2 Filing Requirement Appendix 2-JB – Recoverable OM&A Cost Driver Table Summary 2011 - 2019

Total OM&A	2011 Actual - Restated	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year	2011 Actuals to 2015 Test Year	2015 Test Year to 2019 Test Year
Reporting Basis	**CGAAP**	**MIFRS**	**MIFRS**	**MIFRS**	**MIFRS**	**MIFRS**	**MIFRS**	**MIFRS**	**MIFRS**	**MIFRS**	**MIFRS**
Opening Balance *	**$ 42,136,201**	**$ 41,644,654**	**$ 51,478,365**	**$ 54,516,505**	**$ 60,387,369**	**$ 62,632,679**	**$ 64,394,131**	**$ 66,255,827**	**$ 67,708,658**	**$ 41,644,654**	**$ 62,632,679**
IFRS Adoption - Burden rates		$ 8 377 863								$ 8 377 863	$ -
IFRS Adoption - Depreciation of Fleet / Stores equipment		$ (369,410)								$ (369,410)	$ -
IFRS Adoption - PEB		$ (43,000)								$ (43,000)	
Inclusion of Smart Meter costs in OM&A		$ 1,180,303								$ 1,180,303	$ -
										$ -	$ -
Change in Salaries, Wages and Benefits	$ (538,000)	$ 122,666	$ 1,890,210	$ 2,563,153	$ 1,118,393	$ 1,394,572	$ 1,004,147	$ 1,050,771	$ 974,872	$ 5,694,422	$ 4,424,362
Change in Non-Labour Expenses	$ 849,654	$ 251,422	$ 516,525	$ 2,500,407	$ 652,187	$ 745,493	$ 550,161	$ 484,533	$ 432,870	$ 3,920,542	$ 2,213,057
Change in New Business Requirements		$ (289,490)	$ 401,836	$ 561,415	$ 308,684	$ (430,923)	$ (88,135)	$ 162,163	$ (77,532)	$ 982,444	$ (434,427)
Change in Net Management Fees	$ (803 201)	$ 601 748	$ 83 177	$ 461 122	$ 249 654	$ 165 328	$ 496 139	$ (115 655)	$ 117 767	$ 1 395 701	$ 663 578
Change in Distributed Costs		$ 1 610	$ 146 392	$ (215 234)	$ (83 608)	$ (113 019)	$ (100 615)	$ (128 982)	$ (16 145)	$ (150 839)	$ (358 760)
Closing Balance	**$ 41,644,654**	**$ 51,478,365**	**$ 54,516,505**	**$ 60,387,369**	**$ 62,632,679**	**$ 64,394,131**	**$ 66,255,827**	**$ 67,708,658**	**$ 69,140,489**	**$ 62,632,679**	**$ 69,140,489**

* For 2011 Actuals, Opening Balance is 2011 Board Approved Total OM&A

The five main cost drivers of OM&A are:

- Salaries, Wages, and Benefits – Human resource costs are the single largest expense across all of Horizon Utilities' regulated operations, comprising 55% and 53% of the total OM&A cost base in 2011 and 2015, respectively. Within the Management Fee charge from Customer Care to EDO, the corresponding ratios are 46.4% and 41.6% for 2011 and 2015 respectively;
- Non-Labour Expenses – These include costs other than employee compensation for sustaining core business activities such as: facilities costs; repairs and maintenance on equipment, fleet and buildings; tree trimming; consulting and outside service provider costs; insurance; computer maintenance; software licenses; and training and development. A detailed list of Non-Labour Expenses for the years 2011 through 2019 is included in Table 4-15 of this Exhibit. The costs for the years 2014 through 2019 are subject to an assumed level of annual inflation of 1.5% per year described in Tab 1, Schedule 1 of this Exhibit, which is net of the productivity achievements described in Tab 3, Schedule 4 of this Exhibit;
- New Business Requirements – These costs are incremental to expenditures incurred for core activities and correspond to initiatives aligned to operational improvement, risk management/ business sustainability, and productivity. The different categories of NBRs are explained below;
- Net Management Fees – These costs include amounts charged by Customer Care to EDO for customer care services including Call Centre, meter reading, billing, collections, payment processing, and other back-office support functions, as well as amounts charged by Horizon Holdings Inc. for Stakeholder/Public Relations and oversight of Corporate Communications. These amounts are partly offset by amounts recovered by EDO; and
- Distributed Costs - These costs correspond to the allocated costs charged to OM&A by departments providing services (e.g. Facilities, Fleet, IST), net of total costs recovered by such departments. Total Distributed Costs in OM&A are negative, as costs may be recovered outside EDO or may be charged to capital.

Each of the cost drivers are analyzed and described in the following sections in two manners:

(1) Cost driver, separated into two periods (i) 2015 Test Year vs. 2011 Actual to explain how OM&A has evolved since the last CoS application and to contextualize the 2015 Test Year budget; and (ii) 2019 Test Year vs. 2015 Test Year, to explain the forecasted variances during this period.

(2) Year-over-year analysis to provide further in-depth information on year-over-year fluctuations in OM&A between 2011 Actual and the 2019 Test Year; and

Salaries, Wages, and Benefits Costs

The year-over-year changes in salaries, wages, and benefits costs which relate to labour compensation are included in Table 4-13 below and discussed in the narrative that follows.

Table 4-13 – Chapter 2 Filing Requirement Appendix 2-JB - Recoverable OM&A Cost Driver Table: Salaries, Wages, and Benefits 2012 – 2019

Salaries, Wages and Benefits	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year	2011 Actual to 2015 Test Year	2015 Test Year to 2019 Test Year
Opening Balance*	**$ 27,751,037**	**$ 27,873,703**	**$ 29,763,913**	**$ 32,327,066**	**$ 33,445,459**	**$ 34,840,031**	**$ 35,844,178**	**$ 36,894,949**	**$ 27,751,037**	**$ 33,445,459**
Base Salaries and Wages [(1)]	$ 1,290,594	$ 1,524,115	$ 1,735,980	$ 483,291	$ 677,695	$ 798,021	$ 896,386	$ 923,333	$ 5,033,980	$ 3,295,435
OMERS [(1)]	$ 566,201	$ 455,446	$ 350,957	$ 54,422	$ 82,788	$ 97,170	$ 108,071	$ 111,098	$ 1,427,026	$ 399,127
CPP, EI, EHT, WSIB [(1)]	$ 91,560	$ 254,218	$ (5,395)	$ 16,007	$ 49,808	$ 58,519	$ 74,308	$ 71,110	$ 356,391	$ 253,745
Incentive Pay [(1)]	$ 14,075	$ 115,586	$ 62,229	$ 38,524	$ 39,592	$ 40,710	$ 41,851	$ 43,020	$ 230,415	$ 165,173
Overtime & Vac/OT Payouts [(1)]	$ (546,509)	$ 757,160	$ (683,785)	$ 10,364	$ 12,972	$ 35,289	$ 49,178	$ 65,503	$ (462,771)	$ 162,942
Post-employment benefits [(1)]	$ 373,541	$ 18,825	$ 28,057	$ 38,832	$ 41,970	$ 45,558	$ 48,697	$ -	$ 459,255	$ 136,225
Life, Health, LTD [(1)]	$ (371,539)	$ (491,749)	$ 947,620	$ 16,182	$ 60,863	$ 149,210	$ 80,478	$ 84,841	$ 100,514	$ 375,392
Contract Labour [(1)]	$ 38,348	$ (11,027)	$ 123,405	$ (25,456)	$ -	$ -	$ -	$ -	$ 125,270	$ -
Other employee compensation [(1)]	$ (27,343)	$ (63,752)	$ 55,875	$ (154)	$ 935	$ 983	$ 1,330	$ 1,347	$ (35,373)	$ 4,595
Net Labour Allocation	$ (1,306,262)	$ (668,613)	$ (51,789)	$ 486,380	$ 427,950	$ (221,312)	$ (249,528)	$ (325,382)	$ (1,540,285)	$ (368,273)
Closing Balance	**$ 27,873,703**	**$ 29,763,913**	**$ 32,327,066**	**$ 33,445,459**	**$ 34,840,031**	**$ 35,844,178**	**$ 36,894,949**	**$ 37,869,820**	**$ 33,445,459**	**$ 37,869,820**

Increase to payroll costs (sum of [(1)] above)	*$ 1,428,928*	*$ 2,558,823*	*$ 2,614,942*	*$ 632,013*	*$ 966,623*	*$ 1,225,459*	*$ 1,300,299*	*$ 1,300,254*	*$ 7,234,707*	*$ 4,792,635*
Net change in labour allocation to OM&A	*$ (1,306,262)*	*$ (668,613)*	*$ (51,789)*	*$ 486,380*	*$ 427,950*	*$ (221,312)*	*$ (249,528)*	*$ (325,382)*	*$ (1,540,285)*	*$ (368,273)*
Net increase to OM&A	***$ 122,666***	***$ 1,890,210***	***$ 2,563,153***	***$ 1,118,393***	***$ 1,394,572***	***$ 1,004,147***	***$ 1,050,771***	***$ 974,872***	***$ 5,694,422***	***$ 4,424,362***

** Opening 2012 Actuals represent 2011 Actual costs, as restated to Modified IFRS and to include Smart Meter costs*

2015 Test Year vs. 2011 Actual

Salaries, wages, and benefits increases are the main contributor to the OM&A cost variance in the 2015 Test Year over 2011 Actual restated with Smart Meters, representing $5,694,422 of the total OM&A increase of $11,842,268 over the period. The increase in salaries, wages, and benefits is driven by several factors: salary and wage increases resulting from inflation and merit increases for employees currently not at full job rate; FTE growth; pension and benefits increases (both in contribution rates and related to wage growth); and the extent to which certain payroll costs formerly capitalized under CGAAP are now expensed under IFRS. These increases are partly offset by a reduction in overtime costs.

The impact on salaries, wages, and benefits of increases to FTE and salaries, wages, and benefits inflation is a total increase of $7,234,707 between 2011 Actual and the 2015 Test Year; of which $5,694,422 is allocated to OM&A.

The primary driver for the increase is annual inflationary adjustments in salaries and wages which represent $3,396,809 of the $7,234,707 increase. Union employees comprise approximately 70% of Horizon Utilities' workforce and are governed by Horizon Utilities' Collective Agreement with the IBEW. The current four year agreement was effective June 1, 2011, expires May 31, 2015 and provides for the following annual increases:

- June 1, 2011 to May 31, 2012 2.8%
- June 1, 2012 to May 31, 2013 2.9%
- June 1, 2013 to May 31, 2014 3.1%
- June 1, 2014 to May 31, 2015 3.1%

In addition to the percentage increase, some skilled trades employees are entitled to annual stepped progression rate increases as they acquire more skill and experience in accordance with the terms of the Collective Agreement.

Non-union employee wage growth resulting from annual wage increases, and adjustments required to move employees closer to the competitive job rate, has averaged [redacted] per annum, from 2011 to 2015, exclusive of FTE increases. This is aligned with Horizon Utilities'

compensation approach and competitive market data. A detailed explanation is provided in Tab 4, Schedule 2 of this Exhibit.

The second largest driver for the increased salaries, wages, and benefits between 2011 Actual and the 2015 Test Year is the growth of 20 FTE (excluding temporary resources for NBRs, representing $1,867,586 of the $7,234,707 increase. Detailed explanations for the additional FTE are included in Tab 4, Schedule 2 of this Exhibit.

Benefits include: group health insurance; and statutory remittances including Canada Pension Plan ("CPP"), Employment Insurance ("EI"), Employer Health Tax ("EHT"), and post-employment benefits. Benefits comprise $2,307,812 of the $7,234,707 increase in salaries, wages and benefits; including the impact of changes in FTE. The benefits costs per employee have increased by $5,320 from $23,617 to $28,937, or at a CAGR of 5.2% from 2011 Actual to the 2015 Test Year; driven primarily by the increase in the employer contribution rates for OMERS and higher post-employment benefits costs. OMERS introduced employer and employee pension contribution increases as part of a long-term plan to eliminate a deficit between plan assets and plan obligations. The following table presents historical OMERS contribution rates: (i) up to the Yearly Maximum Pensionable Earnings ("YMPE"); and (ii) on earnings in excess of the YMPE.

Table 4-14 – OMERS Contribution Rates 2011 - 2013

Year	YMPE	Up to YMPE	Over YMPE
2011	$ 48,300	7.40%	10.70%
2012	$ 50,100	8.30%	12.80%
2013	$ 51,100	9.00%	14.60%

Projected post-employment benefits costs and projections used in the Application were provided to Horizon Utilities by its independent advisor and actuary, Eckler Ltd., a firm of consultants and actuaries with considerable experience in the field of pensions and benefits. The report from Eckler Ltd. is provided in Tab 4, Appendix 4-4.1 of this Exhibit.

2019 Test Year vs. 2015 Test Year

The impact on payroll costs of increases to FTE and salary, wages, and benefits inflation is a total increase of $4,792,635 between 2015 Test Year and the 2019 Test Year; of which $4,424,362 is allocated to OM&A based on the capitalization policy.

Increases to salaries and wages from the 2015 Test Year to the 2019 Test Year are primarily explained by wage inflation of $3,699,982 (of the $4,792,635); offset by a modest decline in FTE of 3.0 or $239,374. Horizon Utilities is forecasting a modest decline in budgeted positions of 3.0 FTE (excluding temporary resource for NBR) driven by productivity improvements and strategic outsourcing over the 2015-2019 Test Years. Changes in FTE are discussed in further detail in the Employee Compensation section in Tab 4, Schedule 2 of this Exhibit.

Projected salaries and wages for the 2015 – 2019 Test Years are based on [redacted] inflation for non-union and union staff.

Benefits comprise $1,169,084 of the $4,792,635 increase in salaries, wages, and benefits, including the impact of changes in FTE. Benefits costs per employee have increased by $3,648 from $28,937 to $32,585 or a CAGR of 3.0% from 2015 to 2019 Test Year, primarily driven by the increase in contributions for OMERS and higher post-employment benefits costs.

Non-Labour Expenses

Horizon Utilities' year-over-year changes in non-labour expenses are included in the table below and further discussed in the narrative that follows.

Table 4-15 – Chapter 2 Filing Requirement Appendix 2-JB - Recoverable OM&A Cost Driver Table: Non-Labour Expenses

2012 – 2019

Non-Labour Expenses	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year	2011 Actual to 2015 Test Year	2015 Test Year to 2019 Test Year
Opening Balance	**$ 19,280,588**	**$ 19,532,010**	**$ 20,048,535**	**$ 22,548,942**	**$ 23,201,129**	**$ 23,946,622**	**$ 24,496,783**	**$ 24,981,316**	**$ 19,280,588**	**$ 23,201,129**
Bad Debts	$ (8,027)	$ (696,289)	$ 562,754	$ 16,913	$ 17,005	$ 20,432	$ 21,918	$ 20,145	$ (124,650)	$ 79,500
Consulting	$ 36,061	$ 102,363	$ 10,418	$ (13,653)	$ (101,046)	$ 104,490	$ 60,083	$ (5,518)	$ 135,189	$ 58,009
Insurance - Property	$ 7,724	$ 84,598	$ 42,043	$ 2,758	$ 2,799	$ 2,841	$ 2,884	$ 3,353	$ 137,123	$ 11,878
Insurance - General	$ (85,790)	$ 117,191	$ (15,983)	$ (240)	$ (243)	$ (247)	$ (251)	$ 8,559	$ 15,178	$ 7,818
Internet Services	$ (38,798)	$ 138,150	$ 77,830	$ 6,173	$ 6,267	$ 6,356	$ 6,454	$ 6,551	$ 183,355	$ 25,628
Janitorial, Landscaping, HVAC and Service Agreement	$ (21,368)	$ 120,126	$ 196,661	$ 14,924	$ 15,146	$ 15,376	$ 15,604	$ 15,839	$ 310,343	$ 61,965
Legal Fees	$ (197,078)	$ (7,935)	$ (32,209)	$ 46,132	$ 6,523	$ 6,624	$ 6,721	$ 6,822	$ (191,091)	$ 26,689
Outside Service Provider	$ 326,273	$ 258,581	$ (135,687)	$ 22,788	$ 21,624	$ 21,949	$ 23,782	$ 19,522	$ 471,955	$ 86,877
Property tax	$ (287,416)	$ 238,566	$ 0	$ 11,953	$ 12,133	$ 12,312	$ 12,498	$ 12,686	$ (36,897)	$ 49,629
Regulatory Costs	$ (322,667)	$ 15,151	$ 57,961	$ 10,500	$ 10,657	$ 10,818	$ (25,225)	$ 47,348	$ (239,054)	$ 43,598
Repairs And Maintenance - Building	$ 299,073	$ 157,891	$ (176,340)	$ 8,421	$ 8,547	$ 8,676	$ 8,806	$ 8,938	$ 289,045	$ 34,967
Repairs And Maintenance - Equipment	$ (54,353)	$ (120,651)	$ 628,420	$ 12,646	$ 318,612	$ 18,872	$ 19,160	$ 19,434	$ 466,061	$ 376,078
Safety	$ (15,274)	$ (58,395)	$ 106,829	$ 7,426	$ 7,534	$ 7,650	$ 7,760	$ 7,880	$ 40,586	$ 30,824
Software and Hardware License And Maintenance	$ 86,962	$ 13,789	$ 134,620	$ 239,661	$ 167,596	$ 58,727	$ 51,569	$ (6,988)	$ 475,032	$ 270,903
Telephone	$ 7,318	$ (18,854)	$ 107,050	$ 5,714	$ 5,799	$ 5,886	$ 5,974	$ 6,064	$ 101,228	$ 23,723
Training And Development	$ (56,059)	$ (113,325)	$ 186,279	$ 20,766	$ 16,502	$ 5,591	$ 11,252	$ 11,424	$ 37,660	$ 44,769
Travel And Accommodations	$ (33,584)	$ 21,995	$ 109,035	$ 7,395	$ 2,931	$ 2,981	$ 3,025	$ 3,069	$ 104,841	$ 12,006
Tree Trimming	$ 61,335	$ 237,544	$ 6,127	$ 12,750	$ 12,941	$ 13,136	$ 13,331	$ 13,532	$ 317,757	$ 52,940
Utilities	$ (25,995)	$ 128,384	$ 30,434	$ 13,212	$ 13,410	$ 13,613	$ 13,815	$ 14,023	$ 146,035	$ 54,861
Vehicle	$ 251,048	$ (144,687)	$ 118,285	$ 14,475	$ 14,692	$ 14,913	$ 15,137	$ 15,363	$ 239,121	$ 60,105
Other Operating Costs	$ 322,038	$ 42,332	$ 485,881	$ 191,473	$ 186,065	$ 199,165	$ 210,237	$ 204,822	$ 1,041,724	$ 800,289
Closing Balance	**$ 19,532,010**	**$ 20,048,535**	**$ 22,548,942**	**$ 23,201,129**	**$ 23,946,622**	**$ 24,496,783**	**$ 24,981,316**	**$ 25,414,187**	**$ 23,201,129**	**$ 25,414,187**

** Opening 2012 Actuals represent 2011 Actual costs, as restated to Modified IFRS and to include Smart Meter costs*

2015 Test Year vs. 2011 Actual

Non-labour expenses associated with core business activities have increased $3,920,541 or 20.3% (CAGR 4.7%) from the 2011 Actual to the 2015 Test Year. The following is a description of the principal drivers that influenced the cost increases (all the numbers stated below are comparisons between 2015 Test Year and 2011 Actual):

- Increased costs of $466,061 for repairs and maintenance equipment driven by:
    - Increase of $276,511 for Repairs and Maintenance – Equipment for Construction and Maintenance ("C&M"). These expenditures are necessary to: (i) restore services and repair distribution plant on both a planned basis, in response to inspection reports, and on a reactive basis, in response to equipment failure and system damage caused by storms; (ii) mitigate equipment failure on aging equipment; (iii) safeguard employees; and (iv) to ensure compliance with regulations;
    - Increase of $210,359 for Repairs and Maintenance – Equipment for Supply Chain Management ("SCM"). These increases are due to: (i) increased expenditures in maintenance, repairs and procurement of parts for end-of-life equipment used by Fleet and Logistics operations; (ii) to maintain end-of-life facilities related equipment, extending their replacement schedule; and (iii) additional maintenance and repairs to facilities equipment necessary to maintain safe operation;
- Increase of $475,032 for Software and Hardware License and Computer Maintenance which includes additional maintenance costs of $200,000 to accommodate NBRs comprising: (i) an expansion in server and data storage to support the implementation of new GIS and OMS applications as described in Exhibit 2, Tab 6, Schedule 1; (ii) an upgrade of the server environment used to read Smart Meters in order to mitigate business risks related to maintaining vendor support for this business critical application; (iii) the upgrade and expansion of the server and data storage environment to support annual data growth rates in excess of 30%; (iv) the addition of Information Technology ("IT") network security monitoring tools to detect and quarantine potential security events

and incidents, thereby mitigating business risks related to breaches of network security and data privacy; and (v) a new enterprise data backup and archiving system to address IT environment growth and to eliminate business risks related to system and data backup required for prudent business management and compliance with regulatory requirements;

- Increase of $471,955 in Outside Service Provider costs principally driven by:

    - The migration of the IFS ERP system to an IFS ERP Managed Services Cloud environment in September 2013 as part of Phase 1 of the IFS ERP Upgrade at an annual outside service provider cost of $243,300. Details of this project are provided in Exhibit 2, Tab 6, Schedule 1. These costs increase the operating costs in the IST department but provide a corporate cost savings of approximately $170,000 primarily from: the elimination of one technical support FTE at $100,000; the elimination of annual computer hardware maintenance of $70,000; and the avoidance of $150,000 in annual depreciation costs (not included in IST department operating expenses); and

    - The continuous improvement initiatives undertaken by the Human Resources Department since 2012 to increase overall employee performance and engagement, as defined in Program Delivery Costs with Variance Analysis in Tab 3, Schedule 3 of this Exhibit. Initiatives include: enhancements to performance management and Attendance Management Programs; improved recruitment tools and processes; implementation of eLearning; leadership development and implementation of the Occupational Health and Safety Management System ("OHSMS"); and a biennial Employee Survey (last completed in 2013) that is a key information source to provide insight on the prioritization of employee engagement initiatives. These activities have contributed $179,951 to the increased outside service provider costs; and

    - 2015 Test Year tree trimming expenditures, which are forecast to be $317,757 higher than 2011 Actual, result from of an increased volume of work associated with storm restoration. See Tab 3, Schedule 3 of this Exhibit for a more detailed

description of historical storm experience in Horizon Utilities' service areas. Horizon Utilities has been experiencing rising costs associated with storm restoration as a result of severe storms during 2011, 2012, and 2013. Horizon Utilities has provided for increased costs in the Test Years based on the 2011-2013 history and a number of climate model projections which are available from sources such as the Ontario Ministry of Natural Resources, Environment Canada, and the WeatherWise Partnership. While the specific projections vary, depending on the type of model used and the assumptions made, generally the models predict more frequent severe weather events in southern Ontario and the area served by Horizon Utilities;

- Increase in building repairs and maintenance of $289,045 due to the deferral of certain necessary investments in building infrastructure, that has resulted in a significant backlog of required repairs and maintenance, as elaborated in Exhibit 2, Tab 6, Schedule 1. Horizon Utilities' buildings and infrastructure systems are at or nearing end-of-life, resulting in additional expense for: necessary structural and system repairs; and additional expense for the procurement of replacement parts for systems nearing end-of-life. This necessary investment in Horizon Utilities' buildings is required to address: operational deficiencies; building accessibility; protection of assets; the removal of hazardous materials; security; and air quality. Horizon Utilities needs to replace assets which have reached end-of-life and, in doing so, must ensure compliance with current Ontario Building and Fire Codes. Horizon Utilities' building renewal plan is discussed in further detail in Exhibit 2, Tab 6, Schedule 1;

- Increase in vehicle repairs and maintenance of $239,121 due to: the deferral of the replacement of vehicles past their recommended service life in order to reallocate financial capital to buildings investments between 2012 and 2015 as discussed in Exhibit 2, Tab 6, Schedule 1; increased fuel costs; and general inflationary increases in parts and labour. Horizon Utilities has provided further details on vehicle replacement over the historical years and 2014 Bridge Year in Exhibit 2, Tab 6, Schedule 1. This has resulted in a significant backlog of required repairs and maintenance and impacts on vehicle availability and reliability. The deferral of vehicle replacements has necessitated

the operation of vehicles past their economic useful life resulting in increased expenditures related to operations and maintenance;

- Increase in other facilities related costs of $310,343 and $146,035 for janitorial and landscaping, and utilities respectively. Utility-related costs have increased as a result of increases in useable square footage and occupancy, resulting in increased consumption of electricity and natural gas. Horizon Utilities is mitigating the increase of fuel commodity costs by installing high efficiency HVAC units and lighting systems where applicable. Janitorial costs have increased due to necessary maintenance corresponding to approximately 40,295 square feet of reclaimed floor space at the Head Office (both at the Hughson building and John Street buildings), Nebo Road, and Vansickle Road locations as discussed in the Resource and Office Space Utilization Study Report in Appendix J of the DSP filed as Appendix 2-4 in Exhibit 2. Landscaping costs include expenditures associated with: grass cutting; branch and/or tree removal; snow removal; and salting. The state of the various facilities was reviewed with respect to necessary maintenance services. Horizon Utilities' area of focus was on its five buildings and 28 substations. Mature substations and areas where there were concerns with public safety and access were identified. Horizon Utilities has broadened the area around each of its locations for which these services are contracted, increased the frequency and expanded the type of landscaping maintenance activities being performed, resulting in increased costs;

- Additional Internet Services of $183,355 for expansion of network bandwidth required to: (i) address business risks related to inadequate bandwidth at the Horizon Utilities' disaster recovery data centre to support business continuity requirements in the event of loss of services at the production data centre; (ii) provide capacity for strategic outsourcing of IT network security monitoring and incident response to address business risks by providing monitoring and response capabilities beyond normal business hours; (iii) provide capacity for increasing requirements for mobile worker connectivity; (iv) provide capacity for network access to the IFS ERP Managed Services Cloud; and (v) provide capacity for the strategic outsourcing of customer Call Centre call overflow.

Productivity gains related to items (iii), (iv), and (v) above are included in Tab 3, Schedule 4 of this Exhibit; and

- Increase of $137,123 for Property Insurance due to increased premiums, as further elaborated in Tab 3, Schedule 3 of this Exhibit.

These increases are partially offset by reductions in regulatory costs and legal fees of $239,054 and $191,091, respectively, which are due to the inclusion of expenses in 2011 relating to the last Cost of Service application.

The above-noted increases as well as year-over-year variances in operating costs are discussed in further detail in Tab 3, Schedule 3 of this Exhibit.

2019 Test Year vs. 2015 Test Year

Non-wage operating expenses are based on operating work plans with supplier costs at current price levels for 2013 and rising thereafter by an assumed annual inflation rate of 1.5% per year, commencing in the 2014 Bridge Year.

Costs for equipment repairs and maintenance are expected to increase at a higher rate than 1.5% to address restoration work associated with storm damage and increased maintenance costs associated with the backlog of assets beyond their useful lives.

Costs for computer maintenance and software licenses are expected to increase at a higher rate than 1.5% as a result of NBRs, and IST projects as described in the IST Program Variance Analysis in Tab 3, Schedule 3 of this Exhibit.

Horizon Utilities will achieve a lower OM&A growth rate in this period due to the realization of savings from productivity initiatives as discussed in Tab 3, Schedule 4 of this Exhibit. Horizon Utilities is forecasting an average total annual savings of $6,409,000 during the Test Years 2015 to 2019, which mitigate cost increases to the levels provided in this Application.

New Business Requirements

The year-over-year changes in NBRs are included in the table below and are discussed in the evidence that follows.

Table 4-16 – Chapter 2 Filing Requirement Appendix 2-JB - Recoverable OM&A Cost Driver Table: New Business Requirement Variances

New Business Requirements	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year	2011 Actual to 2015 Test Year	2015 Test Year to 2019 Test Year
Opening Balance	**$ 690,223**	**$ 400,733**	**$ 802,570**	**$ 1,363,984**	**$ 1,672,668**	**$ 1,241,745**	**$ 1,153,610**	**$ 1,315,773**	**$ 690,223**	**$ 1,672,668**
Sustainability/ Risk Mitigation										
GIS/OMS	$ -	$ 31 700	$ 663 606	$ (11 129)	$ (58 373)	$ (88 135)	$ 12 163	$ 12 468	$ 684 177	$ (121 877)
Corporate Website	$ (239 333)	$ 69 043	$ (69 043)	$ -	$ -	$ -	$ -	$ -	$ (239 333)	$ -
ERP upgrade	$ -	$ -	$ 104 678	$ (80 678)	$ -	$ -	$ 50 000	$ (50 000)	$ 24 000	$ -
Collective Bargaining	$ -	$ -	$ -	$ 100 000	$ (100 000)	$ -	$ 100 000	$ (100 000)	$ 100 000	$ (100 000)
Network Core Switch Upgrade	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 60 000	$ -	$ 60 000
Enterprise Unified Communications	$ -	$ -	$ -	$ 40 000	$ -	$ -	$ -	$ -	$ 40 000	$ -
Regulatory/ Compliance										
Green Energy Act	$ 49,403	$ 372,085	$ (251,488)	$ 2,550	$ (172,550)	$ -	$ -	$ -	$ 172,550	$ (172,550)
2015 Custom IR Application	$ -	$ -	$ -	$ 551,941	$ -	$ -	$ -	$ -	$ 551,941	$ -
Asset Condition Assessments	$ 60,000	$ 57,000	$ 232,000	$ (349,000)	$ -	$ -	$ -	$ -	$ -	$ -
Regulatory Compliance review	$ -	$ -	$ 45,000	$ (45,000)	$ -	$ -	$ -	$ -	$ -	$ -
Load Forecast Model	$ 39 555	$ (39 555)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Return on Investment										
Planning and Scheduling	$ (92,296)	$ (90,458)	$ (142,911)	$ -	$ -	$ -	$ -	$ -	$ (325,664)	$ -
e-mobile	$ (112,219)	$ (13,007)	$ -	$ -	$ -	$ -	$ -	$ -	$ (125,226)	$ -
Activity Based Costing	$ -	$ -	$ -	$ 100,000	$ (100,000)	$ -	$ -	$ -	$ 100,000	$ (100,000)
Cognos	$ 5,400	$ 15,028	$ (20,428)	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Closing Balance	**$ 400,733**	**$ 802,570**	**$ 1,363,984**	**$ 1,672,668**	**$ 1,241,745**	**$ 1,153,610**	**$ 1,315,773**	**$ 1,238,241**	**$ 1,672,668**	**$ 1,238,241**

** Opening Balance for 2012 Actuals represent 2011 Actual costs*

2015 Test Year vs. 2011 Actual

Horizon Utilities has made significant investments in NBRs since 2011. NBRs comprise projects incremental to recurring annual costs incurred in 2011 categorized as follows: (i) managing risks and ensuring sustainability of critical business operations; (ii) complying with legislated or regulatory requirements; and (iii) providing future cost savings or avoidance which benefit ratepayers over the long term.

The average annual cost incurred for NBRs in the 2011 to 2015 period is $986,036. Costs associated with NBRs are expected to increase by $982,044 or a CAGR of 24.8% from 2011 Actual to the 2015 Test Year. NBRs include:

- Sustainability/Risk Mitigation Initiatives - these investments generally represent new and replacement investment in systems, processes, and infrastructure necessary to sustain existing business operations. These investments are designed to address growth in the size and complexity of the existing business, continuous improvement, and customer needs. Key projects within this category are the GIS/OMS project and the ERP upgrade, both explained in more detail below. The justification for these investments is risk mitigation and business continuity;
- Regulatory/Compliance Initiatives - these investments are required to support compliance with regulatory bodies such as the OEB and the IESO, statutes and regulations and to mitigate health and safety related risks; and
- Return on Investment Initiatives - these investments provide productivity or efficiency gains and risk mitigation and result in a return on investment through cost reduction and/ or avoidance.

The larger initiatives are typically multi-year projects and Table 4-17 presents the annual and cumulative expenditures for the periods 2011 to 2015. The expenditures shown below represent the non-capital investment levels on such projects.

Table 4-17 – New Business Requirements – 2011 - 2019 Annual and Cumulative OM&A Expenditures

New Business Requirements	2011 Actual - Restated	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year	2011 to 2015 Cumulative Expenditure	2016 to 2019 Cumulative Expenditure
Sustainability/ Risk Mitigation											
GIS/OMS	$ -	$ -	$ 31,700	$ 695,306	$ 684,177	$ 625,804	$ 537,669	$ 549,832	$ 562,300	$ 1,411,183	$ 2,275,605
Corporate Website	$ 239 333	$ -	$ 69 043	$ -	$ -	$ -	$ -	$ -	$ -	$ 308 376	$ -
ERP upgrade	$ -	$ -	$ -	$ 104,678	$ 24,000	$ 24,000	$ 24,000	$ 74,000	$ 24,000	$ 128,678	$ 146,000
Collective Bargaining	$ -	$ -	$ -	$ -	$ 100,000	$ -	$ -	$ 100,000	$ -	$ 100,000	$ 100,000
Network Core Switch Upgrade	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 60 000	$ -	$ 60 000
Enterprise Unified Communications	$ -	$ -	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 160,000
Regulatory/ Compliance											
Green Energy Act	$ -	$ 49,403	$ 421,488	$ 170,000	$ 172,550	$ -	$ -	$ -	$ -	$ 813,441	$ -
2015 Custom IR Application	$ -	$ -	$ -	$ -	$ 551 941	$ 551 941	$ 551 941	$ 551 941	$ 551 941	$ 551 941	$ 2 207 763
Asset Condition Assessments	$ -	$ 60,000	$ 117,000	$ 349,000	$ -	$ -	$ -	$ -	$ -	$ 526,000	$ -
Regulatory Compliance review	$ -	$ -	$ -	$ 45 000	$ -	$ -	$ -	$ -	$ -	$ 45 000	$ -
Load Forecast Model	$ -	$ 39 555	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 39 555	$ -
Return on Investment											
Planning and Scheduling	$ 325,664	$ 233,368	$ 142,911	$ -	$ -	$ -	$ -	$ -	$ -	$ 701,943	$ -
e-mobile	$ 125,226	$ 13,007	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 138,233	$ -
Activity Based Costing	$ -	$ -	$ -	$ -	$ 100,000	$ -	$ -	$ -	$ -	$ 100,000	$ -
Cognos	$ -	$ 5,400	$ 20,428	$ -	$ -	$ -	$ -	$ -	$ -	$ 25,828	$ -
Total	**$ 690,223**	**$ 400,733**	**$ 802,570**	**$ 1,363,984**	**$ 1,672,668**	**$ 1,241,745**	**$ 1,153,610**	**$ 1,315,773**	**$ 1,238,241**	**$ 4,930,178**	**$ 4,949,368**

A brief explanation of each initiative or project is provided below, in order of magnitude of related expenditure.

Sustainability/ Risk Mitigation Initiatives

GIS/OMS - Implemented the GIS and the first phase of the multi-phase OMS initiative

GIS

Horizon Utilities has centralized the distribution assets into a single asset registry contained in the GIS. Horizon Utilities' current GIS System, CableCad, is 18 years old and met departmental needs at that time. The GIS is a critical system which supports Asset Management, Capital Design, Field Operations, and Locates. The GIS system also represents a considerable investment by the corporation in records pertaining to every asset on the distribution system and is an invaluable and central system to the core functioning of the utility. Although the system has been enhanced over the years by the manufacturer and by Horizon Utilities staff, CableCad remains a limited user software platform never intended to be used at a corporate or enterprise level. It has been increasingly clear over the years that Horizon Utilities cannot use this current technology to satisfy its information needs at an enterprise level. Enterprise class systems interoperate and interface with other key business databases and tools. These systems are secure and have the ability to be customized for the needs of specific departments. This has limited Horizon Utilities' progress in providing operational systems to improve customer services by utilizing the power of a GIS system to aid in outage management as one example.

The biggest threat however to this extremely valuable application and records collected over the decades is that the current GIS system has reached end-of-life and the vendor will not support upgrades. The current GIS will not be operable on Horizon Utilities' operating systems within two years.

The primary benefits of the GIS upgrade are:

- Preservation of investment, sustainment and enhancement of asset data and related corporate records;

- Mitigation of a material risk related to a foundational system that is no longer supported and at the end of its useful life; and

- Interoperability and interfacing with other key business systems (CYME[3]/Supervisory Control and Data Acquisition ("SCADA")/Advanced Metering Infrastructure ("AMI")) to leverage investment and improve customer service and improved operational decision making.

The GIS presents Horizon Utilities' distribution assets in graphical form with the asset attributes (such as - age, manufacturer, size/length, and installation date) and with electrical connectivity. Horizon Utilities has collected records and inspection data to create an inventory of condition data for individual equipment.

The following daily operational activities, required to support the distribution system, are dependent on a functioning GIS:

- Engineering design of capital and maintenance projects;

- Production of construction drawings and plans for construction and maintenance activities;

- Ability to support underground cable locates;

- Asset data for asset management purposes; and

- Production of maps for control and operation of the distribution system.

Horizon Utilities will not be able to execute the above-mentioned critical functions or adopt some of the necessary strategic future initiatives, in the absence of a functioning GIS.

An OMS cannot be implemented with the current GIS system. The implementation of Mobile applications and Work Management systems will be expensive and less effective without the

[3] CYME is a software application used by engineering for modeling and analysis of the distribution system.

use of modern open architecture GIS technologies that are specifically designed for enterprise level interoperability.

Horizon Utilities has provided a complete project description of the GIS project in Exhibit 2, Tab 6, Schedule 1.

OMS

OMS comprises technology and systems to assess, predict, and manage outages as well as to enable bi-directional communication channels with customers to provide greater transparency into system operations. The GIS is a necessary pre-requisite system to enable an OMS. A basic requirement for an OMS is the ability to communicate the type, location, and connectivity attribute information of the distribution system assets which is made available digitally only through a GIS system.

The OMS can receive information from a variety of sources such as: GIS; Smart Meters through the AMI; the Interactive Voice Response system ("IVR") (i.e., customer calls); and Customer Information System ("CIS"). Ultimately, the OMS is monitoring for an actual or likely outage as a result of status information from these sources. The OMS reacts to this information by predicting potential causes and identifying the source (e.g., fuse, transformer, switch) and location (e.g., street, pole number) of an outage. Horizon Utilities is then able to react in a timely and precise manner by dispatching crews for outage resolution and communicating with customers on the nature and expected duration of such.

The principal benefits derived from the implementation of OMS are as follows:

- Automate and provide proactive customer communication on an outage such as posting on the web, recording on the IVR phone system, and/or e-mail/telephone contact with customer in advance of the customer calling Horizon Utilities to inform of a service interruption;

- Improved productivity and response time as the source and type of service interruption can be pinpointed without sending an investigative crew but rather sending a crew who is equipped to repair/restore problem;

- Improved productivity as a result of the elimination of the current manual process of entering outage data from SCADA into CIS and other systems to manage outage information and records;

- Improved productivity and response time as a result of the elimination of the current manual process of entering outage data from SCADA into CIS and other systems to manage outages information and records;

- Improved productivity due to the consolidation of multiple operating maps into a single map in OMS; and

- Improved safety for field personnel due to the elimination of multiple operating maps and potential for maps to be out of date in transposing information from one system to another.

Horizon Utilities has provided further details of its OMS implementation in Exhibit 2, Tab 6, Schedule 1.

The implementation of the GIS/OMS project requires four temporary contract resources in 2014 and one in 2015.

Corporate Website - The 2011 – 2013 Corporate Communications project involved a redesign of the Horizon Utilities website to create a more user-friendly and interactive website for customers. The refreshed website provides a variety of new and improved features including a new myAccount portal for customer self-service and enhanced tools to assist customers in the management of their account, energy use, and costs.

Expenditures incurred in 2013 corresponded to: the provision of outage notification maps with estimated restoration information for customers; the launch of a mobile website to enable customers to access their Horizon Utilities account and outage information from any type of personal device; and on-going maintenance of the website. These measures addressed evolving customer expectations for enhanced engagement with Horizon Utilities by utilizing new technological tools for business transactions and customer communications. The enhancement

to the website also provided an effective means of communicating major developments of interest to customers in a timely manner, thereby lessening pressure on Call Centre volumes.

The provision of self-service tools increases accessibility to services and provides customer alternatives to contacting the Horizon Utilities Call Centre and directly contributing to productivity gains. myElectric provides tools for the customer to use directly to assist in the understanding of customer consumption and related costs. These tools also allow Horizon Utilities to promote customer education.

ERP Upgrade – The current IFS ERP system was installed in 2008 and upgraded in 2013 to the latest version IFS 8.1 to eliminate operational risks dependent on software, database and operating systems that will not be supported by respective vendors beyond 2014. Phase 2 of the project, which is underway in 2014, involves removal of custom modifications that have been superseded by core functionality now available in IFS version 8.1. Removal of these modifications will reduce annual software maintenance fees up to $90,000/year, and they will reduce the cost of future upgrades as modifications will not have to be carried forward to new versions or supported therein. Eliminating these modifications is required to provide a simplified foundation for future process and productivity improvements. An application interface will also be developed to integrate Horizon Utilities' Planning and Scheduling system (Oracle Primavera) to IFS, to improve staff productivity by eliminating the need to manually rekey project, work order, time and material data that already exists in IFS. A contract Material Planner and Expediter specialist is required in 2014 to support the development of this interface. This upgrade is discussed in further detail in Exhibit 2, Tab 6, Schedule 1.

Collective Bargaining - Horizon Utilities will prepare for the negotiation of a new Collective Agreement to take effect June 1, 2015, commencing in the 2014 Bridge Year. One time operating costs of $100,000 are budgeted in the years of negotiation (i.e., the 2015 Test Year and the 2018 Test Year) to provide for costs associated with meeting facilities and related expenses; legal support; and printing new collective agreements. These costs support the negotiation of labour agreements to minimize the risks inherent in a labour disruption.

Network Core Switch Upgrade - The core switch replacement in 2019 is necessary to upgrade end-of-life core network switches that were installed in 2005 at both the Hamilton and St.

Catharines data centres. This investment will eliminate the risk related to technologies that are no longer supported by the vendor for business critical network infrastructure. The current vendor will not be providing switch software updates for known security vulnerabilities, which could compromise Horizon Utilities' networks and potentially the other information systems connected to the network. These switches are the central hub of the Horizon Utilities' network environment; they connect all devices and route both network and phone system traffic. This implementation will increase computer maintenance and software license costs. The details of this project are discussed in Appendix G of the DSP filed as Appendix 2-4 in Exhibit 2.

Enterprise Unified Communications - The 2015 project comprises the integration of real-time communication services such as instant messaging ("IM"), video conferencing, data sharing web sessions, call control and speech recognition with non-real time communication such as integrated voicemail, e-mail, Short Message Service ("SMS") and fax.

This project will improve the efficiency and effectiveness of staff communication and collaboration issues between corporate facilities and while working remotely. Current modes of communication make it difficult for employees to work efficiently together between facilities and results in travel and other costs that can be avoided using more contemporary real-time communication mediums. Examples of how Unified Communications will improve staff efficiency and productivity are:

- Use presence information to instantly see whether and how someone is available right now – via phone, IM, video, or email – and quickly launch the appropriate type of communications;

- Find an informed resource that is available immediately rather than sending messages and waiting for responses;

- Replace more expensive or time consuming communications such as e-mail or phone calls with faster communications such as instant messaging;

- Enable staff and business partners to reach a person in any location – desk, hallways, field site, home office, or customer location via integrated, single-identifier access;

- Establish voice, web or video conferences immediately to get information, resolve problems, or clarify issues;

- Extend office communications tools and features to mobile devices and personal computers to provide consistent communications at all times; and

- Eliminate frequent calls to check voice mail when mobile by delivering alerts or the actual message to the user's mobile device.

The project will provide the capability to optimize business processes, reduce unproductive staff time consumed in travelling between facilities, and provide the capability to seamlessly collaborate irrespective of location. Horizon Utilities expects to improve staff productivity for 100 employees by an average conservative estimate of fifteen minutes per day per employee. Using these estimates, the expected productivity gain will be 786 workdays per year or approximately $280,000 per year. This project and the associated productivity gains are discussed in greater detail in Tab 3, Schedule 4 of this Exhibit. This project is scheduled for 2015 as it integrates with the Enterprise Phone System project which is being upgraded in 2015, the details for which are provided in Appendix G of the DSP filed as Appendix 2-4 in Exhibit 2.

Regulatory/ Compliance Initiatives

Green Energy Act – Horizon Utilities filed a Basic Green Energy Act Plan ("GEA plan") with its 2011 EDR CoS Application (EB-2010-0131); which was approved by the Board. Horizon Utilities continued to have a Green Energy Rate Adder for the years, 2012, 2013 and 2014. The costs listed in Table 4-17 consist of approved Basic GEA projects related to: (i) Renewable Connections; (ii) Renewable Connection Enablers; (iii) Smart Grid Investigations; (iv) Customer Engagement and Communication; (v) Feeder Automation; and (vi) Substation Automation.

2015 Custom IR Application – These are total third-party costs related to the preparation, filing, and adjudication process of this 2015-2019 Custom IR Application. The expected total costs, including legal and consulting, are $2,759,704, which are incurred in 2013 and 2014, but recognized as an annual average recoverable costs of $551,941 during the 2015 to 2019 Test Years.

Asset Condition Assessments ("ACAs") – Horizon Utilities' Asset Management ("AM") model is managed and implemented through an AMP; the process through which capital investment planning is conducted. Horizon Utilities engaged an engineering firm, Kinectrics Inc. ("Kinectrics"), at the end of 2012, to improve its ACA process and to conduct detailed ACAs on its key distribution assets. Kinectrics is an independent consulting engineering company with over 100 years of expertise in addressing the North American utility industry's most challenging technical problems.

The information collected during the ACA provided Horizon Utilities with enhanced asset condition data used to inform the long term capital planning requirements for the distribution system discussed in the DSP in Appendix 2-4 of Exhibit 2. The Kinectrics analysis provided clear corroboration for the assertion that, based on sound engineering principles and best asset management practices, Horizon Utilities current renewal investment is below the recommended value. The health of Horizon Utilities' distribution system is degrading and increased investment is required to halt further system health degradation to increasingly unacceptable levels. The 20 year System Renewal investment, required to replace the assets with a high risk of failure as identified by Kinectrics, is $693MM. A copy of the Kinectrics' ACA is included as Appendix B in the DSP.

KPMG LLP (Canada) ("KPMG") was then retained to provide an independent assurance review of the methodology and analytics used in the Kinectrics' ACA. KPMG provided Horizon Utilities with a report dated January 23, 2014 included in Appendix C of the DSP filed as Appendix 2-4 in Exhibit 2, (the "KPMG Report") which included their assessment of the validity and accuracy of Kinectrics' methodologies and confirmed Kinectrics' results. Horizon Utilities used the KPMG Report to verify the Kinectrics' ACA and the long term investment requirements for distribution assets in order to complete its DSP. The ACA forms the basis of the DSP. The DSP is a new requirement for distributors who are filing a Cost of Service application, the requirements for which are specified in Chapter 5 of the Board's *Filing Requirements for Electricity Distribution Rate Applications - Consolidated Distribution System Plan Filing Requirements*.

Horizon Utilities engaged experienced consultants in the development of its DSP as a necessary and prudent measure to determine and validate the volume of assets at risk of failure. This information provided the basis for determining the future investment requirements

in distribution system infrastructure for the purpose of delivering sustainable service to customers at reasonable cost.

Load Forecast Model — Horizon Utilities has implemented the MetrixND software of Itron Inc. ("MetrixND") as its load forecasting tool. Horizon Utilities chose this tool because of its flexibility and capacity to accommodate class specific data; weather normalization; customer reclassifications; TOU consumption data; and Customer and Demand Management ("CDM"), in accordance with the Board's Chapter 2 Filing Requirements. Horizon Utilities is better able to forecast revenue to consumption by customer class based on class specific load forecast models. The class-specific forecasting approach provides greater flexibility to specify the regression formula in a way that is more suitable to the characteristics for a given rate class. This also provides a higher level of confidence in class-specific forecasts that are derived from the use of explanatory variables rather than from allocation of total purchases based on historical actual. Further details related to the selection of MetrixND and the Load Forecast process are provided in Exhibit 3, Tab 1, Schedule 1.

Return on Investment Initiatives

Planning and Scheduling – The Planning and Scheduling project is a multi-year initiative which commenced in 2011 to determine and implement industry best practices for the operation of an integrated and centralized work schedule for capital and maintenance programs. The resulting new processes have increased the efficient and effective use of: labour resources; vehicles; tools; and materials.

The project includes process changes involving Customer Connections, Supply Chain, Engineering and Operating, Construction and Maintenance, and Finance business units, and the implementation of a web-based planning and scheduling application supplied by Oracle: Primavera Enterprise Project Management ("Primavera"). Primavera is an effective and easy-to-use application for prioritizing, planning, managing, and executing capital and maintenance projects, and programs. Primavera is an integrated project portfolio management solution comprising role-specific functionality to support a number of business units contributing to each project.

Internal staff worked with an external consultant in 2011 and 2012 to define roles and processes for each business unit to create shared, centralized planning and scheduling processes to leverage the Primavera application. The new processes and system allow the planning, scheduling and tracking of all capital and maintenance projects from creation to completion; such provides visibility for schedulers to better match workforce capacity with the demand for capital and maintenance work.

Results to date have been positive; the most significant return on the investment was a sustained capacity improvement in the C&M business unit of more than nine Full Time Equivalent ("FTE") in 2013. This capacity improvement is more thoroughly discussed in the Productivity Achievements section in Tab 3, Schedule 4 of this Exhibit.

e-mobile - An electronic service order dispatch system was implemented in 2011 to provide improvements in work flow related to in-field service orders. Electronic service orders can now be directly dispatched to staff in the field and staff can electronically complete their service order work thereby eliminating paper processes and manual data entry. Productivity savings of more than $1,075,000 have been gained through streamlined processes and decreased headcount requirements. A summary of the productivity gains from this initiative is included in Tab 3, Schedule 4 of this Exhibit.

Activity-Based Costing – This 2015 initiative will be built on the Activity Based Costing ("ABC")/ Business Intelligence system implemented by Horizon Utilities in 2012. The objective of this project is to ensure that the activity coding structure and related inputs into the ERP system are aligned with business intelligence reporting for key business processes (e.g. meter reading to customer payment, procurement initiation to supplier payment), thereby enhancing the ability to monitor and evaluate productivity metrics. The current structure of the ABC framework allows measurements of costs for discrete activities. It does not support the capture of unit volumes to provide meaningful unitized costs for these activities, nor does it enable the alignment of multiple activities that constitute a single end-to-end key business process. It is not possible to establish unitized cost metrics (e.g. annual cost of meter reading to cash collection per customer) in a uniform and systematic manner at this time. The lack of measurement capability hinders management's ability to identify and prioritize areas where additional efficiencies may be realized; appropriate measurement is the necessary prerequisite to

validating productivity achievements with empirical evidence. Horizon Utilities estimates that this investment will conservatively yield $100,000 of annual productivity benefit (cost savings or future avoidance); corresponding to 1% of annual OM&A of approximately $10,000,000 to support EDO's key business processes.

Cognos – A new budget system was implemented in 2013 to improve the quality and efficiency in the budgeting and business planning process, which had previously been conducted primarily in Excel. At present, the cost of preparing budgets and forecasts across the organization exceeds $1,000,000 per year based on labour time keeping records, and the cycle time for the annual budgeting process is approximately seven months. The implementation of this system is expected to significantly decrease this cycle time and to reduce the efforts required to prepare annual budgets, multi-year financial plans quarterly forecasts and monthly variance analysis. Time savings from migrating to the new budget system were quantified for each of these activities, along with the elimination of a parallel process formerly managed by IST Project Management to plan work on corporate initiatives within the constraints of existing resources. The aggregate value of these efficiencies is approximately $100,000 annually: $74,000 from budget and forecast preparation, $56,000 in efficiencies on monthly variance analyses and $17,000 from the elimination of the parallel process for corporate initiatives, The improved quality of budgets is also expected to result in improved efficiency in monthly analysis of variances to budget and quarterly forecast adjustments.

2019 Test Year vs. 2015 Test Year

The cumulative cost incurred for NBRs in the 2016 to 2019 period is $4,949,368, as identified in Tab 2, Schedule 2, Table 4-17 of this Exhibit. Expenditures for NBRs are expected to peak during the 2015 Test Year, with the commencement of the planned recoveries of 2015 Custom IR Application costs in the amount of $551,941, as identified in Tab 4, Schedule 6 of this Exhibit. The costs decline to $1,241,745 in 2016 due to the completion of the ABC project; the GEA implementation, and the Collective Bargaining process in prior years. This level of OM&A is maintained over the 2016-2019 Test Years and consists of GIS/OMS expenditure and Cost of Service recoveries of approximately $570,000 and $551,941 per annum respectively as stated in Tab 2, Schedule 2, Table 4-17 of this Exhibit.

Net Management Fees

The year-over-year changes in Net Management Fees are included in the Table 4-18 below and are discussed in the evidence that follows:

Table 4-18 – Chapter 2 Filing Requirement Appendix 2-JB - Recoverable OM&A Cost Driver Table: Net Management Fees

Net Management Fees	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year	2011 Actual to 2015 Test Year	2015 Test Year to 2019 Test Year
Opening Balance	**$ 5,531,918**	**$ 6,133,665**	**$ 6,216,842**	**$ 6,677,964**	**$ 6,927,618**	**$ 7,092,946**	**$ 7,589,085**	**$ 7,473,430**	**$ 5,531,918**	**$ 6,927,618**
Customer Care charges EDO	$ 687,706	$ 57,030	$ 714,723	$ 266,225	$ 212,041	$ 532,641	$ (68,911)	$ 131,855	$ 1,725,685	$ 807,626
HHI charges EDO	$ -	$ -	$ 231,798	$ 10,711	$ 6,802	$ 7,003	$ 7,206	$ 7,092	$ 242,509	$ 28,102
EDO charges others	$ (85,959)	$ 26,147	$ (485,399)	$ (27,282)	$ (53,515)	$ (43,505)	$ (53,950)	$ (21,181)	$ (572,493)	$ (172,151)
Closing Balance	**$ 6,133,665**	**$ 6,216,842**	**$ 6,677,964**	**$ 6,927,618**	**$ 7,092,946**	**$ 7,589,085**	**$ 7,473,430**	**$ 7,591,196**	**$ 6,927,618**	**$ 7,591,196**

** Opening Balance for 2012 Actuals represent 2011 Actual costs*

2015 Test Year vs. 2011 Actual

Net Management Fees have increased by $1,395,701, representing a CAGR of 5.8% from the 2011 Actual to the 2015 Test Year. These are costs charged by Customer Care to EDO for customer care services including Call Centre, meter reading, billing, collections, payment processing, and other back-office support functions, partly offset by amounts recovered by EDO. The Customer Care division provides billing, collection, Call-Centre, and related services for Horizon Utilities electricity distribution customers and City of Hamilton water customers. The latter services are provided under a five year contract expiring on December 31, 2014 but that is expected to be renewed under substantially similar terms. The Management Fee charged to EDO is based on allocation of the cost of the services provided by Customer Care.

Net Management Fees for 2014 onwards increased due to ongoing refinements in allocations consistent with an ABC methodology as provided in the recent Transfer Pricing Study (included as Appendix 4-6.1 to this Exhibit) and the Management Fee charged by Horizon Holdings Inc. ("HHI") for services provided to Horizon Utilities' EDO division. The Transfer Pricing Study (which the Board directed at pg. 27 of its Decision on Horizon Utilities' 2011 CoS Application EB-2010-0131) has resulted in updated costs and allocation factors that form the basis for Management Fee levels for 2014 through 2019. In implementing the Board's Decision in Horizon Utilities' 2011 CoS Application, no Management Fee was included for services provided by HHI to EDO, notwithstanding HHI's services in support of the regulated utility. That Decision directed an envelope reduction to OM&A to be included in the revenue requirement and was silent on Horizon Utilities' request to allocate a portion of HHI costs to EDO. Since that time, Horizon Utilities has requested HHI to provide services to and assume responsibility for Corporate Communications and Stakeholder/Public Relations within EDO, and it is appropriate to allocate a share of those costs to EDO. The Transfer Pricing Study incorporates the estimate of executive and other staff time incurred in affiliate activities, which the Board also directed in the 2011 CoS Application Decision.

2019 Test Year vs. 2015 Test Year

Net Management Fees are expected to increase at a CAGR of 2.3%, principally due to expected inflation over the period. Incremental costs for Customer Care to prepare for an upgrade to the CIS in 2020 will also contribute to a change in fee levels. The higher rate of increase in 2017 compared to 2015, and the subsequent decrease in 2018, is due to a one-time expenditure in 2017 to prepare for the CIS upgrade (to be implemented in 2020-21) which is described in Tab 3, Schedule 3 of this Exhibit.

The current CIS is at end-of-life as discussed in Exhibit 2, Tab 6, Schedule 1.

OM&A Cost Drivers – Year-Over-Year Variance Analysis

The following section provides a more detailed annual variance analysis for each component of OM&A. The analysis focuses on the three main cost drivers: Labour; Non Labour Expenses; and Net Management Fees.

2011 Actual (MIFRS Restated) vs. 2011 Actual (CGAAP Basis)

OM&A in 2011, restated on an MIFRS basis and including Smart Meter expenses, was $50,790,410 or $9,145,756 higher than the CGAAP amount of $41,644,654. The increase is explained by: (i) a change in capitalization policy required under IFRS that does not permit capitalization of expenses that are not directly attributable to capital activities with such costs included in OM&A ($8,377,863); (ii) the inclusion of Smart Meter expenses within OM&A ($1,180,303); offset by (iii) a requirement under IFRS to reallocate any depreciation formerly expensed within OM&A under CGAAP to depreciation expense ($369,410); and (iv) a requirement under IFRS to recognize gains/losses for post-employment benefits, formerly recognized in OM&A under CGAAP, in Other Comprehensive Income (“OCI”) ($43,000).

2012 Actual (MIFRS) vs. 2011 Actual (MIFRS) OM&A

OM&A in 2012 was $51,478,365 or $687,955 higher than the 2011 Actual (MIFRS restated) amount of $50,790,410.

Salaries, Wages, and Benefits

The salaries, wages, and benefits costs charged to OM&A increased by $122,666 (MIFRS restated) between the 2011 Actual and the 2012 Actual. The variance is due to:

- Total salary, wages and benefits inflation on payroll of $1,123,798. Non-union employee salaries increased by 4.0% in 2012 due to general wage inflation, and merit increases for individuals who are not currently at full job rate but who are progressing towards full job rate. Wages for union employees increased by 2.9% effective June 1, 2012, in accordance with the Collective Agreement. Average benefits for both union and non-union increased by 10.8% due to the increase in the mandated employer contribution rates for OMERS and higher post-employment benefit costs. Further details on employee compensation and benefits are provided in Tab 4, Schedule 2 of this Exhibit;
- A net addition of 4.9 FTE in 2012 resulted in an additional payroll increase of $813,291. The increase in FTE is attributed to vacancies that were filled in IST and SCM. Further details on FTE are provided in the Employee Compensation section of Tab 4, Schedule 2 of this Exhibit;
- A reduction in overtime and contract labour costs of $508,161. The power restoration effort related to a major storm in April 2011 resulted in approximately $450,000 of related overtime costs; and
- Less $1,306,262 of the above explained variances allocated to capital activities.

Non-Labour Expenses

Non-labour costs increased by 1.3% in 2012. This rate of increase was in excess of the IRM factor of 0.58% but below the national inflation rate of 1.5% as reported by Statistics Canada in the Consumer Price Index for 2012. The following is a description of the drivers that influenced the cost increases:

- Increases in vehicle repairs and maintenance of $251,048 and consistent with the level of maintenance required for older assets. Horizon Utilities will manage the increased

costs for these expenses through ongoing preventative maintenance programs for vehicles. Productivity efforts in the administration of the fleet maintenance program include a staggered second shift to conduct vehicle maintenance, with no increase to FTE, a reduction in overtime, and better vehicle availability and internal customer service to the operating groups;

- Increases in building repairs and maintenance of $299,073, due to the prior deferral of certain necessary investments in building infrastructure that has resulted in a significant backlog of required repairs and maintenance as elaborated in Exhibit 2, Tab 6, Schedule 1. These costs are required to address operational deficiencies, building accessibility, the removal of hazardous materials, security, and air quality. Horizon Utilities needs to replace assets which have reached end-of-life and ensure compliance with Ontario Building and Fire Codes. Horizon Utilities' building renewal plan is discussed in further detail in Exhibit 2, Tab 6, Schedule 1.

- Reduction in property tax expense from 2011 to 2012 due to a one-time $210,055 property tax refund resulting from reassessments of prior year property tax filings.

- Increases in outside service providers and professional fees of $326,273 and $165,599 respectively. These incremental increases were principally the result of departmental initiatives within Human Resources and Finance. Horizon Utilities initiated enhancements to its Human Resources strategy commencing in 2012. The enhancements included revisions to: the performance management program; a comprehensive review of the Attendance Management Program; and an assessment of recruitment tools and practices. These key areas of focus represented opportunities to improve overall employee satisfaction. Effectively managing performance, attendance and recruitment contributes to Horizon Utilities' strategic objectives of being "A Great Place to Work", the "Best Performing Utility" and ultimately "Easy to Do Business With", regarding customer satisfaction. External consultants were retained to provide subject matter expertise and to bring their industry experience to bear to develop the above-mentioned enhancements. Additional legal fees were incurred in 2012 in respect of union employee grievances. A consultant was engaged in the Finance department to support the development of the new pro-forma budgeting model to enhance the accuracy and efficiency of preparing the annual financial plan. This new budgeting

model automates many steps for balance sheet and cash flow projections completed through an interface with budget data from the Cognos system and established balance sheet account drivers.

Management Fee

The Management Fee from Customer Care to EDO increased by $687,706 in 2012 over 2011. Of this total $368,000 was as a result of a one-time recovery of retailer settlement costs in 2011 that were incurred in prior years. The balance of the increase in 2012 was primarily due to inflation.

2013 Actual vs. 2012 Actual

OM&A for 2013 was $54,516,505 or $3,038,140 higher than the 2012 Actual amount of $51,478,365.

Salaries, Wages, and Benefits

The salaries, wages, and benefits costs charged to OM&A increased by $1,890,210 between the 2012 Actual and the 2013 Actual. The impact is due to:

- Total salary, wages and benefits inflation on payroll of $1,483,614. Non-union employee salaries increased by 3.6% in 2013 due to general wage inflation, and merit increases for individuals who are not currently at full job rate but who are progressing towards full job rate. The rate for union employees, as specified by the Collective Agreement for that year was 3.1%, effective June 1 2013; average benefits for both union and non-union increased by 9.8% driven by the increase in the required employers' contribution rates for OMERS;

- A net addition of 1.9 FTE in 2013 created a further payroll increase of $329,076. The increase in FTE is mainly attributed to vacancies filled in Finance (1.4 FTE), SCM (2.0 FTE) and Corporate Communications (1.0 FTE), offset by a decline in FTE in Customer Connections (0.8 FTE) and C&M (2 FTE). The eliminated positions were largely driven by outsourcing and capacity improvements from the Planning and Scheduling system. Further details on FTE are provided in the Employee Compensation section of Tab 4,

Schedule 2, of this Exhibit. Further details on productivity savings are provided in the Productivity section in Tab 3, Schedule 4 of this Exhibit;

- Increase in overtime of $746,133 driven by the restoration efforts relating to storms in July 2013 and December 2013;

- Less $668,613 of the above explained variances allocated to capital activities.

Non-Labour Expenses

Non-labour costs have increased by 2.6% in 2013 over the previous year. The following is a description of the drivers that influenced the cost increases:

- Increase in internet services of $138,150 due to the expansion of network bandwidth required to: (i) address business risks related to inadequate bandwidth at the disaster recovery data centre in St. Catharines to meet business continuity requirements in the event of a loss of services at the production data centre in Hamilton; (ii) support increased data backup and data replication requirements between the production data centre in Hamilton to the disaster recovery data centre in St. Catharines to support new applications such as GIS, OMS, budgeting and forecasting; (iii) provide capacity for strategic outsourcing of IT network security monitoring and incident response to address cyber security related business risks beyond normal business hours; (iv) provide capacity for network access to the IFRS ERP Managed Cloud Services; and (v) provide capacity for the strategic outsourcing of customer call overflow. Productivity gains related to items (iv) and (v) are included in Tab 3, Schedule 4 of this Exhibit.

- Increase of $237,544 in tree trimming costs as a result of the July 2013 wind storm.

- Increase in external service provider costs of $258,581 driven by the Finance department temporary requirements for consulting and contract staff support for the ERP upgrade, the CoS Application, the implementation of the Cognos budgeting solution, and to support core activities of this group resulting from vacancies and unplanned absences.

- Property taxes have increased by $238,566 in 2013 over 2012. The 2012 property tax expense included a refund as a result of prior year reassessments of $210,055.

- Increase of $201,789 in 2013 for insurance premiums which was attributable to an increase in property premiums of $84,598 and an increase in liability insurance premiums of $117,191. Horizon Utilities received a premium refund in 2012 as a result of a favourable claims history in prior years as discussed in Tab 3, Schedule 3 of this Exhibit. The liability insurance expense increase in 2013 is the net result of the absence of a similar premium rebate in 2013 combined with an overall premium increase. The experience rating rebate is refunded in years where there is a surplus calculated, by MEARIE, Horizon Utilities' insurance provider, when claims are paid out.

- Increase in other facilities related costs of $120,126 and $128,384 for janitorial, landscaping and utilities respectively further discussed on page 40 of this Schedule.

- Increase in consulting costs of $102,363 driven by consulting expenditures in Facilities relating to standards and compliance.

The above increases are offset by a reduction in bad debts of $696,289 that principally resulted from: (i) a decrease in net write-offs ($366,289); and (ii) a reduction in the allowance for doubtful accounts resulting from improved aging of accounts receivable, and lower bad debts experience in 2013 as compared to 2012 ($330,000).

Management Fee

There is no material forecasted year-over-year variance to the Management Fee for this period.

2014 Bridge Year vs. 2013 Actual OM&A

OM&A is projected to be $60,387,369 in 2014 or $5,870,864 higher than the 2013 Actual amount of $54,516,505.

Salaries, Wages, and Benefits

The salaries, wages, and benefits costs charged to OM&A are expected to increase by $2,563,153 between the 2013 Actual and 2014 Bridge Year. The impact is due to:

- Total salary, wages and benefits inflation on payroll of $1,667,573. Non-union employee salaries are forecast to increase by [redacted] in 2014 due to: general wage inflation and merit increases for individuals who are not currently at full job rate but who are progressing towards full job rate. The rate for union employees, as specified by the Collective Agreement for this year is 3.1%, effective June 1, 2014. Average benefits for both union and non-union are forecast to remain relatively flat;

- A net addition of 14.9 FTE (excluding five temporary resources for NBRs) in 2014 has created a further payroll increase of $1,507,749. Horizon Utilities has provided further detail on the increase in FTE in Tab 4, Schedule 2 of this Exhibit. Table 4-53 shows a total reduction of 19.9 FTE between 2013 and 2014, of which five relate to the 2014 temporary resourcing of GIS and OMS project and ERP upgrade, as discussed in the NBRs section; offset by

- A reduction in overtime of $560,380 due to the restoration efforts related to storms in July 2013 and Dec 2013;

- Less $51,789 of the above explained variances allocated to capital activities.

Non-Labour Expenses

The 2014 budget provides for a necessary increase in Non-Labour Expense of 12.5% or $2,500,407. The following is a description of the specific drivers of this essential cost increase that now forms part of the ongoing cost structure:

- Increase of $562,754 of bad debts expense. The increase in bad debts expense of $562,754 is principally attributable to: (i) the reduction in the allowance for doubtful accounts in 2013 as previously explained ($330,000); and (ii) an increase in anticipated net write-offs as compared to 2013 ($232,754).

- Increase of $628,420 in repairs and maintenance costs for equipment driven by:
    - Increase of $327,104 related to repairs and maintenance of distribution plant equipment. These expenditures are largely driven by the requirement to restore services and repair distribution plant; mitigate equipment failure on old equipment; safeguard employees; and to ensure compliance with regulations, as referenced in Tab 3, Schedule 3 of this Exhibit; and
    - Increase of $295,477 for equipment repairs and maintenance in SCM. This increase is due to: (i) increased expenditures in maintenance, repairs and procurement of parts for end-of-life equipment used by Fleet and Logistics operations, (ii) maintenance of end-of-life facilities related equipment; extending their replacement schedule; and (iii) additional maintenance and repairs to facilities equipment necessary to maintain safe operation.
- Increase in janitorial, landscaping and HVAC related costs of $196,661. Landscaping costs include expenditures associated with grass cutting; branch and/or tree removal; snow removal and salting. Facilities reviewed the state of the various buildings and identified where there was a need for additional services. Horizon Utilities' area of focus was on its five buildings and 28 substations. Mature substations and areas where there were concerns with public safety and access were identified. Horizon Utilities has broadened the area around each of its locations for which these services are contracted, increased the frequency and expanded the type of landscaping maintenance activities being performed, resulting in increased costs.
- Increase in telephone costs of $107,050 driven by: (i) the implementation of one toll free number for customers to contact Horizon Utilities, as opposed to separate numbers depending on city (incremental $22,500); and (ii) an additional Primary Rate Interface ("PRI") on the phone system in St. Catharines to provide capacity to support business continuity and customer call volumes in the event of a failure at the Hamilton data centre (incremental $26,400). The remainder is related to 2013 expenditures coming in at $28,000 less than budget. Telephone expenses are variable and include a mix of fixed charges for lines, etc. and variable charges such as, long distance and toll free charges.

- Increased software license and maintenance costs of $134,620 with respect to the following recent development and implementation initiatives: planning and scheduling; Performance Management system; GIS/OMS; enterprise backup and archiving in the fourth quarter of 2013; Cognos budgeting and forecasting system; security management tools; and software licenses for new personal computers in two new eLearning centres at the St. Catharines and Nebo Road locations to improve staff productivity.

- Increased training and development costs of $186,279 to support system and application implementations as referenced above, as well as to provide job specific employee training and development related to the Apprentice program.

- Increased vehicle costs of $118,285 are attributable to increases in maintenance and repairs to extend vehicle life.

The above increases are partially offset by reductions in building repairs and maintenance costs of $176,340. Costs were higher than expected in 2013 as a result of unexpected repairs and maintenance costs for unplanned events.

Management Fees

The increase of $461,122 **i**n Net Management Fees from 2013 to 2014 is driven by refinements to transfer pricing methodology from Customer Care to EDO based on the Transfer Pricing Study conducted in 2013, and by the inclusion of price increases for postage announced by Canada Post on December 11, 2013 (impact of $118,491). Horizon Utilities has included the Transfer Pricing Study in Appendix 4-6.1 of this Exhibit.

Management Fees charged by HHI for services provided specifically to EDO represent services undertaken by HHI that would otherwise be directly incurred by EDO. The provision of such services by HHI is efficient as it permits cost sharing of resources that would otherwise be duplicated in both EDO and HHI. Discussion of this Management Fee is provided in Tab 4, Schedule 3 of this Exhibit.

2015 Test Year vs. 2014 Bridge Year

OM&A is projected to be $62,632,679 in 2015 or $2,245,310 higher than the 2014 amount of $60,387,369.

Salaries, Wages, and Benefits

Salaries, wages, and benefits costs charged to OM&A are expected to increase by $1,118,393 between the 2014 Bridge Year and 2015 Test Year. The impact is due to:

- Total salary, wages, and benefits inflation on payroll of $898,596. Non-union employee salaries are forecast to increase by [redacted] in 2015 due to general wage inflation and merit increases for individuals who are not currently at full job rate but who are progressing towards full job rate. Average benefits for both union and non-union is forecast to increase by 3.1%;

- Retirements are expected to contribute to a decrease of 2.3 FTE (excluding 4.5 temporary resources for NBRs) in 2015 and a corresponding reduction in payroll salaries, wages, and benefits of $251,492. Productivity initiatives permit anticipated retirements to be offset by modest levels of hiring and outsourcing. The decrease in 2.3 FTE from 2014 to 2015 is further described in Tab 4, Schedule 2, Appendix 2-K of this Exhibit. Appendix 2-K shows a total reduction of 6.8 FTE between 2014 and 2015, of which 4.5 relate to the 2014 temporary resourcing of the GIS/OMS project and the ERP upgrade, as discussed in the NBRs section;

- Increase in overtime and contract labour of $15,092; and

- Net increase in labour allocated to operating activities of $486,380 due to an increase in labour hours required for maintenance programs.

Non-Labour Expenses

The 2015 budget provides for a necessary increase in non-labour expenses of $652,187 or 2.9%. This increase is mainly due to inflation of 1.5% and software, licensing, and 24x7 support costs for the AMI system to transmit meter data on a daily basis. The increase in expenses is expected to be less than that of the preceding years as a result of the increased emphasis on productivity initiatives, included in Tab 3, Schedule 4 of this Exhibit, which are expected to deliver $6,175,000 in savings in 2015.

Management Fee

The increase in the Management Fee in 2015 is due primarily to the expected cessation of cost recoveries from an affiliated CDM business in Horizon Energy Solutions Inc. ("HESI") as a result of the completion of its contract for the provision of CDM services to a third-party utility. This event represents a loss of efficiency created by CDM for EDO, which was recovering a portion of underlying fixed costs from this business. These fixed costs are unaffected by the loss of small incremental volumes associated with the CDM services business.

2016 Test Year vs. 2015 Test Year

OM&A is projected to be $64,394,131 in 2016 or $1,761,452 higher than the 2015 amount of $62,632,679.

Salaries, Wages, and Benefits

The salaries, wages, and benefits costs charged to OM&A are expected to increase by $1,394,572 between the 2015 Test Year and 2016 Test Year. The impact is due to:

- Total salary, wages and benefits inflation on payroll of $1,178,632. Non-union employee salaries are forecast to increase by [redacted] in 2016 due to general wage inflation, and merit increases for individuals who are not currently at full job rate but who are progressing towards full job rate. Average benefits for both union and non-union are forecast to increase by 3.0%;

- A reduction of one FTE is expected in 2016 as a result of a retirement and which will lead to a corresponding reduction in payroll salaries, wages, and benefits of $224,981. Productivity initiatives permit anticipated retirements to be offset by modest levels of hiring and outsourcing. The reduction in FTE is further described in Tab 4, Schedule 2, Appendix 2-K (Tables 4-53 and 4-54) of this Exhibit;
- Modest increase in overtime and contract labour of $12,972; and
- The net increase in labour allocated to operating activities of $427,950 is due to the redeployment of resources from capital projects (ERP Upgrade, GIS/OMS) to operational sustainment of these systems.

Non Labour Expenses

Horizon Utilities' 2016 plan results in an increase in non-labour expenses of $745,493 or 3.2%. This increase is explained by:

- Inflationary assumption of 1.5% as previously identified in Tab 1, Schedule 1, of this Exhibit with the exception of the following:
    - Increase in equipment repairs and maintenance costs of $318,612 to address restoration work associated with storm damage and, in the near-term, increased maintenance costs associated with the backlog of assets beyond their useful lives;
    - Computer maintenance of $20,000 to upgrade the Cisco Phone system to address business risks related to the end of vendor support for the phone system hardware and Call Centre software. Further details of this project are provided in Appendix A and Appendix G of the DSP filed as Appendix 2-4 in Exhibit 2; and
    - Computer maintenance of $20,000 to upgrade hardware in the virtual server environment to support increased capacity required for business and data growth.

The increase is less than that of the current IRM years due to the continued realization of productivity initiatives provided in Tab 3, Schedule 4 of this Exhibit, which are expected to deliver $6,335,000 in savings in 2016.

Management Fee

Net Management Fees will increase by $165,328, consistent with inflationary assumptions previously identified.

2017 Test Year vs. 2016 Test Year

OM&A is projected to be $66,255,827 in 2017 or $1,861,696 higher than the 2016 amount of $64,394,131.

Salaries, Wages, and Benefits

The salaries, wages, and benefits costs charged to OM&A are expected to increase by $1,004,147 between the 2016 Test Year and 2017 Test Year. The impact is principally due to:

- Total salary, wages and benefits inflation on payroll of $1,295,036. Non-union employee salaries are forecast to increase by [redacted] in 2017 due to general wage inflation, and merit increases for individuals who are not currently at full job rate but who are progressing towards full job rate. Average benefits for both union and non-union are forecast to increase by 3.7%;
- Retirements will contribute a 2 FTE decrease in 2017 and a corresponding reduction in payroll salaries, wages, and benefits of $104,866. Productivity initiatives permit anticipated retirements to be offset by modest levels of hiring and outsourcing. The reduction in FTE is further described in Tab 4, Schedule 2 of this Exhibit;
- Increase in overtime of $35,289; and
- Less $221,312 of the above explained variances allocated to capital activities.

Non Labour Expenses

In 2017 non-labour expenses are expected to increase by $550,161 or 2.3%. This increase is explained by:

- Inflationary assumption of 1.5% as previously identified in Tab 1, Schedule 1, of this Exhibit with the exception of the following:
    - Consulting costs of $75,742 for Asset Management related to third-party validation of ACA analysis; and
    - $40,000 for incremental virtual server licenses to support the expansion of the virtual server environment to accommodate business growth; incremental Storage Area Network Management and backup licenses to accommodate data growth rates.

The increase in expenses is less than that of the current IRM years due to the continued realization of productivity initiatives, as provided in Tab 3, Schedule 4 of this Exhibit, which are expected to deliver $6,395,000 in savings in 2017.

Management Fee

The increase in Net Management Fees of $496,139 is primarily due to costs incurred in Customer Care in connection with the implementation of a necessary upgrade to the CIS in 2020-2021, as well as inflation on recurring annual costs. One-time costs of $400,000 are forecast for 2017 in connection with the issuance of a Request for Information to potential CIS vendors; principally for third-party consultants to assist in defining and documenting system requirements and to assist in the evaluation of vendor submissions. This initiative is further described in Tab 3, Schedule 2 of this Exhibit.

2018 Test Year vs. 2017 Test Year

OM&A is projected to be $67,708,658 in 2018 or $1,452,831 higher than the 2017 amount of $66,255,827.

Salaries, Wages, and Benefits

The salaries, wages, and benefits costs charged to OM&A are expected to increase by $1,050,771 between the 2017 Test Year and 2018 Test Year. The impact is due to:

- Inflation of $1,050,771 comprising:
  - Total salary, wages and benefits inflation on payroll of $1,251,121. Non-union employee salaries are forecast to increase by [redacted] in 2018 due to general wage inflation and merit increases for individuals who are not currently at full job rate but who are progressing towards full job rate. Average benefits for both union and non-union are forecast to increase by 2.9%;
  - Increase in overtime of $49,178; and
  - Less $249,528 of the above explained variances allocated to capital activities.
- There is no forecasted change in FTE in 2018.

Non-Labour Expenses

The 2018 non-labour expenses are expected to increase by $484,533 or 2.0%. This increase is mainly due to consulting costs for Asset Management related to third-party validation of ACA analysis in addition to inflation of 1.5% as previously identified in Tab 1, Schedule 1, of this Exhibit.

The growth rate is less than that of the current IRM years due to the continued realization of productivity initiatives, as provided in Tab 3, Schedule 4 of this Exhibit, which are expected to deliver $6,495,000 in savings by 2018.

Management Fees

The decrease in Net Management Fees of $115,655 is primarily due to lower non-recurring costs in 2017 associated with the previously mentioned CIS upgrade in Customer Care.

2019 Test Year vs. 2018 Test Year

OM&A is projected to be $69,140,490 in 2019 or $1,431,832 higher than the 2018 amount of $67,708,658.

Salaries, Wages, and Benefits

The salaries, wages, and benefits costs charged to OM&A are expected to increase by $974,872 between the 2018 Test Year and 2019 Test Year. The impact is due to:

- Inflation of $974,872 comprising:
  - Total salary, wages and benefits inflation on payroll of $1,234,751. Non-union employee salaries are forecast to increase by [redacted] in 2019 due to general wage inflation and merit increases for individuals who are not currently at full job rate but who are progressing towards full job rate. Average benefits for both union and non-union is forecast to increase by 2.9%;
  - Increase in overtime of $65,503; and
  - Less $325,382 of the above explained variances allocated to capital activities.
- There is no forecasted change in FTE in 2019.

Non-Labour Expenses

The increase in non-labour expenses is $432,870 or 1.7% in 2019. This increase is mainly attributed to an inflationary assumption of 1.5% as previously identified in Tab 1, Schedule 1, of this Exhibit.

Net Management Fees

Net Management Fees will increase by $117,767, due to inflation, partially offset by productivity savings, as described in Tab 3, Schedule 4 of this Exhibit.

RECOVERABLE OM&A COSTS PER CUSTOMER AND PER FTE

Table 4-20 summarizes OM&A costs year-over-year on a per customer and per FTE basis.

OM&A costs per customer are increasing on a year-over-year basis from 2011 to 2019 as a result of factors explained in the foregoing analysis. Horizon Utilities adopted IFRS effective January 1, 2012. For financial reporting purposes, the OEB requires distributors adopting IFRS to present one year of comparative information in its first IFRS financial statements. The comparative year for Horizon Utilities is 2011. As a result of the transition to IFRS, Horizon Utilities Corporation was required to make changes to its capitalization policy effective January 1, 2011 which impacted OM&A in the comparative year. IFRS diverges from CGAAP as it does not permit the capitalization of indirect overhead costs as PP&E. The impact of removing indirect overhead costs from capital as a consequence of the transition to IFRS resulted in a corresponding increase in OM&A costs. The impact of the change to Horizon Utilities capitalization policy is discussed in further detail in Exhibit 6, Tab 2, Schedule 1. The following Table 4-19 presents 2011 OM&A per customer restated on a comparable MIFRS basis to subsequent years, including Smart Meter costs:

Table 4-19 – 2011 OM&A as Restated to MIFRS and including Smart Meter

	2011 Board Approved	2011 Actual
2011 OM&A as reported (CGAAP)	$ 42,136,201	$ 41,644,654
Adjustments:		
Transition to MIFRS	$ 7,965,453	$ 7,965,453
Smart Meter Costs	$ 1,180,303	$ 1,180,303
2011 OM&A , as restated (MIFRS including Smart Meters)	$ 51,281,957	$ 50,790,410
Number of Customers	237,031	237,311
2011 OM&A per customer, as restated	**$ 216.35**	**$ 214.03**

As shown in Table 4-20, the 2015 Test Year OM&A per customer is $257.41 and the OM&A cost per FTE in the 2015 Test Year is $180,103.17.

Table 4-20 – Chapter 2 Filing Requirement Appendix 2-L - OM&A per Customer and per FTE 2011 – 2019

	Last Rebasing Year -2011- Board Approved	Last Rebasing Year - 2011- Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Reporting Basis	CGAAP	CGAAP	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS	MIFRS
Number of Customers	237,031	237,311	238,490	240,117	241,692	243,319	245,123	247,036	249,021	250,909
Total Recoverable OM&A from Appendix 2-JB	$ 42,136,201	$ 41,644,654	$ 51,478,365	$ 54,516,506	$ 60,387,369	$ 62,632,679	$ 64,394,131	$ 66,255,827	$ 67,708,658	$ 69,140,489
OM&A cost per customer	$ 177.77	$ 175.49	$ 215.85	$ 227.04	$ 249.85	$ 257.41	$ 262.70	$ 268.20	$ 271.90	$ 275.56
Number of FTEs	349	328	333	335	355	348	345	344	344	344
Customers/FTEs	679	724	717	717	682	700	711	718	723	729
OM&A Cost per FTE	$ 120,699.52	$ 127,058.38	$ 154,729.08	$ 162,735.84	$ 170,340.38	$ 180,103.17	$ 186,649.65	$ 192,458.68	$ 196,678.84	$ 200,838.00

After restating 2011 actual results for the impact of the transition to IFRS and the inclusion of Smart Meter costs, total OM&A per customer in that year was $214.03. On this basis, the CAGR of OM&A per customer from 2011 Actual to 2019 Test Year is 3.2%. The customer counts in Table 4-20 are those used to calculate rates in Exhibit 8. The number of customers reported in this table is a yearly average, calculated by taking the average of January and December figures.

FTE counts are those used for the purposes of Appendix 2-K as described in Tab 4, Schedule 2 of this Exhibit.

INCREASE IN OM&A EXPENSE IN RELATION TO A DECREASE IN CAPITALIZED OVERHEAD

OM&A costs are forecasted to increase by $13,150,698 in the 2015 Test Year as compared to 2011 as a result of Horizon Utilities' changes to its capitalization policy. Horizon Utilities adopted IFRS effective January 1, 2012, as previously identified. Horizon Utilities was required to change its capitalization policy to exclude from capital any costs which are not directly attributable to an item of PP&E, as part of the transition to IFRS.

Table 4-21 below (corresponding to the Board's Appendix 2-DA) identifies the costs currently capitalized under MIFRS and the costs which would have been capitalized under CGAAP. The transition to IFRS and changes to Horizon Utilities' capitalization policy are discussed in further detail in Exhibit 2, Tab 6, Schedule 4 and Exhibit 6, Tab 2, Schedule 1.

Table 4-21 – Chapter 2 Filing Requirement - Appendix 2-DA – Overhead Expense

The following table should be completed based on the information requested below. An explanation should be provided for any blank entries. The entries should include overhead costs that are currently capitalized on self-constructed assets under MIFRS.

Nature of the Overhead Costs	(A) [1] Dollar Impact on PP&E Historic Year (2013)	(B) Dollar Impact on PP&E Bridge Year (2014)	(C) Dollar Impact on PP&E Test Year (2015)	(D) Dollar Impact - PP&E Variance Test versus Bridge	(E) [1] Dollar Impact - PP&E Variance Test versus Historic	(F) Directly Attributable? (Y/N)	(G) Reasons why the overhead costs are allowed to be capitalized under MIFRS or an alternate accounting standard given limitations on capitalized overhead
employee benefits	$ 3,009,769	$ 3,256,268	$ 2,872,168	$ (384,099)	$ (137,601)	Y	Benefits are capitalized per IAS 16, since these represents directly attributable employee costs, such as CPP, EI, OMERS Pension, EHT, WSIB, dental and medical plans. Benefits are applied to the direct labour costs allocated via timesheets. These costs are capitalized both under IFRS and CGAAP.
costs of site preparation				$ -	$ -	Y	Horizon does not track these costs separately and cannot provide this information without unreasonable effort, but confirms that these costs are part of self-constructed assets.
initial delivery and handling costs				$ -	$ -	Y	Horizon does not track these costs separately and cannot provide this information without unreasonable effort, but confirms that these costs are part of self-constructed assets.
costs of testing whether the asset is functioning properly				$ -	$ -	Y	Horizon does not track these costs separately and cannot provide this information without unreasonable effort, but confirms that these costs are part of self-constructed assets.
professional fees				$ -	$ -	Y	Horizon does not track these costs separately and cannot provide this information without unreasonable effort, but confirms that these costs are part of self-constructed assets.
				$ -	$ -		
costs of opening a new facility				$ -	$ -	N	Horizon Utilities confirms that these type of costs are expensed under both CGAAP and IFRS and are not part of self-constructed asset costs.
costs of introducing a new product or service (including costs of advertising and promotional activities)				$ -	$ -	N	Horizon Utilities confirms that these type of costs are expensed under both CGAAP and IFRS and are not part of self-constructed asset costs.
costs of conducting business in a new location or with a new class of customer (including costs of staff training)				$ -	$ -	N	Horizon Utilities confirms that these type of costs are expensed under both CGAAP and IFRS and are not part of self-constructed asset costs.
administration and other general overhead costs				$ -	$ -	N	Horizon Utilities confirms that these type of costs are expensed under both CGAAP and IFRS and are not part of self-constructed asset costs.
				$ -	$ -		
Insert description of additional item(s) and new rows if needed.				$ -	$ -		
Total	$ 3,009,769	$ 3,256,268	$ 2,872,168	$ (384,099)	$ (137,601)		

Table 4-21 continued – Chapter 2 Filing Requirement - Appendix 2-DA – Overhead Expense

The following table should be completed based on the information requested below. An explanation should be provided for any blank entries. The entries should include overhead costs that were capitalized on self-constructed assets under CGAAP but are no longer capitalized under MIFRS or an alternate accounting standard and are included in OM&A.

Nature of the Overhead Costs	(A) [1] Dollar Impact on OM&A Historic Year (2013)	(B) Dollar Impact on OM&A Bridge Year (2014)	(C) Dollar Impact on OM&A Test Year (2015)	(D) Dollar Impact - OM&A Variance Test versus Bridge	(E) [1] Dollar Impact - OM&A Variance Test versus Historic	(F) Directly Attributable? (Y/N)	(G) Reasons why the overhead costs are not allowed to be capitalized under MIFRS or an alternate accounting standard given limitations on capitalized overhead
employee benefits				$ -	$ -		
costs of site preparation				$ -	$ -		
initial delivery and handling costs				$ -	$ -		
costs of testing whether the asset is functioning properly				$ -	$ -		
professional fees				$ -	$ -		
costs of opening a new facility				$ -	$ -		
costs of introducing a new product or service (including costs of				$ -	$ -		
costs of conducting business in a new location or with a new class of				$ -	$ -		
administration and other general overhead costs - Engineering burden	$ 3,705,121	$ 5,023,523	$ 5,475,469	$ 451,946	$ 1,770,348	N	Where an employee is performing general and administrative tasks, not specifically related to a capital project, wages and employee benefit expenses are recognized as operating expenses. All other general and administrative costs of the department will be expensed to operating as incurred.
administration and other general overhead costs - Construction burden	$ 1,757,413	$ 1,340,996	$ 1,724,520	$ 383,524	-$ 32,893	N	These costs include wages and employee benefits that are related to employees performing general and administrative tasks not related to a capital projects. Therefore these costs cannot be attributable to specific capital project and expensed under IFRS.
administration and other general overhead costs -Fleet burden	$ 2,319,209	$ 2,340,645	$ 2,281,201	-$ 59,444	-$ 38,008	N	These costs include general maintenance costs such as wages and benefits of administrative personnel that and any other general activities that not directly attributable to each vehicle.
administration and other general overhead costs - Stores burden	$ 2,966,030	$ 3,536,284	$ 3,669,508	$ 133,224	$ 703,478	N	These costs are related to the operations of the warehouses and the procurement of goods and services. They are considered to benefit the organization as a whole and are difficult to link directly with the construction of a "specific asset". As such, these expenditures are recorded as operating expenses.
				$ -	$ -		
				$ -	$ -		
				$ -	$ -		
Insert description of additional item(s) and new rows if needed.				$ -	$ -		
Total	$ 10,747,773	$ 12,241,448	$ 13,150,698	$ 909,250	$ 2,402,925		

PROGRAM DELIVERY COSTS WITH VARIANCE ANALYSIS

OVERVIEW OF PROGRAM DELIVERY COSTS

This section provides a variance analysis of Horizon Utilities' OM&A cost by major function, consistent with section 2.7.3 of the Board's Chapter 2 Filing Requirements.

Appendix 2-JC is provided in Schedule 3 of this Tab for the 2011 Board-Approved year through the 2019 Test Year.

Appendix 2-JC summarizes Horizon Utilities' OM&A costs by major function. It also includes a variance analysis between the 2015-2019 Test Years costs and the last Board-Approved costs and the most recent actual costs. Explanations for variances over $300,000 are provided for each program.

Year-over-year variances during the 2015 to 2019 period are primarily attributable to inflation, due to the relatively modest level of changes in OM&A associated with NBRs as discussed in Tab 2, Schedule 2 of this Exhibit.

DIVISION OVERVIEWS

Horizon Utilities has provided Appendix 2-JC OM&A Programs in Tab 3, Schedule 3 of this Exhibit, on the basis of major function, in accordance with section 2.7.3 "Program Delivery Costs with Variance Analysis" of the Board's *Chapter 2 Filing Requirements*. This section provides an overview of Horizon Utilities' major functions, first by Division, then by Department, in order to frame the variance analysis provided in Appendix 2-JC.

Horizon Utilities' business and operational structure consists of five divisions: Customer Services; Utility Operations; Human Resources; Corporate Communications; and Office of the Senior Vice President ("SVP") and Chief Financial Officer ("CFO"). Horizon Utilities has provided a detailed description of the divisions as OM&A costs are driven by the expenditures within each of these divisions.

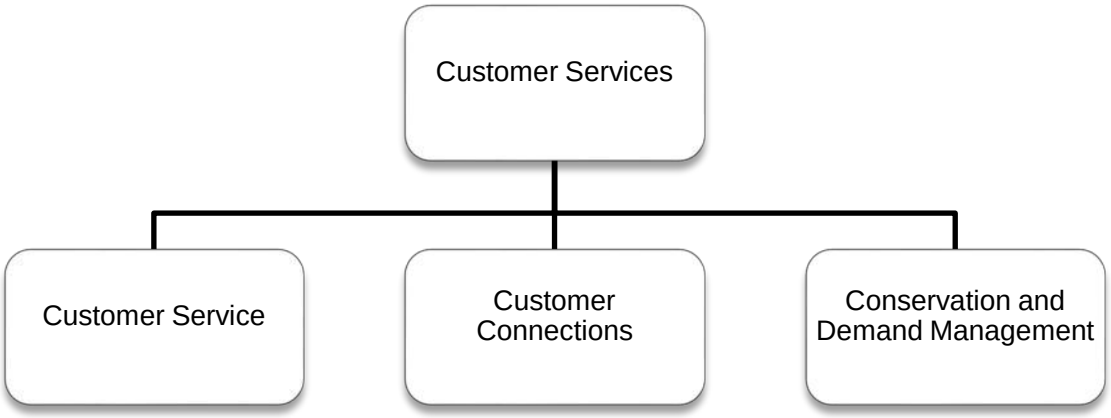
Horizon Utilities and its divisions practice cost containment within their budgets. While some divisions have specific programs and initiatives that recognize, assess and value productivity, other divisions build on their budget platform and work to ensure that costs remain stable, outside of annual inflationary increases. Divisions that have few non-labour costs, are diligent in ensuring that those costs remain flat over the Test Years. This effort continues to be a part of Horizon Utilities' budgeting process, but this also follows the Board's direction on the RRFE, under *"operational effectiveness - continuous improvement in productivity and cost performance is achieved; and utilities deliver on system reliability and quality objectives."* Horizon Utilities continues to be proactive in its efforts to achieve productivity and savings in the 2015 – 2019 Test Years, as discussed in Tab 3, Schedule 4 of this Exhibit.

Customer Services Division

The Customer Services division consists of three departments: Customer Service (which includes Customer Care); Customer Connections; and CDM.

The Customer Connections department is fully included in EDO. Operating expenditures associated with Customer Care are allocated through a Management Fee to EDO, as described in Tab 2, Schedule 2 of this Exhibit.

Figure 4-1: Customer Services Division

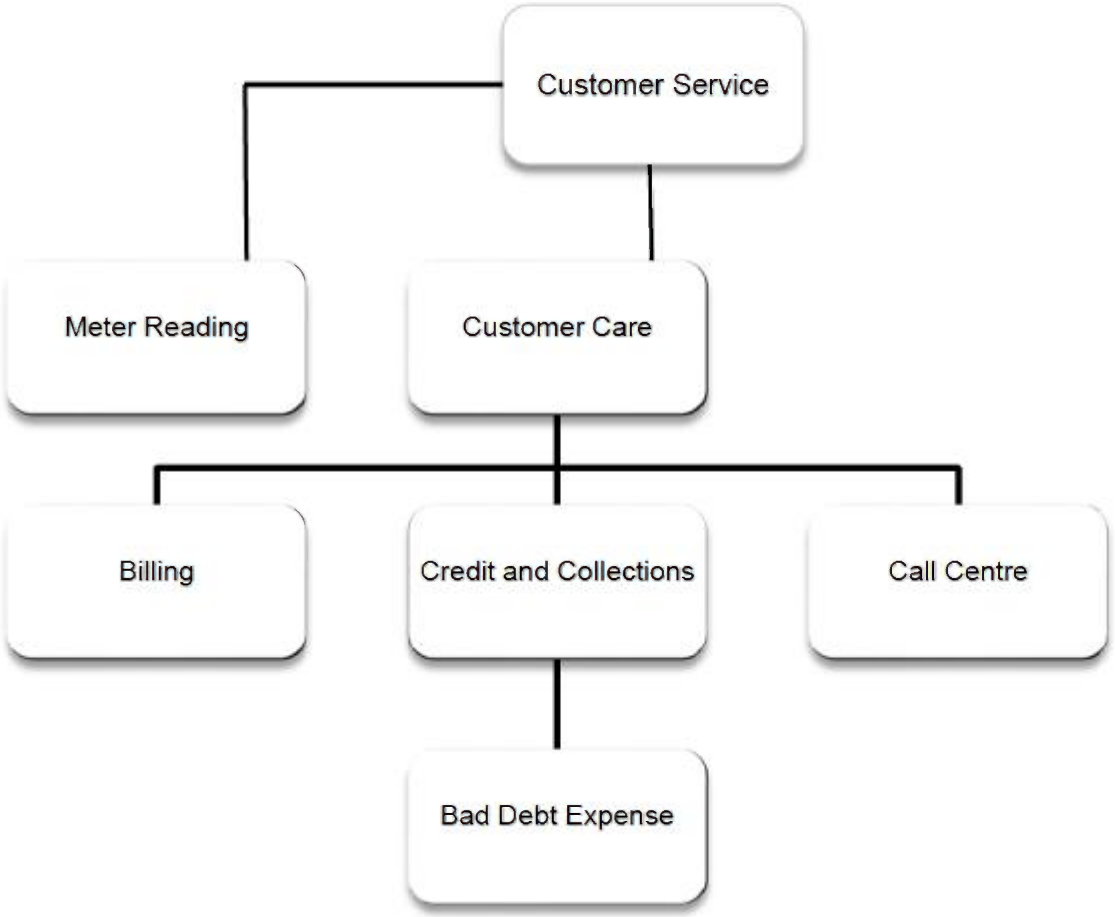


Customer Service

The Customer Service business unit is responsible for customer service activities for the 240,000 residential, commercial and industrial electricity customers in Hamilton and St. Catharines; and water customers of the City of Hamilton. These activities include meter reading; billing; credit and collections; the Call Centre; payment processing and other related functions. The Customer Service business unit is aligned to Horizon Utilities' objective to be "easy to do business with", and to deliver value to customers from its processes and customer programs.

The Customer Service business unit is divided into four main work groups: Meter Reading; Billing; Credit and Collections; and the Call Centre, the latter three groups constituting Customer Care.

Figure 4-2: Customer Service Department



Customer Service is investing in projects and initiatives that leverage new and existing technologies and process re-design elements to enhance the customer experience in a cost effective manner. The utilization of technology and process re-design, as further described in this document, improves the customer experience in its interaction with Horizon Utilities and augments departmental capacity without adding any additional headcount; and supports the cost containment and future reduction of expenses relative to operating under the status quo.

The implementation and evolution of web services has been an important area of focus for Horizon Utilities in response to its customers' needs and utility trends for communication, education, and awareness with respect to services and electricity bills. The rapid rise in web-based technology has resulted in customer expectations of 24x7 accessibility to account information and the increasing desire to utilize self-serve options. Horizon Utilities continually assesses and responds to customer needs through the provision of new or enhanced web tools. Horizon Utilities' first generation web portal was implemented in 2007, allowing customers to: log in to view their account transactions; submit a meter read; advise of a payment; retrieve their account balance; or view their next meter read date either on-line or through an automated IVR system.

Through additional investment to the end of 2013, the portfolio of customer service web and self-service options now includes: bill-direct paperless billing; self-service for reporting of account move-in and/or move-out information; and Smart Meter information displays including hourly, weekly, and monthly views.

The most recent customer-oriented web enhancements were:

- The provision of an expanded myElectric portal (2012), which includes tools for the customer to calculate their next bill; understand consumption and cost differences between bills; and set alerts to advise when preset cost and consumption thresholds are reached;
- Web presentment of invoices through Canada Post's epost service (2012);
- Provision of an outage map and related information on Horizon Utilities' website (2013) with companion information available through Facebook and Twitter;
- The implementation of a mobile website to enable customers to view myAccount and outage information from smart and mobile devices (2013); and
- An option for customers to pay their bills on line by credit card (2013).

The customer demand for timely 24x7 access to information, web tools and self-service is evident by the increase in logins to myAccount which have doubled since 2010 with more than 700,000 unique customer logins in 2013.

It is estimated that the use of self-service and the provision of robust myAccount and myElectric web tools has resulted in the avoidance of approximately 170,000 calls to the Call Centre in 2013. The provision of tools and self-service options has negated the need to hire additional agents to respond to this increasing customer demand for information and account transparency. It is estimated that the provision of web services has offset the hiring of as many as seven Customer Care representatives, which would otherwise have been required to provide a similar level of information and customer support through the Call Centre, further described in the productivity section in Tab 3, Schedule 4 of this Exhibit.

Continued web investments are necessary to continue to drive more cost and time efficient mediums for customer access (for both the customer and the utility) than traditional calls into a Call Centre and to meet customer expectations for 24x7 accessibility. Additional self-service tools, including customer registration of a pre-authorized payment plan over the web, are planned for 2014 and beyond. The provision of pre-authorized payments over the web is a self-service convenience to customers and is estimated to provide $30,000 annually in additional capacity to Customer Service through the automation of office processes.

Customer Service also plans to utilize operational information to enhance service to customers without increasing operating expenditures. The availability of outage management information, in particular, will enable proactive outage and restoration information to customers and provide enriched support to vulnerable customers such as the elderly in the event of power outages. Increased transparency to customers during outages and restoration efforts will begin in 2014 as part of the OMS project and customer communication enhancements are included in every phase of the implementation plan. Details of the OMS project are provided in Exhibit 2, Tab 6, Schedule 1.

Customer Service has implemented a number of initiatives to increase productivity, contain costs, and build capacity. Initiatives implemented to improve productivity include: the implementation of e-mobile service orders; the automation of certain back-office processes; and outsourcing of overflow Call Centre services. The total Customer Services productivity achievement is $1,510,000 to the end of 2013 and is provided in Tab 3, Schedule 4 of this Exhibit.

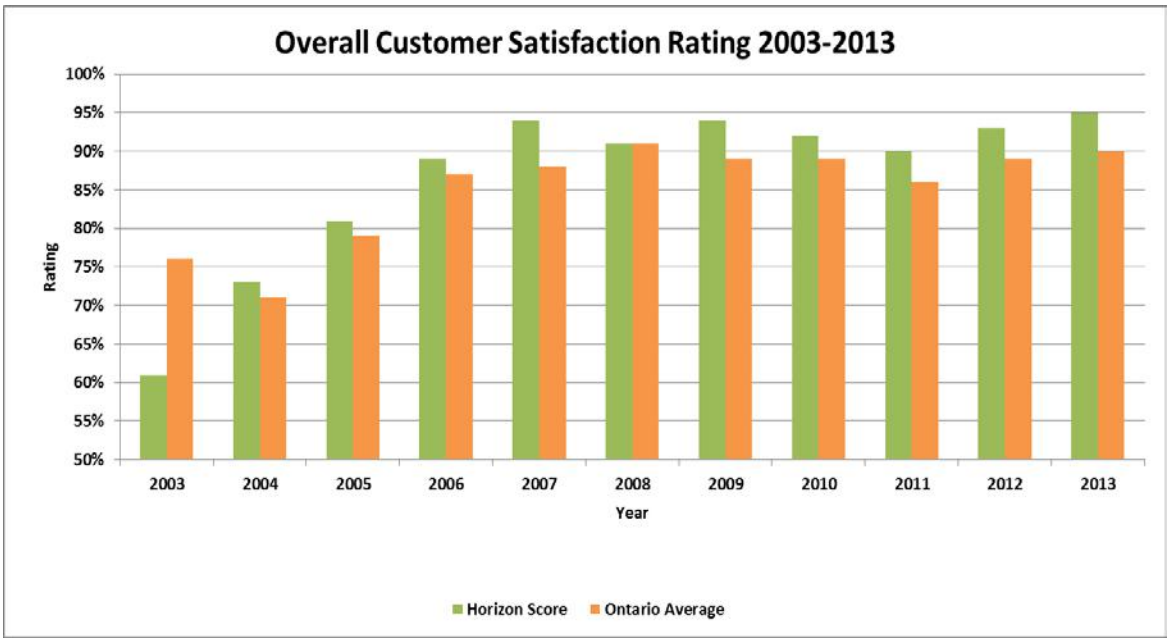
An outcome of the Customer Care productivity plan is the reduction of permanent headcount in the department. Customer Care had 69 FTE in 2011. This has been reduced to 65 FTE in 2014 due to:

- e-mobile productivity achievements, which enabled the reduction of one clerical position in the beginning of 2012;
- Outsourcing of MV-90 overflow work, which enabled the reduction of one MV-90 Operator beginning in 2012;
- The closing of reception service in the office in St. Catharines which enabled the reduction of one clerical position beginning in 2013; and,
- The implementation of overflow Call Centre services in 2014 which enabled the reduction of one Customer Service Representative in 2013.

Customer Service anticipates a further reduction in headcount of 4 FTE between 2015 and 2019 due to the implementation of overflow Call Centre services as described on page 12 of this Schedule.

The results of the external annual Customer Satisfaction Survey support Horizon Utilities' customer-focused "easy to do business with" objective as evidenced by customer satisfaction scores that have been higher than the Ontario industry average over the past five years. Horizon Utilities scored 95% in customer satisfaction, based on 602 customers responding to telephone interviews in the 2013 Customer Satisfaction Survey. The survey is representative of the views of Horizon Utilities customers +/- 3.99% 19 times of out of 20. Horizon Utilities' 2013 Customer Satisfaction Survey is included as Appendix 4-1 of this Exhibit.

Figure 4-3: Overall Customer Satisfaction Rating



In addition to measuring customer satisfaction and obtaining operational feedback, Horizon Utilities also asks a series of questions to determine customer engagement and expectations regarding current and potential future initiatives. This has included feedback on various topics including Smart Metering, customer response to CDM initiatives, and most recently in 2013, Smart Grid and electronic bill presentment.

In 2012, Horizon Utilities began augmenting the annual Customer Satisfaction Survey with a simple transactional telephone survey. Transactional surveys are useful to obtain customers' feedback to a specific service provision. On a weekly basis, a third-party provider would contact a random subset of Horizon Utilities' customers who had contacted the Call Centre with a query in the previous seven days. The two minute survey allowed customers to rate their most recent customer service experience. In 2013, 75% of the customers indicated they were "satisfied" or "very satisfied" with the level of service provided by Horizon Utilities and 90% of the respondents indicated that their concern or query was addressed with this one call to the Customer Care Call Centre.

The transactional telephone survey and the annual Customer Satisfaction Survey are both utilized as foundational building blocks towards the enhancement of the customer experience, meeting customer requirements and expectations, and promoting an environment of continuous improvement.

Meter Reading

At Horizon Utilities, 99% of meters are interrogated electronically through the AMI system for residential and general service customers, or MV-90 technology for larger customers.

AMI refers to the infrastructure and systems required to support the reading of Smart Meters throughout the Horizon Utilities service territory. Daily meter reading via the AMI system is the accountability of one AMI Operator and overseen by the Supervisor, Billing. The MV-90 functionality is also overseen by the Supervisor, Billing with daily accountabilities completed by the MV-90 Operator.

The intent is to transition all electric meters to be interrogated through one of these two systems by the end of 2015. However, a very small number of conventional meters are expected to remain unconverted due to physical restrictions in accessing the meter. AMI meter read success rates are tracked monthly and Horizon Utilities is achieving an average success rate of 99%, as required pursuant to section 2.3 of the Province's *Functional Specification for an Advanced Metering Infrastructure* (referred to in Ontario Regulation 425/06, as amended by Regulation 440/07).

Conventional meter reading services are contracted out to a non-affiliated third-party under a service level agreement for both the Hamilton and St. Catharines service territories. Horizon Utilities currently has approximately 2,500 electric meters that are read visually on either a monthly or bi-monthly reading schedule. The meter contract was negotiated through a competitive bidding process and is valid to March 31, 2015 with an option to renew for an additional two years.

The Horizon Utilities service area is challenged with access issues in some parts of the service territory, as meter access points are inside customer premises in many older neighbourhoods. The meter readers leave a card at the door of the customer's premises

when such access is not available, enabling the customer to report their own meter reading which avoids an estimated billing. Customers have a number of options to report their meter readings which include: provision through a self-service application on the Horizon Utilities' website; utilizing the automated telephone functions; mailing back the card; emailing a picture of the meter to the Customer Care department; or speaking with a customer service representative.

Billing

With a mix of bi-monthly and monthly billing, Horizon Utilities issues 1.6 million invoices annually to electricity customers. On average, this total includes approximately 50,000 final bills for customers moving within or outside of Horizon Utilities' service territory. An annual billing schedule is created based on the meter reading schedule to ensure timely billing of services. The billing functions include: appropriate validation and estimation and edit ("VEE") processes; all synchronization and transactional data flows related to the use of the provincial Meter Data Management Repository ("MDM/R"); Electronic Business Transactions ("EBT") and retailer settlement functions for approximately 22,000 retailer accounts; account adjustments; processing of meter changes; and various other account related field service orders and mailing services. Horizon Utilities offers customers several billing and payment options including: an equal payment plan; a preauthorized payment plan; and paperless billing from Horizon Utilities' website or Canada Post's epost. Customers have the ability to view their account history, smart meter data, invoices, and transactions online through a self-service option on a 24x7 basis from Horizon Utilities' website.

Horizon Utilities began the implementation of TOU rates in December, 2009. All TOU eligible customers are billed on TOU rates, with the exception of residential locations where a Smart Meter has not been installed due to lack of access to the meter and some small business locations. Small businesses will have their meter changed to a Smart Meter at the time of the next meter re-verification, which was originally scheduled to be prior to the end of 2015. The change-out program is ahead of schedule; the remaining Smart Meters are now anticipated to be installed prior to the end of 2014.

Horizon Utilities has utilized the Smart Metering infrastructure to deliver operational efficiencies and improve customer service. This has been achieved primarily through an 80% reduction in amended bills which has resulted in more than 5,500 hours of capacity created within the department. The department has diverted this additional capacity towards ensuring that Horizon Utilities has been able to meet the accountabilities associated with the daily data and system management related to the provincial MDM/R without increasing headcount.

Horizon Utilities has been providing a paperless billing service to customers since 2007. Horizon Utilities added Canada Post's epost web presentment service to the customer suite of bill presentment options, in order to counteract increasing paper and mailing costs and respond to customer demand. At the end of 2013, approximately 6.5% of Horizon Utilities' customers no longer received a paper invoice, which provides a positive financial impact against rising postage costs. A notice was issued by Canada Post on December 11, 2013, advising of a significant increase to postage costs in 2014 and beyond. The development of strategies to drive customer enrolment in paperless billing services is in progress.

The CIS utilized for billing and customer account management is a system provided by Daffron and Associates, Inc. This system is nearing the end of its useful life and requires investment to migrate to a new system or undertake a major upgrade to the current Daffron browser-based solution. Horizon Utilities will investigate the requirements for a new or upgraded CIS in 2017 including a review of options for vendors and solutions through a formal Request for Proposals ("RFP") process. The decision on whether the organization should upgrade the CIS to Daffron iXP or migrate to a new CIS solution will be determined based upon the results and evaluation of the RFP process in early 2018. Project plans to support the upgrade or replacement of the CIS system will be developed in 2018 to support the eventual system implementation, which is envisioned to commence in 2020 for full implementation by 2021.

Credit and Collections

The Credit and Collections function comprises: the collection of overdue active accounts; security deposits; and final bills for service termination. Credit risk is an identified concern for Horizon Utilities, particularly since it issues over 360,000 past due notices annually.

The forecast for credit losses for 2015, 2016, 2017, 2018, and 2019 is $1,451,913, $1,468,918, $1,489,350, $1,511,268 and $1,531,413 respectively. The forecasted credit losses for the years 2015 to 2019 inclusive have been determined on the basis of estimated customer growth by customer class, estimated increases in accounts receivable balances, economic projections, and historical actual bad debt experience.

Horizon Utilities enforces credit policy in accordance with the Distribution System Code ('DSC") in an effort to minimize credit losses. Payments with respect to active overdue accounts are pursued and collected by in-house staff through reminder notices, final notice letters, and direct telephone contact. Field collections are contracted out within the same competitive process as the meter reading, which adds a layer of efficiency to the process. Final bill collections (or "move outs") are turned over to a collection agency 30 days after the final due date.

Horizon Utilities' management of customer collections activities and credit risk has evolved since 2010 with regulation changes for Customer Service standardization for low-income and residential customers. Horizon Utilities does not request security deposits for low-income customers and, in compliance with the Board's requirements in the DSC, applies any held security to the customer account prior to the initiation of a final notice. This has reduced the total value of security deposits held for residential customers from approximately $6,500,000 in 2009 to $3,000,000 in 2013. Horizon Utilities promotes the Arrears Management Program to defer customer arrears and avoid disconnection of service. More than 700 customers have a deferred contract agreement with Horizon Utilities at any given time, with an average program deferral value of approximately $290,000.

Bad Debt Expense

Bad debt expense represents the amount of accounts receivable that are considered uncollectible in a given period. There are two categories of bad debt expense: electricity billing and billing for other services such as miscellaneous billings for recoverable (non-capital) work; and, in respect of vehicle accidents, insurance claims, etc.

The amount of bad debt expense related to electricity billing is determined on the basis of customer accounts charged against earnings less recoveries plus or minus a change in the allowance for doubtful accounts. The allowance for doubtful accounts is computed based on the sum of all uncollected customer accounts beyond 90 days, plus a specific provision for customer accounts identified as bad debts (e.g. customers in receivership or bankruptcy), plus a general provision of 1.2% on the balance of outstanding accounts receivable. The allowance is monitored monthly and adjusted as appropriate through bad debt expense.

Call Centre

Horizon Utilities' Call Centre department responds to approximately 310,000 telephone inquiries, emails, and after hours voice mail messages annually with additional outage calls being directed to System Control Room staff.

Horizon Utilities targets an average of 13 calls per hour per agent, with a call quality score of 90% measured by Horizon Utilities' internal program; and 75% of customer calls answered within 30 seconds. Over the 3-year period of 2011 to 2013, Horizon Utilities' Call Centre department averaged 79% of the calls being answered within 30 seconds while maintaining a call quality score of 94%.

Customer Service Supervisors meet with each customer service representative monthly to review quality scoring. These sessions are designed to engage these employees with coaching to improve service quality indicators.

Horizon Utilities is in the process of implementing an outsourced overflow service for the Call Centre to augment the capacity of that provided internally and to manage costs. The first phase of the overflow service was implemented in February 2014 and is expected to

enable enhanced scheduling of resources to address call volumes that vary due to time of day, week, month, and year as well as augment the resources available to assist customers during emergency events such as wide-spread or long-duration outages.

The implementation of an overflow services is expected to improve the customer experience through increased accessibility to an agent. Phase 2 of the implementation will include expanded hours of customer service which are also expected to improve agent availability and accessibility to customers without increasing operating expenditures.

Customer Connections

The Customer Connections department is responsible for metering and new customer connection services for all residential, commercial and industrial customers within Horizon Utilities' service territory. Key areas of accountability in the business unit include maintaining Horizon Utilities' metering infrastructure and assets as well as all wholesale meter points registered with the IESO; providing new or upgraded connections for customers; managing customer requirements to join Feed-In Tariff programs; responding to customer inquiries and requests related to these areas; and protecting distribution system assets and revenue by the reduction of unauthorized electricity usage.

Operating expenditures in the business unit are primarily associated with the connection of new customers to the distribution system and the maintenance and installation of customer and wholesale meters in accordance with Measurement Canada's *Electricity and Gas Inspection Act.*

Horizon Utilities continues with the installation of Smart Meters for less than 45 residential customers where access to the meter has been restricted and for 1,395 small business commercial customers as the meters are due for re-verification. Many meter points are located indoors and are difficult to access in the older parts of Horizon Utilities' service area. Horizon Utilities has initiated an extensive communication effort with these customers, including multiple phone calls and scheduling appointments after hours, in order to address this meter access issue.

The Customer Connections department developed and maintains the Smart Meter AMI and related communications systems and protocols for data backhaul of residential and small commercial meter information. This includes the management of more than 234,000 Smart Meters and a network of almost 450 collectors. Customer Connections operates within a robust quality management program which is a requirement to maintain the ISO 9001 Quality Management Standard, and the S-A-01 Measurement Canada Accreditation Standard.

Horizon Utilities provides Suite Metering technology for new and retrofit multi-residential buildings, in response to evolving market conditions and customer demand. In 2014, Customer Connections plans to review and streamline suite metering processes to enhance the service offering.

In 2011, the Customer Connections department initiated an e-mobile system to reduce and/or automate clerical tasks associated with meter services and improve work flows.

The success of e-mobile has increased throughput of work for meter services, resulting in the reduction of one Meter Person and the redeployment of two Meter Person positions to Connections Technicians through which new work related to planning and scheduling was advanced in the department. It has also built additional capacity in the department from the automation of clerical tasks that allow staff to perform more meaningful work. Approximately $1,075,000 in productivity benefits due to e-mobile have been achieved as of the end of 2013 as noted in Tab 3, Schedule 4 of this Exhibit. This includes the reduction of 1 FTE Meter Person and the re-deployment of 2 FTE Meter Persons to Customer Connections Technicians identified above.

The success of e-mobile has enabled Customer Connections to complete additional customer-driven work requests without significantly increasing headcount. For example, in response to *Green Energy Act* requests, Horizon Utilities has completed 275 microFIT and 24 FIT connections, and an additional 575 service layouts for pending connections. Based upon historical results, Horizon Utilities forecasts the connection of approximately 100 microFIT and ten to fifteen FIT projects annually. At this same time, the number of customer-requested connection projects has increased by almost 25%. In 2011, 235 customer requests were submitted and completed as compared to 290 in 2013.

A Distribution Engineer - Generation Connections position was created in 2012 to support the volume of renewable generation connections in Horizon Utilities service territory and provide the specialized knowledge required to support this customer segment. The Generation Connections Engineer position was included in the Green Energy Act Plan which was approved by the Board in Horizon Utilities' 2011 Cost of Service ("CoS") Application (EB-2010-0131).

Customer Connections will be adding the position of a Distribution Engineer - Wholesale Metering and Communications in 2014. This new role was previously performed by an Outside Service Provider but it is being transitioned to an internal position due to: the permanency of the requirement for this work; reduced operating costs with repatriation of this position; the level of accountability; criticality of the position; and related risk to the organization.

The Distribution Engineer - Wholesale Metering and Communications will be responsible for the completion and maintenance of all required IESO documentation including the databases for all of IESO registered wholesale metering points. This position is directly involved with distribution design, calculation of losses, and the completion of totalization tables for the IESO. The qualifications for this position include a Professional Engineering designation and knowledge of electrical and electronic theory to carry out engineering and analytical studies related to wholesale power metering equipment.

The increased expenditure for the Distribution Engineer - Wholesale Metering and Communications will be offset by the decreased expense for the Outside Service Provider.

Customer Connections will continue to leverage existing systems and technologies to deliver cost effective metering and connection services that enhance the customer experience in 2014 and beyond.

Customer Connections liaises with local contractors and developers to facilitate new or upgraded connections to the distribution system. Horizon Utilities deploys a biennial Contractor and Developers Satisfaction Survey through an independent third-party provider in order to understand the viewpoint of this group and to continuously improve services. Improvement from the 2011 survey has been achieved as the 2013 survey indicated that 94% of the contractors and developers who participated in the telephone survey were "very satisfied" or "somewhat

satisfied" with Horizon Utilities. A summary of the 2013 Contractor and Developers Satisfaction Survey is provided as Appendix 4-2 of this Exhibit.

Customer Connections developed a web self-service for service layout requests in 2013 in order to align with Horizon Utilities' objective "to be easy to do business with" and to enhance electrical contractor relations. This project was initiated in response to feedback from electrical contractors through the biennial survey and participation in industry association meetings. Contractors identified the importance of ease of access and timely responses for them to efficiently serve their customers. The web self-service allows contactors to submit their service requests at the time that is most convenient for them and avoids any wait times in contacting a Connections Clerk for appointments. This additional service will also improve processing efficiencies and service request details will be received in a clear written format, which facilitates email responses back to the contractors.

Horizon Utilities plans to expand this service to include additional service order requests such as panel changes and to possibly integrate this with a web based appointment calendar where the contractor can select and confirm available appointment times for a service truck. Providing these low cost service enhancements to the contractors will also streamline back office processes, thereby making more time available to better manage more complex contractor and customer requirements.

CDM

The CDM business unit helps customers manage their energy usage and supports Ontario's current CDM framework. On March 31, 2010, the Minister of Energy and Infrastructure of Ontario, under the guidance of sections 27.1 and 27.2 of the *Ontario Energy Board Act, S.O. 1998*, directed the OEB to establish CDM targets to be met by distributors. Accordingly, on November 12, 2010, the OEB amended Horizon Utilities' distribution licence to require Horizon Utilities, as a condition of its licence, to achieve 281.42 GWH of energy savings and 60.36 MW of peak demand savings, over the period beginning January 1, 2011 through December 31, 2014.

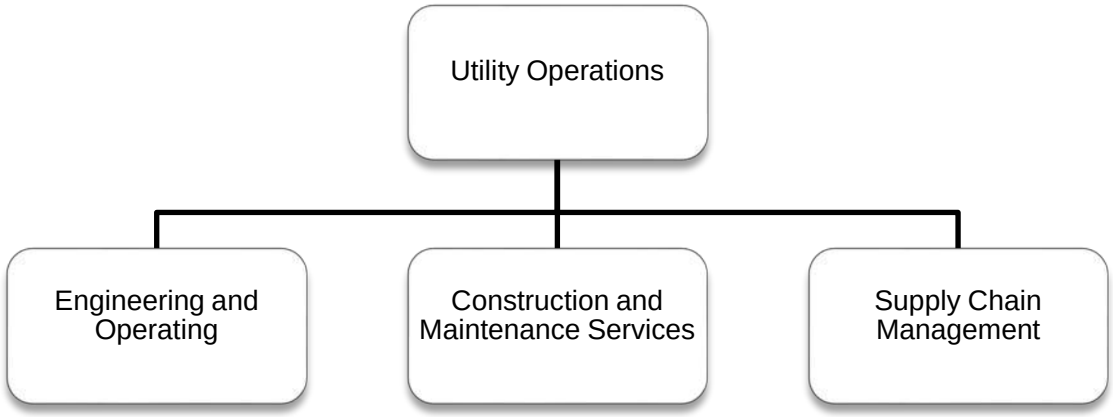
Horizon Utilities entered into a Master Agreement with the OPA on February 1, 2011 to deliver the portfolio of OPA Programs to all customer segments including residential, commercial,

institutional, industrial, and low income. Horizon Utilities is leveraging the OPA's suite of programs in order to achieve Horizon Utilities' energy and demand savings targets. All costs for the CDM business unit are financed through the Global Adjustment Mechanism, and not the regulated electricity distribution charges of the Applicant.

Utility Operations Division

Utility Operations consists of three business units: Engineering and Operating; Construction and Maintenance; and Supply Chain Management.

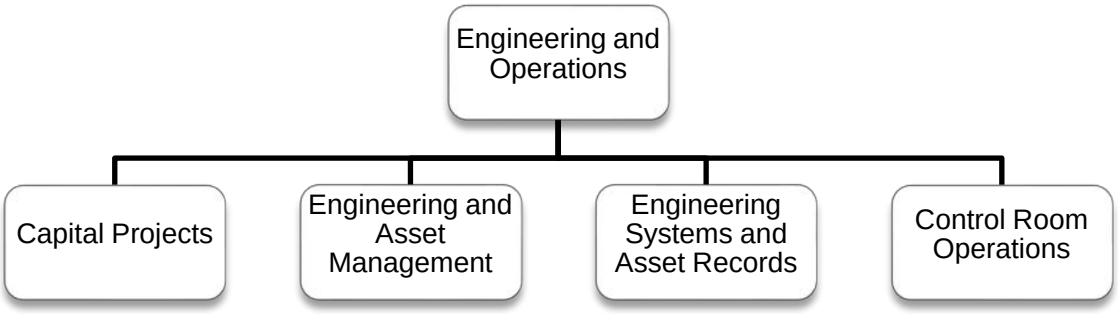
Figure 4-4: Utility Operations



Engineering and Operations ("E&O")

The E&O business unit is responsible for Horizon Utilities' distribution system throughout its complete lifecycle. This includes planning, engineering, capital and maintenance design, and system operation. E&O includes four departments: Capital Projects; Engineering and Asset Management; Engineering Systems and Asset Records; and Control Room Operations.

Figure 4-5: Engineering and Operations



E&O is implementing a plan designed to improve the collaboration and integration between E&O and Customer Service personnel and systems. Historically, Customer Service has been responsible for customer care interactions including billing and collections, while E&O has been responsible for the delivery of electricity and the management of service-specific requests. There has been an absence of sufficient integration between Customer Service managed systems such as the CIS, AMI, GIS, SCADA, and other record keeping systems. The integration of Customer Service and E&O systems will result in improved communications, timely provision of information in usable formats, improved decision making, and enhanced service to customers.

Drivers of this change are:

- Increasing customer expectations – given the plethora of communication options such as web sites, Twitter, phone and email, customers have come to expect 24x7 service. Customers also expect rapid, accurate delivery of information, often within minutes or hours of a request or event.

- Smart Grid Implementation – The availability of affordable monitoring and data collection technology in the distribution system for internal use provides Horizon Utilities with the opportunity to communicate more data more quickly to consumers. This provides greater transparency into the system's operating conditions.

- Infrastructure Renewal – Current infrastructure renewal programs provide the opportunity to deploy new technology as Horizon Utilities replaces end-of-life assets. This will provide additional information on the distribution system's operating status and allow for a more robust customer support program.

The E&O business unit is replacing the current end-of-life GIS which will facilitate the implementation of an OMS with the ability to integrate distribution automation capacity within the existing smart meter network. Horizon Utilities will improve system operations and will be able to provide an increased level of customer service through multiple, customized communication channels providing increased transparency with respect to the operation of the distribution system.

Capital Projects

The Capital Projects department is accountable for the design of capital projects, allocation of materials, project planning, and management of the distribution capital budget.

Capital Projects works with the municipalities to secure municipal consent permits to allow Horizon Utilities to construct on the public right of ways and with entities such as the Electrical Safety Authority ("ESA") to ensure public safety and compliance with applicable regulations. This department interacts with all levels and divisions of the organization, and at the municipal and provincial levels of government during the design and construction phase of capital projects.

Engineering and Asset Management

The Engineering and Asset Management department provides engineering services for Horizon Utilities and is responsible for the long term planning and development of the distribution system.

Horizon Utilities' distribution system is among the oldest in the province and the renewal of that system is a major focus for Asset Management. Continued improvement of the AMP will include ACAs and field diagnostic testing to further improve Horizon Utilities' quantitative measures of the assets; deployment of distribution automation technology; and to support

Horizon Utilities' activities and programs initiated through its Basic GEA Plan. Further details on the Kinectrics' ACA are provided in Exhibit 2, Tab 6, Schedule 1 and included as Appendix B of the DSP, filed as Appendix 2-4 in Exhibit 2.

Improving the overall performance of the distribution system continues to be a key driver for Asset Management. In addition to the initiatives previously identified, emphasis will be placed on monitoring distribution material and equipment failures and identifying failure trends. This will allow the proactive identification of equipment which is most likely to fail and replace or service it before an outage can occur.

The engineering services provided by Asset Management include:

- Development and implementation of material and construction standards. This ensures that all equipment installed on the system, and the methods by which it is installed are properly reviewed and engineered;
- Distribution system modeling and engineering studies;
- Automation of the distribution system; and
- Distribution system protection and control measures (e.g. fusing).

Asset Management also provides long term planning and asset monitoring services, including:

- Asset lifecycle monitoring and renewal. This includes the identification of assets reaching end-of-life and the design of renewal programs to replace assets at the optimum point in time;
- Planning for distribution network expansion and identification of requirements for new capacity;
- Monitoring and evaluating distribution system assets and ensuring the system operates at the expected reliability level of 99.99% availability (on average). This represents an average of 53 minutes of outage per customer annually; and,
- Establishing maintenance programs to ensure the continued operation of the system.

Engineering Systems and Asset Records

The Engineering Systems and Asset Records department is responsible for the maintenance, security and provision of asset information and attributes used to predict expected lifespan. Asset Records is responsible for mapping electrical and civil infrastructure, tracking joint asset use, managing easement and land base records, and providing drafting services for Horizon Utilities' design and construction activities.

Engineering System responsibility was added to this department in 2014. This change was required to support and continue the development of the engineering systems (new GIS and OMS integrated with the existing SCADA and CIS system) which provide the tools from which increased customer value can be achieved. The convergence of Operations and Customer Service system tools will enable new and enhanced customer tools and the creation of a proactive, agile customer communication platform to change the ways in which Horizon Utilities serves its customers in the future.

The continued development and deployment of the new systems and integration with existing systems could not be supported with the existing resources and structure of E&O. This group has evolved to improve the collaboration and integration between E&O and Customer Service personnel and systems.

Control Room Operations

Control Room Operations is responsible for the monitoring and control of the distribution system network; maintaining a reliable supply of electricity to customers and ensuring safe and efficient performance of the network.

The "System Control Room" operates 24 hours a day, 7 days a week. The System Control Room is the point of contact for all customer inquiries regarding the operation, condition and status of the distribution system. Horizon Utilities' primary System Control Room is located in Hamilton with a backup System Control Room located in the St. Catharines service centre for business continuity purposes.

The System Control Room is linked to the distribution system by a data communication network and information is processed by a SCADA system. Real-time breaker status, voltage and current readings from the Hydro One transformer stations and from most of Horizon Utilities' substations are sent to the System Control Room and displayed on the SCADA system. The System Control Room is the control authority for Horizon Utilities' distribution system. The System Control Room operators continuously monitor the distribution system, transfer load as required, and dispatch crews, to repair equipment failures and provide work protection for crews performing work on the system.

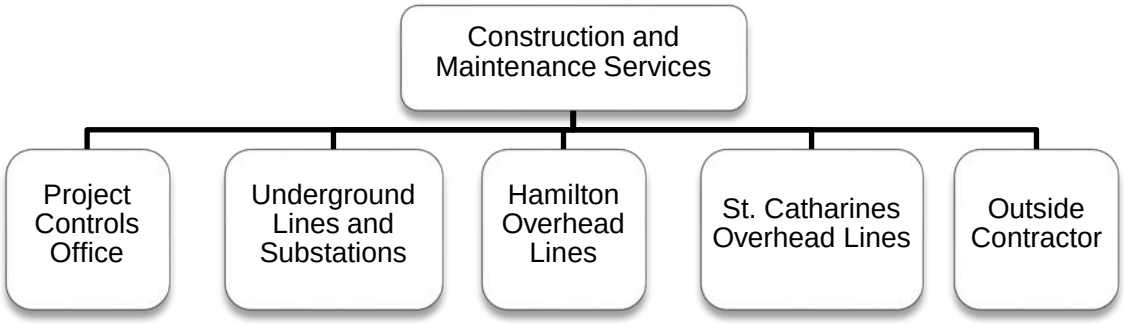
Construction and Maintenance Services ("C&M")

C&M is responsible for constructing, maintaining, and operating the distribution system; including emergency response on a 24 hours a day, 7 days a week basis.

C&M maintains the overhead and underground distribution plant. Horizon Utilities' maintenance strategy is to minimize reactive and emergency-type work through an effective and proactive planned maintenance program. Maintenance activities, when performed on an established cycle from year to year, maximize equipment life span, improve service reliability, and reduce the number of unplanned outages by identifying and correcting deficiencies within the distribution plant before a failure occurs.

Three services centers in Hamilton, Stoney Creek and St. Catharines provide operational space for more than 130 staff, 90 vehicles, and related equipment and materials. C&M is organized into five departments: Project Controls Office ("PCO"); Underground Lines and Substations; Hamilton Overhead Lines; St. Catharines Overhead Lines; and Outside Contractor.

Figure 4-6: Construction and Maintenance Services



Project Controls Office

The PCO was established in 2013 to provide a strong, clear focus on production and performance improvement within C&M. The PCO's primary role is to establish production schedules for capital and maintenance work, using the planning and scheduling processes that meet asset management and customer service requirements, in a way that maximizes work force productivity and quality results. Cost, schedule, and scope are key performance indicators for the PCO.

Underground Lines, Substations, Overhead Lines, and Outside Contractor

The Underground Lines and Substations, Hamilton and St. Catharines Overhead Lines, and the Outside Contractor departments perform predictive, preventative, corrective and reactive maintenance activities as described in the DSP filed as Appendix 2-4 in Exhibit 2.

Approximately fifty percent of Horizon Utilities' labour force was allocated to operations and maintenance activities over the past four years to carry out operational system reviews and continuous improvements, and to comply with regulatory requirements. Workforce attrition, old assets, and the increasing frequency of damaging storms will continue to present upward pressures on operation and maintenance costs over the next five years. This will be mitigated by efficiency and capacity improvements as described in the Workforce Labour Strategy and Plan ("WLSP") filed as Appendix 4-3 of this Exhibit and the Productivity section

in Tab 3, Schedule 4 of this Exhibit. Additional contractors will be hired to supplement Horizon Utilities' workforce to support increasing capital investment requirements.

Underground Distribution Maintenance

The underground distribution system consists of: more than 1,900 kilometers of underground cable; an infrastructure of 4,000 concrete vaults and cable chambers; 200 transformer rooms; 9,000 pad mounted transformers; and various types of switching cubicles. These components require inspection, cleaning, testing, and maintenance on a periodic basis as follows:

- Visual plant inspections (3 year cycle);
- Thermography (3 year cycle);
- Corrective maintenance activities (based on inspection findings);
- Blade cleaning and alignment on switches (3 year cycle); and
- Transformer room inspection, cleaning and component maintenance (3 year cycle).

Substation Maintenance

There are 25 substations in the Hamilton area and three in the St. Catharines area. The majority of substation assets are beyond or near end-of-life. Consequently, regular maintenance is necessary to prolong the lives of assets that are in service, and to assist in predicting failures before they occur. A number of inspection, testing and maintenance activities are conducted by four substation maintainers at the 28 substations on a regular basis, as follows:

- Inspections of various substation and building equipment (monthly);
- Power transformer oil analysis (annually);
- Thermography (infra-red scanning) (annually);
- Partial discharge testing of metal-clad switchgear (5 year cycle);
- Internal resistance testing of substation storage battery sets (annually); and

- Breaker and relay preventative maintenance (maximum 6 year cycle).

Overhead Distribution Maintenance

The overhead distribution system consists of more than 1,500 kilometers of overhead line, 52,000 poles, 15,000 transformers, and over 700 load break switches. All of these components require inspection, cleaning, testing, and maintenance on a periodic basis, as follows:

- Wood pole testing (7 year cycle);
- Overhead and underground thermography scanning (3 year cycle);
- Visual plant inspections (3 year cycle);
- Corrective maintenance activities (based on inspection findings);
- Load break switch maintenance (5 year cycle); and
- Planned forestry maintenance (3 year cycle).

Emergency response and reactive maintenance are managed within overhead distribution maintenance and include services for both the Hamilton and St. Catharines service areas. Examples are repairs required as a result of storm damage and emergency tree trimming.

Contract Management

Certain significant outsourcing arrangements are managed within C&M including tree trimming; cable locating; wood pole testing; vacuum truck service and dry ice cleaning.

Tree trimming: Tree trimming is an important component of preventative line maintenance that mitigates service interruption and public safety risks from interfering vegetation. Tree trimming and clearing is completed by contractors. The entire service territory is trimmed on a 3-year cycle.

Cable locating: More than 50,000 cable locates are performed each year. Multi-utility locates are performed through one contractor which allows for a more cost efficient and timely execution of locating services. These contracted services support an average locate

performance of 98.5% over the past seven years. Horizon Utilities continues to exceed the OEB requirement of responses to locate requests within 5 working days, 90% of the time.

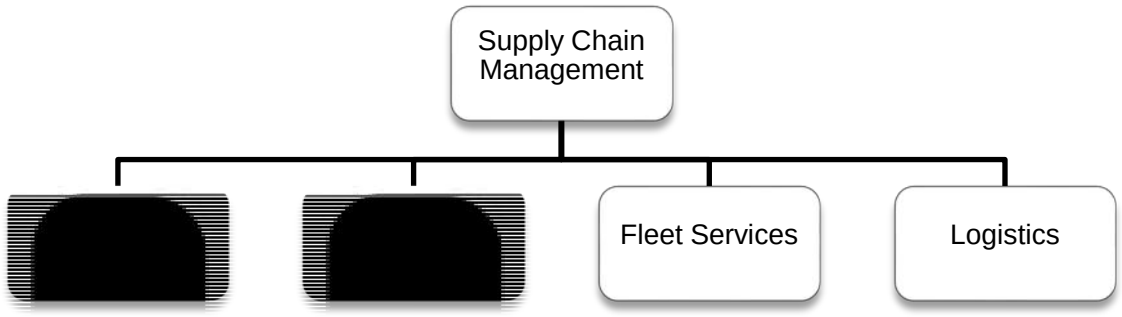
Wood pole testing: Horizon Utilities performs residual wood pole testing on all of its wood pole assets over a seven year cycle, as part of its predictive maintenance program. The purpose of these tests is to determine asset condition relative to age. All poles identified as requiring replacement within the next five years are scheduled into the pole replacement program. An estimated 6,000 wood poles were tested in Hamilton and St. Catharines in 2013.

Vacuum truck service: Third-party contractors provide vacuum excavation services for installing/replacing poles, perform small excavations for underground repairs, and clean underground manholes and vaults.

Dry ice cleaning: The current carrying components of certain types of switchgear can be cleaned using dry ice techniques without de-energizing the equipment. These activities are more effectively contracted to third parties as they require both specialized equipment and trade skills and the activities are seasonal.

Supply Chain Management ("SCM")

Figure 4-7: Supply Chain Management



The SCM business unit oversees the management of procurement, fleet services, logistics management and facilities, and document and records management programs.

SCM is also responsible for Horizon Utilities' sustainable development and environmental management efforts. SCM will lead many corporate environmental programs including internal energy consumption reduction efforts; improved building design; upgrades to building systems and infrastructure to meet related regulations; and decreased vehicular and facilities emissions over the next six years.

SCM's objectives for 2014-2019 are as follows:

- Building renewal and renovations;
- Building systems and infrastructure upgrades;
- Enhancement of building security;
- Substation rainwater management enhancement;
- HVAC and Chiller upgrades;
- Installation of generator emissions reduction technology; and
- Replacement of vehicles and vehicle maintenance resources.

Internally, SCM has continued to improve internal processes, reduce employee safety risk, reduce building equipment and systems failure, build efficiencies, maintain operation and maintenance costs, and increase productivity. Several projects and initiatives are planned to realize productivity improvements, including:

- Implementing E-Procurement solutions on key procurement activities to reduce sourcing and procurement evaluation timelines, improve process visibility, and increase productivity;

- Increasing strategic partnerships and leveraging purchasing volume to reduce operating costs, improve service levels, and ensure availability of materials and services required to support capital projects and labour challenges;

- Implementing small materials kiosks at Horizon Utilities' facilities to increase availability of materials and improve tool time for various groups;

- Implementing new processes and expanding the use of current tools (i.e. bar coding solution) to build stronger control measures, streamline processes, and build efficiencies that will result in reduced operations and maintenance costs, and increased productivity;

- Enhancing Horizon Utilities' work environments by renewing and optimizing office space at Horizon Utilities' properties, reducing overcrowding in some areas, consolidating department or team employees, removing hazardous materials, improving air flow, reclaiming poorly utilized storage and warehouse space for office space, and reducing energy and water consumption;

- Continuing to implement required building related efforts to support the Accessibility for Ontarians with Disabilities Act ("AODA") as part of the building renewal and renovation projects between 2014 and 2019;

- Developing and implementing a long term Climate Change Adaptation Implementation Plan to improve systems reliability, reduce operating costs, improve customer service levels and support maintenance programs; and

- Developing and Implementing a Building and Equipment 20 Year Replacement Strategy Plan to improve equipment and systems reliability, reduce operating costs and better capital expenditure planning.

The SCM business unit comprises 40 permanent positions with expertise in facilities management, procurement, fleet services, and logistics. SCM provides and maintains support to all Horizon Utilities' business units at its five main properties and 28 substations in Hamilton and St. Catharines.

Facilities

The Facilities department focuses on building and introducing processes and tools to improve maintenance services for Horizon Utilities' properties. Facilities will strive to improve internal customer service and employee productivity levels through building and workspace renewal and asset management projects. Finally, efforts will be made to improve electricity and water conservation programs.

The following key initiatives have been identified to facilitate these programs:

- Building renewal and renovation projects; and
- Developing a long term replacement strategy plan for equipment and properties.

Procurement

The Procurement department within SCM is responsible for sourcing and purchasing of goods and services to support the operations of Horizon Utilities in accordance with established policies and procedures. The department is also committed to the implementation of best practices to improve efficiencies in the procurement of goods and services; ensure availability of materials and services to support capital and maintenance programs; and limit exposure to pricing increases. The Procurement department develops supplier relationships to facilitate the negotiation of long-term agreements; take advantage of volume purchasing opportunities to obtain competitive pricing; and secure materials and services at the lowest price. The department consists of eight employees under the direction of the Director of the Supply Chain Management department.

Key initiatives include implementation of E-Procurement solutions; enhancement of the corporate contract management program; negotiation of procurement alliances with key suppliers and contractors; and increasing green procurement.

Fleet Services

The Fleet Services department is responsible for maintaining the availability and reliability of Horizon Utilities' 189 vehicles and related equipment. The department consists of eight employees under the direction of the Director of Supply Chain Management.

Key Fleet Services initiatives include implementing a fleet automated work order solution (scheduled for 2014) that will improve productivity, including augmenting mechanic time capacity for fleet maintenance.

Fleet Services has also been improving management service levels; productivity efforts; and maintenance programs to ensure a safe and reliable fleet.

This department was able to achieve productivity savings by reorganizing the shift schedule to best optimize vehicle availability. These savings are discussed further in Tab 3, Schedule 4 of this Exhibit.

Logistics

The Logistics department is responsible for managing Horizon Utilities' inventory to ensure the availability of materials to support capital and maintenance projects. This department will continue to improve the material management process in an effort to reduce inventory levels without affecting material availability. Logistics will also automate and streamline current processes to improve workflow and reduce manual intervention thus creating efficiency.

Key initiatives identified for the coming years include project material kitting and self-serve kiosk implementation. These initiatives will improve management of Logistics employee workloads; increase customer service levels; tool time in operating and capital programs; and material issuing controls. The department comprises thirteen employees under the direction of the Director of Supply Chain Management.

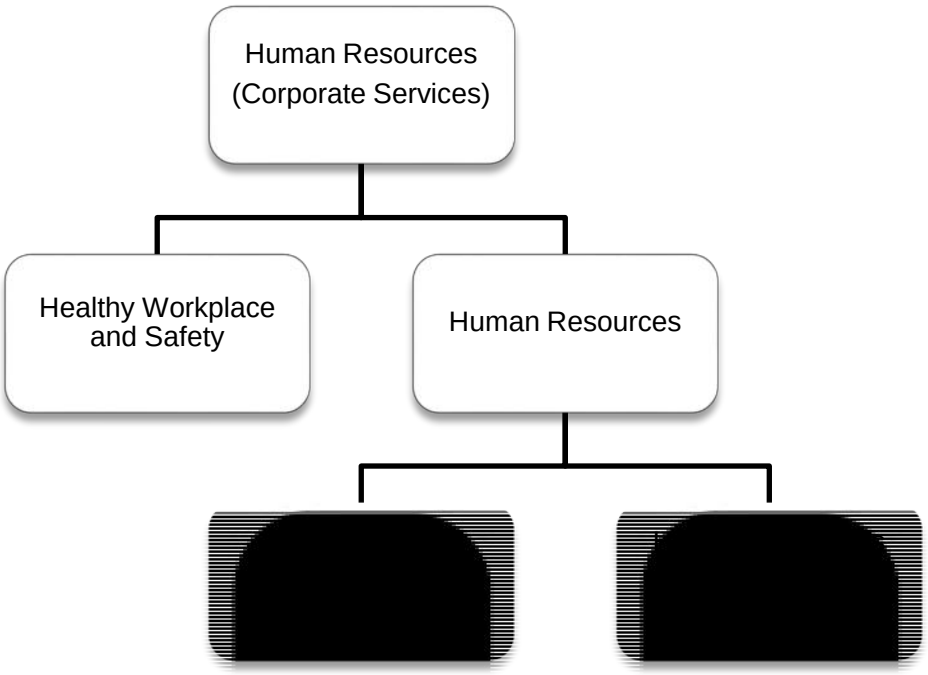
Human Resources (Corporate Services) Division

The Human Resources division is comprised of seventeen employees and provides key people and administrative management services to each department within Horizon Utilities. These services are essential both to day-to-day operations and to the success of the organization. Working in conjunction with departmental managers, Human Resources develops long term, strategic human resource plans that contribute to the accomplishment of organization-wide business plans and objectives. These plans ensure that the Horizon Utilities' requirements for human resources support are met; support the overall strategic plan of Horizon Utilities; and contribute to employee engagement and satisfaction.

People management includes: managing employee and labour relations; hiring and retention; reward and recognition; performance management; career/succession planning and employee development; as well as regulatory and statutory compliance. Program administration for payroll, benefits, pension and attendance is also a vital function of the Human Resources division.

Human Resources is responsible for: the design and delivery of innovative learning and development programs; the facilitation of robust recruitment methods; organizational development; change management expertise; compensation and benefits services; workforce analytics; and labour and employee relations. Human Resources also manages the organization's health, safety and wellness practices and programs. All of these efforts support and align with Horizon Utilities' business priorities and corporate objectives.

Figure 4-8: Human Resources (Corporate Services) Division



Human Resources is comprised of the following departments.

Healthy Workplace and Safety ("HWS")

HWS is responsible for the development, implementation and governance of programs and practices that promote a healthy and safe workplace in support of overall employee wellness, through the establishment and maintenance of an occupational health and safety management system. Horizon Utilities is committed to minimizing safety risks to all employees, contractors, visitors, customers and the public by implementing comprehensive risk management aligned with the OHSMS. It also has a key role in the management of occupational and non-occupational disability claims including early and safe return-to-work programs.

Human Resources

Human Resources is organized into two departments: Learning and Organization Development: and Human Resources and Employee Relations. These departments provide oversight and direction to all departments with regard to the management of human resources.

Learning and Organizational Development

The Learning and Organizational Development department is responsible for the design and delivery of: flexible and innovative learning and development programs; organizational development; and change management expertise. Learning and Organizational Development identifies, develops, and delivers flexible learning solutions to meet organizational, development and regulatory demands. It also develops programs to enable organizational performance and leadership effectiveness; and provides operational and project support to promote effective management of people and process change impacts. Some examples include: recent performance management program enhancements; the introduction of eLearning, an on-line learning solution; the oversight and execution of the biennial employee survey; and change management support for corporate initiatives such as Planning and Scheduling and GIS/OMS.

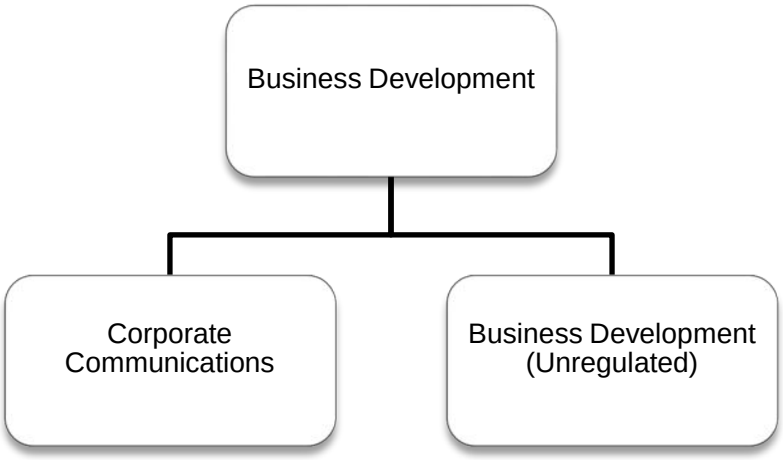
Human Resources and Employee Relations

The Human Resources and Employee Relations department is responsible for: the design and delivery of robust recruitment methods; employee and labour relations; compensation and benefits services; and workforce analytics. The employee and labour relations function promotes a positive, interests-based employer-employee relationship to enable a productive, respectful and engaged workforce. The employee and labour relations function provides guidance, advice and coaching with respect to various policies and people practices, regulations, legislation, and the negotiation and interpretation of the collective agreement. The recruitment and selection function establishes and supports the staffing and selection processes required to attract, retain and promote talent in an effort to meet Horizon Utilities' current and emerging needs. The compensation, benefits and analytics function is responsible for the administration and management of payroll, compensation, benefits, and pension programs. This function conducts and compiles research and analytics to support workforce planning and people practices; since tracking employee demographics, industry trends, and future business requirements is essential to informing Human Resources decisions and maintaining a skilled and productive workforce.

Business Development Division

The Business Development Division, led by the Vice-President, Business Development, comprises two departments: Corporate Communications department; and Business Development. The Business Development department resides in HHI. Certain activities undertaken by this department are on behalf of the regulated EDO business. The related costs of such are charged to EDO through a Management Fee which is included the Corporate Administration program costs. Such activities, related Management Fees, and justification are described in detail in the Transfer Pricing Study filed as Appendix 4-6.1 of this Exhibit. With the exception of this intercompany fee, none of costs associated with the Business Development department are included in the OM&A which forms part of Horizon Utilities' proposed revenue requirement.

Figure 4-9: Business Development Division



Corporate Communications

The Corporate Communications department is responsible for leading and executing all internal and external communications, and related processes, for Horizon Utilities. The department reinforces Horizon Utilities' reputation, strategic vision and brand values consistently across all stakeholder groups – employees, customers, shareholders, other utilities, municipal and provincial governments, interest groups, media and the community at large. The drivers of the costs within this department are primarily salaries, wages, and benefits.

Internal Communications

The Internal Communications function coordinates all elements of communication to employees, including adherence to brand guidelines and important corporate themes such as mission, vision, and values. As a result, it interprets the needs of several departments and communicates easy-to-understand information relating to items such as company initiatives and successes.

External Communications

The External Communications function ensures that the communication of information regarding Horizon Utilities consistently represents the company's values, vision and brand in a planned and coordinated way. Messages are crafted in simple language with clear "calls to action". This includes intensifying Horizon Utilities' social media presence in order to solidify its reputation as a sector leader in key areas such as customer focus, sustainable development, environmental awareness and community investment.

Business Development (Unregulated)

The Business Development department resides in HHI and is principally responsible for strategic planning, corporate development and industry relations for HHI's two affiliates: Horizon Utilities and HESI. The department exists to enhance the strategic capacity and corporate development expertise of the Executive Management Team ("EMT") of the Horizon family of companies.

The principal focus of Business Development is on growth of the business through: customer growth initiatives within the Applicant's current service territory; mergers, acquisitions and outsourcing opportunities with other local distribution companies ("LDCs").

Business Development manages several external relationships, such as relations with the Ontario government, including its Commissions and panels such as the Ontario Distribution Sector Review Panel and municipalities and related organizations such as the Association of Municipalities of Ontario ("AMO"), Canadian Urban Institute, and Quality Urban Energy Systems of Tomorrow ("QUEST"). Business Development also fosters and maintains relationships with

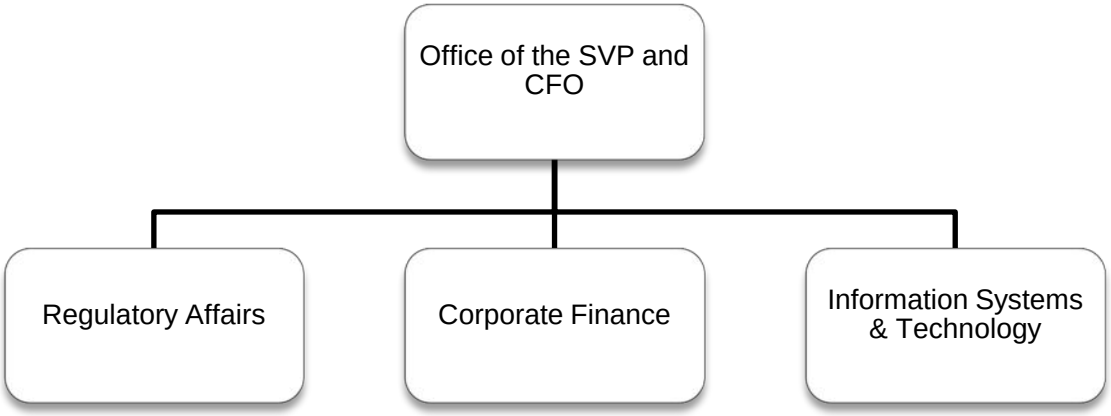
local and provincial interest groups, such as sustainability and environment groups, and with economic development departments, Chambers of Commerce, and their associations.

Business Development is also responsible for generating responses to corporate legal matters, such as trademarks, and reviewing of municipal official plans, growth strategies and policies, such as Community Improvement Plans ("CIPs").

Office of the SVP and CFO Division

The SVP/CFO division includes the Regulatory Affairs, Corporate Finance and IST departments.

Figure 4-10: Office of the SVP and CFO Division



Regulatory Affairs

The Regulatory Affairs department is accountable for all aspects of regulatory processes for the organization including: regulatory filings; compliance; and related internal operational support. Regulatory Affairs builds and supports key relationships with government, regulators, industry peers, and stakeholders to strategically monitor, influence, and evaluate potential impacts and opportunities related to industry regulation and government energy policy.

A primary function of Regulatory Affairs is its leadership in developing and defending applications for electricity distribution rates (e.g. CoS Applications) and annual Incentive Rate Mechanism ("IRM") applications.

Regulatory Affairs advises executive management of the financial, economic, political, and operational implications of current and evolving regulation with due regard for corporate strategy and compliance. It monitors pending and existing regulatory activities that will affect growth opportunities.

Regulatory Affairs is also responsible for the following processes:

- Forecasting and analyzing revenue based on a detailed, statistically based electricity load forecast for all customer classes;
- Monthly reporting and monitoring of regulatory balances such as the Ontario Clean Energy Benefit and Deferral and Variance Accounts;
- Compliance with quarterly and annual OEB Reporting and Record Keeping Requirements ("RRR"); and
- Compliance with statutes and codes including requirements related to the protection of privacy. The VP Regulatory Affairs is the Privacy Officer for the organization.

The Regulatory Affairs department expenses include salaries, wages, and all related benefit expenses of the Regulatory Affairs staff; annual OEB fees; legal and consulting services; software and maintenance costs and other administration costs. Regulatory Affairs also has costs allocated to its budget, which include the costs of facilities, computer support and other shared services.

Corporate Finance

The Corporate Finance department is accountable for all aspects of corporate finance; treasury; risk management and internal control; financial reporting; business planning and budgeting; and taxation. Corporate Finance is committed to providing excellent service to both its internal and external customers with the highest degree of accuracy, reliability, completeness and timeliness, and to safeguarding the Corporation's assets through the establishment of effective internal controls. The department is also committed to the implementation of best practices to improve operating efficiencies, and to provide employees with appropriate training and technology. The department consists of two departments; each headed by a Director, reporting to the Vice President, Finance.

The Financial Reporting department within Corporate Finance is responsible for the preparation of statutory, management, and Board of Directors financial reporting in accordance with IFRS; all daily accounting functions including accounts payable, accounts receivable, and general

accounting; treasury functions including borrowing and cash management; risk management; accounting systems and internal control processes; and supporting tax compliance. It is also responsible for all statutory reporting and compliance with applicable legislation governing financial practices.

The Budgeting and Business Analysis department within Corporate Finance is responsible for leading the annual business planning process, culminating in a multi-year Financial Plan approved by the Board of Directors. The Financial Plan is supported by detailed departmental budgets prepared using an integrated Financial Planning Software Solution which the group administers and maintains. It is also responsible for the annual determination of uniform costing rates, preparing monthly variance analyses of actual results compared to budget, providing advice and financial analysis to other departments for decision-making support, preparing quarterly forecasts, providing essential analysis to support regulatory requirements, and maintaining the economic evaluation model used to determine customer contribution and security deposit requirements for system expansions.

The Corporate Finance departmental expenses include salaries, wages, and all related benefit expenses of the Finance staff, annual audit fees, actuarial fees, banking services fees, and other administration costs. The business unit also bears the full cost for all administrative functions of post-employment benefit obligations and use of building facilities.

IST

The IST department is responsible for providing enterprise and departmental systems, solutions, and services that are the foundation for supporting the strategic and operational requirements and processes of Horizon Utilities. The objective of IST is to provide a robust, secure, scalable, reliable, cost-effective, IST infrastructure that supports current and future business requirements. IST is also responsible for the development and implementation of best-practice information technology ("IT") policies, processes, and procedures to ensure appropriate control, management and protection of corporate IST assets, data, and associated risks.

IST is divided into five sub-departments: Business Applications; Technical Services; Business Projects; IST Security; and IST Management and Project Management.

Business Applications

Business Applications costs include application development, support, and operation of the IBM iSeries/ Daffron Customer Information System environment and internet applications.

Technical Services

Technical Services costs include the implementation, monitoring, management and user support for IST infrastructure, servers, networks, telephony, data communications, mobile computing, and end-user computing environments.

Business Projects

Business Projects costs include the implementation, application administration and management, and user application support for the ERP application environment.

IT Security

IT Security costs include: implementation of cyber security tools and ongoing management including 24x7 monitoring of the environment by an external service provider; security risk assessment and mitigation; data privacy management; and the Cyber Security Awareness Program.

IST Management and Project Management

The IST Management and Project Management Office costs include the cost of the Director, IST and the Project Management Office.

The activities of IST Business Unit are focused on delivery of processes, technology, systems and support services that support five key strategic areas:

- Friction Attrition: The reduction of the operating cost base by the replacement of inefficient paper-bound and electronic processes and activities through broad adoption of technology;

- Enterprise Telecommunications Management: Use of robust, scalable, enterprise-wide telecommunications standards, processes and tools to cost-effectively and securely drive business and operations processes. This includes pervasive use of mobile technologies;
- Enterprise Information Management: Use of advanced information management techniques and technologies to effectively manage ever increasing and large volumes of data in order to provide business and operational analytics that improve integration and management of key business processes;
- Lifecycle Upgrades of Major Enterprise Business System: Planned upgrade of major business systems IFS ERP and Daffron Customer Information System to mitigate risks related to age of systems and ongoing vendor support; and
- Lifecycle Upgrades and/or New Implementations of Enterprise Operations Systems: This includes planned upgrades of key operations systems (such as GIS, OMS, and SCADA) to mitigate risks related to the age of systems; ensure ongoing vendor support; and provide new or improved modern capabilities for key operations processes such as Outage Management.

IST Business Unit activities are focused on delivery of a robust, scalable and secure information technology foundation in order to deliver in these important services. These activities are grouped into the following two areas:

- eFrastructure Services – Implementation and ongoing management of an integrated, cost-effective infrastructure in terms of:
    - Technology components;
    - Core business and operations applications;
    - Common, interchangeable, navigable and reusable data;
    - Flawless infrastructure operations.
- IST Capability - Development and/or restructuring of the IST function through the implementation of new tools and development of new competencies required to support new technologies:

- Standardized and integrated services;
- Efficient utilization of outside services, such as, managed services and cloud computing;
- Streamlined decision processes;
- Best practice based project management;
- Simplified IST administrative processes.

YEAR-OVER-YEAR VARIANCE ANALYSIS ON OM&A COSTS BY PROGRAM

Appendix 2-JC is provided below for the 2011 Board-Approved year through the 2019 Test Year.

Table 4-22 – Chapter 2 Filing Requirements - Appendix 2-JC - OM&A Costs by Program

2011 Board-Approved - 2014 Bridge Year

Programs	Last Rebasing Year (2011 Board-Approved)	Last Rebasing Year (2011 Actual)	2012 Actual	2013 Actual	2014 Bridge Year
Reporting Basis	**CGAAP**	**CGAAP**	**MIFRS**	**MIFRS**	**MIFRS**
Executive					
Corporate	1,586,372	1,157,680	884,314	1,388,031	1,027,123
Sub-Total	**1,586,372**	**1,157,680**	**884,314**	**1,388,031**	**1,027,123**
Human Resources					
Corporate Services	399,506	592,461	533,205	487,312	483,350
Healthy Workplace & Safety	462,808	341,941	395,147	530,789	820,954
Human Resources	1,672,609	1,450,741	1,828,434	1,841,240	1,984,311
Sub-Total	**2,534,923**	**2,385,143**	**2,756,786**	**2,859,342**	**3,288,614**
Business Development & Corporate Communications					
Corporate Communications	1,217,387	1,098,676	945,125	1,064,847	1,127,509
Sub-Total	**1,217,387**	**1,098,676**	**945,125**	**1,064,847**	**1,127,509**
Regulatory Affairs					
Regulatory Affairs	2,635,793	2,857,702	2,137,885	1,894,608	2,288,408
Sub-Total	**2,635,793**	**2,857,702**	**2,137,885**	**1,894,608**	**2,288,408**
Corporate Finance					
Corporate Finance	3,114,150	2,886,610	3,184,666	3,687,190	3,662,618
Sub-Total	**3,114,150**	**2,886,610**	**3,184,666**	**3,687,190**	**3,662,618**
IST					
Business Projects	627,990	567,130	602,906	539,138	704,536
PC Services	1,000,583	1,024,651	1,177,794	1,443,879	1,712,577
Business Applications	1,009,627	1,065,571	1,021,326	765,106	657,200
Information Systems and Technology	80,420	180,534	371,510	363,519	509,211
Cyber Security	239,338	244,577	264,828	371,111	498,930
Sub-Total	**2,957,957**	**3,082,463**	**3,438,364**	**3,482,754**	**4,082,455**
Customer Services					
Customer Care Intracompany Horizon	8,362,750	8,253,528	8,954,864	8,489,832	9,614,808
Customer Service and Customer Connections	-	2,001	-	-	-
Advance Meter Inventory/Meter Data Management & Repository	1,065,275	393,780	452,423	465,643	657,045
MV90	158,541	181,545	156,316	139,444	183,284
Sub-Total	**9,586,566**	**8,830,854**	**9,563,604**	**9,094,919**	**10,455,138**

Table 4-23 – Chapter 2 Filing Requirements - Appendix 2-JC - OM&A Costs by Program

2011 Board-Approved - 2014 Bridge Year

Programs	Last Rebasing Year (2011 Board-Approved)	Last Rebasing Year (2011 Actual)	2012 Actual	2013 Actual	2014 Bridge Year
Reporting Basis	**CGAAP**	**CGAAP**	**MIFRS**	**MIFRS**	**MIFRS**
Customer Connections					
Customer Connections	1,830,403	2,168,164	1,895,001	2,177,114	2,273,614
Meter Assets and Inside Service	658,425	688,476	647,359	634,709	784,348
Meter Sevice Providing	40,417	33,061	50,329	47,879	-
Smart Meters	(2,615,348)	(811,963)	207,087	21,124	-
Sub-Total	**(86,103)**	**2,077,738**	**2,799,776**	**2,880,825**	**3,057,962**
Utility Operations					
Utility Operations	1,119,536	912,389	1,083,206	1,386,510	1,177,345
Sub-Total	**1,119,536**	**912,389**	**1,083,206**	**1,386,510**	**1,177,345**
Construction and Maintenance					
Underground	1,996,406	2,037,115	2,490,179	1,767,307	3,304,290
Contractor Management	188,416	16,877	(5,625)	1,518,735	1,938,538
Overhead	6,681,505	7,057,742	6,699,100	6,899,436	5,046,085
Substations	1,165,593	769,133	696,721	490,902	851,250
Project Controls Office	769,869	682,118	597,352	487,108	556,010
Construction and Maintenance Services	241,115	209,226	163,497	236,789	234,446
Sub-Total	**11,042,904**	**10,772,210**	**10,641,224**	**11,400,277**	**11,930,619**
FACILITIES					
Facilities - General	481,163	274,973	401,639	501,332	634,718
Building - Substations	570,331	643,224	614,706	929,368	961,132
Building - John St. Hamilton	518,707	725,062	767,895	956,767	978,914
Building - Nebo Rd. Hamilton	589,017	825,803	999,541	1,026,150	1,173,432
Building - Stoney Creek	177,569	241,687	255,965	318,922	329,326
Building - Vansickle Rd. St. Catharines	306,578	582,405	333,574	569,419	640,038
Sub-Total	**2,643,365**	**3,293,154**	**3,373,320**	**4,301,959**	**4,717,560**
Supply Chain Management					
Procurement	-	425,784	527,747	705,474	853,214
Fleet	-	(154,336)	1,987,468	1,984,101	2,094,079
Logistics	-	(1,003,317)	1,557,528	1,443,024	1,926,703
Supply Chain	770,358	594,577	602,672	434,160	396,256
Sub-Total	**770,358**	**(137,292)**	**4,675,415**	**4,566,759**	**5,270,252**
Engineering and Operations					
Engineering and Asset Management	100,000	774,504	1,466,047	1,822,025	1,950,811
Control Room Operations	2,493,506	2,318,511	2,466,416	2,484,656	2,189,720
Engineering Systems and Asset Records	260,425	97,240	941,881	934,440	2,472,786
Capital Projects	-	(903,020)	893,614	988,935	1,460,884
Engineering Operations & Operational Improvement	159,062	140,091	226,723	278,430	227,566
Sub-Total	**3,012,993**	**2,427,326**	**5,994,680**	**6,508,486**	**8,301,766**
Miscellaneous					
Total	**42,136,201**	**41,644,654**	**51,478,365**	**54,516,506**	**60,387,369**

Table 4-24 – Chapter 2 Filing Requirements - Appendix 2-JC - OM&A Costs by Program

2015 Test Year- 2019 Test Year

Programs	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Reporting Basis	**MIFRS**	**MIFRS**	**MIFRS**	**MIFRS**	**MIFRS**
Executive					
Corporate	1,030,142	1,020,602	1,022,805	1,015,157	1,053,303
Sub-Total	**1,030,142**	**1,020,602**	**1,022,805**	**1,015,157**	**1,053,303**
Human Resources					
Corporate Services	497,727	509,715	522,526	535,196	548,659
Healthy Workplace & Safety	852,481	873,275	895,478	917,400	938,774
Human Resources	2,130,092	2,134,002	2,187,290	2,340,927	2,289,729
Sub-Total	**3,480,301**	**3,516,992**	**3,605,295**	**3,793,523**	**3,777,162**
Business Development & Corporate Communications					
Corporate Communications	1,143,176	1,171,246	1,197,486	1,222,395	1,249,236
Sub-Total	**1,143,176**	**1,171,246**	**1,197,486**	**1,222,395**	**1,249,236**
Regulatory Affairs					
Regulatory Affairs	2,883,584	2,921,409	2,962,048	3,003,270	3,093,237
Sub-Total	**2,883,584**	**2,921,409**	**2,962,048**	**3,003,270**	**3,093,237**
Corporate Finance					
Corporate Finance	3,877,189	3,939,928	4,042,083	4,143,995	4,224,708
Sub-Total	**3,877,189**	**3,939,928**	**4,042,083**	**4,143,995**	**4,224,708**
IST					
Business Projects	641,686	978,212	1,009,993	1,042,872	1,063,729
PC Services	1,825,637	1,920,309	1,966,308	2,045,182	2,077,360
Business Applications	656,888	671,404	687,733	702,921	717,336
Information Systems and Technology	513,873	525,950	538,360	551,112	562,134
Cyber Security	554,173	570,594	598,108	610,057	760,630
Sub-Total	**4,192,256**	**4,666,469**	**4,800,502**	**4,952,143**	**5,181,188**
Customer Services					
Customer Care Intracompany Horizon	9,899,570	10,130,264	10,685,009	10,639,713	10,793,436
Customer Service and Customer Connections	-	-	-	-	-
Advance Meter Inventory/Meter Data Management & Repository	852,029	872,942	895,249	917,314	938,216
MV90	188,267	198,655	197,100	201,509	205,830
Sub-Total	**10,939,866**	**11,201,862**	**11,777,357**	**11,758,536**	**11,937,482**

Table 4-25 – Chapter 2 Filing Requirements - Appendix 2-JC - OM&A Costs by Program

2015 Test Year - 2019 Test Year

Programs	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Reporting Basis	**MIFRS**	**MIFRS**	**MIFRS**	**MIFRS**	**MIFRS**
Customer Connections					
Customer Connections	2,397,789	2,465,038	2,540,826	2,612,336	2,681,988
Meter Assets and Inside Service	811,826	835,294	861,324	886,203	910,246
Meter Sevice Providing	-	-	-	-	-
Smart Meters	-	-	-	-	-
Sub-Total	**3,209,615**	**3,300,332**	**3,402,150**	**3,498,539**	**3,592,234**
Utility Operations					
Utility Operations	1,211,490	1,245,518	1,282,309	1,320,642	1,333,794
Sub-Total	**1,211,490**	**1,245,518**	**1,282,309**	**1,320,642**	**1,333,794**
Construction and Maintenance					
Underground	2,676,774	2,751,800	2,837,480	2,917,510	2,995,813
Contractor Management	1,831,219	1,864,055	1,898,560	1,932,785	1,967,009
Overhead	6,075,172	6,221,823	6,314,475	6,449,252	6,620,709
Substations	657,270	877,716	900,006	921,710	943,131
Project Controls Office	593,257	638,261	658,257	678,024	663,825
Construction and Maintenance Services	230,200	235,674	241,562	247,365	254,137
Sub-Total	**12,063,891**	**12,589,330**	**12,850,341**	**13,146,645**	**13,444,624**
FACILITIES					
Facilities - General	649,523	668,298	689,562	708,964	727,854
Building - Substations	976,050	991,291	1,006,775	1,022,511	1,038,415
Building - John St. Hamilton	995,219	1,012,295	1,029,690	1,047,414	1,075,632
Building - Nebo Rd. Hamilton	1,192,132	1,211,102	1,230,390	1,249,999	1,244,400
Building - Stoney Creek	334,920	340,661	346,508	352,468	358,623
Building - Vansickle Rd. St. Catharines	650,060	660,326	670,764	681,376	693,981
Sub-Total	**4,797,904**	**4,883,972**	**4,973,689**	**5,062,730**	**5,138,906**
Supply Chain Management					
Procurement	881,900	875,248	911,017	925,758	949,995
Fleet	2,162,035	2,207,932	2,256,451	2,304,582	2,351,898
Logistics	2,026,138	2,080,065	2,138,806	2,196,050	2,248,624
Supply Chain	392,864	399,986	407,532	415,006	424,025
Sub-Total	**5,462,936**	**5,563,231**	**5,713,806**	**5,841,396**	**5,974,542**
Engineering and Operations					
Engineering and Asset Management	1,768,620	1,543,082	1,657,954	1,747,710	1,761,320
Control Room Operations	2,320,526	2,464,925	2,545,575	2,624,677	2,694,769
Engineering Systems and Asset Records	2,755,543	2,832,852	2,848,389	2,964,360	3,030,588
Capital Projects	1,268,743	1,300,250	1,336,268	1,369,618	1,403,658
Engineering Operations & Operational Improvement	226,898	232,131	237,769	243,320	249,740
Sub-Total	**8,340,330**	**8,373,240**	**8,625,955**	**8,949,685**	**9,140,075**
Miscellaneous					
Total	**62,632,679**	**64,394,131**	**66,255,827**	**67,708,658**	**69,140,489**

Executive

The first program identified in Appendix 2-JC is Executive, which includes Corporate Administration. Corporate Administration is responsible for corporate governance and execution of the strategic and operating plans. This program comprises the functions of the Board of Directors for Horizon Utilities, the CEO, the SVP & CFO, and the executive support staff.

Table 4-26 provides the 2011 through 2019 expenditures for the Corporate Administration Program. A variance analysis in support of this table follows.

Table 4-26 – Corporate Administration 2011 - 2019 Expenditures and Variances

Annual Expenditures

	2011 Board-Approved	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Corporate Administration	$ 1,586,372	$ 1,157,680	$ 884,314	$ 1,388,031	$ 1,027,123	$ 1,030,142	$ 1,020,602	$ 1,022,805	$ 1,015,157	$ 1,053,303

Variance % Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Corporate Administration	-35.06%	-25.78%	-0.93%	0.22%	-0.75%	3.76%

Variance $ Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Corporate Administration	$ (556,230)	$ (357,889)	$ (9,540)	$ 2,203	$ (7,648)	$ 38,146

2015 Test Year (MIFRS) vs. 2011 Board-Approved (CGAAP)

The Corporate Administration OM&A program has four components:

i. Expenses incurred in the operation of: the CEO Office; the SVP & CFO Office; and the Board of Directors;

ii. Corporate Accounts comprising certain expenses not captured in any other program, such as: financial auditing fees; premiums for property and corporate liability insurance; industry membership fees; and payroll processing fees;

iii. The Management Fee charged to EDO by HHI for oversight of the Corporate Communications program and the fulfillment of EDO's Government Relations function; and

iv. Management Fees recovered by EDO.

Management Fees are more fully described in the Transfer Pricing Study included in Tab 4, Appendix 4-6.1 of this Exhibit. The study documents the methodology used to derive Management Fee amounts charged by or to EDO for the 2014 Bridge Year and the 2015 to 2019 Test Years. This methodology consists of applying specific allocators to detailed itemized projections of costs incurred in providing the services, whereas in 2013 and prior years, these charge levels were derived by applying inflation factors to legacy Management Fee amounts. Year-over-year variances in Management Fee amounts are also addressed in Tab 2, Schedule 2 of this Exhibit.

The 2015 plan for Corporate OM&A is forecast to be $556,230 or 35.06% lower than the 2011 Board-Approved amount of $1,586,372. The decrease primarily results from higher Management Fee recovered by EDO of $1,032,437, which reduces net OM&A expenses**.** The following table summarizes the Management Fees recovered by EDO:

Table 4-27 – Management Fees Recovered by EDO

Account Description	2011 Board Approved ($)	2015 Test Year ($)	Variance
Management Fee - Horizon Charges Customer Care	600,490	1,049,001	(448,511)
Management Fee - Horizon Charges HUC	19,776	22,459	(2,683)
Management Fee - Horizon Charges HHSI (HCE)		47,314	(47,314)
Management Fee - Horizon Charges CDM		462,825	(462,825)
Management Fee - Horizon Charges Solar Sunbelt GP		26,206	(26,206)
Managment Fee - Horizon Charges HESI for MSP Services		44,898	(44,898)
Total	**620,266**	**1,652,703**	**(1,032,437)**

As the table shows, compared to the 2011 Board-Approved amounts, the Management Fee charged to Customer Care has increased due to refinements to the allocation methodology, as described in the Transfer Pricing Study. Additional Management Fees have been implemented since 2011 to recover costs from Hamilton Hydro Services Inc. ("HHSI"), the CDM business of Horizon Utilities and the Solar Sunbelt General Partnership. These Management Fees were classified as miscellaneous revenues in the 2011 Board-Approved balances and are now recorded as OM&A offsets. In addition, a new Management Fee was added in 2012 to recover costs from the Meter Service Provider ("MSP") business of HESI.

This decrease is partially offset by the HHI Management Fee referenced in (iii) above which was not present in 2011 ($242,509); higher payroll processing fees ($63,000); and higher property and general insurance premiums ($63,000).

Horizon Utilities reviews insurance coverage amounts annually for each of its operations as well as the deductible rates in order to minimize insurance exposure and manage annual premiums. Corporate liability insurance premiums have increased for 2014 throughout the industry, mainly due to large storm damage claims in 2013 in Ontario and Alberta/British Columbia. The premiums for comprehensive liability insurance increased by $63,000 in 2014.

***2015 Test Year (MIFRS) vs. 2013 Actual* (MIFRS)**

In 2015, Corporate OM&A is expected to be $357,889 or 25.78% lower than the 2013 Actual of $1,388,031. The decrease is primarily due to higher Management Fees recoverable by EDO reducing net OM&A expenses by $591,854, partially offset by the Management Fee charged to EDO by HHI in 2015 ($242,509). As shown in the Transfer Pricing Study, the increase in Management Fees recoverable by EDO is mainly due to the increased fee amounts chargeable to Customer Care ($424,251) and to CDM ($150,705) as a result of refinements to the allocation methodology.

2016 Test Year (MIFRS) vs. 2015 Test Year (MIFRS)

The anticipated decrease in Corporate Administration costs in 2016 of $9,540 or 0.93% over the prior year is principally due to inflation on costs recoverable by EDO as noted in the Transfer Pricing Study ($53,515 or 3.2%), partially offset by inflation on directly incurred costs ($37,174 or 1.5%) and the Management Fee charged by HHI ($6,802 or 2.8%). There are no anticipated changes to Corporate Administration activities for this period.

2017 Test Year (MIFRS) vs. 2016 Test Year (MIFRS)

The anticipated increase in Corporate Administration costs in 2017 of $2,203 or 0.22% over the prior year is principally due to inflation on directly incurred costs ($38,705 or 1.6%) and the Management Fee charged by HHI ($7,003) offset by inflation on costs recoverable by EDO as noted in the Transfer Pricing Study ($43,505 or 2.5%). There are no anticipated changes to Corporate Administration activities for this period.

2018 Test Year (MIFRS) vs. 2017 Test Year (MIFRS)

The anticipated decrease in Corporate Administration costs in 2018 of $7,648 or 0.75% over the prior year is principally due to inflation on costs recoverable by EDO as noted in the Transfer Pricing Study ($53,950 or 3.1%), partially offset by inflation on directly incurred costs ($39,096 or 1.6%) and the Management Fee charged by HHI ($7,206 or 2.8%). There are no anticipated changes to Corporate Administration activities for this period.

2019 Test Year (MIFRS) vs. 2018 Test Year (MIFRS)

The anticipated increase in Corporate Administration costs in 2019 of $38,146 or 3.76% over the prior year is principally due to inflation on costs directly incurred ($52,234 or 2.0%) and the Management Fee charged by HHI ($7,092 or 2.0%), partially offset by inflation on costs recoverable by EDO as noted in the Transfer Pricing Study ($21,181 or 1.2%). There are no anticipated changes to Corporate Administration activities for this period.

Human Resources

The Human Resources division provides key people and administrative management services across Horizon Utilities, as described in Tab 3, Schedule 2 of this Exhibit.

Table 4-28 provides the 2011 through 2019 expenditures for the Human Resources Program. A variance analysis in support of this table follows below.

Table 4-28 – Human Resources 2011 - 2019 Expenditures and Variances

Annual Expenditures

	2011 Board-Approved	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Corporate Services	$ 399,506	$ 592,461	$ 533,205	$ 487,312	$ 483,350	$ 497,727	$ 509,715	$ 522,526	$ 535,196	$ 548,659
Healthy Workplace & Safety	$ 462,808	$ 341,941	$ 395,147	$ 530,789	$ 820,954	$ 852,481	$ 873,275	$ 895,478	$ 917,400	$ 938,774
Human Resources	$ 1,672,609	$ 1,450,741	$ 1,828,434	$ 1,841,240	$ 1,984,311	$ 2,130,092	$ 2,134,002	$ 2,187,290	$ 2,340,927	$ 2,289,729
Total	**$ 2,534,923**	**$ 2,385,143**	**$ 2,756,786**	**$ 2,859,342**	**$ 3,288,614**	**$ 3,480,301**	**$ 3,516,992**	**$ 3,605,295**	**$ 3,793,523**	**$ 3,777,162**

Variance % Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Corporate Services	24.59%	2.14%	2.41%	2.51%	2.42%	2.52%
Healthy Workplace & Safety	84.20%	60.61%	2.44%	2.54%	2.45%	2.33%
Human Resources	27.35%	15.69%	0.18%	2.50%	7.02%	-2.19%
Total	37.29%	21.72%	1.05%	2.51%	5.22%	-0.43%

Variance $ Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Corporate Services	$ 98,221	$ 10,415	$ 11,988	$ 12,812	$ 12,670	$ 13,463
Healthy Workplace & Safety	$ 389,673	$ 321,692	$ 20,794	$ 22,203	$ 21,922	$ 21,374
Human Resources	$ 457,483	$ 288,852	$ 3,909	$ 53,288	$ 153,637	$ (51,198)
Total	$ 945,378	$ 620,959	$ 36,691	$ 88,303	$ 188,228	$ (16,361)

2015 Test Year (MIFRS) vs. 2011 Board-Approved

Human Resources expenditures planned for 2015 are $945,378 or 37.29% higher than 2011 Board-Approved. This variance is largely attributed to the re-organization of the department in 2012 and 2013, the engagement of consulting services (as discussed below), and the implementation of new technology solutions.

The VP, Corporate Services retired in the fall of 2011 and was replaced by a new VP, Human Resources. This presented an opportunity to re-organize the Human Resources and HWS departments in 2012 and 2013 to better align to organizational needs. This re-organization included the reallocation of three existing FTE from other programs and the introduction of two new FTE, as discussed below, which represents approximately $650,998 of the variance between 2015 and 2011 Board-Approved.

The five additional FTE referenced above are elaborated as follows:

1. **Electrical Safety Specialist**: This position works closely with front-line supervision and provides expert advice, consultation, and safety assurance of all electrical and construction work. The Specialist assists in the interpretation, application and auditing for compliance with the technical aspects related to: legal requirements; regulated codes and standards; corporate policies and procedures, industry guides and practices; and risk assessments and incident management or investigations. This position represents a reallocation of an existing FTE from the C&M Program with no incremental cost.

2. **Administrator Claims/Disability**: Horizon Utilities has experienced a rise in the average workforce age demographics resulting in an increase in the number and complexity of disability claims. This has necessitated additional expertise to support the Attendance Management Program by mitigating absenteeism and facilitating early and safe return to work. The Administrator Claims/Disability is responsible to: examine, assess and administer occupational and non-occupational claims; adjudicate/review claims with medical consultants and/or third-party resources; manage, administer and correspond with claimants, policyholders, administrators, other insurance carriers, doctors, Workplace Safety and Insurance Board (WSIB); coordinate return-to-work solutions in partnership with front-line supervisor/managers; and manage the tracking

and development and distribution of health, safety and wellness reports. This position was created in 2013.

3. **Human Resources Generalist**: This position was required to meet increasing organizational demands with respect to labour/employee relations and recruitment functions. The addition of this position in 2013 has allowed Human Resources to strengthen its proactive support for and coaching of front-line supervisors, managers and senior leaders to maintain a positive labour and employee relations climate. The HR Generalist is responsible for: supporting all employee/labour relations activities including grievances/labour management issues, discipline, collective agreement interpretation, employee concerns; attendance management consultations; performance management and improvement plans; recruitment support; and ongoing support and guidance to departments in the interpretation and application of legislation and corporate policies.

4. **Human Resources Data Administrator:** HR has experienced a growing demand for timely business intelligence and data to make informed decisions in support of people management. The HR Data Administrator position was added in 2012 to provide additional support in the areas of reporting; data analysis; and research as well as compensation, benefits and back-up for payroll. This was a temporary position that was converted to a permanent role, funded by the reallocation of an existing headcount from C&M.

5. **Executive Assistant**: This position was transferred from the Corporate Administration program to the Human Resources program in 2012**.** This position supports the VP, Human Resources as well as the SVP and CFO.

Horizon Utilities initiated enhancements to its Human Resources strategy commencing in 2012. Key areas of focus included: communication; learning and leadership development; performance management; attendance management; recruitment tools and practices; and safety and wellness. The 2011 Employee Survey feedback validated these key areas of focus as opportunities to improve overall employee engagement and satisfaction. Effectively managing performance, attendance and recruitment contributes to Horizon Utilities' strategic objectives of being "A Great Place to Work" and the "Best Performing Utility" and subsequently

translates to customer satisfaction as described in Tab 1, Schedule 1 of this Exhibit. External consultants were retained for their subject matter expertise and broad knowledge of best practices in other industries and organizations to assist HR in addressing these identified areas. The work by external third parties represents $214,500 of the variance between 2015 and 2011 Board-Approved. Additional consulting support was required in 2013 related to the implementation of the OHSMS.

New technology platforms and solutions were implemented during 2012 in support of the enhanced HR strategy. These technology solutions represent approximately $82,800 of the variance between 2015 and Board-Approved 2011.

Intelex, a safety software system, was purchased in 2012 to support efforts to achieve CSA Z1000; a leading standard that provides a framework for developing and implementing an OHSMS as described in Tab 2, Schedule 2 of this Exhibit.

Horizon Utilities implemented a Taleo applicant tracking system and purchased a recruiter license and job postings with LinkedIn[4] in 2012 in order to enhance recruitment capabilities (both internally and externally). The benefits of these systems include: administrative efficiencies; a more robust, searchable database to easily identify candidates with specific qualifications; enhanced applicant experience; and the ability to more proactively source qualified applicants as detailed in Tab 2, Schedule 2, of this Exhibit.

Horizon Utilities began working with Skillsoft, a leading provider of eLearning solutions, in support of ongoing requirements for employee learning and development. The introduction of eLearning, or online learning, complements Horizon Utilities' suite of learning solutions (e.g., on-the-job training, in-house training, attendance at conferences/off-site courses) and contributes to a productive workforce by affording employees an additional way in which to refine or acquire the skills and knowledge necessary to perform their roles effectively. Enabling skill development through eLearning improves employee competence and confidence and contributes to overall employee and customer satisfaction.

[4] LinkedIn is a social networking website for people in professional occupations. Founded in December 2002 and launched on May 5, 2003, it is mainly used for professional networking.

Through the Skillsoft platform, Horizon Utilities is able to provide employee access to over 300 eLearning/online courses including topics such as: desktop applications; communication; leadership; and team and personal effectiveness. Employee access to courses is available 24x7 from the convenience of their desktop, laptop, eLearning kiosk, or home, and allows them to complete courses on their own time and at their own pace. This flexible new learning solution facilitates quick and easy access to tips, techniques and knowledge that employees can apply on the job immediately.

eLearning is a cost effective and sustainable training option as it alleviates some of the costs associated with the planning and delivery of on or off-site learning, including consultant fees, print/materials, as well as travel. Reducing logistical challenges, including less time spent scheduling and/or travelling to training sites, improves employee capacity and minimizes business/service disruption for customers.

Human Resources continue to be proactive in their efforts to achieve productivity and savings in the 2015 – 2019 Test Years.

2015 Test Year (MIFRS) vs. 2013 Actual (MIFRS)

Human Resources expenditures are expected to increase by $620,959 or 21.72% in the 2015 Test Year compared to the 2013 Actual.

The increase is primarily due to vacancies in the Human Resources Division and HWS in 2013 compared to 2015, as well as inflationary increases in salaries, wages, and benefits in 2014 and 2015 (collectively comprising approximately $364,094 of the variance).

The HWS department had vacancies in the positions of Manager, HWS and Electrical Safety Specialist in 2013. Consequently, salary and benefit expenses were lower than budgeted. The 2015 budget assumes a full complement of employees.

The Director, Human Resources and Employee Relations position was vacant for a portion of 2013. The 2015 budget includes a full year of payroll costs for this position.

In 2015, the expected increase in operating expenses in the HWS department represents 18% or $110,000 of the variance relative to 2013. These costs are attributed to two key areas of

focus: a) developing a comprehensive wellness strategy; and b) continuation of CSA Z1000 certification.

Employee physical and emotional wellness is critical to enabling a productive and engaged workforce. Horizon Utilities will engage a third-party consultant to: assess the current wellness program and future needs; conduct stakeholder engagement and external research; and compile a report detailing a recommended wellness strategy including recommended processes to monitor and measure program effectiveness. The development of a comprehensive employee wellness strategy will consider targeted programs for specific work groups and related wellness concerns (i.e., repetitive strain injuries). Developing and implementing wellness programs, resources and tools is necessary to meet the changing needs of a multi-generational workforce and will improve overall employee satisfaction. Implementing strategies which address specific wellness concerns and/or trends improves opportunity to mitigate potential risk of employee injury or absence and business disruption, including related costs.

Horizon Utilities continues to strive for excellence in Occupational Health and Safety and has chosen to implement Canadian Standards Association Z1000 ("CSA Z1000"), a national, workplace health and safety management standard as detailed in Tab 2, Schedule 2 of this Exhibit. Horizon Utilities will engage a third-party consultant to support its efforts to achieve standardization and optimize the benefits of implementing a systematic approach to identifying and managing health and safety risks and related costs. Specifically, the consultant will: complete a comprehensive review of existing policies, procedures and recommend revisions as necessary; develop and deliver training to address skill/knowledge gaps; and conduct audits to validate program compliance and/or opportunities for continued improvement. Allocating the appropriate resources and focus to this critical initiative is important to ensuring a high quality and timely outcome.

Additional costs were also budgeted for 2015 to support labour negotiations with respect to a new Collective Agreement (the current agreement expires in May 2015) and this represents 16% of the variance. Operating costs of $100,000 are budgeted in 2015 to provide for meeting facilities and related expenses, legal support, and printing new collective agreements. These costs support the negotiation of labour agreements and minimize the risks inherent in a labour disruption.

In 2014, the expected increase in operating expenses in the HR department represents 8% or $50,000 of the variance relative to 2013. This expenditure will be utilized to implement an electronic performance management system. This system will provide employees with the ability to complete performance forms (e.g. appraisals, mid – year reviews, etc.) electronically in a centralized tool. The current manual paper based process will be replaced with an automated, streamlined process which will enable improved tracking and reporting on progress and completion of performance appraisals. The system will enable electronic routing for review and approval of forms and action plans which will reduce the administrative functions associated with a paper based system. The Information contained within the performance management system will allow for timely organizational analytics and performance metrics. Additionally, the information will inform learning and development priorities as it relates to employee development plans.

2016 Test Year (MIFRS) vs. 2015 Test Year (MIFRS)

The anticipated increase in Human Resources costs in 2016 of $36,691 or 1.05% over the prior year is principally due to inflation. There are no anticipated changes to HR staffing levels and costs remain relatively stable.

2017 Test Year (MIFRS) vs. 2016 Test Year (MIFRS)

The anticipated increase in Human Resources costs in 2017 of $88,303 or 2.51% over the prior year is principally due to inflation. There are no anticipated changes to HR staffing levels.

2018 Test Year (MIFRS) vs. 2017 Test Year (MIFRS)

The anticipated increase in Human Resources costs in 2018 of $188,228 or 5.22% over the prior year is principally due to inflation and costs associated with negotiating a new collective agreement. There are no anticipated changes to Human Resources activities for this period.

2019 Test Year (MIFRS) vs. 2018 Test Year (MIFRS)

Human Resources costs are anticipated to decrease in 2019 by $16,361 or 0.43% over the prior year principally due to a reduction of collective bargaining costs offset by annual inflationary increases. There are no anticipated changes to HR staffing levels.

Corporate Communications

The Corporate Communications department is responsible for leading and executing all internal and external communications, and related processes, for Horizon Utilities, as further described in the Division Overview section in Tab 3, Schedule 2 of this Exhibit.

Table 4-29 provides the 2011 through 2019 expenditures for the Corporate Communications Program. A variance analysis in support of this table is provided below.

Table 4-29 – Corporate Communications 2011 - 2019 Expenditures and Variances

Annual Expenditures										
	2011 Board-Approved	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Corporate Communications	$ 1,217,387	$ 1,098,676	$ 945,125	$ 1,064,847	$ 1,127,509	$ 1,143,176	$ 1,171,246	$ 1,197,486	$ 1,222,395	$ 1,249,236

Variance % Increase/(Decrease)						
	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Corporate Communications	-6.10%	7.36%	2.46%	2.24%	2.08%	2.20%

Variance $ Increase/(Decrease)						
	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Corporate Communications	$ (74,211)	$ 78,329	$ 28,071	$ 26,239	$ 24,909	$ 26,841

2015 Test Year (MIFRS) vs. 2011 Board-Approved (CGAAP)

In 2015, Corporate Communications OM&A is expected to be $74,211 or 6.10% lower than the 2011 Board-Approved budget. The decrease is mainly due to:

- Lower outside service provider expenses related to website development ($165,000) due to development work undertaken in 2011; offset by
- General wage and price inflation.

2015 Test Year (MIFRS) vs. 2013 Actual (MIFRS)

The anticipated increase in Corporate Communications costs in 2015 of $78,329 or 7.36% over the 2013 Actual is principally due to inflationary adjustments to salaries, wages, and benefits. There are no anticipated changes to activities or staff levels within Corporate Communications activities for the period.

2016 Test Year (MIFRS) vs. 2015 Test Year (MIFRS)

The anticipated increase in Corporate Communications costs in 2016 of $28,071 or 2.46% over the prior year is principally due to inflationary adjustments to salaries, wages, and benefits. There are no anticipated changes to activities or staff levels within Corporate Communications in 2016.

2017 Test Year (MIFRS) vs. 2016 Test Year (MIFRS)

The anticipated increase in Corporate Communications costs in 2017 of $26,239 or 2.24% over the prior year is principally due to inflationary adjustments to salaries, wages, and benefits. There are no anticipated changes to activities or staff levels within Corporate Communications in 2017.

2018 Test Year (MIFRS) vs. 2017 Test Year (MIFRS)

The anticipated increase in Corporate Communications costs in 2018 of $24,909 or 2.08% over the prior year is principally due to inflationary adjustments to salaries, wages, and benefits.

There are no anticipated changes to activities or staff levels within Corporate Communications in 2018.

2019 Test Year (MIFRS) vs. 2018 Test Year (MIFRS)

The anticipated increase in Corporate Communications costs in 2019 of $26,841 or 2.20% over the prior year is principally due to inflationary adjustments to salaries, wages, and benefits. There are no anticipated changes to activities or staff levels within Corporate Communications in 2019.

Regulatory Affairs

Regulatory Affairs is accountable for all aspects of regulatory processes for the organization including: regulatory filings; compliance; and related internal operational support. The function of the Regulatory Affairs Department is discussed in further detail in Tab 3, Schedule 2 of this Exhibit.

Table 4-30 provides the 2011 through 2019 expenditures for the Regulatory Affairs Program. A variance analysis in support of this table is provided below.

Table 4-30 – Regulatory Affairs 2011 - 2019 Expenditures and Variances

Annual Expenditures										
	2011 Board-Approved	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Regulatory Affairs	$ 2,635,793	$ 2,857,702	$ 2,137,885	$ 1,894,608	$ 2,288,408	$ 2,883,584	$ 2,921,409	$ 2,962,048	$ 3,003,270	$ 3,093,237

Variance % Increase/(Decrease)						
	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Regulatory Affairs	9.40%	52.20%	1.31%	1.39%	1.39%	3.00%

Variance $ Increase/(Decrease)						
	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Regulatory Affairs	$ 247,791	$ 988,977	$ 37,824	$ 40,640	$ 41,222	$ 89,967

2015 Test Year (MIFRS) vs. 2011 Board-Approved (CGAAP)

Regulatory Affairs expenditures in 2015 are forecast to be $247,791 or 9.40% over 2011 Board-Approved. This variance is due to the annualized recovery of costs related to preparation of the 2015 Custom IR Application in the amount of $551,941, and the net reduction of legal and consulting costs from 2011 of $300,000 relating to the 2011 CoS Application. Regulatory Affairs continues to be proactive in their efforts to achieve productivity and savings in the 2015 – 2019 Test Years.

2015 Test Year (MIFRS) vs. 2013 Actual (MIFRS)

Expenditures are forecast to be $988,977 or 52.20% higher in 2015 compared to 2013 Actual. This variance is the result of costs related to the 2015 Custom IR Application in the amount of $551,941 as noted above, and with full complement of staff in Regulatory Affairs increasing the amount from 2013 by $245,619. Costs for the 2015 Custom IR Application of $707,213 incurred in 2013 were deferred for recovery over the 2015 – 2019 Test Years (as discussed in Tab 4, Schedule 6 of this Exhibit). Legal and consulting costs in 2015 are forecast to be higher by $124,405. The total costs expected to be incurred in preparing this Custom IR Application are estimated to be $2,759,704.

2016 Test Year (MIFRS) vs. 2015 Test Year (MIFRS)

The anticipated increase in Regulatory Affairs costs in 2016 of $37,824 or 1.31% over the prior year is principally due to inflationary adjustments to salaries, wages, and benefits. There are no anticipated changes to activities or staff levels within Regulatory Affairs in 2016.

2017 Test Year (MIFRS) vs. 2016 Test Year (MIFRS)

The anticipated increase in Regulatory Affairs costs in 2017 of $40,640 or 1.39% over the prior year is principally due to inflationary adjustments to salaries, wages, and benefits. There are no anticipated changes to activities or staff levels within Regulatory Affairs in 2017.

2018 Test Year (MIFRS) vs. 2017 Test Year (MIFRS)

The anticipated increase in Regulatory Affairs costs in 2018 of $41,222 or 1.39% from the prior year is principally due to inflationary adjustments to salaries, wages, and benefits. There are no anticipated changes to activities or staff levels within Regulatory Affairs in 2018.

2019 Test Year (MIFRS) vs. 2018 Test Year (MIFRS)

The anticipated increase in Regulatory Affairs costs in 2019 of $89,967 or 3.00% over the prior year is principally due to inflationary adjustments to salaries, wages, and benefits. There are no anticipated changes to activities or staff levels within Regulatory Affairs in 2019.

Information Systems and Technology

IST is responsible for providing enterprise and departmental systems, solutions, and services, as outlined in Tab 3, Schedule 2 of this Exhibit.

Table 4-31 presents the total costs incurred by each sub-department of IST and the distributed cost recoveries achieved by each sub-department from non-EDO businesses, resulting in the net IST costs charged to EDO. These sub-departments are described in Tab 3, Schedule 2 of this Exhibit.

The allocation methodology which determines the IST costs charged to EDO is as follows:

(i) 25% of the costs for IST Management and Project Management ("Information Systems and Technology" in the table) are charged to each of the other four IST sub-departments;

(ii) PC Services costs are allocated based on the number of personal computers;

(iii) Cyber Security costs are allocated based on the number of personal computers (no allocation to PC Services or to IST Management);

(iv) The Business Applications' sub-department costs are allocated based on historical experience as follows: 49.8% to Customer Care, 40% to the Business Projects sub-department, and 10.2% directly to EDO (meter reading / AMI); and

(v) The Business Projects sub-department is 100% allocated to EDO departments.

Table 4-31 – IST Program Costs

	2011 Board Approved	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year
Total OM&A:					
Business Projects	$ 627,990	$ 567,130	$ 602,906	$ 539,138	$ 704,536
PC Services	$ 1,340,979	$ 1,379,375	$ 1,545,511	$ 1,835,691	$ 2,200,770
Business Applications	$ 2,113,388	$ 2,215,791	$ 2,190,963	$ 1,700,194	$ 1,539,933
Information Systems and Technology	$ 80,420	$ 180,534	$ 371,510	$ 363,519	$ 509,212
Cyber Security	$ 328 212	$ 337 192	$ 364 345	$ 489 998	$ 669 807
Total Costs	**$ 4,490,989**	**$ 4,680,022**	**$ 5,075,236**	**$ 4,928,542**	**$ 5,624,259**
Recoveries from non-EDO businesses:					
Business Projects	$ -	$ -	$ -	$ -	$ -
PC Services	$ (340,396)	$ (354,724)	$ (367,718)	$ (391,813)	$ (488,193)
Business Applications	$ (1,103,761)	$ (1,150,220)	$ (1,169,637)	$ (935,088)	$ (882,733)
Information Systems and Technology	$ -	$ -	$ -	$ -	$ -
Cyber Security	$ (88 874)	$ (92 615)	$ (99 518)	$ (118 887)	$ (170 877)
Total Recoveries from non-EDO businesses	**$ (1,533,031)**	**$ (1,597,559)**	**$ (1,636,873)**	**$ (1,445,788)**	**$ (1,541,803)**
Net IST costs allocated to EDO:					
Business Projects	$ 627,990	$ 567,130	$ 602,906	$ 539,138	$ 704,536
PC Services	$ 1,000,583	$ 1,024,651	$ 1,177,794	$ 1,443,879	$ 1,712,577
Business Applications	$ 1,009,627	$ 1,065,571	$ 1,021,326	$ 765,106	$ 657,200
Information Systems and Technology	$ 80,420	$ 180,534	$ 371,510	$ 363,519	$ 509,211
Cyber Security	$ 239 338	$ 244 577	$ 264 828	$ 371 111	$ 498 930
Net IST costs allocated to EDO	**$ 2,957,957**	**$ 3,082,463**	**$ 3,438,364**	**$ 3,482,754**	**$ 4,082,455**

	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Total OM&A:					
Business Projects	$ 641,686	$ 978,212	$ 1,009,993	$ 1,042,872	$ 1,063,729
PC Services	$ 2,344,505	$ 2,464,526	$ 2,526,783	$ 2,627,504	$ 2,681,527
Business Applications	$ 1,544,444	$ 1,580,070	$ 1,618,208	$ 1,655,713	$ 1,691,974
Information Systems and Technology	$ 513,873	$ 525,951	$ 538,361	$ 551,112	$ 562,134
Cyber Security	$ 710,557	$ 725,116	$ 740,513	$ 755,766	$ 909,642
Total Costs	**$ 5,755,064**	**$ 6,273,874**	**$ 6,433,859**	**$ 6,632,967**	**$ 6,909,005**
Recoveries from non-EDO businesses:					
Business Projects	$ -	$ -	$ -	$ -	$ -
PC Services	$ (518,868)	$ (544,217)	$ (560,475)	$ (582,322)	$ (604,167)
Business Applications	$ (887,557)	$ (908,666)	$ (930,475)	$ (952,793)	$ (974,638)
Information Systems and Technology	$ -	$ -	$ -	$ -	$ -
Cyber Security	$ (156,384)	$ (154,522)	$ (142,405)	$ (145,709)	$ (149,012)
Total Recoveries from non-EDO businesses	**$ (1,562,809)**	**$ (1,607,405)**	**$ (1,633,355)**	**$ (1,680,824)**	**$ (1,727,817)**
Net IST costs allocated to EDO:					
Business Projects	$ 641,686	$ 978,212	$ 1,009,993	$ 1,042,872	$ 1,063,729
PC Services	$ 1,825,637	$ 1,920,309	$ 1,966,308	$ 2,045,182	$ 2,077,360
Business Applications	$ 656,888	$ 671,404	$ 687,733	$ 702,921	$ 717,336
Information Systems and Technology	$ 513,873	$ 525,950	$ 538,360	$ 551,112	$ 562,134
Cyber Security	$ 554 173	$ 570 594	$ 598 108	$ 610 057	$ 760 630
Net IST costs allocated to EDO	**$ 4,192,256**	**$ 4,666,469**	**$ 4,800,502**	**$ 4,952,143**	**$ 5,181,188**

	2015 Test Year vs. 2011 Board Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Total OM&A:						
Business Projects	$ 13,696	$ 102,547	$ 336,526	$ 31,782	$ 32,878	$ 20,858
PC Services	$ 1,003,525	$ 508,813	$ 120,022	$ 62,257	$ 100,721	$ 54,023
Business Applications	$ (568,943)	$ (155,750)	$ 35,625	$ 38,139	$ 37,505	$ 36,261
Information Systems and Technology	$ 433,453	$ 150,353	$ 12,078	$ 12,410	$ 12,751	$ 11,022
Cyber Security	$ 382,345	$ 220,559	$ 14,558	$ 15,397	$ 15,253	$ 153,876
Total Costs	**$ 1,264,076**	**$ 826,523**	**$ 518,809**	**$ 159,985**	**$ 199,108**	**$ 276,038**
Recoveries from non-EDO businesses:						
Business Projects	$ -	$ -	$ -	$ -	$ -	$ -
PC Services	$ (178,472)	$ (127,055)	$ (25,349)	$ (16,258)	$ (21,847)	$ (21,845)
Business Applications	$ 216,204	$ 47,531	$ (21,109)	$ (21,809)	$ (22,318)	$ (21,845)
Information Systems and Technology	$ -	$ -	$ -	$ -	$ -	$ -
Cyber Security	$ (67,510)	$ (37,497)	$ 1,862	$ 12,117	$ (3,304)	$ (3,303)
Total Recoveries from non-EDO businesses	**$ (29,778)**	**$ (117,021)**	**$ (44,596)**	**$ (25,950)**	**$ (47,469)**	**$ (46,993)**
Net IST costs allocated to EDO:						
Business Projects	$ 13,696	$ 102,547	$ 336,526	$ 31,781	$ 32,879	$ 20,857
PC Services	$ 825,054	$ 381,758	$ 94,673	$ 45,999	$ 78,874	$ 32,177
Business Applications	$ (352,739)	$ (108,218)	$ 14,516	$ 16,329	$ 15,188	$ 14,415
Information Systems and Technology	$ 433,453	$ 150,353	$ 12,078	$ 12,410	$ 12,752	$ 11,022
Cyber Security	$ 314 835	$ 183 061	$ 16 421	$ 27 514	$ 11 949	$ 150 573
Net IST costs allocated to EDO	**$ 1,234,299**	**$ 709,502**	**$ 474,214**	**$ 134,033**	**$ 151,641**	**$ 229,045**

Table 4-32 provides the 2011 through 2019 net OM&A expenditures for IST Programs. A variance analysis follows that explains the main drivers of total IST costs before distributed cost recoveries as identified in Table 4-31.

Table 4-32 – Information Systems and Technology 2011 - 2019 Expenditures Allocated to EDO

Annual Expenditures

	2011 Board-Approved	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Business Projects	$ 627,990	$ 567,130	$ 602,906	$ 539,138	$ 704,536	$ 641,686	$ 978,212	$ 1,009,993	$ 1,042,872	$ 1,063,729
PC Services	$ 1,000,583	$ 1,024,651	$ 1,177,794	$ 1,443,879	$ 1,712,577	$ 1,825,637	$ 1,920,309	$ 1,966,308	$ 2,045,182	$ 2,077,360
Business Applications	$ 1,009,627	$ 1,065,571	$ 1,021,326	$ 765,106	$ 657,200	$ 656,888	$ 671,404	$ 687,733	$ 702,921	$ 717,336
Information Systems and Technology	$ 80,420	$ 180,534	$ 371,510	$ 363,519	$ 509,211	$ 513,873	$ 525,950	$ 538,360	$ 551,112	$ 562,134
Cyber Security	$ 239,338	$ 244,577	$ 264,828	$ 371,111	$ 498,930	$ 554,173	$ 570,594	$ 598,108	$ 610,057	$ 760,630
Total	$ 2 957 957	$ 3 082 463	$ 3 438 364	$ 3 482 754	$ 4 082 455	$ 4 192 256	$ 4 666 469	$ 4 800 502	$ 4 952 143	$ 5 181 188

Variance % Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Business Projects	2.18%	19.02%	52.44%	3.25%	3.26%	2.00%
PC Services	82.46%	26.44%	5.19%	2.40%	4.01%	1.57%
Business Applications	-34.94%	-14.14%	2.21%	2.43%	2.21%	2.05%
Information Systems and Technology	538.99%	41.36%	2.35%	2.36%	2.37%	2.00%
Cyber Security	131.54%	49.33%	2.96%	4.82%	2.00%	24.68%
Total	41.73%	20.37%	11.31%	2.87%	3.16%	4.63%

Variance $ Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Business Projects	$ 13,696	$ 102,547	$ 336,526	$ 31,781	$ 32,879	$ 20,857
PC Services	$ 825,054	$ 381,758	$ 94,673	$ 45,999	$ 78,874	$ 32,177
Business Applications	$ (352,739)	$ (108,218)	$ 14,516	$ 16,329	$ 15,188	$ 14,415
Information Systems and Technology	$ 433,453	$ 150,353	$ 12,078	$ 12,410	$ 12,752	$ 11,022
Cyber Security	$ 314,835	$ 183,061	$ 16,421	$ 27,514	$ 11,949	$ 150,573
Total	$ 1,234,299	$ 709,502	$ 474,214	$ 134,033	$ 151,641	$ 229,045

2015 Test Year (MIFRS) vs. 2011 Board-Approved (CGAAP)

The anticipated increase in IST expenditure in the 2015 Test Year compared to 2011 Board-Approved is $1,264,076 or 28.15%. This increase is driven by the following items:

IST Staffing – Salaries, Wages, and Benefits

Salaries, wages, and benefits are increasing $525,094 from 2011 Board-Approved to the 2015 Test Year as a result of inflationary adjustments and the department being fully staffed as planned as of June 2013. The increase is attributed to hiring the following positions:

- IFS Subject Matter Expert – IFS is Horizon Utilities' enterprise resource planning system, used to manage business processes in the Finance, Supply Chain, Project Planning and Costing, and Human Resources functions. This position provides in-depth technical leadership on strategic IFS ERP system decisions, project planning, and detailed system configuration. The IFS Subject Matter Expert evaluates, designs, and implements IFS ERP solutions required to support major system upgrades and business process improvements. This position was filled in June 2012.
- Supervisor, IST Service Desk – This position was created in 2013 to address IST management resource capacity issues. The IST Service Desk was previously managed by the Manager, Technical Services. The IT infrastructure at Horizon Utilities' has grown since 2008 from approximately 40 servers in a single data centre to over 120 servers in the production data centre, and a full disaster recovery data centre. This growth was required to: address business risk mitigation issues related to business continuity capabilities; implementation of new business applications to replace aging enterprise applications, such as GIS; and to provide infrastructure to support productivity improvements in the areas of mobile workforce capabilities, eLearning, outsourcing of customer Call Centre for call overflow, and enterprise data backup and archiving. The management of this necessary infrastructure growth combined with the management of the IST Service Desk department was beyond the resource capacity of the Manager, Technical Services and necessitated an additional new position. The IST Service Desk, among other duties, handles over 7,000 calls

per year and administers the Annual Corporate Computer Replacement program (provided in detail in Exhibit 2, Tab 6, Schedule 3). The latter includes the ordering, configuration and deployment of approximately 150 PCs per year. The position of Supervisor, IT Service Desk was filled in June 2013.

Other factors contributing to the increase between 2011 and 2015 are related to the filling of unplanned vacancies from a staff retirement; internal transfers to other departments to fill vacant positions; maternity leave; and staff resignations. IST had a full complement of staff in 2013. Unplanned vacancies from 2011 that are now filled include: Manager, IST Security; IT Security Analyst; Sr. Programmer Analyst; Computer Operator; and PC Technician. The migration of the IFS ERP system to a cloud-based management service in September 2013 resulted in the realization of a productivity gain through the elimination of the Data Base Analyst position as described in the Productivity section in Tab 3, Schedule 4 of this Exhibit.

Telecommunications

Expenditures corresponding to telecommunications increased by $173,194 from 2011 Board-Approved to the 2015 Test Year. This increase is directly attributed to network expansion to support the following business requirements:

- Increased internet bandwidth to support mobile connectivity requirements by field workers and to deliver the e-mobile productivity gains identified in Tab 3, Schedule 4 of this Exhibit;
- Expansion of the corporate network to support the migration of the IFS ERP system to a Managed Service Cloud environment as provided in Exhibit 2, Tab 6, Schedule 1 and to deliver the productivity gains identified in Tab 3, Schedule 4 of this Exhibit;
- Implementation of a redundant backup internet connectivity for the disaster recovery data centre to address business risks of insufficient capacity should a disaster necessitate a transfer to this data centre;
- Implementation of a redundant backup internet connection for the production data centre to mitigate business risks related to a single point of failure by providing

telecommunication carrier diversity in the event of loss of service from the primary carrier; and

- Implementation of redundant backup connectivity for the Horizon Utilities' AMI network to mitigate business risks related to not being able to read meters and bill customers in the event of loss of service from the primary service provider.

Outside Services

The use of Outside Services involves the outsourcing of day-to-day IST service management responsibilities as a method for improving the effectiveness and efficiency of IST operations, meeting the evolving technology and support requirements of other departments, and reducing business risk. Expenditures on Outside Services are increasing by $252,372 from the 2011 Board-Approved to the 2015 Test Year. These new services are required to: address changing business requirements; improve IST support to the business; expand services beyond normal business hours; and address potential cyber security risks. Details of these new services implemented beginning in 2013 are described below.

IFS ERP Managed Services Cloud

The IFS ERP system was migrated from an in-house hardware environment to a private cloud-based managed service as part of the Phase 1 of the IFS ERP Upgrade project in 2013 as detailed in Exhibit 2, Tab 6, Schedule 1. The IFS managed services include: provision of the hardware infrastructure, network services, storage, data backup, disaster recovery, and 24x7 environment monitoring and management services. The managed services are provided at approximately $265,000 per year which is 35% less than the in-house environment that they replaced. The annual savings comprise: (i) a decrease of one full-time support staff; (ii) elimination of hardware maintenance costs; (iii) a reduction in depreciation resulting from foregone $450,000 capital expenditure for in-house server hardware. The managed service and associated costs will be in place from 2013 - 2019. Annual savings will be approximately $170,000; or $850,000 through the Test Years, as identified in the productivity section in Tab 3, Schedule 4 of this Exhibit. These services were originally planned and budgeted to be provided by in-house IST staff on new hardware installed in the Horizon Utilities data centres.

Management of Cyber Security Profile

Detecting network security threats in a timely manner, and responding before they can compromise networks and data, requires 24x7 monitoring and mitigation capabilities. This requires security systems and personnel to respond in a timely manner which is not possible solely with a two person security team that works during normal business hours. In order to address related IT security risks cost effectively without additional hiring, Horizon Utilities implemented a 24x7 managed service in 2013 to provide 24x7 security incident monitoring; at an annual cost of $120,000. Analysis of logs from the Security Incident and Event Management System ("SIEM") identified that, in an average month, there are approximately 1,500,000 potential security events detected of which 50% occur outside normal business hours. The managed services provider monitors the SIEM and immediately responds to potential threats by managing security devices and changing security settings to stop threats as they are identified. This minimizes the risk related to non-response by providing continuous coverage outside normal business hours. This managed service and associated costs commenced in 2013 and will continue through the 2014 Bridge Year and 2015 - 2019 Test Years.

Contract Programming Services

The increase in outside services expenditure is partially offset by a reduction of $90,000 per year by the elimination of one contract programmer as demand for custom programming services from the IST department related to Horizon Utilities' CIS has decreased.

2015 Test Year (MIFRS) vs. 2013 Actual (MIFRS)

The anticipated increase in IST expenditures in the 2015 Test Year compared to 2013 Actual is $826,523 or 16.77%. The increase is attributed to the following items:

IST Staffing – Salaries, Wages, and Benefits

Salaries, wages, and benefits expenditures are increasing by $254,692 from 2013 to 2015. The increase in ongoing annual costs is related to full year costs for new staff additions and unplanned vacancies and inflationary adjustments.

In 2013, IST requirements to support business initiatives led to significant growth in IST infrastructure with the introduction of new applications and business productivity tools such as mobile computing GIS upgrade, OMS, phone system, and network connectivity to substations. This growth in the IT infrastructure required (and will continue to require) the full time engagement of the Manager, Technical Services. As a result, a Supervisor, IST Service Desk position was created to relieve the workload capacity issue for the Manager. Details are provided in "IST Staffing – Salaries, Wages, and Benefits" section above.

Maintenance

Maintenance includes expenditures for Computer Hardware Maintenance and for Software Licenses and Maintenance. Maintenance expenditures are increasing by $46,236 from 2013 to 2015 as a result of the following:

- Expansion of Horizon Utilities Server and Storage Area Network to accommodate increased processing and storage requirements for new enterprise application systems (GIS, OMS) and to support data growth rates in excess of 30% per annum;
- A new enterprise data backup and archiving solution as described in Exhibit 2, Tab 6, Schedule 1 required to support data volume growth averaging in excess of 30% per year;
- Implementation of security monitoring tools to strengthen Horizon Utilities' network perimeter and support increased improved security related to mobile connectivity for field workers; and
- Implementation of Enterprise Unified Communications capabilities to drive increased staff productivity through the real-time integration of communication services such as instant messaging; video conferencing, data sharing web sessions; call control and

speech recognition with non-real-time communication services such as voicemail; e-mail; and fax. Productivity gains are included in Tab 3, Schedule 4 of this Exhibit.

Consulting

Consulting includes expenditures on third-party expertise to assist IST staff in the development of IST architecture, strategies and roadmaps, and to provide specialized IST expertise where there is limited or no internal expertise. In 2015, consulting costs will increase $96,778 or 27.05% over 2013 as a result of the following costs:

- Development of an Enterprise Information Management strategy and roadmap to identify business and technical requirements for management and integration of the large volumes of data collected from Smart Meters, smart grid devices, and SCADA devices with other systems, such as IFS ERP, Daffron CIS, GIS and OMS. Most of this data is currently being utilized only for the purpose it was collected, such as TOU billing, electrical network operation, or network asset management. The data is not being integrated and utilized for business planning and operations management due to a lack of required technologies to collate, process, store, and analyze the data.
- A security assessment of Horizon Utilities' AMI environment to identify potential security risks or confirm that none exist and to ensure appropriate protection of the network infrastructure and the privacy of customer. This system is critical to Horizon Utilities as it provides meter reading capabilities used to bill customers; and
- A security assessment of Horizon Utilities' security profile with respect to North American Electric Reliability Corporation/Critical Infrastructure Protection ("NERC/CIP") and ISO 27002 standards. In recent years, there has been an increase in cyber-terrorism threats in relation to critical infrastructure. The NERC/CIP standards have been established to assist utilities in securing their assets from these threats. This assessment was undertaken to provide a snapshot of Horizon Utilities' security profile and will be used to assist with identification and planning of future IT security initiatives to manage potential security vulnerabilities and data privacy risks. Cyber security is an ever-evolving practice. Periodic security assessments by expert security firms that can perform ethical hacking of the

environment are required to identify potential vulnerabilities and necessary security configuration or other changes required in order to prevent them.

Outside Services

Expenditures on Outside Services are increasing $308,360 or 114.99% from 2013 to 2015. This increase is attributed to an annualization of costs for Horizon Utilities' IFS ERP Managed Services Cloud environment, the details for which are included in Exhibit 2, Tab 6, Schedule 1, and the implementation of 24x7 cyber security incident monitoring and event response as described in Tab 3, Schedule 3, page 30 of this Exhibit. Implementation of the IFS ERP Managed Services Cloud environment will deliver the productivity gains identified in Tab 3, Schedule 4 of this Exhibit**.**

2016 Test Year (MIFRS) vs. 2015 Test Year (MIFRS)

The anticipated increase in IST costs in 2016 of $518,809 or 9.01% over the prior year is principally attributable to:

- An increase in salaries, wages, and benefits in OM&A $396,150 as staff is redirected back to operating activities from capital projects undertaken in 2013 to 2015 such as: the IFS ERP Upgrade; GIS; and OMS; and

- Incremental hardware and software maintenance of $93,768 to support planned growth of the server and storage area network infrastructure based on annual growth rates of 30% per year.

2017 Test Year (MIFRS) vs. 2016 Test Year (MIFRS)

The anticipated increase in IST costs in 2017 of $159,985 or 2.55% over the prior year is principally due to inflation and adjustments in annual software and hardware maintenance costs resulting from changes in products used in the IT infrastructure. There are no anticipated changes to other IST activities for this period.

2018 Test Year (MIFRS) vs. 2017 Test Year (MIFRS)

The anticipated increase in IST costs in 2018 of $199,108 or 3.09% over the prior year is principally due to inflation and an increase in software maintenance cost of approximately $60,000 related to implementation of additional incremental security management applications as detailed in Tab 3, Schedule 3 of this Exhibit. There are no other anticipated changes to IST activities for this period.

2019 Test Year (MIFRS) vs. 2018 Test Year (MIFRS)

The anticipated increase in IST costs in 2019 of $276,038 or 4.16% over the prior year is principally attributable to annual inflationary increases and an increase in training and development expenditures of $60,000 to support the creation of eLearning modules for internal systems to improve delivery of end-user training that will enhance staff productivity and improve IST staff capacity to work on projects without increasing headcount.

Corporate Finance

The Corporate Finance department is accountable for all aspects of corporate finance; treasury; risk management and internal control; financial reporting; business planning and budgeting; and taxation, as further described in Tab 3, Schedule 2 of this Exhibit**.** Table 4-33 provides the 2011 through 2019 expenditures for the Finance Program. A variance analysis in support of this table is provided below.

Table 4-33 – Corporate Finance 2011 - 2019 Expenditures and Variance

Annual Expenditures										
	2011 Board-Approved	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Corporate Finance	$ 3,114,150	$ 2,886,610	$ 3,184,666	$ 3,687,190	$ 3,662,618	$ 3,877,189	$ 3,939,928	$ 4,042,083	$ 4,143,995	$ 4,224,708

Variance % Increase/(Decrease)						
	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Corporate Finance	24.50%	5.15%	1.62%	2.59%	2.52%	1.95%

Variance $ Increase/(Decrease)						
	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Corporate Finance	$ 763,038	$ 189,998	$ 62,739	$ 102,155	$ 101,913	$ 80,713

2015 Test Year (MIFRS) vs. 2011 Board-Approved (CGAAP)

In 2015, Finance OM&A is expected to be $3,877,189 or $763,038 (24.50%) higher than 2011 Board-Approved OM&A of $3,114,150. The increase is principally due to: inflationary increases in salaries and benefits ($299,676); increased contract labour costs ($290,000); and the addition of a permanent Financial Advisor position ($120,000). The Financial Advisor position was created in 2012 and supports financial analysis with respect to the annual business and financial planning process and other various internal projects and initiatives. This permanent position mitigates the need for contract resources for financial analysis needs, which had been necessary due to workload, and delivers immediate results given an incumbent's familiarity with internal financial systems, practices and processes.

Contract labour is required to support business initiatives including: the ABC analysis project discussed in Tab 2 Schedule 2 of this Exhibit; streamlining account structures; re-engineering the budgeting process; the ERP upgrade; and the CoS application. Contract labour is also required to assist in the development of an internal control framework, with periodic assessments and audits of internal controls against this framework. Internal control is a crucial aspect of Horizon Utilities' governance system and its ability to manage risk is fundamental in supporting objectives of creating, enhancing and protecting stakeholder values. Periodic monitoring, evaluation and reporting on internal controls will provide transparency and accountability to management and stakeholders for this important element of the governance system.

2015 Test Year (MIFRS) vs. 2013 Actual (MIFRS)

2015 Finance OM&A expenditure is forecast to be $189,998 or 5.15% higher than 2013 Actual. This increase in operating costs is primarily driven by the engagement of contract labour resources to support business initiatives as noted above and inflationary increases to salaries, wages, and benefits and other expenses.

There are no changes in permanent staffing levels from 2013 through to 2019.

2016 Test Year (MIFRS) vs. 2015 Test Year (MIFRS)

The anticipated increase in Finance costs in 2016 of $62,739 or 1.62% over the prior year is principally due to inflation. Productivity achievements realized in prior years contribute to increased capacity of approximately $340,000 per year as discussed in the Productivity Section in Tab 3, Schedule 4 of this Exhibit. OM&A growth is controlled by the realization of these savings from the productivity initiatives. There are no anticipated changes to Finance activities for this period.

2017 Test Year (MIFRS) vs. 2016 Test Year (MIFRS)

The anticipated increase in Finance costs in 2017 of $102,155 or 2.59% over the prior year is principally due to inflation. Productivity achievements realized in prior years contribute to increased capacity of approximately $340,000 per year as discussed in the Productivity Section in Tab 3, Schedule 4 of this Exhibit. OM&A growth is controlled by the realization of these savings from the productivity initiatives. There are no anticipated changes to Finance activities in this period.

2018 Test Year (MIFRS) vs. 2017 Test Year (MIFRS)

The anticipated increase in Finance costs in 2018 of $101,913 or 2.52% over the prior year is principally due to inflation. Productivity achievements realized in prior years contribute to increased capacity of approximately $340,000 per year as discussed in the Productivity Section in Tab 3, Schedule 4 of this Exhibit. OM&A growth is controlled by the realization of these savings from the productivity initiatives. There are no anticipated changes to Finance activities for this period.

2019 Test Year (MIFRS) vs. 2018 Test Year (MIFRS)

The anticipated increase in Finance costs in 2019 of $80,713 or 1.95% over the prior year is principally due to inflation. Productivity achievements realized in prior years contribute to increased capacity of approximately $340,000 per year as discussed in the Productivity Section in Tab 3, Schedule 4 of this Exhibit. OM&A growth is controlled by the realization of these

savings from the productivity initiatives. There are no anticipated changes to Finance activities for this period.

Customer Service

Customer Service provides services to both EDO and non-regulated water billing services. Consequently, a portion of the costs of the Customer Care department are allocated to EDO through a Management Fee and certain other Customer Service costs, related to AMI and MV-90**,** are direct expenses of EDO. Details of the functions provided by Customer Service and the AMI and MV-90 systems are provided in Tab 3, Schedule 2 of this Exhibit.

Customer Service performs activities for third-party entities and, therefore, activities performed for Horizon Utilities are charged through a Management Fee, as identified in Table 4-34. The Management Fee charged by Customer Care to EDO is based on fully-allocated costs as more fully explained in the Transfer Pricing Study included as Appendix 4-6.1 of this Exhibit.

The provision of billing, collections, and customer services, and changes in the Management Fee were the primary drivers of Customer Service's expenditures from 2011 to 2019. Year-over-year variances are principally due to inflation, increases in expenditures related to Canada Post postage costs, and one-time expenditures related to the planning of the CIS upgrade which is scheduled to commence in 2020 for full implementation in 2021. These items are discussed further in Tab 4, Schedule 3 of this Exhibit. Increases related to Canada Post expenditures represent an average annual increase to costs of $300,000 or a CAGR of 5.37% for the period of 2013 through 2019. Customer Service has implemented a number of initiatives in efforts to contain operating expenditures without impacting the services provided to customers. These include: the provision of self-service options which enable 24x7 accessibility for customers and increase automation for the department; the active promotion of paperless billing options to provide added convenience to customers in an attempt to offset rising Canada Post mailing expenses; and streamlining of processes to create additional capacity in the department. Customer Service's productivity measures have resulted in the decrease of 4 FTE between 2011 and 2014 and a further headcount reduction of 4 FTE is anticipated by the end of 2019. Customer Service's productivity achievements are detailed in Tab 3, Schedule 4 of this Exhibit.

Table 4-34 provides the 2011 through 2019 expenditures for the Customer Service Program. A variance analysis in support of this table is provided below.

Table 4-34 – Customer Service 2011 - 2019 Expenditures and Variances

Annual Expenditures

	2011 Board-Approved	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Customer Care Intracompany Horizon	$ 8,362,750	$ 8,253,528	$ 8,954,864	$ 8,489,832	$ 9,614,808	$ 9,899,570	$ 10,130,264	$ 10,685,009	$ 10,639,713	$ 10,793,436
Customer Service and Customer Connections	$ -	$ 2,001	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Advance Meter Inventory/Meter Data Management & Repository	$ 1,065,275	$ 393,780	$ 452,423	$ 465,643	$ 657,045	$ 852,029	$ 872,942	$ 895,249	$ 917,314	$ 938,216
MV90	$ 158,541	$ 181,545	$ 156,316	$ 139,444	$ 183,284	$ 188,267	$ 198,655	$ 197,100	$ 201,509	$ 205,830
Total	$ 9 586 566	$ 8 830 854	$ 9 563 604	$ 9 094 919	$ 10 455 138	$ 10 939 866	$ 11 201 862	$ 11 777 357	$ 11 758 536	$ 11 937 482

Variance % Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Customer Care Intracompany Horizon	18.38%	16.61%	2.33%	5.48%	-0.42%	1.44%
Customer Service and Customer Connections	0.00%	0.00%	0.00%	0.00%	0.00%	0 00%
Advance Meter Inventory/Meter Data Management & Repository	-20.02%	82.98%	2.45%	2.56%	2.46%	2 28%
MV90	18.75%	35.01%	5.52%	-0.78%	2.24%	2.14%
Total	14.12%	20.29%	2.39%	5.14%	-0.16%	1 52%

Variance $ Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Customer Care Intracompany Horizon	$ 1,536,820	$ 1,409,738	$ 230,694	$ 554,745	$ (45,296)	$ 153,723
Customer Service and Customer Connections	$ -	$ -	$ -	$ -	$ -	$ -
Advance Meter Inventory/Meter Data Management & Repository	$ (213,246)	$ 386,387	$ 20,913	$ 22,307	$ 22,065	$ 20,902
MV90	$ 29,726	$ 48,823	$ 10,388	$ (1,555)	$ 4,409	$ 4,321
Total	$ 1 353 300	$ 1 844 947	$ 261 996	$ 575 496	$ (18 822)	$ 178 946

2015 Test Year (MIFRS) vs. 2011 Board-Approved (CGAAP)

Horizon Utilities' Customer Care costs in 2015 are forecast to be $1,536,820 or 18.38% higher than the 2011 Board-Approved. This variance is primarily explained by changes to Management Fees as described in the Transfer Pricing Study, included in Appendix 4-6.1 of this Exhibit. These expenditures contributing to Management Fees increases include: annual increases related to labour and payroll expenditures; postage increases impacting the Freight, Postage and Delivery expenditure by $300,000; new, permanent increased Outside Service Provider expenditures of $170,000 to support the implementation of overflow Call Centre services; and increased Bad Debt expenditures of $100,000. Expenditure increases have been partially offset by cost containment in labour and payroll related expenditures, and the Customer Service productivity initiatives as described in Tab 3, Schedule 4 of this Exhibit.

Canada Post advised its customers of postage increases in late 2013. Effective March 31, 2014 Horizon Utilities postage expenditures will increase by approximately $300,000 annually, from $1,319,250 for 2013 increasing to $1,642,000 for 2015 which represents a 24.5% increase.

Customer Service expects to decrease the permanent FTE headcount by six employees in 2015 compared to 2011. The reduction in headcount is due to the productivity benefits delivered from e-mobile electronic service orders, the outsourcing of overflow Call Centre services, and other productivity initiatives which are detailed in Tab 3, Schedule 4 of this Exhibit.

The AMI and MV-90 functions are described in the Customer Service overview provided in Tab 3, Schedule 2 of this Exhibit.

AMI costs are forecast to decrease by $213,246 or 20.02% in the 2015 Test Year over 2011 Board-Approved. This is primarily due to the completion of the mass deployment of the Smart Meter program and the migration of eligible customers to TOU rates. Expenditures of $100,000 and $200,000 related to project management and public relations, respectively, are no longer required. These savings are partially offset by annual inflationary increases to all expenditure items.

The MV-90 are forecast to increase from 2011 Board-Approved to the 2015 Test Year expenditures of $29,726 or 18.75% is due to annual inflationary increases, partially offset by

cost containment through the outsourcing of overflow MV-90 services as provided in the productivity section in Tab 3, Schedule 4 of this Exhibit.

2015 Test Year (MIFRS) vs. 2013 Actual (MIFRS)

Customer Care costs are forecast to increase by $1,409,738 or 16.61% in the 2015 Test Year over the 2013 Actual.

The increase is primarily due to: annual increases in salaries, wages, and benefits of approximately $200,000; increased Canada Post postage expenditures of approximately $300,000 as previously described and new; and permanent increased Outside Service Provider expenditures of approximately $170,000 to support the implementation of overflow Call Centre services. These expenditure increases have been partially offset by decreased licensing expenditures to support electronic business transactions ("EBT") for retailer billing and associated interactions with electricity retailers of $100,000; a reduction of 2 FTE between 2013 and 2015; and the operating expenditures reductions as a result from productivity initiatives as provided in Tab 3, Schedule 4 of this Exhibit.

AMI expenditures are forecast to increase by $386,387 in the 2015 Test Year over 2013, primarily due to $186,290 in increased software and licensing expenses related to the AMI system, a reallocation of labour costs of $155,251 as staff is redirected back to operating activities from capital projects in 2015, and annual inflationary increases. Approximately $40,000 of the AMI software and licensing expenditure increase is related to the increased number of server processors which were added in 2013 to support timely meter data processing. In 2015, vendor support is being increased from support during business hours only to 24x7. Increased accessibility to assistance is required to ensure that Smart Metering data can be provided daily to the provincial MDM/R in the event of issues after hours or on weekends.

Increased expenditures of $48,823 related to the MV-90 functionality are primarily due to annual inflationary increases, partially offset by the outsourcing of the overflow MV-90 services work, a productivity initiative discussed in Tab 3, Schedule 4 of this Exhibit.

2016 Test Year (MIFRS) vs. 2015 Test Year (MIFRS)

Customer Care costs are forecast to increase in 2016 by $230,694 or 2.33% over prior year. Customer Service headcount is anticipated to decrease by 1 FTE between 2015 and 2016 due to the implementation of the overflow Call Centre service. The equivalency in Call Centre hours will be transferred to Outside Service Provider expenditures. The implementation of overflow services as provided in Tab 3, Schedule 4 of this Exhibit, will increase accessibility for customers and assist in cost containment of payroll expenditures.

AMI expenditures are forecast to increase in 2016 by $20,913 or 2.45% over prior year. Increased expenditures are due to annual inflationary increases.

MV-90 expenditures are forecast to increase in 2016 by $10,388 or 5.52% over prior year. Increased expenditures are due to annual inflationary increases, partially offset by the continued outsourcing of the overflow MV-90 services work as discussed in the productivity section in Tab 3, Schedule 4 of this Exhibit.

2017 Test Year (MIFRS) vs. 2016 Test Year (MIFRS)

The anticipated increase in Customer Care costs in 2017 of $554,745 or 5.48% over prior year is principally due to non-recurring project and consulting costs of $400,000 corresponding to the investigation and planning of the upgrade or replacement of the CIS. The CIS upgrade or replacement project is scheduled to begin in 2020 for implementation in 2021. The increase is also attributable to annual inflationary increases. CIS work planned for 2017 includes: the definition of system requirements; development of an RFP to investigate and solicit proposals for upgrade and replacement options; and RFP evaluation, vendor selection, and contract development. This justification for the CIS upgrade or replacement is provided in Appendix G of the DSP filed as Appendix 2-4 of Exhibit 2.

Increased Customer Care expenditures are partially offset by a reduction of 1 FTE between 2016 and 2017 due to the implementation of the overflow Call Centre service and the sustained operating expenditure reductions as a result from productivity initiatives as provided in Tab 3, Schedule 4 of this Exhibit.

AMI expenditures are forecast to increase in 2017 by $22,307 or 2.56% over prior year, due primarily to annual inflationary increases.

MV90 expenditures are forecast to decrease in 2017 by $1,555 or -0.78% over prior year. This is a result of decreased training requirements of $5,475 from the previous year, and cost containment through the outsourcing of overflow MV-90 services as provided in Tab 3, Schedule 4 of this Exhibit, partially offset by annual inflationary increases to operating expenditures.

2018 Test Year (MIFRS) vs. 2017 Test Year (MIFRS)

The anticipated decrease in Customer Care costs in 2018 of $45,296 or 0.42% from the prior year is principally due to reduction in the one-time consulting expenditure planned in 2017 to support the CIS upgrade project, offset by annual inflationary increases.

AMI expenditures are forecast to increase in 2018 by 22,065 or 2.46%, primarily due to annual inflationary increases.

MV90 expenditures are forecast to increase in 2018 by $4,409 or 2.24%, primarily due to annual inflationary increases, offset by outsourcing of overflow MV-90 services as provided in Tab 3, Schedule 4 of this Exhibit.

2019 Test Year (MIFRS) vs. 2018 Test Year (MIFRS)

The anticipated increase in Customer Care expenditures in 2019 is $153,723 or 1.44% as compared to the prior year. This increase is due to annual inflationary increases, offset by the realization of cost containment efforts through the implementation of the above mentioned outsourced overflow Call Centre service.

AMI expenditures are forecast to increase in 2019 by 20,902 or 2.28% due to annual inflationary increases.

MV90 expenditures are forecast to increase in 2019 by $4,321 or 2.14% due to annual inflationary increases, partially offset by outsourcing of overflow MV-90 services as provided in Tab 3, Schedule 4 of this Exhibit.

Customer Connections

Customer Connections is responsible for all functionality related to metering and new customer connection services.

A full description of the department functionality is provided Tab 3, Schedule 2 of this Exhibit.

Table 4-35 provides the 2011 through 2019 expenditures for the Customer Connections Program. A variance analysis in support of this table is provided below.

Table 4-35 – Customer Connections 2011 - 2019 Expenditures and Variances

Annual Expenditures

	2011 Board-Approved	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Customer Connections	$ 1,830,403	$ 2,168,164	$ 1,895,001	$ 2,177,114	$ 2,273,614	$ 2,397,789	$ 2,465,038	$ 2,540,826	$ 2,612,336	$ 2,681,988
Meter Assets and Inside Service	$ 658,425	$ 688,476	$ 647,359	$ 634,709	$ 784,348	$ 811,826	$ 835,294	$ 861,324	$ 886,203	$ 910,246
Meter Sevice Providing	$ 40,417	$ 33,061	$ 50,329	$ 47,879	$ -	$ -	$ -	$ -	$ -	$ -
Smart Meters	$ (2,615,348)	$ (811,963)	$ 207,087	$ 21,124	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ (86,103)	$ 2,077,738	$ 2,799,776	$ 2,880,825	$ 3,057,962	$ 3,209,615	$ 3,300,332	$ 3,402,150	$ 3,498,539	$ 3,592,234

Variance % Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Customer Connections	31.00%	10.14%	2.80%	3.07%	2.81%	2.67%
Meter Assets and Inside Service	23.30%	27.91%	2.89%	3.12%	2.89%	2.71%
Meter Sevice Providing	-100.00%	-100.00%	0.00%	0.00%	0.00%	0.00%
Smart Meters	-100.00%	-100.00%	0.00%	0.00%	0.00%	0.00%
Total	-3827.65%	11.41%	2.83%	3.09%	2.83%	2.68%

Variance $ Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Customer Connections	$ 567,386	$ 220,675	$ 67,249	$ 75,788	$ 71,510	$ 69,652
Meter Assets and Inside Service	$ 153,401	$ 177,118	$ 23,468	$ 26,030	$ 24,879	$ 24,043
Meter Sevice Providing	$ (40,417)	$ (47,879)	$ -	$ -	$ -	$ -
Smart Meters	$ 2,615,348	$ (21,124)	$ -	$ -	$ -	$ -
Total	$ 3,295,718	$ 328,790	$ 90,717	$ 101,817	$ 96,389	$ 93,695

2015 Test Year (MIFRS) vs. 2011 Board-Approved (CGAAP)

The Customer Connections total program costs, exclusive of Smart Meters, are expected to increase by $680,370 or 26.9% in the 2015 Test Year over the 2011 Board-Approved. This is primarily due to the addition of 1 FTE in 2013 and annual inflationary increases to costs. The Distribution Engineer – Generation Connections was required to support Green Energy initiatives including Feed-in-Tariff projects. This position provides specialized knowledge and the expertise required to support customer microFIT, FIT, and cogeneration projects. The Distribution Engineer assists the customer from application to connection for all Green Energy Act connections. Horizon Utilities has completed 275 microFIT and 24 FIT connections in response to Green Energy Act requests.

2015 Test Year (MIFRS) vs. 2013 Actual (MIFRS)

Customer Connections total costs are expected to increase by $328,790 or 11.41% in the 2015 Test Year over the 2013 Actual. This is primarily explained by: the filling of one position that was vacant throughout 2013; a third-party consultant position that has been transitioned to a permanent Distribution Engineer - Wholesale Metering and Communications position to reduce process risk to the organization; and annual inflationary increases; partially offset by the expenditure reductions achieved as a result of the productivity improvements through e-mobile as provided in Tab 3, Schedule 4, of this Exhibit.

2016 Test Year (MIFRS) vs. 2015 Test Year (MIFRS)

The anticipated increase in Customer Connections costs in 2016 of $90,717 or 2.83% over the prior year is principally due to inflation. There are no anticipated changes to staffing within Customer Connections, however, the anticipated increase in customer driven project being managed through departmental capacity achieved through productivity initiatives. Increased expenditures are partially offset by the sustained productivity achievement related to the implementation of e-mobile as discussed in Tab 3, Schedule 4 of this Exhibit.

2017 Test Year (MIFRS) vs. 2016 Test Year (MIFRS)

The anticipated increase in Customer Connections costs in 2017 of $101,817 or 3.09% over the prior year is principally due to inflationary increases. There are no anticipated changes to Customer Connections activities for this period. Increased expenditures are partially offset by the sustained productivity achievement related to the implementation of e-mobile as provided in Tab 3, Schedule 4 of this Exhibit.

2018 Test Year (MIFRS) vs. 2017 Test Year (MIFRS)

The anticipated increase in Customer Connections costs in 2018 of $96,389 or 2.83% over the prior year is principally due to inflationary increases. There are no anticipated changes to Customer Connections activities for this period. Increased expenditures are partially offset by the sustained productivity achievement related to the implementation of e-mobile as provided in Tab 3, Schedule 4 of this Exhibit.

2019 Test Year (MIFRS) vs. 2018 Test Year (MIFRS)

The anticipated increase in Customer Connections costs in 2019 of $93,695 or 2.68% over the prior year is principally due to inflationary increases. There are no anticipated changes to Customer Connections activities for this period. Increased expenditures are partially offset by the sustained productivity achievement related to the implementation of e-mobile as provided in Tab 3, Schedule 4 of this Exhibit.

Utility Operations

Utility Operations provides executive support for distribution operations through three business units: E&O; C&M; and SCM as outlined in Tab 3, Schedule 2 of this Exhibit.

Table 4-36 provides the 2011 through 2019 expenditures for the Utility Operations Program. A variance analysis in support of this table is provided below.

Table 4-36 – Utility Operations 2011 - 2019 Expenditures and Variances

Annual Expenditures										
	2011 Board-Approved	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Utility Operations	$ 1,119,536	$ 912,389	$ 1,083,206	$ 1,386,510	$ 1,177,345	$ 1,211,490	$ 1,245,518	$ 1,282,309	$ 1,320,642	$ 1,333,794

Variance % Increase/(Decrease)						
	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Utility Operations	8.21%	-12.62%	2.81%	2.95%	2.99%	1.00%

Variance $ Increase/(Decrease)						
	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Utility Operations	$ 91,954	$ (175,020)	$ 34,028	$ 36,792	$ 38,333	$ 13,152

2015 Test Year (MIFRS) vs. 2011 Board-Approved (CGAAP)

Utility Operations' OM&A is expected to be $91,954 or 8.21% higher in the 2015 Test Year over the 2011 Board-Approved. The anticipated increase is mainly due to; increases in post-employment benefits ($85,785), as discussed in Tab 4, Schedule 2 of this Exhibit, and adjustments to salaries, wages, and benefits. Utility Operations continues to be proactive in its efforts to achieve productivity and savings in the 2015 – 2019 Test Years.

2015 Test Year (MIFRS) vs. 2013 Actual (MIFRS)

The anticipated decrease in Utility Operations costs in 2015 of $175,020 or 12.62% from the 2013 Actual is principally due to the allocation of post-employment benefit costs which is further discussed in Tab 4, Schedule 2 of this Exhibit. There are no anticipated changes to activities or staff levels within Utility Operations in this period.

2016 Test Year (MIFRS) vs. 2015 Test Year (MIFRS)

The anticipated increase in Utility Operations costs in 2016 of $34,028 or 2.81% over the prior year is principally due to inflationary adjustments to salaries, wages, and benefits. There are no anticipated changes to activities or staff levels within Utility Operations in 2016.

2017 Test Year (MIFRS) vs. 2016 Test Year (MIFRS)

The anticipated increase in Utility Operations costs in 2017 of $36,792 or 2.95% over the prior year is principally due to inflationary adjustments to salaries, wages, and benefits. There are no anticipated changes to activities or staff levels within Utility Operations in 2017.

2018 Test Year (MIFRS) vs. 2017 Test Year (MIFRS)

The anticipated increase in Utility Operations costs in 2018 of $38,333 or 2.99% over the prior year is principally due to inflationary adjustments to salaries, wages, and benefits. There are no anticipated changes to activities or staff levels within Utility Operations in 2018.

2019 Test Year (MIFRS) vs. 2018 Test Year (MIFRS)

The anticipated increase in Utility Operations costs in 2019 of $13,152 or 1.00% over the prior year is principally due to inflationary adjustments to salaries and wages, with no increase in post-employment benefits. There are no anticipated changes to activities or staff levels within Utility Operations in 2019.

Engineering and Operations

E&O is responsible for the distribution system throughout its complete lifecycle as outlined in the Division Overview section of Tab 3, Schedule 2 of this Exhibit.

Table 4-37 provides the 2011 through 2019 expenditures for the E&O Program. A variance analysis in support of this table is provided below.

Table 4-37 – Engineering and Operations 2011 - 2019 Expenditures and Variances

Annual Expenditures

	2011 Board-Approved	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Engineering and Asset Management	$ 100,000	$ 774,504	$ 1,466,047	$ 1,822,025	$ 1,950,811	$ 1,768,620	$ 1,543,082	$ 1,657,954	$ 1,747,710	$ 1,761,320
Control Room Operations	$ 2,493,506	$ 2,318,511	$ 2,466,416	$ 2,484,656	$ 2,189,720	$ 2,320,526	$ 2,464,925	$ 2,545,575	$ 2,624,677	$ 2,694,769
Engineering Systems and Asset Records	$ 260,425	$ 97,240	$ 941,881	$ 934,440	$ 2,472,786	$ 2,755,543	$ 2,832,852	$ 2,848,389	$ 2,964,360	$ 3,030,588
Capital Projects	$ -	$ (903,020)	$ 893,614	$ 988,935	$ 1,460,884	$ 1,268,743	$ 1,300,250	$ 1,336,268	$ 1,369,618	$ 1,403,658
Engineering Operations & Operational Improvement	$ 159,062	$ 140,091	$ 226,723	$ 278,430	$ 227,566	$ 226,898	$ 232,131	$ 237,769	$ 243,320	$ 249,740
Total	$ 3,012,993	$ 2,427,326	$ 5,994,680	$ 6,508,486	$ 8,301,766	$ 8,340,330	$ 8,373,240	$ 8,625,955	$ 8,949,685	$ 9,140,075

Variance % Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Engineering and Asset Management	1668 62%	-2.93%	-12.75%	7.44%	5.41%	0.78%
Control Room Operations	-6 94%	-6.61%	6.22%	3.27%	3.11%	2.67%
Engineering Systems and Asset Records	958 09%	194.89%	2.81%	0.55%	4 07%	2.23%
Capital Projects	0 00%	28.29%	2.48%	2.77%	2 50%	2.49%
Engineering Operations & Operational Improvement	42 65%	-18.51%	2.31%	2.43%	2 33%	2.64%
Total	176 81%	28.15%	0.39%	3.02%	3.75%	2.13%

Variance $ Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Engineering and Asset Management	$ 1,668,620	$ (53,406)	$ (225,538)	$ 114,873	$ 89,755	$ 13,610
Control Room Operations	$ (172,980)	$ (164,130)	$ 144,399	$ 80,650	$ 79,102	$ 70,092
Engineering Systems and Asset Records	$ 2,495,118	$ 1,821,103	$ 77,308	$ 15,537	$ 115,971	$ 66,228
Capital Projects	$ 1,268,743	$ 279,808	$ 31,507	$ 36,017	$ 33,350	$ 34,040
Engineering Operations & Operational Improvement	$ 67,836	$ (51,532)	$ 5,233	$ 5,638	$ 5,551	$ 6,420
Total	$ 5,327,337	$ 1,831,844	$ 32,910	$ 252,715	$ 323,730	$ 190,390

2015 Test Year (MIFRS) vs. 2011 Board-Approved (CGAAP)

E&O expenditures in 2015 are forecasted to be $5,327,337 or 176.81% over 2011 Board-Approved. This increase was primarily due to the transition to IFRS. The transition to IFRS, summarized in Table 4-38 below, explains $2,980,390 of the increase in expenditures over 2011 Board-Approved value. The total increase is explained as follows:

Transition to IFRS

Horizon Utilities was required to make changes to its capitalization policy, as a result of the transition to IFRS, which impacted OM&A. IFRS diverges from CGAAP as it does not permit the capitalization of indirect overhead costs as PP&E. The impact of removing indirect overhead costs from capital was an increase in OM&A of $2,980,390 as provided below. Horizon Utilities has included a detailed discussion of the impact of the transition to IFRS in Exhibit 6, Tab 2, Schedule 1.

Table 4-38 – Impact of IFRS Conversion by Utility Operations Departments

Programs	2011 Actual - CGAAP	Impact to Capital	Total including Impact to Capital (IFRS)	Remove: Fleet Amortization Capital Adj	Remove: Store Amortization Capital Adj	Remove: Fleet Amortization Operating Adj	Remove: Store Amortization Operating Adj	Add: Logistics impact to Operating	Add: Fleet impact to Operating	Total (inclusive of adj)	Program Adj
Construction and Maintenance	$ 10,772,210	$ 1,797,606	**$ 12,569,816**					$ (189,899)	$(1,146,780)	**$ 11,233,137**	$ 460,927
Supply Chain Management	$ (137,292)	$ 4,561,662	**$ 4,424,370**	$ (910,942)	$ (50,583)	$ (366,677)	$ (3,003)	$ 189,899	$ 1,146,780	**$ 4,429,844**	$4,567,136
Engineering and Operations	$ 2,427,326	$ 2,980,390	**$ 5,407,716**							**$ 5,407,716**	$2,980,390
Total OM&A	**$ 13,062,245**	**$ 9,339,658**	**$ 22,401,903**	**$ (910,942)**	**$ (50,583)**	**$ (366,677)**	**$ (3,003)**	**$ -**	**$ -**	**$ 21,070,698**	**$ 8,008,453**
Amortization			**$ -**	$ 910,942	$ 50,583	$ 366,677	$ 3,003			**$ 1,331,205**	$1,331,205
Total Amortization	**$ -**	**$ -**	**$ -**	**$ 910,942**	**$ 50,583**	**$ 366,677**	**$ 3,003**	**$ -**	**$ -**	**$ 1,331,205**	**$ 1,331,205**
OM&A and Amortization	**$ 13,062,245**	**$ 9,339,658**	**$ 22,401,903**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 22,401,903**	**$ 9,339,658**

Asset Management

The urgent need to materially increase investment in renewal of aging infrastructure is a continuing theme from the previous two Cost of Service Applications (2008 and 2011). Commencing in 2008, Horizon Utilities identified the need for careful planning, review, and prioritization of an increased level of investment. Horizon Utilities subsequently reviewed the capital investment strategies to ensure the continued financial and operational viability of the distribution system and began increasing its capital expenditure at a graduated rate.

Horizon Utilities is committed to investing in a long term AMP and continues to evolve and improve the investment plan through application of a continuous improvement cycle (plan,

do, check, act) against the asset management planning cycle. Horizon Utilities' asset management activities are fully described in Section 2 of the DSP filed as Appendix 2-4 of Exhibit 2. Increased investment in asset management activities has resulted in a necessary increase in consulting services expenditures by $330,000 to assist in improving ACA programs and procedures. Horizon Utilities considers the continued investment and improvement in asset management programs to be essential given the total value of the distribution system assets, the critical age and condition of these assets, and the level of investment for system renewal forecast for the 2014 to 2019 period.

GIS Renewal

Horizon Utilities has centralized the distribution assets into a single asset registry contained in the GIS. The GIS presents Horizon Utilities distribution assets in graphical form with the asset attributes (such as - age, manufacturer, size/length, and installation date) and electrical connectivity. Horizon Utilities has collected records and inspection data to create an inventory of condition data for individual equipment.

Horizon Utilities' current GIS System, CableCad, was selected eighteen years ago to meet departmental needs at that time. The GIS is a critical system which supports Asset Management, Capital Design, Field Operations, and Asset Locates. Although the system has been enhanced over the years by the manufacturer and by Horizon Utilities' staff, CableCad remains a limited user software solution. The current technology cannot be used to satisfy the information needs at an enterprise level. The current GIS has reached end-of-life and the vendor will not support enterprise level upgrades. The current GIS will not be operable on internal operating systems within two years. This project is discussed in further detail in Exhibit 2, Tab 6, Schedule 1.

The renewal of the GIS system included the implementation of an OMS to improve the ability to: identify and respond to service interruptions; reduce service interruption duration; provide improved customer communication during service interruptions through support of multiple communication channels; and increased transparency into the status of service interruptions. A further description and justification of the GIS and OMS systems is provided in Exhibit 2, Tab 6, Schedule 1 and the DSP filed as Appendix 2-4 in Exhibit 2.

This project increases OM&A expenditures for E&O in the following areas:

- Labour: Four additional FTE, offset by a reduction of 1 FTE in the Control Room Operations group, at an annual expense of approximately $400,000, are required to support and maintain this system moving forward. These roles are discussed in detail below.

- Contracting and Consulting: Increased expenditures of $350,000 are forecast for outside service providers to assist in the continued design and implementation of additional functionality offered by these systems. The GIS/OMS has additional capabilities beyond the deployed functionality. Future components such as: integration to the AMI Smart Meter infrastructure; development of compatible units to improve the project design process; development of mobile computing; and the integration of real-time advanced distribution system analysis functionality are all projects to be developed.

- Software Licensing: An increase in software licensing expenditures of $325,000 annually due to the new GIS.

Increased GIS Labour Costs

The engineering systems (new GIS and OMS integrated with the existing SCADA system) have evolved into enterprise systems, similar to the ERP and CIS systems, and need to be supported in a similar manner.

Achieving the customer focused benefits of reduced service interruption duration; improved customer communication during service interruptions through support of multiple communication channels; and increased transparency into the status of service interruptions requires the integration of the GIS, OMS, SCADA communication system with the AMI/Smart Meter Network, CIS system, and distribution automation. The deployment and continued development of the new systems and integration with existing systems cannot be supported with the existing resources and structure of E&O. Failure to evolve and expand this group would result in Horizon Utilities being unable to maintain

the required level of production from the new GIS and OMS environments or continue to evolve their functionality.

The following five permanent positions will be added in support of the GIS project**:**

Manager Engineering Systems & Asset Records:

The evolution and expansion of this department to include responsibility for the major engineering systems, and enterprise class systems, requires managerial oversight.

The deployment of an OMS, integrated with SCADA will be the foundation for the operation of the distribution system and the provision of operational data to customers. Managerial oversight is required to ensure that: these essential systems are operated, maintained, and available to the Control Room Operations group on a 24x7 basis; the integrity of the data pertaining to the distribution system is maintained and updated in a near-real time basis; and the continued development of these critical systems align with Horizon Utilities' distribution system operational and customer service needs. This new position will be responsible for the deployment, operation, administration, and continued development of these key enterprise systems. This position will ensure the integrity of Horizon Utilities' distribution facilities systems information, warehoused in the GIS/OMS and SCADA systems, which includes complete asset information, operating information, and control tools that are current, accurate, reliable and responsive on a 24x7 basis.

The Manager will provide leadership and support to Engineering Systems and Asset Records staff by setting departmental objectives, policies, budgets and operating plans to ensure reliable supply of electricity and optimize performance of the network assets.

Supervisor Engineering Systems:

The Supervisor of Engineering Systems is responsible for ensuring the optimal function, performance, reliability, availability and security of Horizon Utilities' GIS, OMS and SCADA software, systems and databases to users throughout the organization. The supervisor will lead and manage a team of 4 GIS Developers. The Engineering Systems team will ensure:

- That the GIS and OMS systems provide reliable and effective delivery of facilities information, asset relationships, and network status/operating information;
- The daily interfacing and synchronization of the SCADA, GIS and OMS databases including the integrity of asset records and customer data systems;
- That personnel in all user departments with a need to access facilities information are supported in their job by the systems in a responsive and effective manner; and
- That the systems meet minimum up time requirements.

GIS Developer (2):

The two GIS Developers are required to support the following functions:

- GIS System Administration – The new GIS system will involve periodic upgrades and patch releases to address system issues and introduce new functionality. The GIS Developers will be required to analyze, install, test and promote new software releases as they become available.
- Increased GIS functionality. The GIS Developers will program and integrate the additional functionality beyond the functionality delivered by the initial project including:
    - Full integration to the Smart Meter AMI system

- Integration with the CYME engineering analysis software
- Implementation of mobile functionality
- Development of compatible units for project estimation

- Asset Management – The sophistication of Horizon Utilities asset management and asset condition assessments analysis is dependent upon the quality and integrity of data within the GIS. GIS Developers ensure the quality and integrity of data within GIS.
- OMS – support and system administration for this system. User maintenance, software release assessment, testing, deployment, configuration support, validation of the GIS map publishing to OMS, and responsibility for data integrity (availability and accuracy) are all tasks not required with the current systems. These functions are critical to ensure the Control Room has accurate information and a properly supported OMS to support the operation of the distribution system.
- SCADA – Two GIS Developers will acquire responsibility for the SCADA system. SCADA system administration and support needs will increase with the integration to OMS and the deployment of distribution automation. Database setup, communication testing and interaction with field crews for commissioning of automation will require significant resources with the level of automation scheduled to be deployed over the next five years.

These additional tasks cannot be supported by the present level of 2 FTE. Two additional GIS Developers are required to accommodate these increased demands including continued development and implementation of new functionality (e.g. full integration with the Smart Meter AMI system); and supporting the commissioning of distribution automation with the SCADA system.

Increased Capital Investment

Commencing in 2008, Horizon Utilities identified the need for rigorous planning, review, and prioritization of necessary future increases to distribution system renewal investment.

Horizon Utilities has continued to review its capital investment strategies, with the support of knowledgeable engineering consulting support, to ensure the continued financial and operational viability of the distribution system. Horizon Utilities began increasing its distribution capital expenditures at a graduated rate from $17,841,422 (CGAAP) in 2008 to $31,223,358 (CGAAP) by 2010. Ongoing incremental increases to capital investment are required through 2019 to address the declining health and performance of aging distribution assets as discussed in the DSP filed as Appendix 2-4 in Exhibit 2. Increasing capital investment has resulted in a corresponding increase in demand for engineering design and drafting resources. The increased capital investment levels through to 2013 were accommodated with existing staff levels. The necessary continued increase in investment levels forecast for 2014 through 2019 require additional supporting resources and, as a result; three additional FTE will be added to the Capital Projects function in 2014; and one additional FTE was added to the Engineering Systems and Asset Records function. E&O is proposing the addition of two Design Technicians and a Supervisor Design Technician to the existing complement in Capital Projects. The recruitment began in Q1 of 2014 and the positions will be filled by mid-year, aligned with the availability of new graduates from the college technologist program.

These positions are required for the following reasons:

- An increase in the level of capital investment, primarily driven by the need to increase investment in infrastructure renewal;

- The headcount for this group has not increased in many years. It is expected that by 2015 capital investment will increase 30% from 2011 levels;

- Additional demand from external parties has increased the complexity and coordination of work. Municipal permits and ESA 22/04 regulations are examples of more stringent requirements for permits and “as constructed” documentation;

- An increasingly congested underground with multiple utilities, especially in the downtown core, is causing increased planning and co-ordination requirements;

- Increased environmental review requirements from the City require additional impact assessments on trees and vegetation during design phase;

- Design technicians will play an increasing role in the planning and co-ordination of maintenance jobs. The efficiency gains provided by the Planning & Scheduling project (iPass) requires formal job planning – both for capital jobs and maintenance activities; and

- Increased role and need for pre-job planning and design meetings with the field staff during the design stage will result in increased resource requirements to complete technical designs for new capital projects;

The increased numbers of design technicians cannot be adequately supported by the existing supervisor resources. The complexity of the administration and co-ordination required to complete the technical designs, combined with mentoring and coaching demands requires the addition of a third supervisory resource to supervise the expanded team of design technicians.

These additions result in an increase in operating expenditures of approximately $300,000 or 10% of the 2011 Board-Approved budget for E&O.

2015 Test Year (MIFRS) vs. 2013 Actual (MIFRS)

E&O expenditures in 2015 are forecasted to be $1,831,844 or 28.15% over 2013 Actual. This is driven by an increase of $1,821,103 in the Engineering Systems and Asset Records function and an increase of $279,808 in the Capital Projects group offset by a $269,067 aggregate decrease in expenditures in the Engineering and Asset Management, Control Room Operations, and E&O groups.

The increase in the Engineering Systems and Asset Records function is driven by the increased expenditures required to operate, maintain and continue the development of the new GIS and OMS systems as identified above. The increased expenditures for the Capital Projects group is driven by the increased operational demands resulting from the increase in capital investment in the distribution system as identified above.

E&O continues to be proactive in its efforts to achieve productivity and savings in the 2015 – 2019 Test Years.

2016 Test Year (MIFRS) vs. 2015 Test Year (MIFRS)

The anticipated increase in E&O in 2016 of $32,910 or 0.39% over the prior year is principally due to inflation offset by decreased consulting costs associated with the GEA activities provided in Horizon Utilities Basic GEA Plan included in the 2011 Cost of Service Application (EB-2010-0131). There are no anticipated changes to staffing levels in E&O in 2016.

2017 Test Year (MIFRS) vs. 2016 Test Year (MIFRS)

The anticipated increase in E&O in 2017 of $252,715 or 3.02% over the prior year is principally due to: increased consulting costs related to updating of the ACA; and inflationary adjustments to salaries, wages, and benefits, partially offset by savings from a reduction in outside service provider expenses related to the ongoing development and operation of the OMS. There are no anticipated changes to staffing levels in E&O in 2017.

2018 Test Year (MIFRS) vs. 2017 Test Year (MIFRS)

The anticipated increase in E&O in 2018 of $323,730 or 3.75% over the prior year is principally due to inflationary adjustments to salaries, wages, and benefits, and consulting to support asset management with asset condition studies. There are no anticipated changes to staffing levels in E&O in 2018.

2019 Test Year (MIFRS) vs. 2018 Test Year (MIFRS)

The anticipated increase in Engineering and Operations in 2019 of $190,390 or 2.13% over the prior year is principally due to inflationary adjustments to salaries, wages, and benefits. There are no anticipated changes to staffing levels in E&O in 2019.

Construction and Maintenance Services

C&M is responsible for constructing, maintaining, and operating the distribution system; including emergency response on a 24x7 basis, as discussed in the Division Overview section of Tab 3, Schedule 2 of this Exhibit. Table 4-39 provides the 2011 through 2019 expenditures for the C&M Program. A variance analysis in support of this table is provided below.

Table 4-39 – C&M Services 2011 - 2019 Expenditures and Variances

Annual Expenditures

	2011 Board-Approved	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Underground	$ 1,996,406	$ 2,037,115	$ 2,490,179	$ 1,767,307	$ 3,304,290	$ 2,676,774	$ 2,751,800	$ 2,837,480	$ 2,917,510	$ 2,995,813
Contractor Management	$ 188,416	$ 16,877	$ (5,625)	$ 1,518,735	$ 1,938,538	$ 1,831,219	$ 1,864,055	$ 1,898,560	$ 1,932,785	$ 1,967,009
Overhead	$ 6,681,505	$ 7,057,742	$ 6,699,100	$ 6,899,436	$ 5,046,085	$ 6,075,172	$ 6,221,823	$ 6,314,475	$ 6,449,252	$ 6,620,709
Substations	$ 1,165,593	$ 769,133	$ 696,721	$ 490,902	$ 851,250	$ 657,270	$ 877,716	$ 900,006	$ 921,710	$ 943,131
Project Controls Office	$ 769,869	$ 682,118	$ 597,352	$ 487,108	$ 556,010	$ 593,257	$ 638,261	$ 658,257	$ 678,024	$ 663,825
Construction and Maintenance Services	$ 241,115	$ 209,226	$ 163,497	$ 236,789	$ 234,446	$ 230,200	$ 235,674	$ 241,562	$ 247,365	$ 254,137
Total	$ 11 042 904	$ 10 772 210	$ 10 641 224	$ 11 400 277	$ 11 930 619	$ 12 063 891	$ 12 589 330	$ 12 850 341	$ 13 146 645	$ 13 444 624

Variance % Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Underground	34.08%	51.46%	2.80%	3.11%	2.82%	2.68%
Contractor Management	871.90%	20.58%	1.79%	1 85%	1.80%	1.77%
Overhead	-9.07%	-11.95%	2.41%	1.49%	2.13%	2.66%
Substations	-43.61%	33.89%	33.54%	2 54%	2.41%	2.32%
Project Controls Office	-22.94%	21.79%	7.59%	3.13%	3.00%	-2.09%
Construction and Maintenance Services	-4.53%	-2.78%	2.38%	2 50%	2.40%	2.74%
Total	9.25%	5.82%	4.36%	2 07%	2.31%	2.27%

Variance $ Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Underground	$ 680,368	$ 909,467	$ 75,026	$ 85,680	$ 80,030	$ 78,303
Contractor Management	$ 1,642,803	$ 312,484	$ 32,837	$ 34,505	$ 34,224	$ 34,224
Overhead	$ (606,333)	$ (824,264)	$ 146,652	$ 92,652	$ 134,777	$ 171,457
Substations	$ (508,323)	$ 166,368	$ 220,446	$ 22,290	$ 21,704	$ 21,421
Project Controls Office	$ (176,612)	$ 106,149	$ 45,004	$ 19,996	$ 19,767	$ (14,199)
Construction and Maintenance Services	$ (10,915)	$ (6,589)	$ 5,474	$ 5,888	$ 5,803	$ 6,772
Total	$ 1,020,987	$ 663,615	$ 525,439	$ 261,011	$ 296,304	$ 297,979

2015 Test Year (MIFRS) vs. 2011 Board-Approved (CGAAP)

The C&M operations and maintenance costs for the 2015 Test Year are forecast to be $1,020,987 or 9.25% higher than the 2011 Board-Approved amounts. The business drivers that contribute to this variance include salaries; wages and benefits; overtime; vehicles; contracts; and consulting fees as discussed below.

Variances associated with overtime and contractor costs are largely driven by costs associated with storm restoration. Horizon Utilities has experienced a number of severe storms in 2011, 2012, and 2013 that caused significant and unanticipated distribution system damage requiring emergency repairs. High winds during the 2011 and 2012 summer storms and towards the end of Hurricane Sandy as it swept through southern Ontario on October 29, 2012 required extensive overhead restoration as a result of significant tree damage. The storm in July 2013 and the ice storm in December 2013 that affected most of southern Ontario had similar devastating effects. In each case, Horizon Utilities required assistance from a number of construction and tree trimming contractors and neighbouring LDCs.

Horizon Utilities experiences a number of storms each year, but the frequency and impact of severe storms in recent years have been increasing, with an average OM&A impact of approximately $400,000 per storm, and an increase in total OM&A impact each year since 2011.

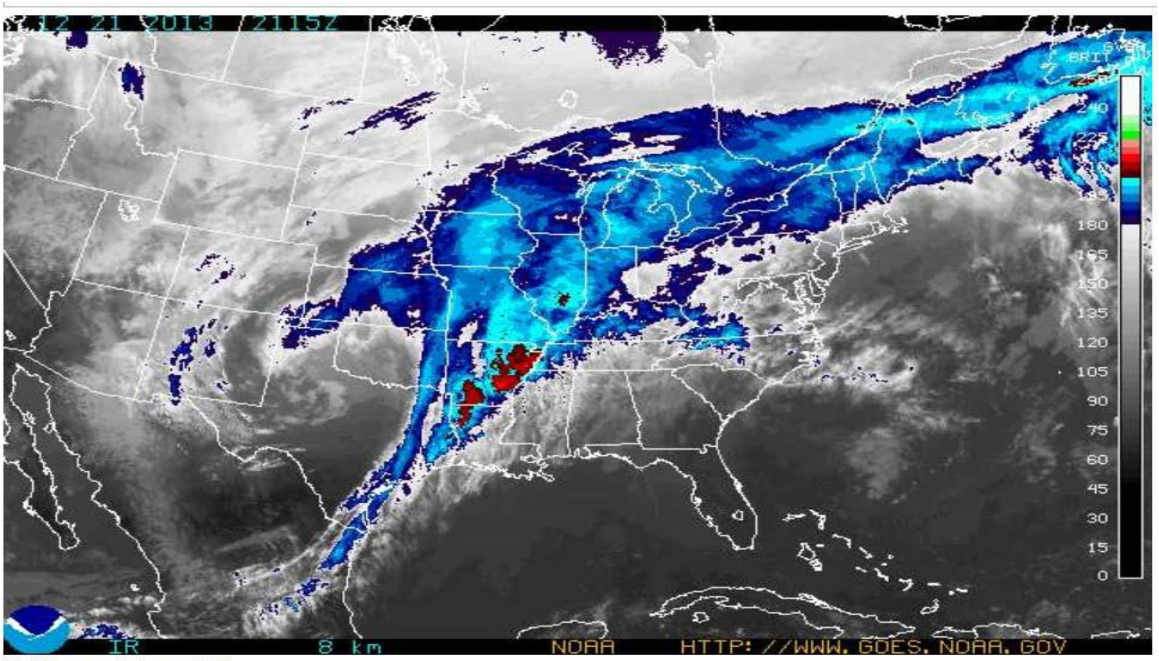
Table 4-40 below provides details for the 2011, 2012, and 2013 storms including customer impacts, OM&A costs, and capital costs.

Table 4-40 – Customer Impacts and Costs of Storm Events

Storm Event	Customer Minutes Interrupted	Total Cost ($)	OM&A ($)	Capital ($)
April 2011	13,100,000	1,563,584	488,224	1,075,340
July 2012	1,688,438	900,000	400,000	500,000
October 2012	3,058,370	144,778	133,277	11,501
July 2013	38,710,911	954,058	471,824	482,234
December 2013	14,384,753	668,812	432,444	236,368

The severity of these storms has been widely documented. The storm in July 2013, which included a record rainfall, caused flash flooding in Toronto that resulted in $940 million in damages. The flooding was the most expensive insured natural disaster in Ontario's history. It was Horizon Utilities' most expensive weather event of the year, with related expenditures totaling $954,058, as identified in Table 4-40.

The ice storm in December 2013 left hundreds of thousands of customers without power in Ontario and took several days to restore power to homes and businesses. One image taken on December 21, 2013 by the National Oceanic and Atmospheric Association ("NOAA") which captures, maintains and analyzes earth data from a constellation of geo-stationary satellites known as the Geostationary Satellite System ("GOES"), is presented below. The extensive storm mass stretching from Texas to Prince Edward Island deposited heavy concentrations of ice throughout Horizon Utilities' service area and just north of Lake Erie and Lake Ontario.



No higher resolution available.

GOES_12_Eastern_US_image_12212013.JPG (640 × 480 pixels, file size: 72 KB, MIME type: image/jpeg)

The ice storm deposited over 20mm of freezing rain in the Hamilton area overnight on December 22, and another 15mm on December 23, 2013, as reported at http://www.theweathernetwork.com/news/articles/worst-ice-storm-in-years-coats-southern-

ontario-cuts-power-to-thousands/18278/1/1. More than 30,000 Horizon Utilities customers were without power at the height of the storm, as a result of the weight of ice on tree limbs which brought down trees, overhead lines, and equipment, as reported at www.thespec.com, December 23, 2013. Many streets remained impassable on the Hamilton Mountain and Upper Stoney Creek areas for a number of days following the storm.

The City of Hamilton reported 2013 as the "worst year for tree damage in recent memory". Ice storm cleanup is expected to continue into April 2014 with "about 10,000 tree damage calls[5]".

Variance explanations for the 2015 Test Year costs vs. the 2011 Board-Approved costs are presented below.

Salaries, Wages, and Benefits

The 2015 Test Year gross salaries, wages, and benefits on payroll are $3,251,143 higher than the 2011 Board-Approved amounts.

Annual salaries and wage inflation is approximately 3% (approximately $1,420,000) over this period as described in Tab 2, Schedule 2 of this Exhibit. Benefits, driven primarily by increases to salaries and wages, account for approximately $1,274,500 of the increase (including real increases in OMERS contribution rates, identified in Tab 2, Schedule 2 of this Exhibit, that represent $897,969 of this amount). See Tab 2, Schedule 2 of this Exhibit for a complete discussion of the drivers for wages, salaries, and benefits increases.

The 2011 headcount for C&M was 147 FTE. C&M has realized and planned for 15 FTE reductions between 2011 and the 2015 Test Year resulting in a productivity improvement of $1,800,000 for the 2015 Test Year. The reductions are a result of: capacity improvements from reduced absenteeism; more efficient use of meeting and training time; reduced downtime for Trouble Crews; and reductions in average travel and yard times for construction crews. A more detailed explanation of these capacity improvements is provided in the Productivity Achievements section in Tab 3, Schedule 4 of this Exhibit.

[5] http://www.hamilton.ca/HotTopics/Winter-storm-updates.htm?WT.mc_id=storm&WT.hamilton_redirect_friendly=1

Overtime

The 2015 Test Year gross overtime costs are forecast to be $664,807 higher than the 2011 Board-Approved amounts as a result of increases associated with emergency repairs and storm restoration contributing to the variance identified in Table 4-39. The 2011 Board-Approved overtime was $853,800. Emergency repairs and storm restoration drove the 2011 Actual overtime costs to $1,713,883. Similarly, storms in 2012 and 2013 contributed significantly to overtime costs of $1,243,338, and $1,792,375, respectively.

Horizon Utilities has been experiencing rising costs associated with storm restoration as a result of severe storms during 2011, 2012, and 2013, and a number of climate model projections, from sources such as the Ontario Ministry of Natural Resources, Environment Canada, and the WeatherWise Partnership[6], suggest this trend will continue. The specific predictions from these models vary, depending on the type of model used and the assumptions made. In general, however, they point to the following changes for southern Ontario and the area served by Horizon Utilities:

- Mean temperatures in Great Lakes Basin could increase by 1.5° C to 2° C in the autumn and 4.5 – 5 °C in winter[7].

- The number of days over 30° C in southern region is expected to more than double by 2050, with some studies indicating the frequency could increase three-fold[8].

- Most areas will experience more precipitation, with most of the increase occurring as rain and less as snowfall and an increased risk of ice.

- Great Lakes water levels could decline by 0.5-1.6 metres,[9] despite the increase in precipitation, due to reduced ice cover and higher evaporation losses.

[6] An initiative of the City of Toronto Environment Office and the GTA Civic Action Group.
[7] The Conference Board of Canada, Adapting to Climate Change: Is Canada Ready, March 2006, page 8.
[8] Chiotti, O. and Lavender, B., (2008), Ontario, page 239.
[9] Conference Board of Canada, Adapting to Climate Change, page 8. See also: Union of Concerned Scientists, Confronting Climate Change in the Great Lakes Region, April 2003, page 24.

- Severe weather events are predicted to become more frequent. "*A 1990's 1-in-20 year annual maximum daily precipitation event is likely to become a 1-10 to 1-in-15 year event by 2050*"[10].

Expecting storm frequency and severity to continue to follow these trends, the 2014 Bridge Year and the 2015 Test Year forecast overtime is budgeted at $1,513,520, and $1,518,607, respectively; based on the average of the 2012 and 2013 experience.

Based on the above, the salaries, wages, benefits and overtime forecast for the 2015 Test Year is $3,251,143 higher than 2011 Board-Approved. Based on a labour capitalization ratio of 50% in 2015, $1,982,198 of this gross increase is allocated to capital and $1,268,945 is allocated to OM&A; this is an 18% increase in OM&A over the four years, or 4.23% increase per year. The capitalization ratio for salaries, wages, and benefits increases from 48% to 50% from 2011 to 2015, remaining at approximately 50% thereafter, as a result of increasing levels of capital activity as described in Exhibit 2, Tab 6, Schedule 1.

Vehicles

Horizon Utilities was required to make changes to its capitalization policy, as a result of the transition to IFRS, which impacted the hourly rates charged to recover vehicle costs in the Fleet department. Under CGAAP, the hourly charge-out rates for vehicles included repairs, maintenance, fuel, consumables, depreciation, vehicle insurance and administrative costs. IFRS diverges from CGAAP as it does not permit the capitalization of indirect overhead costs as PP&E. As a result, under IFRS, the hourly charge-out rates for vehicles include only fuel and vehicle insurance. All other costs, previously included in the charge-out rates for vehicles under CGAAP, were determined to be indirect overhead costs. The change to Horizon Utilities' capitalization policy is discussed in further detail in Exhibit 2, Tab 6, Schedule 5. Horizon Utilities uses one hourly rate for each vehicle, irrespective of whether the vehicle is used for an operating or capital activity. The impact of removing indirect overhead costs from the hourly rate for vehicles in the C&M department was the primary contributor to the decrease in vehicle

[10] "Extreme Weather: Big Picture", Gordon McBean, University of Western Ontario – ICLR, presented at Ontario Regional Climate Change Consortium, slide 8.

operating costs from the 2011 Board-Approved to the 2015 Test Year. The 2015 Test Year vehicle costs associated with operations and maintenance activities are $524,085 lower than 2011 Board-Approved.

Outside Service - Contracts

Horizon Utilities contracts out a number of maintenance activities including tree trimming, vacuum truck services for excavations, and underground plant locates. The 2011 Board-Approved tree trimming costs were $560,000, rising to $606,328, $843,873, $850,000, and $862,750 for 2012 Actual, 2013 Actual, the 2014 Bridge Year, and the 2015 Test Year, respectively.

Tree trimming contracts are established annually to maintain operating clearances around the overhead primary lines in the Hamilton and St. Catharines service areas. Each year, one third of the service areas are trimmed. Competitive bids for 2013 were generally around $700,000 for annual tree trimming according to this cycle. Additional amounts are budgeted each year for expected emergency tree trimming and removals associated with severe storms. As previously described, more frequent and severe storms are impacting Horizon Utilities' service area and, as a result, the cost for tree trimming has increased and is expected to increase further. Cost increases with respect to 2012 and 2013 tree trimming were associated with storm restoration for the July and October storms in 2012, and the July and December storms in 2013. Tree trimming costs are forecasted to be $302,750 higher in the 2015 Test Year than the 2011 Board-Approved amounts as a result of an increase in volume of work associated with storm restoration and inflation.

Vacuum truck service costs and cable locate costs are forecast to be $136,588 higher in the 2015 Test Year than the 2011 Board-Approved amount, driven largely by price inflation.

Consulting Fees

The 2015 Test Year forecast for consulting fees is $352,865 lower than the 2011 Board-Approved amount.

A consulting firm was hired in 2011 to conduct analyses and engage departments to re-engineer planning and scheduling processes across the company, as part of the planning and scheduling initiative. The results of this process included new processes, forms, guidelines, and work instructions aligned with a centralized planning and scheduling model for maintenance and construction projects. The benefits achieved from the planning and scheduling initiative is more fully described in the "Return on Investment Initiatives" section in Tab 2, Schedule 2 and the Productivity Achievements section in Tab 3, Schedule 4 of this Exhibit.

2015 Test Year *(MIFRS)* vs. 2013 Actual *(MIFRS)*

The C&M operations and maintenance costs for the 2015 Test Year are forecast to be $663,615 or 5.82% higher than the 2013 Actual amounts. The business drivers that explain this variance are described below.

Salaries, Wages, and Benefits

The 2015 Test Year salaries, wages, and benefits on payroll (excluding overtime) are $942,615 higher than the 2013 Actual amounts.

Annual salaries and wages increase over this period at approximately 3%, representing approximately $398,885. The cost of benefits increased by approximately $543,730. Changes in benefit costs generally correlate to increases to health, medical and OMERS contributions, including real increases in OMERS contribution rates contributed $101,725 of this $543,730 increase. The drivers for wages, salaries and benefits increases are discussed in Tab 2, Schedule 2 of this Exhibit.

Salaries, wages, and benefits would have been approximately $1,000,000 higher in the absence of a workforce reduction in C&M of 8 FTE over this period; 5 FTE reductions in 2014, and an additional 3 FTE reduction in 2015. These capacity improvements corresponding to reduced absenteeism, more efficient use of meeting and training time, reduced downtime for Trouble Crews, and reductions in average travel and yard times for construction crews are discussed in the Productivity Achievements section at Tab 3, Schedule 4, of this Exhibit.

Overtime

The 2015 Test Year gross overtime costs are forecast to be $273,768 lower than the 2013 Actual amounts. 2013 actual overtime of $1,792,375 included approximately $500,000 resulting from a severe ice storm in late December 2013. The 5-year average overtime from 2011-2015 is $1,556,345; the 2014 Bridge and 2015 Test Year overtime are forecast to be $1,513,520, and $1,518,607, respectively; or marginally below the five year average.

Planned overtime represents about 10% of the total overtime. Every effort is made to avoid planned overtime; however a certain amount of overtime is required to meet customer or community needs. The remaining overtime is associated with after-hour service restoration associated with trouble calls requiring more than Trouble Crew response, and emergency repairs associated with wide-spread system damage and outages generally caused by severe storms.

Repairs and Maintenance

Repairs and maintenance activity is forecast to be $333,906 higher in the 2015 Test Year than the 2013 Actual amounts. The 2014 Bridge and 2015 Test Year includes anticipated increases in costs for storm restoration, and plant maintenance.

As discussed in the variance analysis for the 2015 Test Year vs 2011 Board-Approved, the frequency and impact of storms in recent years has been increasing with the associated increase in operations and maintenance costs. Fifty percent of the increase in repairs and maintenance costs in 2014 and 2015, approximately $200,000, is required to restore and repair overhead lines and hardware including materials and supplies for storm restoration. The remaining expenditures are required for repairs and maintenance of distribution plant that is failing due to age and condition. The DSP filed as Appendix 2-4 in Exhibit 2, provides the proposed capital plans and the expected improvement in service and reliability. However, it is expected that Horizon Utilities will continue to realize rising operations and maintenance costs through the Test Years as the backlog of assets beyond their useful lives continues to be maintained in service. Repairs and maintenance costs are forecast to rise to $773,311 in 2016 and remain at approximately that level through the Test Years

2016 Test Year *(MIFRS)* vs. 2015 Test Year *(MIFRS)*

The anticipated increase in C&M costs in 2016 of $525,439 or 4.36% over the prior year is principally due to an increase in repairs and maintenance costs of $313,076 and inflation, offset by a headcount reduction of 2 FTE. As discussed above, Horizon Utilities expects to realize rising operations and maintenance costs both from the effects of severe storms and through the Test Years as the backlog of assets beyond their useful lives continues to be maintained in service. There are no anticipated changes to Construction and Maintenance activities for this period.

2017 Test Year *(MIFRS)* vs. 2016 Test Year *(MIFRS)*

The anticipated increase in C&M costs in 2017 of $261,011 or 2.07% over the prior year is principally due to wage and price inflation. This increase is offset by a headcount reduction of 1 FTE, or approximately $65,000 in wages and benefits charged to OM&A. In the absence of this productivity improvement C&M costs would have increased by $346,011 in 2017.

C&M headcount has stabilized in 2017 at 128 FTE; 19 FTE lower than the 2011 Board-Approved headcount.

2018 Test Year *(MIFRS)* vs. 2017 Test Year *(MIFRS)*

The anticipated increase in C&M costs in 2018 of $296,304, or 2.31% over the prior year, is principally due to inflation. There are no anticipated changes to Construction and Maintenance activities for this period. C&M headcount remains stable in 2018 at 128 FTE; 19 FTE lower that the 2011 Board-Approved headcount.

2019 Test Year *(MIFRS)* vs. 2018 Test Year *(MIFRS)*

The anticipated increase in C&M costs in 2019 of $297,979, or 2.27% over the prior year, is principally due to wage and price inflation. There are no anticipated changes to C&M activities for this period. The productivity savings realized in prior years continue through 2019. C&M headcount remains stable in 2019 at 128 FTE; 19 FTE lower that the 2011 Board-Approved headcount.

Facilities

The Facilities department focuses on property management and continuously improving the operation by introducing processes and tools to improve maintenance services for Horizon Utilities' properties as outlined in the Division Overview section of Tab 3, Schedule 2 of this Exhibit. Table 4-41 provides the 2011 through 2019 expenditures for the Facilities department. A variance analysis in support of this table is provided below.

Table 4-41 – Facilities 2011 - 2019 Expenditures and Variances

Annual Expenditures

	2011 Board-Approved	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Facilities - General	$ 481,163	$ 274,973	$ 401,639	$ 501,332	$ 634,718	$ 649,523	$ 668,298	$ 689,562	$ 708,964	$ 727,854
Building - Substations	$ 570,331	$ 643,224	$ 614,706	$ 929,368	$ 961,132	$ 976,050	$ 991,291	$ 1,006,775	$ 1,022,511	$ 1,038,415
Building - John St. Hamilton	$ 518,707	$ 725,062	$ 767,895	$ 956,767	$ 978,914	$ 995,219	$ 1,012,295	$ 1,029,690	$ 1,047,414	$ 1,075,632
Building - Nebo Rd. Hamilton	$ 589,017	$ 825,803	$ 999,541	$ 1,026,150	$ 1,173,432	$ 1,192,132	$ 1,211,102	$ 1,230,390	$ 1,249,999	$ 1,244,400
Building - Stoney Creek	$ 177,569	$ 241,687	$ 255,965	$ 318,922	$ 329,326	$ 334,920	$ 340,661	$ 346,508	$ 352,468	$ 358,623
Building - Vansickle Rd. St. Catharines	$ 306 578	$ 582 405	$ 333 574	$ 569 419	$ 640 038	$ 650 060	$ 660 326	$ 670 764	$ 681 376	$ 693 981
Total	$ 2 643 365	$ 3 293 154	$ 3 373 320	$ 4 301 959	$ 4 717 560	$ 4 797 904	$ 4 883 972	$ 4 973 689	$ 5 062 730	$ 5 138 906

Variance % Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Facilities - General	34.99%	29.56%	2.89%	3.18%	2.81%	2.66%
Building - Substations	71.14%	5.02%	1.56%	1.56%	1.56%	1.56%
Building - John St. Hamilton	91.87%	4.02%	1.72%	1.72%	1.72%	2.69%
Building - Nebo Rd. Hamilton	102.39%	16.18%	1.59%	1.59%	1.59%	-0.45%
Building - Stoney Creek	88.61%	5.02%	1.71%	1.72%	1.72%	1.75%
Building - Vansickle Rd. St. Catharines	112.04%	14.16%	1.58%	1.58%	1.58%	1.85%
Total	81.51%	11.53%	1.79%	1.84%	1.79%	1.50%

Variance $ Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Facilities - General	$ 168,360	$ 148,190	$ 18,776	$ 21,263	$ 19,402	$ 18,890
Building - Substations	$ 405,719	$ 46,682	$ 15,240	$ 15,485	$ 15,735	$ 15,904
Building - John St. Hamilton	$ 476,512	$ 38,453	$ 17,076	$ 17,395	$ 17,724	$ 28,218
Building - Nebo Rd. Hamilton	$ 603,115	$ 165,982	$ 18,970	$ 19,288	$ 19,608	$ (5,598)
Building - Stoney Creek	$ 157,351	$ 15,997	$ 5,741	$ 5,847	$ 5,960	$ 6,156
Building - Vansickle Rd. St. Catharines	$ 343,482	$ 80,641	$ 10,266	$ 10,438	$ 10,612	$ 12,605
Total	$ 2,154,539	$ 495,945	$ 86,069	$ 89,716	$ 89,042	$ 76,175

2015 Test Year (MIFRS) vs. 2011 Board-Approved (CGAAP)

Facilities costs for the 2015 Test Year are forecasted to be $2,154,539 or 81.51% higher than the 2011 Board-Approved amount. This variance is explained by necessary increases in building maintenance and repairs for all five buildings and 28 substations corresponding to end-of-life equipment and building related systems. Increases in equipment preventive maintenance programs related to assets such as HVAC units for critical areas such as the computer rooms and the installation of water pumps and air handlers have been and will be required to: reduce equipment failure; extend equipment life; and improve climate conditions and air quality. Equipment preventive maintenance programs will not only ensure equipment reliability, but extend replacement requirements and contain repair and replacement costs. Horizon Utilities expects that the preventative maintenance programs will result in cost containment in the future.

The addition of new required equipment and an increase in the overall staff complement in recent years has resulted in increases to utilities consumption and the need for increased janitorial and waste removal services.

Property security breaches and break-ins have increased the need for additional security services. Between 2009 and 2012, Horizon Utilities experienced a 50% increase in building and yard break-ins. Substations, in particular, have been a target for copper theft. This trend continues in 2013.

Mitigation plans include the addition of preventive measures, such as lighting, motion sensors and security patrols.

The adoption of the ISO14001 Certification and ISO26000 Standard and implementation of an Environment Management System ("EMS") has increased Horizon Utilities' consulting expenditures for audits and assessments required in order to maintain environmental compliance and standards certification.

2015 Test Year (MIFRS) vs. 2013 Actual (MIFRS)

The anticipated increase in Facilities costs in 2015 of $495,945 or 11.53% over the 2013 Actual is principally due to the increased costs related to building and equipment maintenance and repairs as identified above and the addition of 1 FTE, offset by the temporary vacancy for the Facilities Manager in 2013. This position was transferred from Logistics to the Facilities department to add necessary support to facilities management in order to maintain internal customer service levels and improve the level of inspections to support regulations (i.e. HVAC, preventative maintenance activities, daily building inspections, fire extinguishers and system inspections), with no net cost to the Applicant.

2016 Test Year (MIFRS) vs. 2015 Test Year (MIFRS)

The anticipated increase in Facilities costs in 2016 of $86,069 or 1.79% over the prior year is principally due to inflationary adjustments for salaries, wages, and benefits. There are no anticipated changes to activities or staff levels within Facilities in 2016.

2017 Test Year (MIFRS) vs. 2016 Test Year (MIFRS)

The anticipated increase in Facilities costs in 2017 of $89,716 or 1.84% over the prior year is principally due to inflationary adjustments for salaries, wages, and benefits. There are no anticipated changes to activities or staff levels within Facilities in 2017.

2018 Test Year (MIFRS) vs. 2017 Test Year (MIFRS)

The anticipated increase in Facilities costs in 2018 of $89,042 or 1.79% over the prior year is principally due to inflationary adjustments for salaries, wages, and benefits. There are no anticipated changes to activities or staff levels within Facilities in 2018.

2019 Test Year (MIFRS) vs. 2018 Test Year (MIFRS)

The anticipated increase in Facilities costs in 2019 of $76,175 or 1.50% over the prior year is principally due to inflationary adjustments for salaries, wages, and benefits. There are no anticipated changes to activities or staff levels within Facilities in 2019.

Supply Chain Management

SCM is responsible for the management of procurement, fleet services, logistics, and supply chain. This department is also responsible for Horizon Utilities' sustainable development and environmental management efforts as outlined in the Division Overview section of Tab 3, Schedule 2 of this Exhibit.

Table 4-42 provides the 2011 through 2019 expenditures for the SCM Program. A variance analysis in support of this table is provided below.

Table 4-42 – Supply Chain Management 2011 - 2019 Expenditures and Variances

Annual Expenditures

	2011 Board-Approved	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Procurement	$ -	$ 425,784	$ 527,747	$ 705,474	$ 853,214	$ 881,900	$ 875,248	$ 911,017	$ 925,758	$ 949,995
Fleet	$ -	$ (154,336)	$ 1,987,468	$ 1,984,101	$ 2,094,079	$ 2,162,035	$ 2,207,932	$ 2,256,451	$ 2,304,582	$ 2,351,898
Logistics	$ -	$ (1,003,317)	$ 1,557,528	$ 1,443,024	$ 1,926,703	$ 2,026,138	$ 2,080,065	$ 2,138,806	$ 2,196,050	$ 2,248,624
Supply Chain	$ 770,358	$ 594,577	$ 602,672	$ 434,160	$ 396,256	$ 392,864	$ 399,986	$ 407,532	$ 415,006	$ 424,025
Total	$ 770,358	$ (137,292)	$ 4,675,415	$ 4,566,759	$ 5,270,252	$ 5,462,936	$ 5,563,231	$ 5,713,806	$ 5,841,396	$ 5,974,542

Variance % Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Procurement	0.00%	25.01%	-0.75%	4.09%	1.62%	2.62%
Fleet	0.00%	8.97%	2.12%	2.20%	2.13%	2.05%
Logistics	0.00%	40.41%	2.66%	2.82%	2.68%	2.39%
Supply Chain	-49.00%	-9.51%	1.81%	1.89%	1.83%	2.17%
Total	609.14%	19.62%	1.84%	2.71%	2.23%	2.28%

Variance $ Increase/(Decrease)

	2015 Test Year vs. 2011 Board-Approved	2015 Test Year vs. 2013 Actual	2016 Test Year vs. 2015 Test Year	2017 Test Year vs. 2016 Test Year	2018 Test Year vs. 2017 Test Year	2019 Test Year vs. 2018 Test Year
Procurement	$ 881,900	$ 176,426	$ (6,652)	$ 35,770	$ 14,740	$ 24,237
Fleet	$ 2,162,035	$ 177,934	$ 45,897	$ 48,520	$ 48,131	$ 47,316
Logistics	$ 2,026,138	$ 583,114	$ 53,928	$ 58,740	$ 57,244	$ 52,574
Supply Chain	$ (377,494)	$ (41,296)	$ 7,122	$ 7,546	$ 7,475	$ 9,018
Total	$ 4,692,578	$ 896,177	$ 100,295	$ 150,575	$ 127,590	$ 133,145

2015 Test Year (MIFRS) vs. 2011 Board-Approved (CGAAP)

Procurement, Fleet, Logistics and Supply Chain expenditures in the 2015 Test Year are forecast to be $4,692,578 over the 2011 Board-Approved amount. All costs for Procurement, Logistics and Fleet were previously capitalized or allocated as expense to other departments as overhead costs under CGAAP.

Horizon Utilities was required to make changes to its capitalization policy, as a result of the transition to IFRS, which impacted OM&A. IFRS diverges from CGAAP as it does not permit the capitalization of indirect overhead costs as PP&E. The impact of removing indirect overhead costs from capital was an increase in Procurement, Logistics and Fleet OM&A in the amount of $4,567,136 as summarized in Table 4-38. Horizon Utilities has included a detailed discussion of the impact of the transition to IFRS in Exhibit 6, Tab 2, Schedule 1.

Supply Chain Management costs have decreased from 2011 Board-Approved of $770,358 to 2015 Test Year of $392,864, or (49%), as a result of productivity improvements; identified in Tab 3, Schedule 4 of this Exhibit. The costs for Supply Chain remain stable throughout the Bridge and Test Years, as identified above in Table 4-42. Year over year increases range from 1.81% to 2.17%. These variances are attributable to increases in fuel costs and consumption, insurance, and maintenance and repairs to extend vehicle life. The remainder of the increase is due to increased insurance and utility costs and increased expenditures for equipment maintenance programs and repairs in order to extend equipment life.

2015 Test Year (MIFRS) vs. 2013 Actual (MIFRS)

Costs are forecasted to be $896,177 or 19.62% higher in the 2015 Test Year as compared to the 2013 Actual across SCM departments. (Procurement $176,426, Fleet $177,934, Logistics $583,114 and Supply Chain ($41,296)). The increase in Fleet costs is due to vehicle and transportation equipment maintenance and repairs activities attributable to old and end-of-life assets. Horizon Utilities has revised its Fleet Replacement Plan, filed as Appendix 2-10 in the DSP in Exhibit 2, and implemented proactive maintenance efforts to extend the productive life of vehicles and defer the capital purchase of vehicles. The variance in Logistics and Supply Chain is due to increased insurance and general utility costs, increased expenditures for building equipment maintenance programs and repairs in order to extend equipment life. The

implementation of proactive maintenance and the availability of procurement cards have made it more efficient for Horizon Utilities to manage its costs on inventory of materials. Productivity improvements across the SCM functions are discussed further in Tab 3, Schedule 4 of this Exhibit.

2016 Test Year (MIFRS) vs. 2015 Test Year (MIFRS)

The anticipated increase in Supply Chain Management costs in 2016 of $100,295 or 1.84% over the prior year is principally due to inflation. There are no anticipated changes to Supply Chain Management activities for this period.

2017 Test Year (MIFRS) vs. 2016 Test Year (MIFRS)

The anticipated increase in Supply Chain Management costs in 2017 of $150,575 or 2.71% over the prior year is principally due to inflation. There are no anticipated changes to Supply Chain Management activities for this period.

2018 Test Year (MIFRS) vs. 2017 Test Year (MIFRS)

The anticipated increase in Supply Chain Management costs in 2018 of $127,590 or 2.23% over the prior year is principally due to inflation. There are no anticipated changes to Supply Chain Management activities for this period.

2019 Test Year (MIFRS) vs. 2018 Test Year (MIFRS)

The anticipated increase in Supply Chain Management costs in 2019 of $133,145 or 2.28% over the prior year is principally due to inflation. There are no anticipated changes to Supply Chain Management activities for this period.

PRODUCTIVITY ACHIEVEMENTS

The implementation of productivity initiatives and efficiency improvements is important to enable Horizon Utilities to offset increasing expenditures while maintaining and enhancing overall customer service. Tracking productivity is a complex and difficult task requiring the development of necessary systems and tools aligned to the specific process being measured. Horizon Utilities began tracking productivity in 2011 by identifying opportunities to establish efficiencies in each department and determining the baseline measure for evaluation in subsequent years.

The productivity projections in this Application incorporate a number of initiatives and achievements, including:

- Continued emphasis on workforce planning and resource utilization (optimization) through:
    - recruitment processes;
    - training and development – using resources as efficiently and effectively as possible;
    - performance management – providing regular performance feedback to develop a skilled, productive, and agile workforce;
    - focus on "tool time" – minimizing non-productive time; and;
    - managing absenteeism;
- Work Management Process – process improvement of the complete lifecycle of distribution construction projects; commencing with project design and continuing through material procurement, construction, and financial closure. This process is complex and impacts several departments which adds a great deal of complexity through integration. Specific measurements along this process are designed to measure the customer experience with regards to measuring; timeliness of receiving estimates; accuracy of estimates compared to actual costs, and the timely completion and billing of projects.

- Planning and Scheduling – utilization of centralized work schedules to ensure the effective use of labour resources, vehicles, tools, and materials;

- Continued development of the Financial Planning solution – to reduce time to prepare monthly variance analysis, improves the quality of financial projections and provide rolling forecasts;

- Various Customer Services initiatives including: increasing the customer enrolment of e-billing services; implementation of Call Centre overflow services; building of capacity of the Call Centre through self-service and automation; and

- Continued investigation of outsourcing opportunities and strategic alliances for services such as field and final bill collections, bill print and mailing services and payment processing activities.

These initiatives result in productivity gains across the utility by increasing organizational capacity and reducing the number of future hires in: skilled trades, the Call Centre, and certain clerical roles. The creation of worker capacity or increased "tool time" within the organization is necessary to meet new and emerging priorities while containing costs in the delivery of services to customers.

Productivity is categorized as follows:

- **Operating expenses** - realized reductions in operating expenditures;
- **Productivity Improvements/Capacity** - increase in "available time" or "tool time" as a result of process improvements and automation; and
- **Future Cost Avoidance** - realized efficiencies that are expected to result in future operating costs that would be lower than would otherwise be necessary in the absence of the productivity initiative.

Within the categories defined above and through productivity targeting initiatives, Horizon Utilities has realized approximately $3,500,000 in productivity achievements in 2013. This

includes sustained productivity achievements from previous years and incremental benefits established in 2013.

Sustained productivity achievement and the addition of incremental and new initiatives are estimated to produce total productivity gains of $4,990,000, $6,175,000, $6,335,000, $6,395,000, $6,495,000, and $6,645,000 as of 2014, 2015, 2016, 2017, 2018 and 2019 respectively.

Table 4-43 below provides the aggregate productivity savings achieved between 2011 and 2013, and the savings assumed to be achieved in the 2014 Bridge Year through the 2019 Test Year. Horizon Utilities forecasts total annual sustained savings of approximately $6,645,000 by 2019. In other terms, in the absence of these productivity achievements, total costs in 2019 would be approximately $6,645,000 higher than forecast in this Application. These productivity achievements are expected to be sustained in years subsequent to the term of this Application.

Table 4-43 – Productivity Achievement – Actual and Forecast

Initiative	Type	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Construction & Maintenance	Operating Expenditure Reductions	$ -	$ 100,000	$ 100,000	$ 300,000	$ 400,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000
	Productivity Improvements / Capacity	$ -	$ 600,000	$ 1,720,000	$ 1,720,000	$ 1,720,000	$ 1,720,000	$ 1,720,000	$ 1,720,000	$ 1,720,000
Information Systems & Technology	Operating Expenditure Reductions	$ -	$ -	$ 60,000	$ 200,000	$ 220,000	$ 220,000	$ 220,000	$ 220,000	$ 220,000
	Productivity Improvements / Capacity	$ -	$ -	$ -	$ 140,000	$ 1,020,000	$ 1,020,000	$ 1,020,000	$ 1,050,000	$ 1,150,000
Customer Services	Operating Expenditure Reductions	$ 25 000	$ 375 000	$ 710 000	$ 920 000	$ 985 000	$ 1 015 000	$ 1 045 000	$ 1 075 000	$ 1 105 000
	Productivity Improvements / Capacity	$ 50,000	$ 425,000	$ 800,000	$ 1,300,000	$ 1,300,000	$ 1,320,000	$ 1,340,000	$ 1,350,000	$ 1,360,000
Supply Chain Management	Operating Expenditure Reductions	$ -	$ 20,000	$ 40,000	$ 80,000	$ 100,000	$ 100,000	$ 110,000	$ 120,000	$ 110,000
	Productivity Improvements / Capacity	$ -	$ 20,000	$ 50,000	$ 90,000	$ 90,000	$ 100,000	$ 100,000	$ 120,000	$ 140,000
Finance	Operating Expenditure Reductions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Productivity Improvements / Capacity	$ -	$ -	$ 50 000	$ 240 000	$ 340 000	$ 340 000	$ 340 000	$ 340 000	$ 340 000
Total		**$ 75,000**	**$ 1,540,000**	**$ 3,530,000**	**$ 4,990,000**	**$ 6,175,000**	**$ 6,335,000**	**$ 6,395,000**	**$ 6,495,000**	**$ 6,645,000**
OM&A per Application		$50,790,410	$ 51,478,365	$ 54,522,505	$ 60,387,369	$ 62,632,679	$ 64,394,131	$ 66,255,827	$ 67,708,658	$ 69,140,489
Productivity as a % of Total OM&A		*0.1%*	*3.0%*	*6.5%*	*8.3%*	*9.9%*	*9.8%*	*9.7%*	*9.6%*	*9.6%*

Each yearly productivity achievement total in the table above is comprised of incremental achievement from that year as well as sustained achievement from previous years. The table below provides a summary of these productivity achievements in reference to Total OM&A in this Application. In the absence of these productivity savings, the CAGR for OM&A would be 5.1%, rather than 3.9%, for the period from 2011 to 2019.

Table 4-44 – Impact to OM&A CAGR Inclusive and Exclusive of Productivity Savings

	2011 Actual - Restated MIFRS	2012 Actual MIFRS	2013 Actual MIFRS	2014 Bridge Year MIFRS	2015 Test Year MIFRS
OM&A per Application	$ 50,790,410	$ 51,478,365	$ 54,516,505	$ 60,387,369	$ 62,632,679
YOY growth		*1.4%*	*5.9%*	*10.8%*	*3.7%*
Add: Productivity Savings	$ 75,000	$ 1,540,000	$ 3,530,000	$ 4,990,000	$ 6,175,000
OM&A without Productivity	$ 50,865,410	$ 53,018,365	$ 58,046,505	$ 65,377,369	$ 68,807,679
YOY growth		*4.2%*	*9.5%*	*12.6%*	*5.2%*

	2016 Test Year MIFRS	2017 Test Year MIFRS	2018 Test Year MIFRS	2019 Test Year MIFRS	CAGR 2011 to 2019	CAGR 2011 to 2015	CAGR 2015 to 2019
OM&A per Application	$ 64,394,131	$ 66,255,827	$ 67,708,658	$ 69,140,490			
YOY growth	*2 8%*	*2.9%*	*2.2%*	*2.1%*	*3.9%*	*5.4%*	*2.5%*
Add: Productivity Savings	$ 6,335,000	$ 6,395,000	$ 6,495,000	$ 6,645,000			
OM&A without Productivity	$ 70,729,131	$ 72,650,827	$ 74,203,658	$ 75,785,490			
YOY growth	*2 8%*	*2.7%*	*2.1%*	*2.1%*	*5.1%*	*7.8%*	*2.4%*

Horizon Utilities has achieved quantified productivity in the areas of Customer Services, C&M, SCM, IST, and Finance.

Customer Services

At the end of 2013, Customer Services realized more than $1,500,000 in operating expenditure reductions, increased workforce capacity, and cost avoidance as identified in Table 4-45. The Customer Service productivity improvements include a permanent reduction in headcount of 4 FTE and the redeployment of two additional FTE in Customer Connections.

The FTE reductions, redeployments, and capacity built within the division have partially offset increasing payroll-related expenditures to support new and increasing requirements such as: *Green Energy Act*-related initiatives such as FIT and microFIT management; data management related to Smart Meters and TOU billing; response to increased customer demand for connections and service upgrades; increased requirements to support Customer Standardization and the Low-income Energy Assistance Program and to support customer service enhancement projects such as the provision of new web self-service tools.

Productivity and capacity building have been realized in Customer Services in three areas (further elaborated below): the implementation of e-mobile, a paperless work management system; strategic outsourcing of services and a number of initiatives in the Customer Service department including enhanced people and process practices; and the utilization of Smart Meter information in back-office processes. Cost containment has also been achieved through the provision of web-enabled self-service tools, described in Tab 2, Schedule 2 of this Exhibit that provide alternate service channels to customers and paperless billing initiatives which reduce postage and mailing related expenditures. Web service investments enable Horizon Utilities to provide increased service and accessibility to customers in a cost effective manner.

Table 4-45 – Customer Services Productivity Achievement – Actual and Forecast

Initiatve	Type	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
E-mobile	Operating Expenditure Reductions	$ 25,000	$ 200,000	$ 400,000	$ 600,000	$ 600,000	$ 600,000	$ 600,000	$ 600,000	$ 600,000
	Productivity Improvements / Capacity	$ 50,000	$ 300,000	$ 675,000	$ 1,150,000	$ 1,150,000	$ 1,150,000	$ 1,150,000	$ 1,150,000	$ 1,150,000
Customer Service - Outsourcing	Operating Expenditure Reductions	$ -	$ -	$ 60,000	$ 70,000	$ 60,000	$ 70,000	$ 80,000	$ 90,000	$ 100,000
	Productivity Improvements / Capacity	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Customer Service - Miscellaneous	Operating Expenditure Reductions	$ -	$ 175,000	$ 250,000	$ 250,000	$ 325,000	$ 345,000	$ 365,000	$ 385,000	$ 405,000
	Productivity Improvements / Capacity	$ -	$ 125,000	$ 125,000	$ 150,000	$ 150,000	$ 170,000	$ 190,000	$ 200,000	$ 210,000
Total		**$ 75,000**	**$ 800,000**	**$ 1,510,000**	**$ 2,220,000**	**$ 2,285,000**	**$ 2,335,000**	**$ 2,385,000**	**$ 2,425,000**	**$ 2,465,000**

e-mobile

e-mobile is a paperless work order system that replaced paper orders with computer tablets to manage field activities such as new connections, meter changes, and collection activities. In addition to reducing paper and printing costs, streamlining and automation of processes in the back office have reduced the need for manual data entry and minimized clerical tasks and re-work resulting from manual errors.

Meter Persons are able to receive and submit their work service orders electronically and more than half of the Meter Persons take the work vehicle home such that they start and end the work day in the field. e-mobile has eliminated the need for travel time to and from the office to pick up or drop off work and it has increased their tool time (productivity). e-mobile efficiencies have resulted in:

- the elimination of 2 FTE positions within Customer Services;
- the re-deployment of 2 FTE Meter Persons in Customer Connections and the creation of necessary capacity for Connection Technicians to perform more relevant and meaningful work and meet increasing customer demand for new service connections and service upgrades as provided in Exhibit 2, Tab 6, Schedule 3. e-mobile has streamlined processes in Customer Connections - the number of meters changed exceeded the planned amount in 2013.

Customer Services has achieved $1,075,000 in aggregated operating cost reductions, building of capacity, and future cost avoidance to the end of 2013 as identified in Table 4-46, and Horizon Utilities anticipates the annual savings to increase to $1,750,000 on an ongoing basis commencing in 2014 and continuing through the 2015-2019 period.

Table 4-46 – e-mobile Productivity Achievement – Actual and Forecast

Initiative	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Realized Operating Expenditure Reductions	$ 25,000	$ 200,000	$ 400,000	$ 600,000	$ 600,000	$ 600,000	$ 600,000	$ 600,000	$ 600,000
Productivity Improvements / Capacity	$ 25,000	$ 150,000	$ 425,000	$ 750,000	$ 750,000	$ 750,000	$ 750,000	$ 750,000	$ 750,000
Future Cost Avoidance	$ 25,000	$ 150,000	$ 250,000	$ 400,000	$ 400,000	$ 400,000	$ 400,000	$ 400,000	$ 400,000
Total	**$ 75,000**	**$ 500,000**	**$ 1,100,000**	**$ 1,750,000**	**$ 1,750,000**	**$ 1,750,000**	**$ 1,750,000**	**$ 1,750,000**	**$ 1,750,000**

Productivity and work flow improvements have been achieved with the implementation of e-mobile from 2011 to 2013 through:

- The ability to directly dispatch electronic service orders to staff in the field;
- The ability for workers to enter field data directly into systems;
- The reduction of more than 30,000 paper orders annually;
- The elimination of clerical data entry and rework due to the reduction of manual errors and automation; and
- Increased tool time with the elimination of multiple trips to the office.

Operating expenditure reductions of $400,000 as of the end of 2013 include payroll savings due to the elimination of 2 FTE in 2012 as well as savings in paper and printing expenditures.

Increased productivity and capacity savings were realized annually through the automation of tasks and the reduction of time spent in the office by field staff. Building organizational capacity is necessary to meet ongoing operational and regulatory requirements without increasing employee headcount.

The implementation of Customer Standardization rules and the Low-income Energy Assistance Program are examples of regulatory requirements that were delivered more efficiently as a result of the use of employee capacity created through e-mobile.

The work resulting from customer demand for new services and upgrades to services in the Customer Connections department increased by 38% in 2013 as compared to 2012 and would have required the hiring of two FTE to manage the increased workload. This work was delivered without the need for additional FTE as a result of the human resource capacity achieved through efficiencies realized with e-mobile.

Sustained capacity savings of $425,000 were achieved between 2011 and 2013, including the redeployment of two Meter Persons.

Future cost avoidance of $250,000 was realized as of the end of 2013, primarily as a result of the re-deployment of a Connections Clerk to more value added work, as described further below, due to the elimination of paper service orders. The newly assigned work includes responding to customer requests and assisting in the monitoring of the Smart Meter network. Supervisors also have more time available to support their staff with large customer projects and escalated customer concerns, as well as additional capacity to provide infield managerial oversight and coaching of the mobile workforce. e-mobile benefits are expected to continue in 2014 as the use of electronic service orders will enable additional functionality including service reconnections for collections activities. Customer Service and Customer Connections will continue to explore opportunities to streamline e-mobile related processes to achieve additional productivity improvement and cost avoidance measures in 2014.

The benefits generated from this project will be sustained, without any additional headcount, throughout the 2015 to 2019 Test Years.

Customer Service Outsourcing Arrangements

The Customer Service department has identified two outsourcing opportunities to manage costs and improve service to customers without increasing overall expenditures.

i) MV-90 Operator. The Customer Service department began outsourcing overflow MV-90 services in 2012. This outsourcing resulted in the permanent reduction of 1 FTE at an approximate savings of $60,000, net of the cost of outsourcing in 2013. This outsourcing is budgeted to continue through 2014 and beyond, resulted in sustained savings of $60,000 annually. The annual operating expenditure reduction assists in cost containment in the Customer Service department.

ii) Overflow Call Centre services. The Customer Service Call Centre will utilize an overflow Call Centre solution beginning in 2014 in order to increase agent availability during peak times of the day, month, and year as well as during events such as outages. This initiative will partially offset rising labour costs.

Table 4-47 – Customer Services Outsourcing Productivity Achievement – Actual and Forecast

Initiative	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Realized Operating Expenditure Reductions	$ -		$ 60,000	$ 70,000	$ 60,000	$ 70,000	$ 80,000	$ 90,000	$ 100,000

The number of in-bound calls to the Call Centre varies by the time of day, week, month, and year. It is neither efficient nor practical to staff the Call Centre for peak times; as such would leave Customer Service Representatives with too much non-productive time between customer calls. The utilization of an overflow service enables Horizon Utilities to schedule agents on an hourly and daily basis based upon customer demand. As Call Centre staff leave the department due to retirements or other opportunities, the equivalent resources will be transitioned to the overflow service.

An annual reduction of 1 FTE is forecasted based upon historical employee turnover rates in the Call Centre and anticipated retirements. The overflow solution will result in increased accessibility for customers; enable expanded hours of operation without increasing overall costs; and partially offset increasing payroll-related expenditures.

Operating reductions are estimated to be $10,000 annually per FTE transitioned to the overflow provider. Savings will be temporarily decreased in 2015 due to the extension of Call Centre hours which will be managed by the overflow provider.

Customer Service has achieved operating expenditure reductions of $60,000 in 2013 as a result of outsourcing as identified in Table 4-47, above.

Customer Service – Miscellaneous Initiatives

Customer Service has realized approximately $250,000 in operating expenditure reductions as of the end of 2013 as identified in Table 4-48 through a number of miscellaneous initiatives, including: the provision of epost web presentment through Canada Post and promotion of paperless billing services discussed in Tab 3, Schedule 2 of this Exhibit; the termination of third-party delivery services for customer payments and mail between Horizon Utilities' Service Centres; and the creation of an electronic bill for a multi-account customer. This has partially offset increasing payroll-related expenditures and Canada Post postage expenses.

An additional $125,000 in necessary organizational capacity has been created in the department from automation and streamlining of certain processes as of the end of

2013, enhanced people practices, and the leveraging of Smart Meters. This has ensured that operational and regulatory requirements such as compliance with Customer Standardization regulations, and data management to support Time-of-Use billing are met without increasing Customer Service headcount.

Enhanced people and process practices

Customer Service has demonstrated cost containment and necessary organizational capacity building from enhancing its people management practices. This includes revising the Customer Service vacation practice to reduce the number of employees who can be on vacation at the same time. This change has increased employee availability to perform work, and reduced much of the requirement for overtime to meet the operational needs in the department at peak times of the year.

The hiring of part-time Call Centre staff has increased supervisor flexibility to schedule agents at peak times of the day and week. Schedule coordination has resulted in enhanced accessibility for customers without increasing overall Call Centre expenditures.

Horizon Utilities closed its Reception Desk service in its office in St. Catharines, primarily due to low customer service volumes for walk-in service and concerns regarding employee safety. This closure resulted in the elimination of 1 FTE in the Customer Service department. Reductions in operating expenditures related to the headcount reduction were partially offset by increased expenditures related to security services.

Savings achieved to date are anticipated to be sustained, and strong people practices, including employee attendance management to further increase employee availability, will continue in 2014 and beyond.

Leveraging of Smart Meters

The implementation of AMI and the installation of Smart Meters for residential and small business customers as directed under government policy have resulted in lower conventional meter reading costs. Smart Meters are also being installed at larger commercial locations; General Service > 50 kW customer meters are being replaced with Smart Meters at the time of the reverification of the meter.

In 2013, programming was implemented to determine readings of the monthly customer demand through the AMI system for certain GS > 50kW customers, resulting in a further reduction in the number of meters that must be read manually. Operating expenditure reductions and capacity built to the end of 2013 is anticipated to be sustained as identified in Table 4-48, below. Future operating expenditure reductions and increased capacity will be achieved through continued investment in streamlined processes and automation.

Table 4-48 – Customer Services Miscellaneous Productivity Achievements – Actual and Forecast

Initiative	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Realized Operating Expenditure Reductions	$ -	$ 175,000	$ 250,000	$ 250,000	$ 325,000	$ 345,000	$ 365,000	$ 385,000	$ 405,000
Productivity Improvements / Capacity	$ -	$ 125,000	$ 125,000	$ 150,000	$ 150,000	$ 170,000	$ 190,000	$ 200,000	$ 210,000
Total	**$ -**	**$ 300,000**	**$ 375,000**	**$ 400,000**	**$ 475,000**	**$ 515,000**	**$ 555,000**	**$ 585,000**	**$ 615,000**

Construction and Maintenance

C&M has dramatically improved the utilization and efficiency of its workforce through targeted productivity initiatives, such as the Planning and Scheduling tool. The focus of these initiatives was to reduce travel time (to and from job sites); to reduce yard time (obtaining materials and supplies at the beginning of the day, and dropping off scrap at the end of the day); to reduce absenteeism; to be more efficient with scheduling training and meetings; using inclement weather for training and other useful purposes; and converting downtime (i.e., the time Trouble Crews wait between trouble calls) to productive work. Utilization is measured as the number of hours in a work day that is applied to capital and operating work orders divided by the number of hours in a normal work day. Efficiency is measured as the number of units of work accomplished in a given time period per person or crew. All things being equal, an increase in utilization, or an increase in efficiency, or both, translate to higher productivity.

An internal analysis was conducted in 2011 which provided benchmark data and insight into the utilization of the C&M Services' workforce. The analysis demonstrated that, on average, C&M trade employees are utilized in actual "tool-time" activity approximately 5.3 hours out of each 8 hour work-day including approximately 2 hours of travel time and yard time.

The remaining time each day on average, approximately 2.7 hours, was consumed by non-productive time, such as: absenteeism; vacation; lunches; breaks; training and development; meetings; inclement weather; and downtime. It was determined that efficiencies could be gained through attention to controllable areas of non-productive time including yard and travel time; absenteeism; training and development; meetings and better use of downtime. The Planning and Scheduling initiative, included in Tab 3, Schedule 3 of this Exhibit, introduced to improve the management of resources, was instrumental in improving productive time for C&M employees.

Time consumed by vacation, lunches, and breaks is considered uncontrollable time as such is provided under contractual terms of employment specified in the collective agreement. The controllable areas of non-productive time specified above are able to be converted to productive time.

Improving labour utilization through higher ratios of tool time to total available time provides the opportunity to reduce cost or increase productive capacity by completing more work with the same number of employees or the same amount of work with fewer employees. This also provides the opportunity to reduce overtime, and/or reduce the amount of work that is performed by contractors.

As of the end of 2019, C&M anticipates the reduction of 19 FTE in the department as compared to 2011. Capacity improvements achieved during 2012 and 2013, and forecast to be sustained through the Bridge and Test Years, represent a 15% improvement in productivity relative to 2011. Improvements by productivity category and targeted initiative are summarized in Table 4-49. C&M anticipates similar work volumes to be completed by internal staff in 2019 as compared to 2011.

Table 4-49 – C&M Productivity Achievements – Actual and Forecast

Initiative	Type	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Planning and Scheduling Initiative	Operating Expenditure Reductions	$ -	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000
	Produc ivity Improvements / Capacity	$ -	$ 310,000	$ 1,230,000	$ 1,230,000	$ 1,230,000	$ 1,230,000	$ 1,230,000	$ 1,230,000	$ 1,230,000
Outsourcing	Operating Expenditure Reductions	$ -	$ -	$ -	$ 200,000	$ 300,000	$ 400,000	$ 400,000	$ 400,000	$ 400,000
	Produc ivity Improvements / Capacity	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Down ime Reduc ion	Operating Expenditure Reductions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Produc ivity Improvements / Capacity	$ -	$ 190,000	$ 370,000	$ 370,000	$ 370,000	$ 370,000	$ 370,000	$ 370,000	$ 370,000
Absenteeism Reduction	Operating Expenditure Reductions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Produc ivity Improvements / Capacity	$ -	$ 100,000	$ 120,000	$ 120,000	$ 120,000	$ 120,000	$ 120,000	$ 120,000	$ 120,000
Total		**$ -**	**$ 700,000**	**$ 1,820,000**	**$ 2,020,000**	**$ 2,120,000**	**$ 2,220,000**	**$ 2,220,000**	**$ 2,220,000**	**$ 2,220,000**

Planning and Scheduling Initiative

The Planning and Scheduling initiative, which began in 2011, is described in detail in Tab 3, Schedule 3 of this Exhibit. This initiative established a process and expectations for each department that contributes to capital and operating work executed by C&M and leveraged the Primavera centralized scheduling system which was purchased in 2012, as discussed in Tab 2, Schedule 2.

The initiative recognized that the existing process, without a shared planning and scheduling system, did not provide the visibility into work demand or work capacity to allow for improved efficiencies. The implementation of a shared system across those departments contributing to the planning and scheduling of capital and operating work, enables process improvement with a master construction schedule for all planned capital and maintenance work.

The master schedule is the key enabler for effectively managing resources and includes information regarding all vacations; training; planned maintenance; reactive repairs; planned capital work; priorities; and displays real-time status of current projects, as well as key information on future scheduled work. Visibility into the current status of each project, along with any delays or work completed ahead of plan, allows schedulers to insert additional work to increase workforce output and address emerging urgent customer work.

The benefits of this initiative are more efficient and effective planning; improved workforce output from coordination and sequencing of related work and combining jobs of various types to fill the available time in a day; real-time prioritization to improve response to customer needs; improved inventory management using the forecasting features of the system; and improved fleet utilization.

The implementation of Planning and Scheduling practices in 2012 contributed to a reduction in overtime costs of approximately $100,000 as a result of improved scheduling of projects within normal business hours.

Productivity improvements through augmenting human resource capacity were realized with this initiative through reductions in: yard time; travel time; meeting time; and training and development time, described in further detail below. Productivity improvements from the implementation of Planning and Scheduling resulted in an increase in capacity equivalent to 9 FTE in 2013, which is expected to be sustained through the Bridge and Test Years. This enables additional work volume to be completed in house without increasing permanent headcount.

Reduction of Yard and Travel Time

Yard time and travel time efficiencies are a component of the Planning and Scheduling initiative. "Yard time" includes all time that active vehicles spend at service centers during regular working hours. "Travel time" includes time spent driving to and from work sites. Yard-time and Travel-time represented more than twenty-five percent of the work-day in 2012; or approximately two hours per day per person. As a result of the Planning and Scheduling initiative and fueling vehicles after hours, an average of 21 minutes per person per day of this time was converted to productive tool time in 2013, which represents an increase in capacity equivalent to approximately 6.7 FTE and is forecast to be sustained through the Bridge and Test Years.

Reduction in Meeting Time

In 2013, C&M began to plan meetings and training in a more flexible manner to take advantage of non-productive inclement weather days and, thus, improve tool time. This represents an increase in capacity equivalent to approximately 1.6 FTE in 2013, which is forecasted to be sustained through the Bridge and Test Years.

Training and Development Efficiencies

Through the Planning and Scheduling initiative, Horizon Utilities identified an opportunity to reset the C&M annual training program as part of the process improvement focus of the initiative. Prior to the introduction of the Planning and

Scheduling initiative, C&M employees received approximately 80 hours of training per person per year. As part of the initiative, a bottom-up review was conducted to determine areas for improvement while still satisfying regulatory and trades skills requirements.

Training time per employee was reduced from an average of 80 hours per year to 40 hours per year through the following changes:

- Implemented a "boot camp" approach which allowed multiple training sessions with a shorter duration to be consolidated into one or more consecutive days of training to improve efficiency. The boot camp approach yields increased capacity and tool time by eliminating travel time to multiple sessions on different days.

- Training materials were packaged such that delivery can be facilitated by Managers and Supervisors instead of outside service providers, and delivery can occur during scheduled training days, safety meetings, or during inclement weather days.

- Using online learning with a Learning Management System ("LMS") where employees can access and complete training online (i.e. eLearning) at their own pace and on their own time in some cases.

- Enhancements and re-structuring of the Apprenticeship programs to improve knowledge transfer, skill development, and focus on Horizon Utilities' core values.

Outsourcing

Horizon Utilities is seeking to bend its cost curve through transformational changes to its traditional cost structure including outsourcing and the development of key alliances to focus staff on core work and contain rising labour expenditures through outsourcing where it is more cost effective.

As retirements occur in the C&M department, outsourcing of the equivalent work will occur. A total of 11 FTE positions will be outsourced with the retirements anticipated to occur as follows: five FTE in 2014; three in 2015; two in 2016; and one in 2017. This is expected to result in sustained operating expenditure savings of $400,000 annually as of 2016.

Downtime Reduction for Trouble Crews

Horizon Utilities uses single-person Trouble Crews to respond 24/7/365 to: wires down; outages; power quality calls; and emergency services calls. The main focus of Trouble Crews is to respond to these types of trouble calls and provide quick customer and community service, when other crews are engaged in capital or maintenance work, or after normal business hours. The majority of trouble calls occur during the day and evening with the volume of calls generally dropping off after 10pm. There is opportunity to utilize these crews, during times when call volumes are low, to complete certain types of work that can be disrupted when other priority trouble calls occur.

Work began in 2012 to identify, organize, and assign specific maintenance work to be performed by Trouble Crews during downtime, when call volumes are low, with a corresponding capacity contribution to productive work of 1.9 FTE in 2012, and an additional 1.8 FTE capacity contribution to productive work in 2013.

Work that is now assigned to Trouble Crews that can be disrupted for priority trouble calls includes:

- Distribution system asset verifications (nomenclature including switch #'s, pad-mounted transformer #'s);
- Inspection of tree trimming contractor work;
- Repair of system ground connections;
- Miscellaneous permanent repairs associated with trouble calls;
- Repair/replace feeder disconnect switches;

- Repair/replace house services;
- Assist on-call crews as required to reduce requirement to call in additional crews; and,
- Follow up on customer-requested isolations.

These downtime reductions are expected to be sustained.

Absenteeism Reduction

Horizon Utilities has a robust Attendance Management Program designed to aid in the continued wellness of employees and encourage their healthy and safe return to work.

An internal review identified that absenteeism in the C&M department was a significant driver of non-productive time. Approximately 50% of the absenteeism was due to long-term absences associated with convalescence and 50% was associated with short-term absences due to less severe ailments. The Attendance Management Program includes tracking of absences on an employee basis and provides opportunity for setting attendance improvement goals through structured approaches such as face-to-face direct meetings between employees and their Supervisors. Employees are encouraged to make healthy lifestyle choices and attend to their health in order to help them meet their commitment to regular attendance at work. Through this process, significant reductions in absenteeism were achieved in 2012 with a capacity gain equivalent to 2 FTE and a reduction in the average absenteeism rate per employee to 8.2 days per year as compared to 11.3 in 2011. An additional reduction in total absence time within C&M of approximately 300 hours in 2013 was achieved; approximately 0.5 days per person improvement, compared to 2012 results, representing a capacity gain equivalent to 0.2 FTE. Horizon Utilities will continue to focus on the Attendance Management Program to maintain and modestly improve results in this area.

Supply Chain Management (Fleet, Logistics, Procurement and Facilities)

Since 2011, Supply Chain Management has been planning and implementing a number of initiatives aimed at reducing operating expenditures and building organizational capacity without increasing FTE. These initiatives and associated benefits will be sustained throughout the plan period through to 2019.

Table 4-50 – Supply Chain Management Productivity Achievement – Actual and Forecast

Initiative	Type	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Fleet Initiatives	Operating Expenditure Reductions	$ -	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
	Productivity Improvements / Capacity	$ -	$ -	$ -	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000
Procurement Initiatives	Operating Expenditure Reductions	$ -	$ -	$ -	$ 30,000	$ 40,000	$ 40,000	$ 40,000	$ 50,000	$ 50,000
	Productivity Improvements / Capacity	$ -	$ -	$ -	$ 20,000	$ 20,000	$ 30,000	$ 30,000	$ 40,000	$ 40,000
Logistics Initiatives	Operating Expenditure Reductions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Productivity Improvements / Capacity	$ -	$ -	$ -	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 40,000	$ 60,000
Facilities Initiatives	Operating Expenditure Reductions	$ -	$ -	$ 20,000	$ 30,000	$ 40,000	$ 40,000	$ 50,000	$ 50,000	$ 40,000
	Productivity Improvements / Capacity	$ -	$ -	$ 30,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000
Reduction SCM Meetings	Operating Expenditure Reductions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Productivity Improvements / Capacity	$ -	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
Total		**$ -**	**$ 40,000**	**$ 90,000**	**$ 170,000**	**$ 190,000**	**$ 200,000**	**$ 210,000**	**$ 240,000**	**$ 250,000**

Fleet

Fleet Services operates out of the Hamilton Service Centre at the Nebo Road location. Fleet Services previously had one shift that operated from 8am until 4pm daily. In 2012, a second shift was introduced and hours of operation were extended from 8am to 11pm in the Hamilton Service Centre. This allowed mechanics to conduct the required repairs, maintenance and fueling of vehicles after normal business hours in order to ensure availability of vehicles to crews at the start of the work day, which supports maximizing tool time and reducing overtime costs for both crews and mechanics. This initiative has resulted in productivity benefits through a reduction in overtime and reduced operating expenses totaling annual savings of $20,000 for 2012 and 2013. This initiative will result in productivity benefits estimated at $20,000 per year between 2014 and 2019, as identified in Table 4-50, primarily due to a reduction in overtime hours for the mechanics.

Traditionally, Fleet Services used manual processes for inventory control and required the mechanics and fleet clerk to perform inventory management activities. In late 2013, the use of the bar coding system was implemented, to manage vehicle parts inventory, thereby automating the inventory management process. This initiative will result in productivity benefits estimated at the total of $10,000 per year, as identified in Table 4-50, between 2014 and 2019 primarily due to a reduction of former manual processes. This will also build necessary human resource capacity to focus on increasing levels of repair and maintenance on a growing proportion of older vehicles.

Procurement

Many of the activities and processes in the Procurement department were resource and paper intensive. Processes were reviewed in order to reduce costs and build capacity; such as the purchasing process. Prior to April 2013, all purchases, regardless of the amount of the expenditure, required that a purchase order be completed.

Procurement credit cards were introduced in April 2013 and issued to Facilities Maintainers for purchases under $1,000 in order to streamline the procurement process and improve availability of materials required for building maintenance and repairs. As a result, $20,000 of capacity will be generated in 2014 with resource time saved as

identified in Table 4-50 above. Productivity savings were calculated by determining the average number of PO's under $1,000 from 2011 to 2013 as the basis to measure, track and report on Purchase Order ("PO") reductions after the procurement cards were introduced. A monthly query is obtained from IFS on number of POs issued under $1,000 for facilities related expenditures. These initiatives will generate estimated average annual operating expenditure reductions of approximately $42,000 per year between 2014 and 2019.

The Procurement department is expected to generate total estimated average annual productivity savings of approximately $72,000 per year between 2014 and 2019 by streamlining and improving procurement processes and activities. This includes consolidating Purchase Requisitions ("PR") into a Purchase Order; designating specific ordering days; and implementing an e-Procurement process and solution. These initiatives will create necessary human resource capacity within the Procurement department required to focus on increasing procurement and sourcing volumes, corresponding to growth in capital and operating programs, without the need for future additional head count.

Logistics

Currently the majority of warehouse activities and processes within the Logistics department are manual. The Logistics department has reviewed processes in order to make them more efficient and build human resource capacity. Capacity will be built through: the implementation of a new workflow rotation; the development of work activity schedules; the reduction of manual processes by expanding the use of the bar coding system for material receiving, shipping and inventory count activities; the implementation of self-serve kiosks for small materials; and the implementation of a material kitting process. This resource capacity will be useful to offset the forecasted increase in warehouse management activities resulting from increases in capital projects. It is estimated that these initiatives will generate productivity benefits of additional capacity estimated of $36,000 per annum on average, between 2014 and 2019 as identified in Table 4-50.

Facilities

Facilities Maintainers serve all of Horizon Utilities' four locations. Prior to 2012, these individuals were located at the Head Office at John Street, Hamilton and would travel regularly between the four locations in order to provide the necessary support. In 2012, Facilities was reorganized and two Facilities Maintainers that were previously located at Head Office in Hamilton were relocated to the St. Catharines and Stoney Creek Service Centres. This reorganization decreased travel time between service centres and has also reduced fuel consumption expenditures resulting in productivity savings of approximately $52,000 per annum on average, between 2014 and 2019 as identified in Table 4-50.

Meetings

In 2012, the SCM business unit identified the opportunity to reduce the length and number of departmental meetings in order to create efficiencies. Departmental meetings were reduced from monthly to bi-monthly and through strict adherence to established agendas and action logs, the duration of the meetings were reduced from two hours to one hour.

The changes have resulted in the increased resource capacity through the reduction in travel time of staff travelling from various locations to meetings; less frequent meetings; and the reduced duration of the meetings. Over 2012 and 2013, approximately 1000 hours, equivalent to $20,000 in each of 2012 and 2013 of productivity benefits, were generated by increasing resource capacity. It is estimated that 500 hours annually in resource capacity will be generated to a total of $20,000 per year in productivity benefits between 2014 and 2019 due to the reduction of meeting time, as identified in Table 4-50.

Information Systems and Technology

The principal justifications for most IST initiatives are: (i) risk-mitigation to address end-of-life and/ or unsupported legacy systems; and (ii) productivity enhancement initiatives to improve process efficiency and effectiveness. Certain IST initiatives undertaken within the period analyzed in this Application are expected to provide annual productivity benefits as described below of approximately $1,370,000 by 2019, as identified in Table 4-51.

Table 4-51 – IST Productivity Achievement – Actual and Forecast

Initiative	Type	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
IFS ERP Phase 1	Operating Expenditure Reductions	$ -	$ -	$ 60,000	$ 170,000	$ 170,000	$ 170,000	$ 170,000	$ 170,000	$ 170,000
	Productivity Improvements / Capacity	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
IFS ERP Phase 2	Operating Expenditure Reductions	$ -	$ -	$ -	$ 30,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
	Productivity Improvements / Capacity	$ -	$ -	$ -	$ 30,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000
IFS ERP Phase 3	Operating Expenditure Reductions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Productivity Improvements / Capacity	$ -	$ -	$ -	$ 110,000	$ 700,000	$ 700,000	$ 700,000	$ 700,000	$ 700,000
IFS ERP Upgrade	Operating Expenditure Reductions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Productivity Improvements / Capacity	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 30,000	$ 130,000
Enterprise Unified Communications	Operating Expenditure Reductions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Productivity Improvements / Capacity	$ -	$ -	$ -	$ -	$ 280,000	$ 280,000	$ 280,000	$ 280,000	$ 280,000
Total		**$ -**	**$ -**	**$ 60,000**	**$ 340,000**	**$ 1,240,000**	**$ 1,240,000**	**$ 1,240,000**	**$ 1,270,000**	**$ 1,370,000**

The following major IST investments are planned from 2013 to 2019 as follows:

IFS ERP Phase 1 (2013)

The overall scope of IFS ERP Upgrade proceeds in three phases from 2013 to 2015.

Phase 1 comprised an upgrade from version 7.3 to version 8.1 and was completed in September 2013 at a capital cost of approximately $1,225,000. This phase was required to eliminate operational risks related to software, database and operating systems that will not be supported by the respective vendors beyond 2014. The IFS ERP system was migrated to a cloud-based managed service thus reducing the annual operating cost of the IFS environment by $170,000. Reductions were achieved primarily by the elimination of one technical support IST FTE position, elimination of server hardware maintenance, and a reduction in depreciation expenses as server hardware for maintaining the environment in-house was not required. The decision to adopt the IFS ERP Managed Services Cloud also had an associated reduction in capital expenditures of approximately $450,000, as provided in Exhibit 2, Tab 6, Schedule 1.

IFS ERP Phase 2 (2014)

Phase 2 of this three year initiative comprises the removal of custom modifications from the Horizon Utilities' IFS application. The capital budget for this phase of the project is $980,260.

Completion of the modification removal will result in productivity through future cost avoidance by reducing future upgrade costs related to the continued migration of custom modifications to new IFS versions. IFS has indicated that its next major application upgrade will require re-programming of existing custom modifications, as the customization platform will change. The value of cost avoidance of re-programming Horizon Utilities' custom modifications during the next upgrade expected in 2018 and as identified in the DSP filed as Appendix 2-4 in Exhibit 2, is estimated at $658,000. Major upgrades of ERP systems can be expected every three to five years.

This project is also expected to provide ongoing annual savings in software maintenance of approximately $50,000 related to the removal of custom modifications. Additional maintenance costs of $40,000 related to the modifications will be billed by the vendor if the modifications are not removed as part of Phase 2.

IFS ERP Phase 3 (2015)

This phase of the IFS ERP Upgrade comprises the redesign and optimization of existing business processes, and implementation of new business processes using features and functions available in IFS version 8.1. Horizon Utilities has provided the project scope and justification in Appendix A of the DSP which is filed as Appendix 2-4 of Exhibit 2. The one-time capital expenditure for this phase is $1,382,600.

The estimated annual benefit for this phase is approximately $700,000 in staff productivity improvements/capacity and future operating expenditure avoidance. These benefits will be realized through enterprise-wide staff productivity improvements, cost reductions, and cost avoidance related to process improvements.

2018 IFS ERP Upgrade

This 2018 initiative is an enterprise-wide project to perform a life-cycle upgrade of Horizon Utilities' ERP system from IFS version 8.1 to the then current vendor supported version. This is a required major upgrade to the IFS ERP system upgraded in 2013. IFS releases a new major version of the system every three years and it provides support for only the two most recent versions. This project is required to mitigate operational risks dependent of software not supported by the vendor. This project is expected to be a straightforward migration of functionality to the new version.

During this upgrade, Horizon Utilities will realize the benefits of the 2014 IFS ERP Phase 2 initiative by avoiding an estimated $658,000 in capital expenditures corresponding to migration of the custom modifications to the new version; which also corresponds to $130,000 in operating expenditure avoidance related to annual depreciation.

Enterprise Unified Communications

This 2015 initiative comprises the implementation of a unified communications platform to integrate real-time communication services such as: instant messaging; video conferencing; data sharing web sessions; call control and speech recognition with non-real-time communication services such as voicemail, e-mail, and fax. The project will provide the capability to: optimize business processes; improve staff productivity through less travel between facilities; and to seamlessly collaborate regardless of location. The one-time capital expenditure for this project is $400,000.

This project is required to address the communications challenge of reaching coworkers across different facilities or in the field reliably on the first try. Even though communications tools are widespread throughout the organization, the fact that employees are dispersed across multiple corporate facilities, and are increasingly mobile, makes connecting and collaborating with coworkers more difficult. This issue has become more prevalent with the increased introduction of mobile devices and new applications with mobile capabilities (mobile service order management, GIS, and OMS) implemented in part to increase worker time in the field. Unified communications applications will be implemented to provide staff with presence information (i.e. where people are), instant messaging (e.g. chat), and unified messaging (e.g. email, instant messaging, voice mail, mobile voice mail), all accessible from the same mail box and mobile unified communications to improve the ability to connect with coworkers and to improve collaboration. It is expected that staff productivity will be improved by an average of 15 minutes per day per employee for 100 employees with this implementation. The expected productivity gain will be 786 days or approximately $280,000 per year.

These productivity savings were conservatively estimated based on the results of a July 2008 survey of 244 small, medium and large organizations, commissioned by Cisco Systems and conducted by Chadwick Martin Bailey, a Top 50 U.S. market research organization (http://www.cisco.com/web/strategy/docs/gov/CMBResearch_WP.pdf) of 244 small, medium, and large organizations. The survey identified the following:

- 50% of organizations save up to 20 minutes per employee daily from more efficient message management;
- 49% of organizations save up to 20 minutes per employee daily by reaching workers on the first try;
- 68% of organizations reported productivity improvements between geographically-dispersed functional groups;
- 67% of organizations report increased mobile worker productivity and faster problem resolution from mobile unified communications;
- 46% of organizations realized travel savings of more than 5 days per employee annually;
- 33% of organizations saved 11-20 minutes per employee daily from corporate directory access, click-to-dial, presence, and visual voice mail on mobile devices; and
- 40% of organizations indicated 11-30 minutes saved per employee daily with single business phone number and voicemail regardless of device.

Corporate Finance

Corporate Finance (or "Finance") is responsible for certain initiatives that improve productivity as follows: Activity-Based Costing/Business Intelligence system; Financial Planning Solution; and Electronic Funds Transfer. Beginning in 2014, these initiatives will generate $240,000 in productivity improvements and increased capacity benefits. These benefits increase to $340,000 in 2015 and will be sustained for each subsequent Test Year 2016 to 2019.

The effective implementation of these Finance initiatives has addressed capacity constraints in the department and enabled staff to improve efficiency by minimizing process intensive tasks, increasing performance through prescriptive analytics and providing the ability to monitor and manage financial performance through key indicators.

Table 4-52 below provides a summary of the productivity initiatives related to these finance initiatives.

Table 4-52 – Corporate Finance Productivity Achievement – Actual and Forecast

Initiative	Type	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Activity Based Costing / Business Intelligence system	Operating Expenditure Reductions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Productivity Improvements / Capacity	$ -	$ -	$ 20,000	$ 100,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000
Financial Planning Solution	Operating Expenditure Reductions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Productivity Improvements / Capacity	$ -	$ -	$ -	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000
Electronic Funds Transfer ("EFT")	Operating Expenditure Reductions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Productivity Improvements / Capacity	$ -	$ -	$ 30,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000
Total		**$ -**	**$ -**	**$ 50,000**	**$ 240,000**	**$ 340,000**	**$ 340,000**	**$ 340,000**	**$ 340,000**	**$ 340,000**

Finance made the following investments prior to the 2014 Bridge Year:

Activity-Based Costing/Business Intelligence system

An Activity-Based Costing/Business Intelligence ("ABC/BI") system was implemented early in 2012. ABC/BI is a query-optimized data repository that integrates various financial and other data sources from the IFS ERP system. ABC/BI enables detailed reporting of actual and budget data based on activities; standardized reporting; and ad-hoc query functionality. The latter functionality provides user capability to drill down into both budget and actual results, using many dimensions, and to provide identification and analysis of significant cost drivers.

Productivity and capacity savings of approximately $20,000 were realized in 2013. These savings are expected to rise to $100,000 in 2014, then to $200,000 per year from 2015 on as a result of: (i) reduction in time required to prepare monthly management reports; (ii) reduction in time required to distribute monthly management reports; (iii) reduction in time required to produce the annual financial filings for the regulator; and (iv) reduction in efforts required to produce historical financial information for regulatory, audit, or other purposes.

One-time OM&A costs of $100,000 are planned in 2015 to enhance the system implemented in 2012. The objective of this initiative is to ensure that the organization's activity coding structure and related inputs into the ERP system are aligned with business intelligence reporting for key business processes (e.g., meter reading to customer payment, procurement initiation to supplier payment), thereby enhancing management's ability to monitor and evaluate productivity metrics. This initiative is expected to result in additional productivity benefits estimated at $100,000 each year as described in Tab 2, Schedule 2 of this Exhibit.

Financial Planning Solution

The implementation of a Financial Planning Solution, which began in 2012, is anticipated to be completed in 2014. The project includes the implementation of an integrated

software solution for financial planning and budgeting and is estimated to result in productivity and capacity savings of $100,000 starting in 2014 as a result of: (i) reduction in time spent by management staff in the preparation of the annual budgets and forecasts; (ii) reduction in time spent preparing and consolidating resource planning templates, which are now integrated with budget process templates; and (iii) reduction in time spent by Finance staff in the preparation and review of the consolidated budget and forecasts.

Electronic Funds Transfer ("EFT")

In December 2012, an EFT payment option was implemented for a select group of suppliers. Supplier participants received payments electronically rather than by cheque. Since the inception of the EFT payment program, this customer-preferred option has been expanded to include 295 suppliers. Productivity savings (based on processing cheque payments, related supplies, cheque preparation, postage, and cheque reconciliation costs) of $30,000 have been realized for 2013 and $40,000 per year from 2014 to 2019, principally driven by expected additional vendor enrollments**.**

Other Productivity Savings

There are several other productivity based initiatives for which the productivity benefit of future cost avoidance cannot be easily quantified. Such initiatives include: the provision of customer self-service tools and website enhancements; Attendance Management Program, and Horizon Utilities' eLearning initiative. While specific productivity benefits cannot be quantified, these initiatives demonstrate an ongoing commitment to productivity improvement.

Provision of Customer Self Service Tools

Self-service tools are available for customers to access through the website or IVR telephone system. Online tools that enable: customers to submit their account change information; review their invoice; confirm a payment has been received; and submit a meter read are cost effective and increase customer accessibility.

myAccount is secure customer web-based portal that provides customer self-service options; account management tools; and electronic bill presentment features. Customers accessed myAccount more than 700,000 times in 2013. It is estimated that the provision and use of on-line and IVR tools has resulted in the avoidance of approximately 170,000 calls to the Call Centre in 2013 and eliminated the need to hire additional Call Centre agents to respond to increasing customer contact volumes while improving customer response through electronic information mediums.

Attendance Management Program

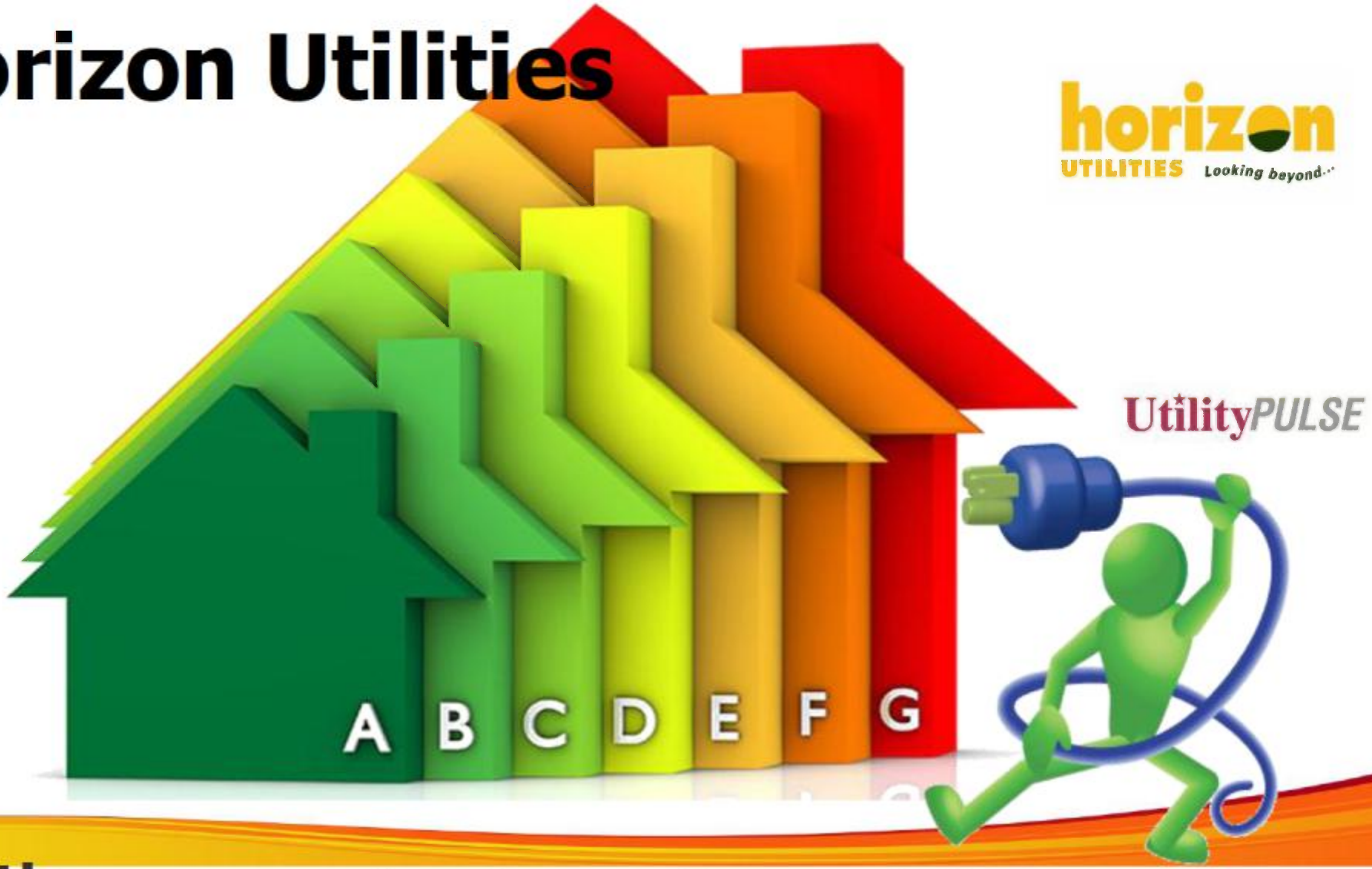
In 2011, the average number of sick days per employee was 8.3 days per year. Through an increased focus on attendance management, an average of 6.5 sick days per employee was achieved in 2013. A revised attendance policy and new program was introduced in 2009 which ensured a consistent approach to attendance management across the organization. The new program included the introduction of a 5 step review process with clear metrics and criteria for entering and exiting the program. In 2011, an organization wide compliance audit of the program was conducted to identify and close gaps in reporting. Effective in 2012, absenteeism metrics were included in the monthly reporting on continuous improvement and productivity. Horizon Utilities will continue to focus on attendance management in order to sustain the productivity achievements attained through the reduction of sick time.

eLearning

An online learning tool was recently introduced and branded internally as eLearning. eLearning enables employees to access courses from the convenience of their desktop, laptop, or new eLearning kiosks. It also allows them to complete courses on their own time and at their own pace. This new learning solution demonstrates an ongoing commitment to employees' learning and development, as well as further supports a commitment to continuous improvement by enabling flexibility in learning. eLearning is a key enabler to increase employee capacity and minimize business disruption

APPENDIX 4-1 – 15TH ANNUAL ELECTRICAL UTILITY CUSTOMER SATISFACTION SURVEY

Horizon Utilities



15th Annual Electric Utility Customer Satisfaction Survey

The purpose of this report is to profile the connection between Horizon Utilities and its customers.

The primary objective of the Electric Utility Customer Satisfaction Survey is to provide information that will support discussions about improving customer care at every level in your utility.

The UtilityPULSE Report Card® and survey analysis contained in this report do not merely capture state of mind or perceptions about your customers' needs and wants - the information contained in this survey provides actionable and measurable feedback from your customers.

This is privileged and confidential material and no part may be used outside of Horizon Utilities without written permission from UtilityPULSE, the electric utility survey division of Simul Corporation.



All comments and questions should be addressed to:

Sid Ridgley, UtilityPULSE division, Simul Corporation

Toll free: 1-888-291-7892 or Local: 905-895-7900

Email: sidridgley@utilitypulse.com or sridgley@simulcorp.com

Executive summary

"Putting the Consumer First" was part of the title of the *Report of the Ontario Distribution Sector Review Panel.* Its findings and recommendations add an additional level of challenges and opportunities. While the Report challenges the structural nature and efficiency of LDCs in Ontario, the "customer" remains focused on their own needs and expectations. The customer is primarily concerned about their overall costs for their electricity rather than the costs of the individual components of producing, transmitting, distributing and regulating electricity.

For the past 15 years, the only constant Ontario LDCs and their customers have faced is constant change. With topics such as SMART Meters, SMART Grid, green energy, infrastructure renewal, coupled with the recommendations from the Ontario Distribution Sector Review Panel, it is easy to predict that change will continue – for many years to come. One of the challenges for utilities today is to determine how to educate, empower and engage their residential and small business customers. The goal for utilities is to cut through the fog of fear, misinformation and confusion that exists amongst its customers, regarding a myriad of subjects, while retaining a very high level of trust, respect and credibility.

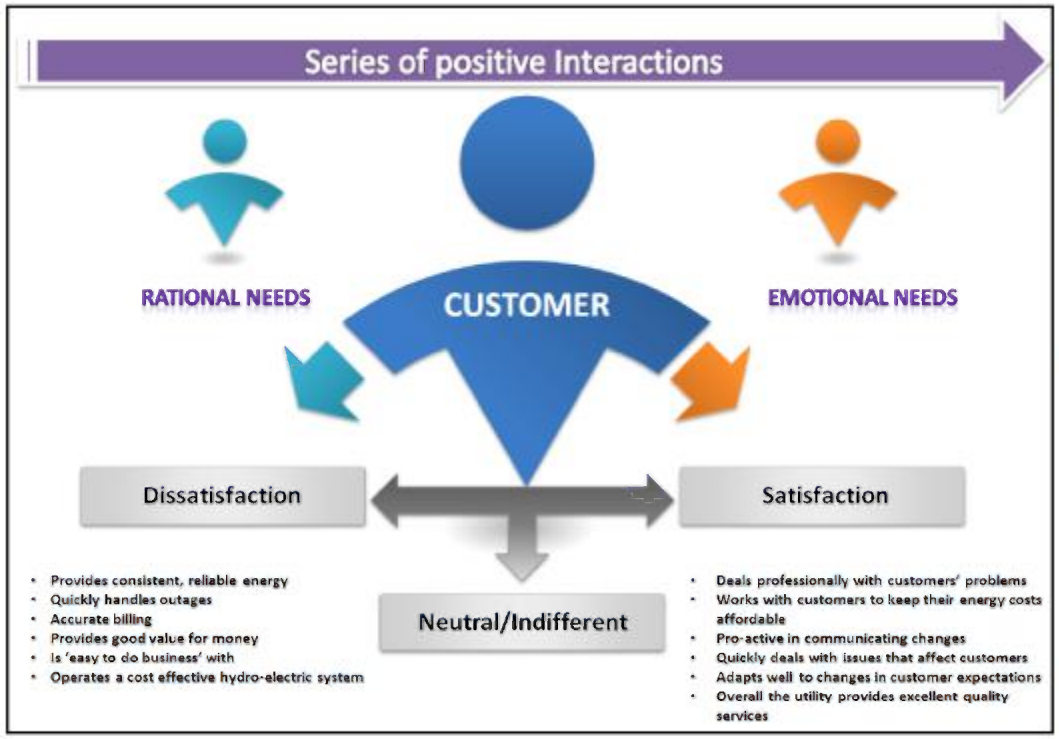




Trust and credibility are the foundational building blocks for ensuring that customers have both their rational and emotional requirements

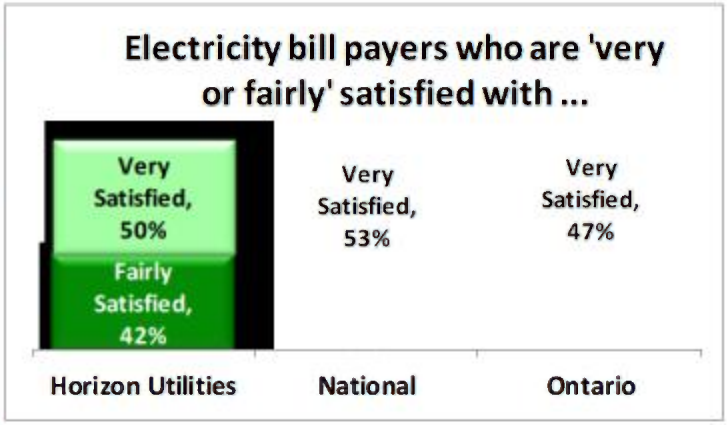
fulfilled. The attributes which help an LDC to be seen as trusted and highly credible are: knowledge, integrity, involvement and trust. On demonstrating Credibility and Trust, Horizon Utilities has done well. Overall, Horizon Utilities 85% [Ontario 82%; National 82%].

Customers, as human beings, are both rational and emotional. The rational side of the customer holds the LDC accountable for doing its job (as contracted), thereby fulfilling the customer's basic needs. The emotional side of the customer is about fulfilling expectations. Meeting rational needs – at best – gets the customer to a neutral state and at worst creates dissatisfaction. Emotional needs, when met, assuming base level rational needs are met, can move a customer from neutral to higher levels of satisfaction.





The old adage, "You cannot command respect, you have to earn respect" is a lesson that aptly describes the loyalty effect with customers. Many people mistakenly think doing a good job will lead to loyalty; that a satisfied customer equals a loyal customer. Customers have expectations of their electric utility that go far beyond "keeping the lights on", "billing me properly", and "restoring power quickly".



- **Satisfaction** happens when utility core services meet or exceed customer's needs, wants, or expectations.
- **Loyalty** occurs when a customer makes an emotional connection with their electric utility on a diverse range of expectations beyond core services.

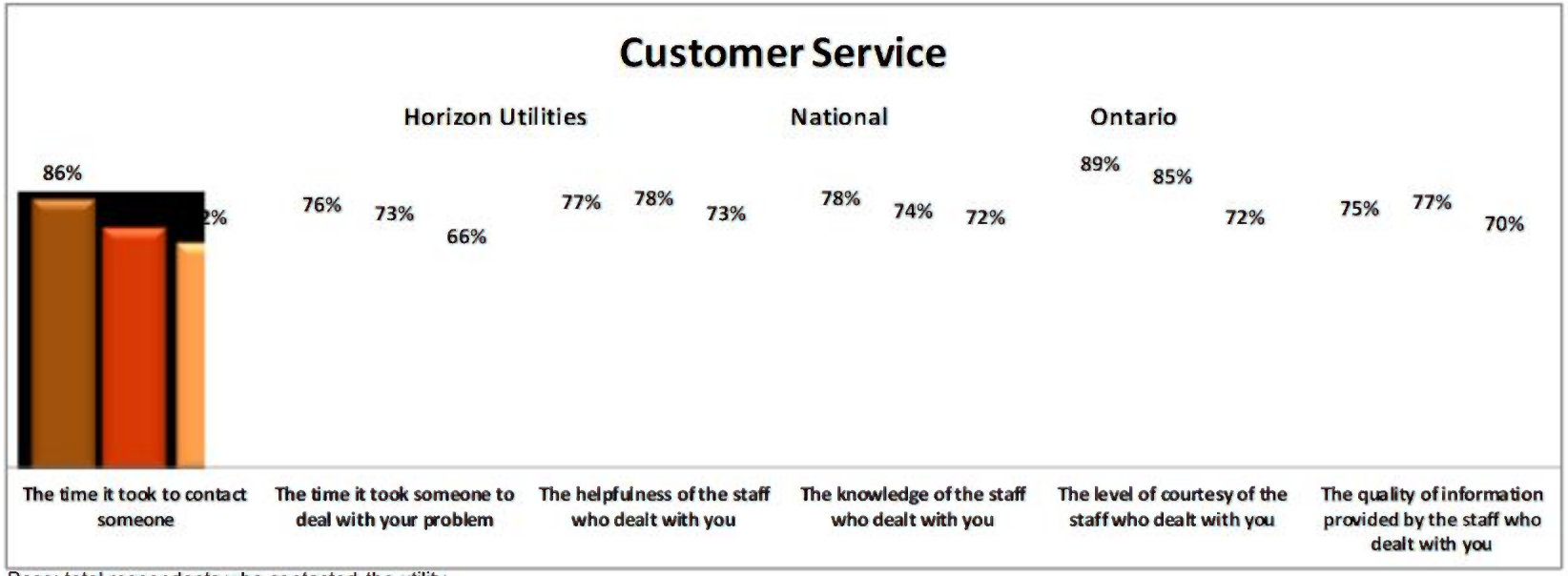
Satisfaction alone does not make a customer loyal; a willingness to commit and advocate for a company along with satisfaction identifies the three basic customer attitudes which underpin loyalty profiles. While satisfaction is an important component of loyalty, the loyalty definition needs to incorporate more attitudinal and emotive components.



Horizon SATISFACTION SCORES – Electricity customers' satisfaction				
Top 2 Boxes: 'very + fairly satisfied'	**2013**	**2012**	**2011**	**2010**
PRE: Initial Satisfaction Scores	92%	90%	83%	88%
POST: End of Interview	95%	93%	90%	92%

Base: total respondents

Customers have needs and expectations AND they will have problems. How those problems are dealt with are "proof points" which will validate or invalidate their perceptions. Customer problems are far more diverse than they have ever been, thereby, causing customer service to change in response to those problems and needs. Given the increase in fragmentation of customer type and customer problems, the need for building a customer-centric culture in line with customers' needs, preferences and expectations is important when customer satisfaction is important to the organization.



Base: total respondents who contacted the utility



The Killer B's (Blackouts and Bills)

It is inevitable that there will be blackouts/power outages – the key is how a utility anticipates outages and deals with them. It should also be noted that there is a disconnect between what a utility might call a "billing problem" and what a customer defines as a "billing problem". Though both viewpoints are valid, employees need to be trained to answer those that cause the most concern with customers.

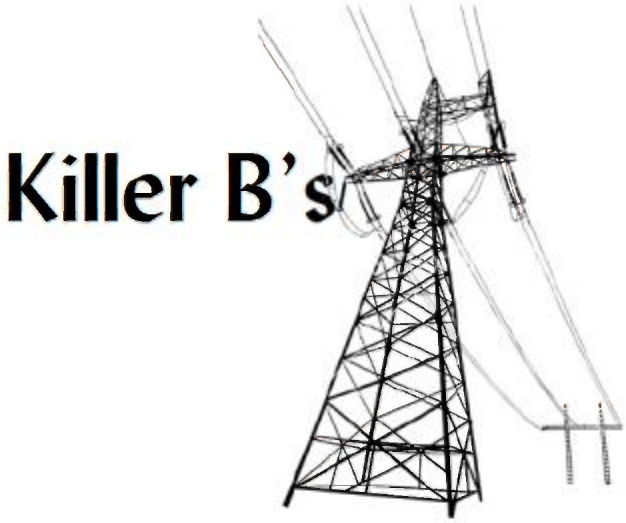
Percentage of Respondents indicating that they had a Blackout or Outage problem in the last 12 months			
	Horizon	National	Ontario
2013	17%	41%	35%
2012	19%	44%	46%
2011	18%	43%	43%
2010	27%	45%	41%

Base: total respondents

Percentage of Respondents indicating that they had a Billing problem in the last 12 months			
	Horizon	National	Ontario
2013	8%	8%	10%
2012	8%	12%	13%
2011	12%	10%	16%
2010	7%	10%	12%

Base: total respondents





What do customers think about electricity costs?

There is a correlation between ability to pay and satisfaction with higher earners reporting the highest levels of initial satisfaction with their utility. It is also true that emotional connectivity, i.e. loyalty, also plays a role about what customers think about costs. Out of all the Ontario survey respondents this year, only 17% of Secure customers vs 43% of At Risk customers report that they sometimes or often worry about paying their electricity bill.

Is paying for electricity a worry or major problem …			
	Horizon	National	Ontario
Not really a worry	67%	70%	66%
Sometimes I worry	20%	18%	21%
Often it is a major problem	7%	8%	11%
Depends	3%	2%	1%

Base: total respondents



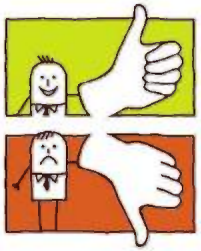
Customer Experience Performance rating (CEPr)

New for 2013 is the Customer Experience Performance rating (CEPr). Every touch point with customers on the phone, website or in-person influences what customers think and feel about the organization.



Customer Experience Performance rating (CEPr)			
	Horizon	National	Ontario
CEPr: all respondents	86%	83%	83%
CEPr: respondents *who have* contacted their utility	82%	79%	77%
CEPr: respondents *who have not* contacted their utility	87%	84%	85%

Base: total respondents



The key is handling every individual element of an interaction with a customer so that he/she feels good at the end of the whole interaction and the utility achieves its business objectives.
While an excellent transaction today creates a positive experience today, the perception created is that future transactions will be excellent too, which is how you want your customers to feel. Of course, a negative transaction creates the perception that future transactions will be negative.



Customer Engagement Index (CEI)

UtilityPULSE has been researching this topic for the past 2 years and we have found that there are 4 basic types of definitions associated with the term called "customer engagement". Here are the basic types:

1- Participation in programs or service offerings
2- Pro-active "reach-out" to customers
3- Customer loyalty
4- How customers think, feel and act towards the organization that serves them.

Drawing from our 25+ years of experience working with enterprises in both the private and public domains, we believe that basic types 1 & 2 are too simplistic and tend to be an efficiency measurement. Whereas types 3 & 4 are more valuable to the organization especially when a key corporate goal is to create an operationally effective place to do business with – essentially an effectiveness and outcomes oriented measurement.

Engagement is how customers think, feel and act towards the organization. As such, ensuring that customers respond in a positive way requires that they are rationally satisfied with the services provided AND emotionally connected to your LDC and its brand. The more frequently and consistently an organization's products and services can connect with a customer, especially on an emotional level, the stronger and deeper the customer becomes engaged with the organization. The six dimensions of an outcome based definition of customer engagement are: empowered, valued, connected, inspired, future oriented and performance oriented.





Utility Customer Engagement Index (CEI)			
	Horizon	National	Ontario
CEI	85%	81%	81%

Base: total respondents

UtilityPULSE Report Card®

The purpose of the UtilityPULSE Report Card is to provide your utility with a snapshot of performance – it represents the sum total of respondents' ratings on 6 categories of attributes that research has shown are important to customers for influencing satisfaction and affinity levels with their utility.



Horizon's UtilityPULSE Report Card®

Performance

	CATEGORY	Horizon	National	Ontario
1	**Customer Care**	**A**	**B+**	**B+**
	Price and Value	B+	B	B
	Customer Service	A	B+	A
2	**Company Image**	**A**	**A**	**A**
	Company Leadership	A	A	A
	Corporate Stewardship	A	A	A
3	**Management Operations**	**A**	**A**	**A**
	Operational Effectiveness	A	A	A
	Power Quality and Reliability	A+	A	A
	OVERALL	**A**	**A**	**A**

Base: total respondents

Corporate Image

Organizations today, are always under scrutiny and have to consider the reality AND perception of their image. Increasingly, organizations have realized that the management of a strong positive image with various stakeholders can be beneficial.

Attributes strongly linked to a hydro utility's image			
	Horizon	National	Ontario
Is a respected company in the community	88%	83%	84%
Maintains high standards of business ethics	87%	81%	81%
A leader in promoting energy conservation	84%	80%	80%
Keeps its promises to customers and the community	85%	81%	82%
Beyond providing jobs and paying taxes, is socially responsible	84%	79%	79%
Is a trusted and trustworthy company	88%	83%	83%
Adapts well to changes in customer expectations	77%	74%	73%
Is 'easy to do business with'	86%	82%	81%
Overall the utility provides excellent quality services	87%	85%	83%
Operates a cost effective hydro-electric system	74%	72%	68%

Base: total respondents with an opinion



Supplemental Insights

Recognizing that customers' interests and needs continue to shift, we have provided data and SMART insights, on a number of subjects such as e-care, e-billing, conservation and more.

SMART Meters & SMART Grid



Do economic incentives have an impact on resource consumption patterns? *77% agree strongly or somewhat that Time-of-Use billing has changed the way in which they consume electricity on a day-to-day basis. [Base: Ontario LDC respondents]*

SMART metering is also a key element of SMART grid technology. This year's survey probed around the concept of SMART grid, its importance and support towards working with neighbouring utilities. It is clear that the need for education is immense. It is also clear that the majority of respondents are very + somewhat supportive of the utility working with neighbouring utilities on SMART grid initiatives.



Level of knowledge about the SMART Grid		
	Ontario LDCs	Horizon
I have a fairly good understanding of what it is and how it might benefit homes and businesses	7%	7%
I have a basic understanding of what it is and how it might work	17%	18%
I've heard of the term, but don't know much about it	33%	30%
I have not heard of the term	42%	43%
Don't know	1%	2%

Base: An aggregate of respondents from 2013 participating LDCs / total respondents from the local utility

Importance of pursuing implementation of the SMART Grid		
	Ontario LDCs	Horizon
Very important	23%	20%
Somewhat important	30%	30%
Neither important or unimportant	9%	7%
Somewhat unimportant	5%	10%
Unimportant	10%	17%
Don't know	23%	16%

Base: An aggregate of respondents from 2013 participating LDCs / total respondents from the local utility

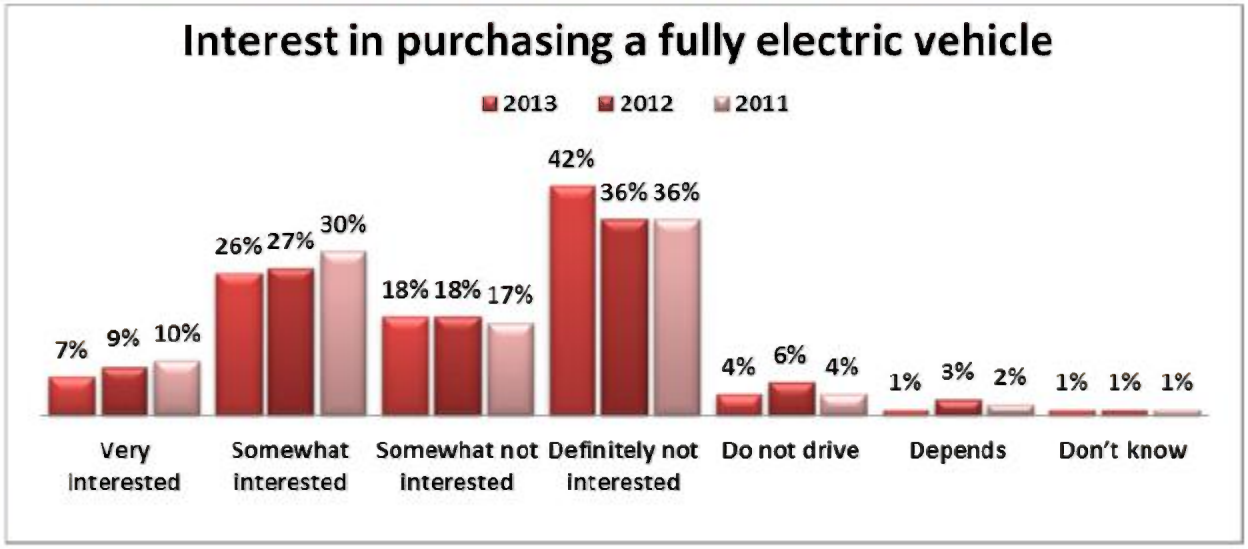
Support towards working with neighbouring utilities on SMART Grid initiatives		
	Ontario LDCs	Horizon
Very supportive	38%	33%
Somewhat supportive	37%	40%
Neither supportive or unsupportive	4%	5%
Somewhat unsupportive	2%	5%
Unsupportive	6%	9%
Don't know	12%	7%

Base: An aggregate of respondents from 2013 participating LDCs / total respondents from the local utility



Purchasing an Electric Vehicle

Looking at age demographics, 22% of older respondents (55+) versus 47% of respondents aged 35-54 and 43% aged 18-34 are in favor of EVs replacing conventional cars.





Base: total respondents in the Ontario Benchmark survey



Energy Conservation & Efficiency

Improving energy efficiency does not mean that customers have to give up or forgo activities to save energy. Rather, new technologies and more effective behaviour will actually allow customers to do more, improving their living conditions rather than reducing their comfort. Energy efficiency can be broken down into two areas: *better use of energy through improved energy-efficient technologies;* and



energy saving through changes in customer awareness and behaviour. During the survey interview process, we asked *"what are the 1 or 2 barriers for creating higher levels of energy efficiency?"* 21% identified "costs involved in making equipment/appliance changes", and 12% identified "lack of knowledge or lack of information". Respondents were asked: *"What will you be doing to conserve energy?"*



Efforts to conserve energy				
Ontario LDCs	**Yes**	**No**	**Already Done**	**Don't Know**
Install energy-efficient light bulbs or lighting equipment	20%	10%	69%	1%
Install timers on lights or equipment	15%	49%	35%	2%
Shift use of electricity to lower cost periods	21%	19%	57%	3%
Install window blinds or awnings	15%	26%	58%	1%
Install a programmable thermostat	15%	20%	63%	2%
Have an energy expert conduct an energy audit	9%	70%	18%	3%
Removing old refrigerator or freezer for free	14%	45%	37%	4%
Join the peaksaverPLUS™ program	18%	48%	21%	13%
Replacing furnace with a high efficiency model	13%	36%	48%	3%
Replacing air-conditioner with a high efficiency model	16%	39%	41%	4%
Use a coupon to purchase qualified energy saving products	33%	42%	21%	4%

Base: An aggregate of respondents from 2013 participating LDCs

E-care and E-billing

For any service provider including electric utilities, using the Internet for online customer care and electronic billing involves a number of interrelated requirements, including a customer's ability to: sign up for and change their services using the internet, find answers to their questions online about their accounts, learn about products, services and topics, i.e., green energy, electricity pricing, etc. It is about giving control to the customer.



81% of Horizon Utilities respondents have access to the internet and 25% have accessed their utility's website in the last six months.

Consumers will eventually adopt electronic billing and online customer care as many industries/companies begin providing consumer bills online, and critical mass is reached.



Using the internet for billing		
	Ontario LDCs	Horizon
I am already receiving my hydro bill electronically	10%	10%
I use on-line banking and will definitely be requesting that my bill be sent electronically	11%	8%
I use on-line banking but prefer to have paper statements	30%	28%
I prefer to have the paper copy of my bills	23%	29%
I don't use on-line banking	17%	23%

Base: An aggregate of respondents from 2013 participating LDCs / 90% of total respondents from the local utility

Social Media



Social media is evolving at an incredible pace. Importantly, it seems to represent a shift in how people discover, read and share news, information and content. Respondents of this year's survey were asked *"how likely they would use social media such as twitter®, facebook® (and others) as a resource for energy efficiency tips or to help manage your electricity use"…*

Likelihood of using Social Media				
	Horizon	Ontario LDCs	Ontario LDCs Age Group:18-34	Ontario LDCs Age Group: 55+
Very likely	4%	6%	10%	3%
Somewhat likely	7%	11%	17%	6%
Not likely	18%	20%	24%	17%
Not likely at all	68%	61%	48%	68%
Don't have social media account	3%	2%	0%	4%
Don't know	1%	1%	0%	1%

Base: An aggregate of respondents from 2013 participating LDCs / 90% of total respondents from the local utility

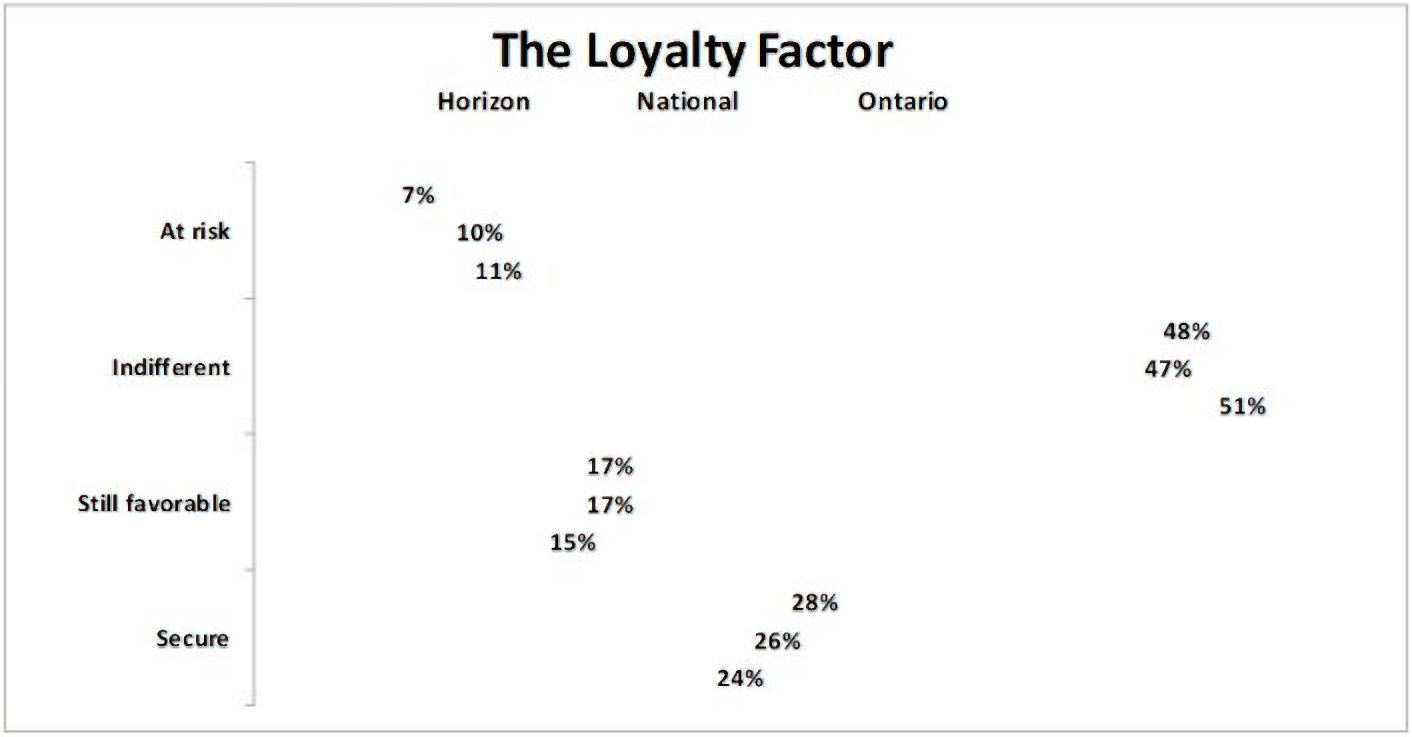


Customer Affinity

Private industry often equates customer loyalty with basic customer retention. If a customer continues to do business with a company, that customer is, by definition, considered to be loyal. If this definition

were applied to many companies in the utility industry, all customers would automatically be considered loyal. As such, measuring customer loyalty would appear to be unnecessary.

Natural monopolies (like LDCs) are not really different in what they should measure except that trying to determine which customers are "loyal" or "at risk" is not about a customer's future behaviour but more about their "attitudinal" loyalty (are they advocates?).



Base: total respondents

Customer Loyalty Groups				
	Secure	Favorable	Indifferent	At Risk
	Horizon			
2013	28%	17%	48%	7%
2012	27%	14%	51%	9%
2011	23%	9%	57%	11%
2010	20%	15%	57%	9%

Base: total respondents



Electricity customers' loyalty – Is a company that you would like to continue to do business with				
Horizon	2013	2012	2011	2010
Top 2 boxes: 'Definitely + Probably' would continue	85%	86%	78%	87%

Base: total respondents



Electricity customers' loyalty – is a company that you would recommend to a friend or colleague				
Horizon	2013	2012	2011	2010
Top 2 boxes: 'Definitely + Probably' would recommend	82%	81%	72%	68%

Base: total respondents

Every LDC has a brand and a brand image, while that image can be affected by events in the industry beyond the control of the LDC, the reality is there is a cost benefit to improving the customer experience, generating higher levels of customer engagement and growing the numbers of Favourable and Secure customers. Providing consistent reliable energy while being seen as 'easy to do business with', along with providing information and support for customers to use electricity more efficiently are core components of a successful relationship with customers.



Marketing – Communications			
	Horizon	National	Ontario
Topics that require more pro-active communication			
Cost of electricity is reasonable when compared to other utilities	64%	66%	61%
Works with customers to keep their energy costs affordable	71%	66%	65%
Adapts well to changes in customer expectations	77%	74%	73%
Operates a cost effective hydro-electric system	74%	72%	68%
Provides good value for money	73%	71%	68%
Topics that your utility scores very well on			
Is a trusted and trustworthy company	88%	83%	83%
Respected company in the community	88%	83%	84%
Accurate billing	88%	85%	86%
Overall the utility provides excellent quality services	87%	85%	83%
Provides consistent, reliable energy	91%	90%	90%

Base: total respondents with an opinion

UtilityPULSE is the only enterprise with multiple year customer trend data that appears on the List of Presenters and Submitters in the *Report of the Ontario Distribution Sector Review Panel*. With 14 years of data (15 now that the 2013 survey has been completed), we know that LDCs in Ontario have made excellent progress in the way(s) in which customers are cared for and served – despite the massive amounts of change that have taken place during that same timeframe.

We've often been asked: "What does it take to be seen as having great customer service?" Our answer continues to be "have genuine empathy for customers". If you and your fellow employees don't have it, then your organization will not achieve the highest levels of customer engagement and affinity as may be possible. This requires Horizon Utilities to ensure that it is truly embracing the strategic intent of being "customer centric" AND it requires the establishment of a corporate culture that supports both customer and employee engagement.



We recommend having meaningful two-way dialogue with employees (and others) to leverage the results from your 2013 customer satisfaction survey derived from speaking with 602 Horizon Utilities customers [March 15, March 25, 2013]. After-all, people can't care about the things that they don't know about.

Sid Ridgley
Simul/UtilityPULSE
Email: sidridgley@utilitypulse.com or sridgley@simulcorp.com
June, 2013

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Satisfaction (pre & post)

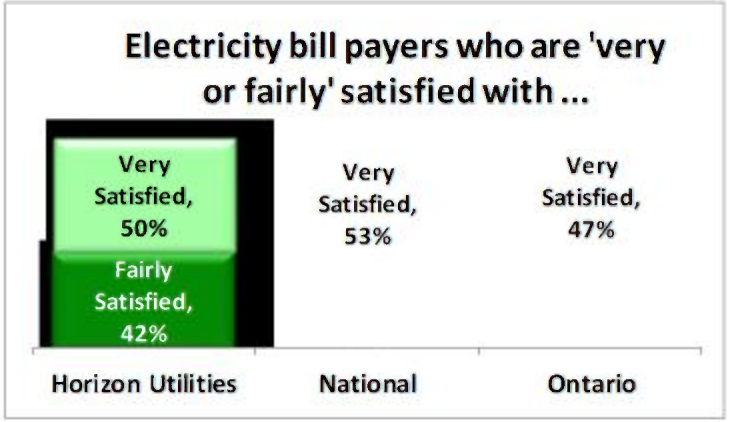
The old adage “You cannot command respect, you have to earn respect” is a lesson that aptly describes the loyalty effect with customers. Many people mistakenly think doing a good job will lead to loyalty; that a satisfied customer equals a loyal customer.

While private industry companies are compelled to understand their customers in order to drive sales and revenue, customer satisfaction measurement can form a similar focus for organizations in the absence of the commercial imperative, such as utilities which operate under monopolistic conditions. It can also help to build a connection with customers and front-line staff, and provide a uniting, motivating factor across the organization. Monopolies are not really different in what they should measure except that trying to determine which customers are “loyal” or “at risk” is not about their future behaviour but more about their “attitudinal” loyalty (are they advocates?). In the private sector customer satisfaction and loyalty are often seen as essential for survival and success. Public sector organizations, especially municipalities, have come to realize that looking after their customers and taking the opportunity to learn from them is key to delivering services which are both effective and efficient.

After 15 years of continued research with electric utility customers, expectations of their electric utility go far beyond “keeping the lights on”, “billing me properly”, and “restoring power quickly”.

- **Satisfaction** happens when utility core services meet or exceed customer's needs, wants, or expectations.

- **Loyalty** occurs when a customer makes an emotional connection with their electric utility on a diverse range of expectations beyond core services.



Satisfaction alone does not make a customer loyal; a willingness to commit and advocate for a company along with satisfaction identifies the three basic customer attitudes which underpin loyalty profiles. While satisfaction is an important component of loyalty, the loyalty definition needs to incorporate more attitudinal and emotive components.

Electricity bill payers who are 'very or fairly' satisfied with...				
	2013	2012	2011	2010
Horizon	92%	90%	83%	88%
National	90%	88%	89%	86%
Ontario	90%	86%	84%	80%

Base: total respondents

Our research has found that in the utility industry environment, especially in Ontario, where most utilities are municipally owned, satisfaction is a strong driver of customer trust as well as, impacts employee engagement. The satisfaction of public customers/citizens both improves employee engagement and is improved by it.



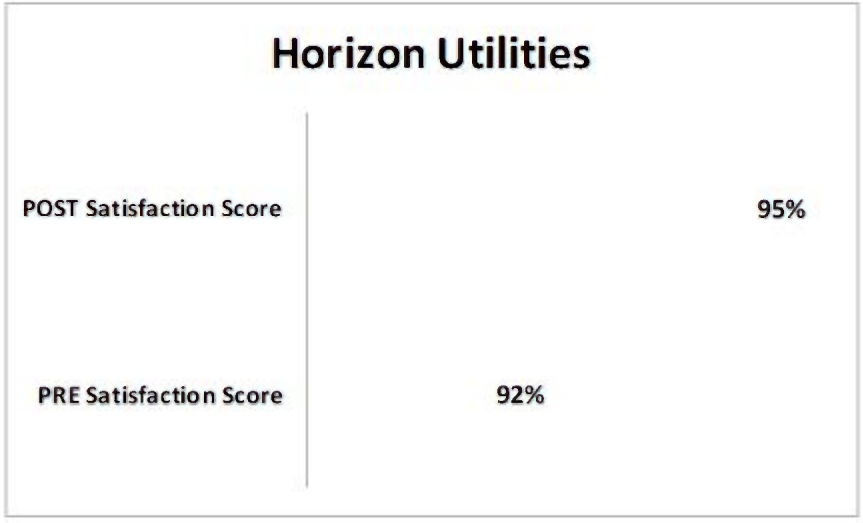
The synergy which exists between customer satisfaction and employee engagement has enormous implications for the performance of those who make up a utility's workforce. Many service personnel are motivated by their desire to help others; succeeding at this task (and having clear evidence that they have satisfied their "customers") can help keep them motivated and engaged.

Satisfied employees, who are working in an organizational culture which promotes service excellence is critical, too. Many companies make the mistake of measuring only customer satisfaction. Measuring organizational culture is the key because employees play an integral role in the customer relationship.

Employees do more than deliver customer service – they personalize the relationship between customer and the utility.

Creating loyal customers and loyal employees go hand in hand and it is the leaders of organizations that must create this alignment. Implementing service excellence works best when its principles are well understood and widespread collaboration is encouraged by management's visible actions. In our experience, this is best achieved by driving change from the 'top down' at the same time as inspiring and fully engaging employees from the 'bottom up'.

In the Simul/UtilityPULSE Customer Satisfaction survey, the overall satisfaction question is asked both at the beginning (PRE) and the end (POST). Asking the general satisfaction question at the start of the survey avoids bias and we obtain a spontaneous rating. This allows measurement of customers' overall impressions of the utility prior to prompting them to think of specific aspects of the relationship. After we have asked about specific aspects of the customer experience, we gain a more *considered* (or conditioned) response.



Base: total respondents

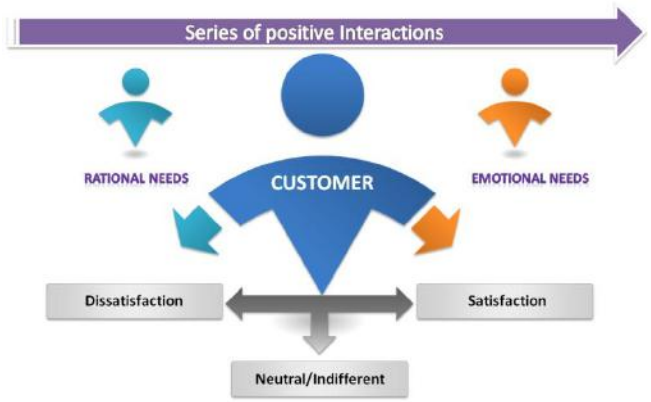
SATISFACTION SCORES – Electricity customers' satisfaction			
Top 2 Boxes: 'very + fairly satisfied'	**Horizon**	**National**	**Ontario**
PRE: Initial Satisfaction Scores	92%	90%	90%
POST: End of Interview	95%	91%	90%

Base: total respondents

SATISFACTION SCORES – Electricity customers' satisfaction				
Top 2 Boxes: 'very + fairly satisfied'	**2013**	**2012**	**2011**	**2010**
PRE: Initial Satisfaction Scores	92%	90%	83%	88%
POST: End of Interview	95%	93%	90%	92%

Base: total respondents

Customers, as human beings, are both rational and emotional. The rational side of the customer holds the LDC accountable for doing its job (as contracted), thereby fulfilling the customer's basic needs. The emotional side of the customer is about fulfilling expectations. Meeting rational needs – at best – gets the customer to a neutral state and at worst creates dissatisfaction. Emotional needs, when met, assuming base level rational needs are met, can move a customer from neutral to higher levels of satisfaction.



Attributes strongly linked to a hydro utility's image			
	Horizon	National	Ontario
RATIONAL NEEDS			
Provides consistent, reliable energy	91%	90%	90%
Quickly handles outages	89%	88%	88%
Accurate billing	88%	85%	86%
Provides good value for money	73%	71%	68%
Is 'easy to do business' with	86%	82%	81%
Operates a cost effective hydro-electric system	74%	72%	68%
EMOTIONAL NEEDS			
Deals professionally with customers' problems	86%	83%	84%
Works with customers to keep their energy costs affordable	71%	66%	65%
Pro-active in communicating changes	81%	77%	80%
Quickly deals with issues that affect customers	85%	82%	82%
Adapts well to changes in customer expectations	77%	74%	73%
Overall the utility provides excellent quality services	87%	85%	83%

Base: total respondents with an opinion

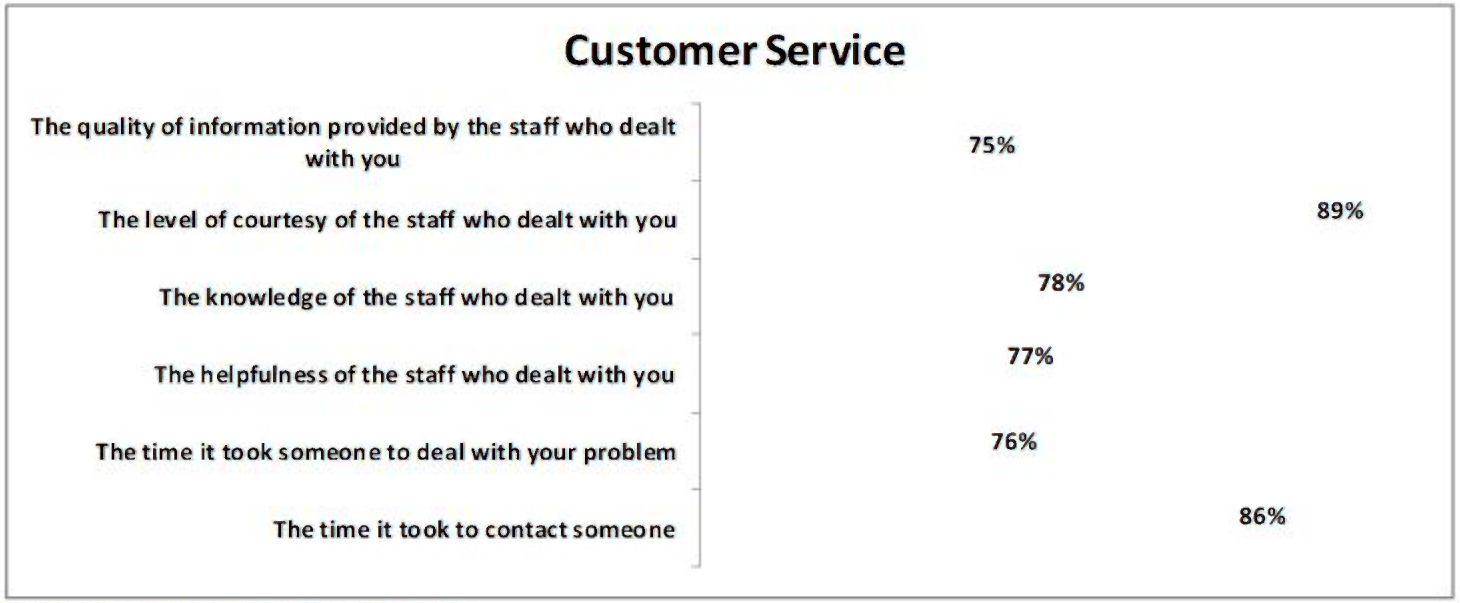
Customer Service

Customer service is a series of activities grouped in processes designed to provide customers and other stakeholders with information or assistance which address customer's needs. Those needs are far more diverse than they have ever been thereby, compelling customer service to change in response to increasing customer demands. Given the increase in fragmentation of customer type and customer problems the need for building a customer-centric culture in line with customers' needs, preferences and expectations is important when customer satisfaction is important to the organization.

Customers don't want to be passed from CSR to CSR, unnecessary bureaucracy, to keep repeating why they are calling, to duplicate information already given, or to have to understand the inner workings of the utility organization.

Respondents were asked about six aspects of their most recent experience with a representative from Horizon Utilities.

- Information – quality of information provided
- Staff attitude – level of courtesy
- Professionalism – the knowledge of staff
- Delivery – helpfulness of staff
- Timeliness – the length of time it took to get what they needed
- Accessibility – how easy it was to contact someone



Base: total respondents who contacted the utility

Satisfaction with Customer Service			
Top 2 Boxes: 'very + fairly satisfied'	**Horizon**	**National**	**Ontario**
The time it took to contact someone	86%	77%	72%
The time it took someone to deal with your problem	76%	73%	66%
The helpfulness of the staff who dealt with you	77%	78%	73%
The knowledge of the staff who dealt with you	78%	74%	72%
The level of courtesy of the staff who dealt with you	89%	85%	82%
The quality of information provided by the staff who dealt with you	75%	77%	70%

Base: total respondents who contacted the utility

The customer service representative's role is essential to effectively handling customer issues/incidents/problems/requests. Having a skilled, trained representative is vital for a positive customer experience when a customer decides to make contact. Respondents who did have contact with a utility representative within the last 12 months were asked about their overall satisfaction with *that* experience.

Overall satisfaction with most recent experience			
	Horizon	**National**	**Ontario**
Top 2 Boxes: 'very + fairly satisfied'	80%	81%	76%

Base: total respondents who contacted the utility

This year we asked respondents to approximate the time since their most recent contact.

Approximation of how long ago most recent contact was made	
	Horizon
12+ months ago	9%
7-12 months ago	15%
4-6 months ago	26%
3 or less months ago	46%

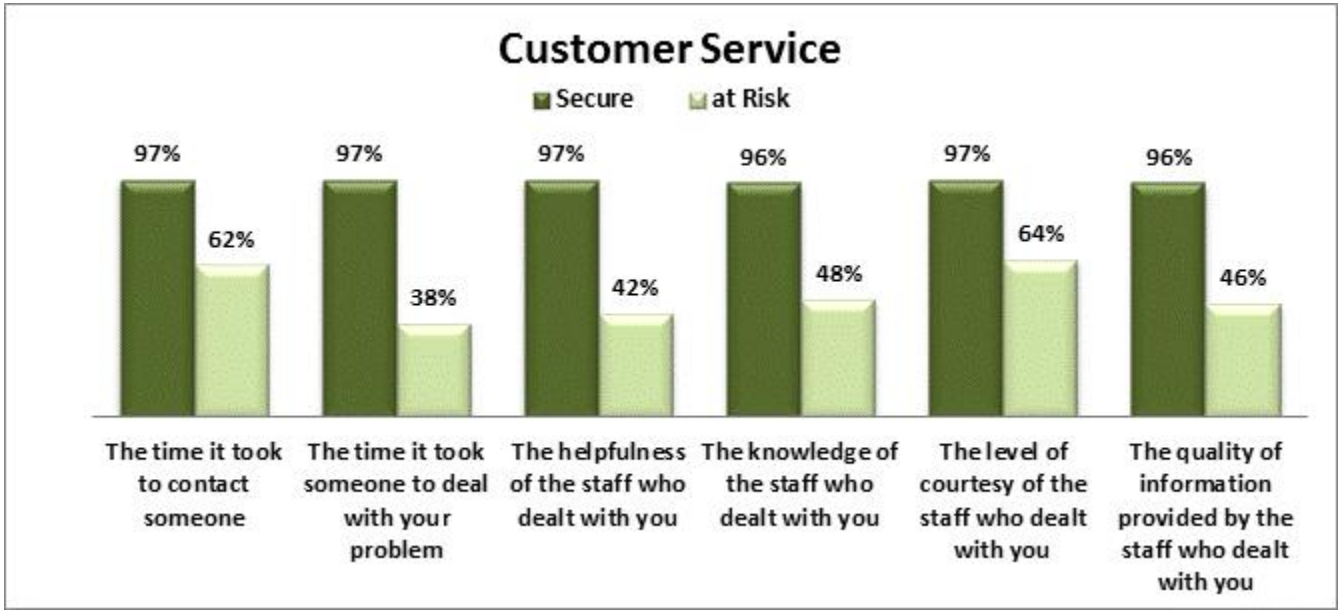
Base: total respondents who tried to contact the utility in the past 12 months

Customers value speed and responsiveness especially as it relates to solving problems. The more flexibility you're able to offer and the more empowerment given to employees, the better able employees will be to meet those "speed" and "responsiveness" requirements. Customers benefit, too, when employees are able to resolve problem issues "on the spot" instead of having to "talk to my manager."

SATISFACTION SCORES – Electricity customers' satisfaction			
National	**National**	**Problems Solved**	**Problems Not Solved**
Top 2 Boxes: 'very + fairly satisfied'	90%	93%	56%
Bottom 2 Boxes: 'fairly + very dissatisfied'	8%	5%	44%

Base: total respondents from 2013 National Benchmark survey

Empowerment is the backbone of the service recovery principle. In the face of error or problems, acting quickly and decisively, being empowered and turning a dissatisfied customer into a satisfied one tends to have a positive impact.



Base: data from the full 2013 database

Satisfaction with Customer Service			
Top 2 Boxes: 'very + fairly satisfied'	**Overall**	**Recent Experience Very Satisfied**	**Recent Experience Very Dissatisfied**
The time it took to contact someone	80%	92%	45%
The time it took someone to deal with your problem	77%	95%	17%
The helpfulness of the staff who dealt with you	80%	98%	21%
The knowledge of the staff who dealt with you	80%	97%	21%
The level of courtesy of the staff who dealt with you	87%	97%	48%
The quality of information provided by the staff who dealt with you	77%	96%	21%

Base: data from the full 2013 database

Important attributes which shape perceptions about service quality			
	Horizon	National	Ontario
Is pro-active in communicating changes and issues which may affect customers	81%	77%	80%
Trusted and trustworthy company	88%	83%	83%
Respected company in the community	88%	83%	84%
Provides good value for money	73%	71%	68%
Customer-focused and treats customers as if they're valued	82%	76%	77%
Deals professionally with customers' problems	86%	83%	84%
Is a company that is 'easy to do business with'	86%	82%	81%
Quickly deals with issues that affect customers	85%	82%	82%
Provides information and tools to help manage electricity	83%	79%	80%
Adapts well to changes in customer expectations	77%	74%	73%
Delivers on its service commitments to customers	87%	85%	87%
Uses responsible business practices when completing work	87%	85%	86%

Base: total respondents with an opinion

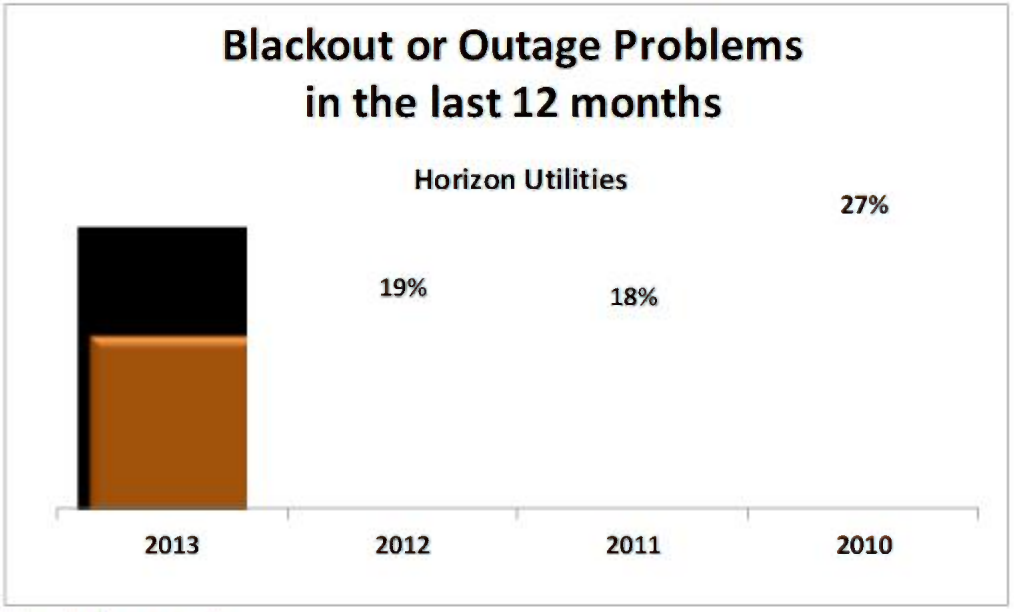
The service experience has a profound impact on customer service scores. The data shows a direct correlation between a very satisfied customer experience and the ratings given across all six measures of customer service. While there are a lot of things utilities cannot control, one thing they can control is the quality of service they provide.



Bill payers' recent problems and problem resolution

Outages and billing problems, we call them the "Killer B's", the two issues that are most likely to cause grief to utility customers.

At one time, if the power went off for a few minutes, it was considered annoying and inconvenient. However, with the onset of computers and smart appliances in homes and businesses, a power outage is now unbearable. Customers have little tolerance for an interruption in their flow of electricity.



Base: total respondents

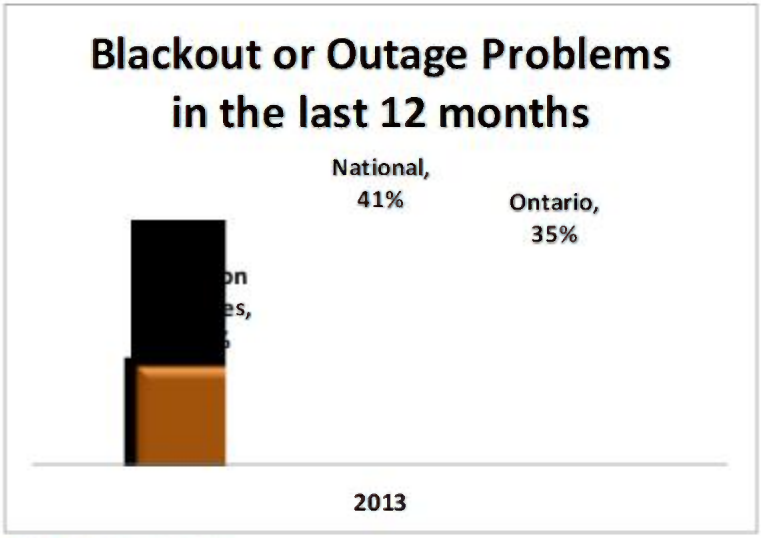
While blackouts are rare, each one has the potential of affecting thousands of people. Think of the thousands of football fans at Super Bowl 2013 who sat in darkness for 38 minutes.

Besides the mere inconvenience an outage creates, economic loss is a principal concern. Typically during an outage, employees are unable to do their work because computers and other equipment are not able to operate. An outage therefore causes an employer to pay wages to idle employees, potentially causes employers to deal with overtime work to clear the backlog created by the down time. Outages also could potentially threaten life by interfering with the operation of life-support equipment i.e. those requiring life-support equipment i.e. ventilators for those afflicted with paralysis (although these instances would be rare and uncommon, the risk and potential liability do exist).

Despite a utility's best efforts, there will be times when the power goes off.

Percentage of Respondents indicating that they had a Blackout or Outage problem in the last 12 months			
	Horizon	National	Ontario
2013	17%	41%	35%
2012	19%	44%	46%
2011	18%	43%	43%
2010	27%	45%	41%

Base: total respondents



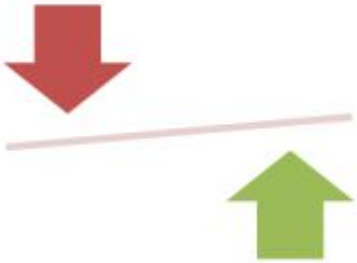
Base: total respondents

Reliability of service needs to be always given primary importance by electric utility systems. Reliability to a customer means that power made available to them is fault free and the outage or interruptions are tolerable and do not disturb their 'normal life'. Customer satisfaction can be improved through providing better quality power in terms of voltage and frequency fluctuations and reliability by reducing outages.

A "pain point" such as a power outage which will cause grief and could anger some customers will impact customer satisfaction scores.

Bill payers recalling a power failure or outage				
	Secure	Favorable	Indifferent	At Risk
Yes	19%	24%	34%	39%
No	80%	75%	65%	61%

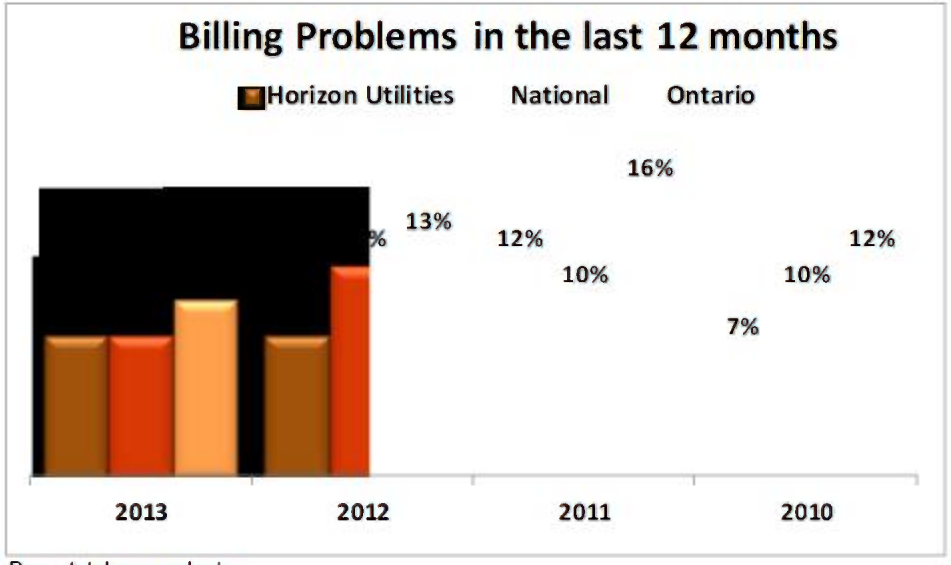
Base: data from the full 2013 database



Even though outages can have a negative impact on satisfaction, utility providers who manage these incidents properly-by providing sufficiently detailed information about the outage and restoring power when they say they will-may be able to mitigate declines, or even improve satisfaction.

For most customers, their bill is the only thing they see (or pay attention to) from their utility provider. It not only tells them how much to pay, it documents their service usage, breakdowns the various charges and provides contact information for customer service. As the principal form of communication between a utility and its customers, utilities cannot underestimate the importance of billing.

When it comes to billing, customers expect zero-defect delivery. Customers expect timely and accurate billings which they understand. Incorrect information, miscalculated balances, bills that are too difficult to understand result in time logged by your CSR's as well as dissatisfied customers. Improving billing activities has an immediate impact on the revenue streams of a utility, in terms of costs associated with managing call center applications.



Base: total respondents

Percentage of Respondents indicating that they had a Billing problem in the last 12 months			
	Horizon	National	Ontario
2013	8%	8%	10%
2012	8%	12%	13%
2011	12%	10%	16%
2010	7%	10%	12%

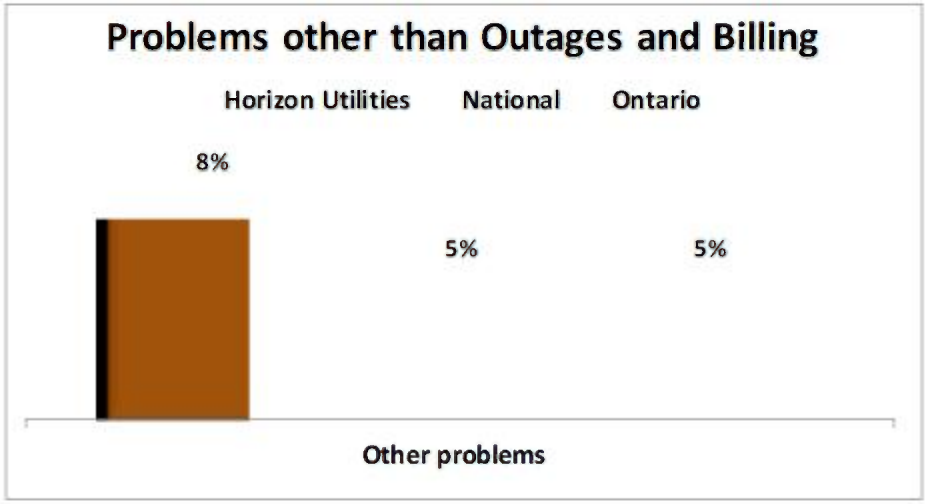
Base: total respondents



Types of Billing Problems	
	Horizon
The amount owed was too high	56%
Complaint about rates or charges	27%
The bill was difficult to understand	6%
The payment made was recorded incorrectly	2%
Pricing systems (tiers or flat)	2%

Base: total respondents with billing problems

As it relates to problems, the Killer B's – Bills and Blackouts still occupy top ranking – while moving/setting up a new account, maintenance repairs, high bills, information on pricing, SMART meters and energy conservation are issues which also contribute to inbound call-centre calls.



Base: total respondents

A customer who has experienced a problem or unfavourable service experience may spread negative word-of-mouth communication. While people have long complained about service providers in offline meeting places such as work lunch rooms, or social gatherings, today's social networks and online discussion forums mean such gripes often reach a considerably wider audience.

By understanding the complaint process and customer complaint behaviour, a utility can learn how to reduce the impact of an unfavourable service experience or complaint.

Our 15 years of research corroborates the notion that customer dissatisfaction and the handling of service recovery are key indicators of customer loyalty. A complaint allows the utility to obtain

customer feedback that is useful in making improvements to increase customer satisfaction and loyalty. Effective resolution of customer problems can have a positive impact on customers' trust and commitment. The complaint handling process therefore, is a series of critical "moments of truth" in maintaining and developing customer relationships.

Percentage of Respondents with problems other than billing or power outages in the last 12 months			
	Horizon	**National**	**Ontario**
Yes	8%	5%	5%
No	92%	95%	95%

Base: total respondents

Percentage of Respondents who contacted their utility and had their problem solved in the last 12 months			
	Horizon	**National**	**Ontario**
Yes	74%	73%	74%
No	20%	19%	19%

Base: total respondents

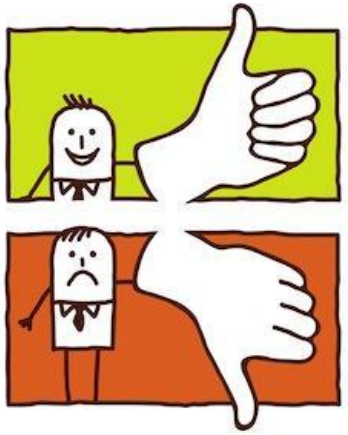
Utilities need to ensure that their customer complaint/service recovery processes are made to be more responsive and proactive. Call-centres need to be capable enough to meet the growing demand of information conscious and tech savvy customers. Every minute counts when it comes to complaints being voiced with the aid of social media.

Attributes describing operational effectiveness			
	Overall Score	Problem Solved	Problem Not Solved
Provides consistent, reliable energy	91%	90%	81%
Delivers on its service commitments to customers	87%	86%	72%
Accurate billing	87%	85%	65%
Quickly handles outages and restores power	89%	88%	80%
Makes electricity safety a top priority	90%	91%	83%
Uses responsible business practices when completing work	88%	87%	76%
Is efficient at handling the hydro-electric systems	84%	83%	73%
Is a company that is 'easy to do business with'	85%	85%	63%
Operates a cost effective hydro-electric system	75%	73%	58%
Overall the utility provides excellent quality services	87%	86%	69%

Base: data from the full 2013 database from those respondents with an opinion

Technology is considered by many in the electricity utility industry to be both a blessing and a curse. On one hand, the LDC (and other service providers) can benefit from embracing technology to reduce costs and hopefully improve service thereby, putting control into the hands of the customer. On the other, when the problem has not been solved or is handled poorly, technology can enable the customer's dissatisfaction to go viral – the impact is on overall satisfaction with customers as well as employees.

Customer Experience Performance rating (CEPr)



New for 2013 is the Customer Experience Performance rating (CEPr). Every touch point with customers on the phone, website or in-person influences what customers think and feel about the organization. The key is handling every individual element of an interaction with a customer so that he/she feels good at the end of the whole interaction and the utility achieves its business objectives.

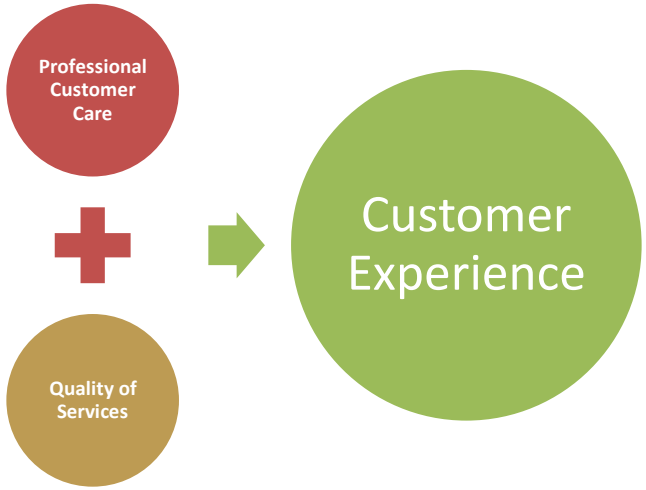
Great experiences occur when all functions of the organization align with one another to achieve the outcomes your customers seek. A good customer experience starts with understanding what your customers care about most and understanding which promises are most important to your customers.

At the heart of the CEPr are 4 central questions:

- Are interactions with the organization professional and productive?
- Is the organization 'easy to deal with'?
- Does the organization effectively meet your needs?
- Does the organization provide high quality services?

Some of the factors which contribute to the overall Customer experience:

- Delivering accessible and consistent customer service
- Understanding customer expectations
- Maintaining timely resolution timelines
- Providing effective communication(s) according to customer needs
- Demonstrating responsiveness
- Speeding up problem resolution
- Conducting problem analysis to prevent recurring issues
- Easy to do business with
- Seeking customer feedback and following through on recommendations



Customer Experience Performance rating (CEPr)			
	Horizon	**National**	**Ontario**
CEPr: all respondents	86%	83%	83%
CEPr: respondents *who have* contacted their utility	82%	79%	77%
CEPr: respondents *who have not* contacted their utility	87%	84%	85%

Base: total respondents

The CEPr (all respondents) for Horizon Utilities is 86%. On the surface this rating appears to be very high (and it is). But put the rating in context – it would mean that a very large majority of customers have a belief that they will have a good to excellent experience dealing with a Horizon Utilities professional. However, the balance of respondents are not anticipating a good to excellent experience, and as such could be more challenging to serve.

While an excellent transaction today creates a positive experience today, the perception created is that future transactions will be excellent too, which is how you want your customers to feel. Of course a negative transaction creates the perception that future transactions will be negative. The key then is to emphasize problem resolution with a "one call" mindset.

The impact of Very Satisfied or Very Dissatisfied experiences on some operational attributes			
Horizon	**Overall Score**	**Recent Experience Very Satisfied**	**Recent Experience Very Dissatisfied**
Provides consistent, reliable energy	91%	91%	79%
Delivers on its service commitments to customers	87%	90%	85%
Accurate billing	88%	93%	67%
Quickly handles outages and restores power	89%	89%	92%
Makes electricity safety a top priority	89%	90%	83%
Uses responsible business practices when completing work	87%	90%	85%
Is efficient at handling hydro-electric systems	84%	83%	85%
Overall the utility proves excellent quality services	87%	92%	75%

Base: respondents who have contacted the utility

Customer Engagement Index (CEI)

The UtilityPULSE Customer Engagement Index (CEI) is a metric designed to get a more in-depth look at the attachment a customer has with your LDC and its brand.

What is Customer Engagement?

Ask 10 pundits, experts or academics about the definition of customer engagement and you will not get a consistent answer. UtilityPULSE has been researching this topic for the past 2 years and we have found that there are 4 basic types of definitions associated with the term called "customer engagement". Here are the basic types:

1- Participation in programs or service offerings
2- Pro-active "reach-out" to customers
3- Customer loyalty
4- How customers think, feel and act towards the organization that serves them.

Ultimately, one has to decide if customer engagement is a program, or an outcome? Basic types 1 & 2 as shown above would suggest that engagement is a program. Types 3 & 4 are outcome based definitions. Drawing from our 25+ years of experience working with enterprises in both the private and

public domains, we believe that basic types 1 & 2 are too simplistic and tend to be efficiency measurements. Whereas types 3 & 4 are more valuable to the organization especially when a key corporate goal is to create an operationally effective place to do business with, essentially they are effectiveness and outcomes oriented measurements.

Your Annual UtilityPULSE survey tracks a customer's willingness to continue to do business, and willingness to recommend their local utility. Through a combination of calculations the end result is a Customer Loyalty index. That is, the number of customers that are: At risk, Indifferent, Favourable, Secure. The goal of every enterprise ought to be the creation of more Secure and Favourable customers. We believe that high levels of customer engagement correlate strongly to high levels of Secure and Favourable customer numbers.

We believe that a customer-centric definition of engagement is more valuable to individuals, teams and executives in an LDC for determining what needs to be done to ensure that the organization is successful today and successful again tomorrow – in a changed world.

Engagement is how customers think, feel and act towards the organization. As such, ensuring that customers respond in a positive way requires that they are rationally satisfied with the services provided AND emotionally connected to your LDC and its brand. The more frequently and consistently an organization's products and services can connect with a customer, especially on an emotional level, the stronger and deeper the customer becomes engaged with the organization.

What does an engaged customer look like?



UtilityPULSE has identified the six key dimensions of what defines customer engagement. They are: empowered, valued, connected, inspired, future oriented and performance oriented.

They include:

- Does the utility allow their customers to feel ***empowered*** about their interactions with the company and decisions affecting their electricity usage
- Does the utility give customers the sense of being ***valued***
- Does the utility act in ways which allows customers to stay ***connected***
- Do customers get ***inspired*** by the way the utility conducts business
- Is the utility forward thinking enabling customers to be ***future oriented***
- Does the utility conduct operations in such a way that customers believe that they are truly ***performance oriented*** in achieving goals and results

Utility Customer Engagement Index (CEI)			
	Horizon	**National**	**Ontario**
CEI	85%	81%	81%

Base: total respondents



UtilityPULSE Report Card®

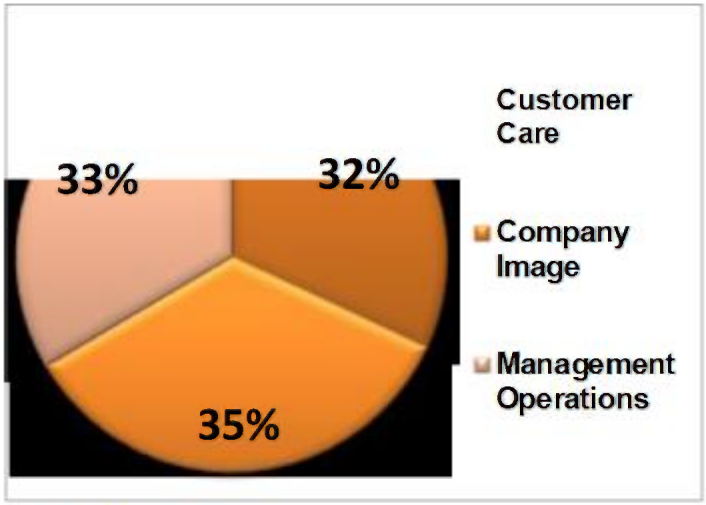
Simul's UtilityPULSE Report Card® is based on tens of thousands of customer interviews gathered over fifteen years. The purpose of the UtilityPULSE Report Card® is to provide electric utilities with a snapshot of performance – on the things that customers deem to be important. Research has identified over 20 attributes, sorted into six topic categories (we call these drivers), that customers have used to describe their utility when they have been satisfied or very satisfied with their utility. These attributes form the nucleus, or base, from which "scores" are assigned. Customer satisfaction and loyalty also play a major role in the calculations.

There are two main dimensions of the UtilityPULSE Report Card® the first is Customer psyche and the other is Customer perceptions about how the utility executes its business.

The Psyche of Customers

Every utility has virtually the same responsibility – provide safe and reliable electricity – yet not all customers are the same. The following chart shows the weight or significance of each category to the customer when forming their overall impression of the utility. Three major themes, each with two major categories make up the UtilityPULSE Report Card®. In effect the Report Card provides feedback about your customers' perception on the importance of each category and driver – as it relates to the benchmark.

UtilityPULSE Report Card® for Horizon Utilities



Base: total respondents

The UtilityPULSE Report Card® also provides customer perceptions about how your utility executes or performs its responsibilities. This is different, very different, from what a customer might say about a major concern or worry that they have about electricity. As our survey has shown since its inception the primary suggestion for improvement is "reduce prices", which is also a major concern which your customers have about municipal taxes, gas for the vehicle, and other utilities.

Readers of this report should note that the categories and drivers are interdependent. Which means that, for example, failure to provide high levels of power quality and reliability will have a negative impact on customer perceptions as it relates to customer service. Customer care, when it doesn't meet customer expectations has a negative impact on Company Image, etc.

Defining the categories and major drivers:

Category: Customer Care

Drivers: Price and Value; Customer Service

Just because everyone likes good customer care, that in and by itself, is not a reason to provide it – though it may be important to do so. In highly competitive industries good customer service may be a differentiating factor. The case for electric utilities is simple, high levels of customer care result in less work (hence cost) of responding to customer inquiries and higher levels of acceptance of the utility's actions.

Price and Value:

Customers have to purchase electricity because life and lifestyle depend on it. This driver measures customer perceptions as to whether the total costs of electricity represent good value and whether the utility is seen as working in the best interests of its customers as it relates to keeping costs affordable.

Customer Service:

Customers do have needs and every now and again have to interface with their utility. How the utility handles various customers' requests and concerns is what this driver is all about. Promptly answering inquiries, providing sound information, keeping customers informed and doing so in a professional manner are the major components of this driver.

Category: Company Image

Drivers: Company Leadership; Corporate Stewardship

Utilities have an image even if they do not undertake any activities to try to build it.

A company's image is both a simple and complex concept. It is simple because companies do create images that are easily described and recognized by their target customers. It is complex because it takes many discrete elements to create an image which includes, but is not limited to: advertising, marketing communications, publicity, service offering and pricing.

An electric utility trying to manage its image has one more challenge to deal with, and that is the electric industry itself. There are so many players that residential customers (in particular) don't know who does what or who is responsible for what. So when there are political or regulatory announcements, the local utility is often swept up into the collective reaction of the population.

Company Leadership

This driver is comprised of customer perceptions as it relates to industry leadership, keeping promises and being a respected company in the community.

Corporate Stewardship

Customers rely on electricity and want to know that their utility is both a trusted and credible organization that is well managed, is accountable, is socially responsible and has its financial house in order.

Category: Management Operations

Drivers: Operational Effectiveness; Power Quality and Reliability

Electrical power is the primary product which utilities provide their customers and, they have very high expectations that the power will be there when they need it. Customers have little tolerance for outages. The reality is, every utility has to get this part right…no excuses. It is the utility's core business. This category and its drivers are clearly the most important for fulfilling the rational needs of a utility's customers.

Operational Effectiveness

This driver measures customers' perceptions as they relate to ensuring that their utility runs smoothly. Attributes such as: accurate billing and meter reading, completing service work in a professional and timely manner and maintaining equipment in good repair are deemed as important to customers.

Power Quality and Reliability

Power outages are a fact of life – and, customers know it. They expect their utility to provide consistent, reliable energy, handle outages and restore power quickly and make using electricity safely an important priority.

Horizon's UtilityPULSE Report Card®

Performance

	CATEGORY	Horizon	National	Ontario
1	**Customer Care**	**A**	**B+**	**B+**
	Price and Value	B+	B	B
	Customer Service	A	B+	A
2	**Company Image**	**A**	**A**	**A**
	Company Leadership	A	A	A
	Corporate Stewardship	A	A	A
3	**Management Operations**	**A**	**A**	**A**
	Operational Effectiveness	A	A	A
	Power Quality and Reliability	A+	A	A
	OVERALL	**A**	**A**	**A**

Base: total respondents

As the UtilityPULSE Report Card® shows, the total customer experience with an electric utility is defined as more than “keeping the lights on”. Customers deal with your utility every day for a variety of reasons, most likely because they need someone to help them solve a problem, answer a question or take their order for service. All your employees, from customer service representatives to linemen, leave a lasting impression on the customers they interact with. In effect there are many moments of truth. Moments of truth are every customer touch point that a utility has with their customers. Therefore, managing these moments of truth creates higher levels of Secure customers while reducing the number of At Risk customers that exist.

It's the small things done consistently that matter: Things like greeting every customer, whether on the phone or in person, in a friendly and helpful manner. Things like listening to the customer's needs, providing solutions to their problems and showing appreciation to the customer for their business.

For communication, utilities now recognize customer communications as a valuable aspect of their business. The better a utility communicates with customers, in a manner that speaks to them, the more satisfied they are with their overall service. “Sending out information” is not the same as having a “conversation” with a customer. We believe that it is increasingly important to channel your communications to the various customer segments which exist.

Obviously employees – in every area – play a critical role in customer service success. Consequently how they feel about their job responsibilities and role in the company will be communicated indirectly

through the level of service which they actually provide customers with whom they interact. The reality is engaged employees are the key to excellent customer care.

Our survey work with employees shows that there are many elements of an organizational culture to support the people model needed to achieve high levels of engagement. Our research has identified 6 main drivers that promote and support people giving their best: feeling empowered, valued, belonging, inspired, growing and performance oriented. There are 12 key processes from “attracting employees” to “saying goodbye to employees” that are part of your people model to get the best performance from every employee.

We believe that taking the time to understand the difference between employee satisfaction and organizational culture is worthwhile from a resourcing perspective and from a people development perspective. Every organization has a culture – we believe that it is a leadership imperative to install and maintain a culture that ensures that you attain the achievements and successes of your utility’s many investments in people, technology and equipment.

The Loyalty Factor

If a customer is satisfied, it doesn't necessarily mean he or she is loyal. Satisfaction is about fulfilling promises/expectations; loyalty goes way beyond that by creating exceptional experiences and long-lasting relationships. There is a reason why marketing campaigns strive to build brand loyalty, not brand satisfaction. Measuring customer loyalty in an industry where many customers don't have a choice of providers doesn't make sense. Or does it?



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The answer depends on how you define "customer loyalty."

Private industry often equates customer loyalty with basic customer retention. If a customer continues to do business with a company, that customer is, by definition, considered to be loyal. If this definition were applied to many companies in the utility industry, all customers would automatically be considered loyal. As such, measuring customer loyalty would appear to be unnecessary.

Natural monopolies (like LDCs) are not really different in what they should measure except that trying to determine which customers are "loyal" or "at risk" is not about their future behaviour but more about their "attitudinal" loyalty (are they advocates?).

Perhaps a better or more relevant way for utilities to approach the definition of customer loyalty is to further expand how they think about loyalty. Consider the following definition: Customer loyalty is an emotional disposition on the part of the customer that affects the way(s) in which the customer (consistently) interacts, responds or reacts towards the company – its products & services and its brand.

So what does it mean to respond favourably to a company? At a basic level, this can mean choosing to remain a customer. As previously mentioned however, this is essentially a non-issue for many utility companies. It then becomes necessary to think beyond just customer retention. One needs to consider other ways in which customers can respond favourably toward a company.

Other favourable responses or behaviours can be classified into one of three categories that reflect the concept of customer loyalty:

- Participation
- Compliance or Influence
- Advocacy



Specific examples of potential participatory behaviour in the electric utility industry include:

- Signing up for programs that help the customer reduce or manage their energy consumption
- Using the utility as a consultant when selecting energy products and services from a third party
- Participating in pilot programs or research studies

Specific examples of potential compliance or influence behaviours that utility customers might exhibit include:

- Seeking the utility's advice or expertise on an energy-related issue
- Voluntarily cutting back on electricity usage if the utility advised the customer to do so
- Accepting the utility's energy advice or referrals to energy contractors or equipment
- Being influenced by the utility's opinion regarding energy- management advice, equipment, or technologies
- Providing personal information that enables the utility to better serve the customer
- Paying bills online

Creating customer advocates can be especially important for a company in a regulated industry. In the absence of customer advocates, or worse, in a situation where customers speak unfavourably about a company or actively work to support issues that are counter to those the company supports, companies can suffer a variety of negative consequences like increased business costs, lawsuits, fines and construction delays. For an electric utility, specific examples of potential advocacy behaviour include:

- Supporting the utility's positions or actions on energy-related public issues, including the environment
- Supporting the utility's position on the location and construction of facilities
- Providing testimonials about positive experiences with the utility

In sum, loyal behaviour in the utility industry may not be as evident as it is in a more competitive environment. Measuring customer loyalty in a generally non-competitive industry requires one to think

about loyalty in non-traditional ways. Customer loyalty is an intangible asset that has positive consequences or outcomes associated with it no matter what the industry. Properly measuring loyalty among utility customers requires thoughtful probing to thoroughly identify the range of participation, compliance, and advocacy behaviours that will ultimately benefit the company in meaningful ways, and foster happier and more loyal customers.

The UtilityPULSE Customer Loyalty Performance Score segments customers into four groups: **Secure** – the most loyal - **Still Favorable**, **Indifferent**, and **At risk**.

Secure customers are "very satisfied" overall with their local electricity utility. They have a very high emotional connection with their utility and definitely would recommend their local utility.

Still favorable customers are "very satisfied" overall, "definitely" or "probably" would recommend their local utility and not switch if they could.

Indifferent customers are less satisfied overall than secure and still-favorable customers and less inclined to recommend their local utility or say they would not switch.

At risk customers, who are "very dissatisfied" with their electricity utility, "definitely" would switch and "definitely" would not recommend it.

Loyalty is driven primarily by a company's interaction with its customers and how well it delivers on their wants and needs.

Customer Loyalty Model

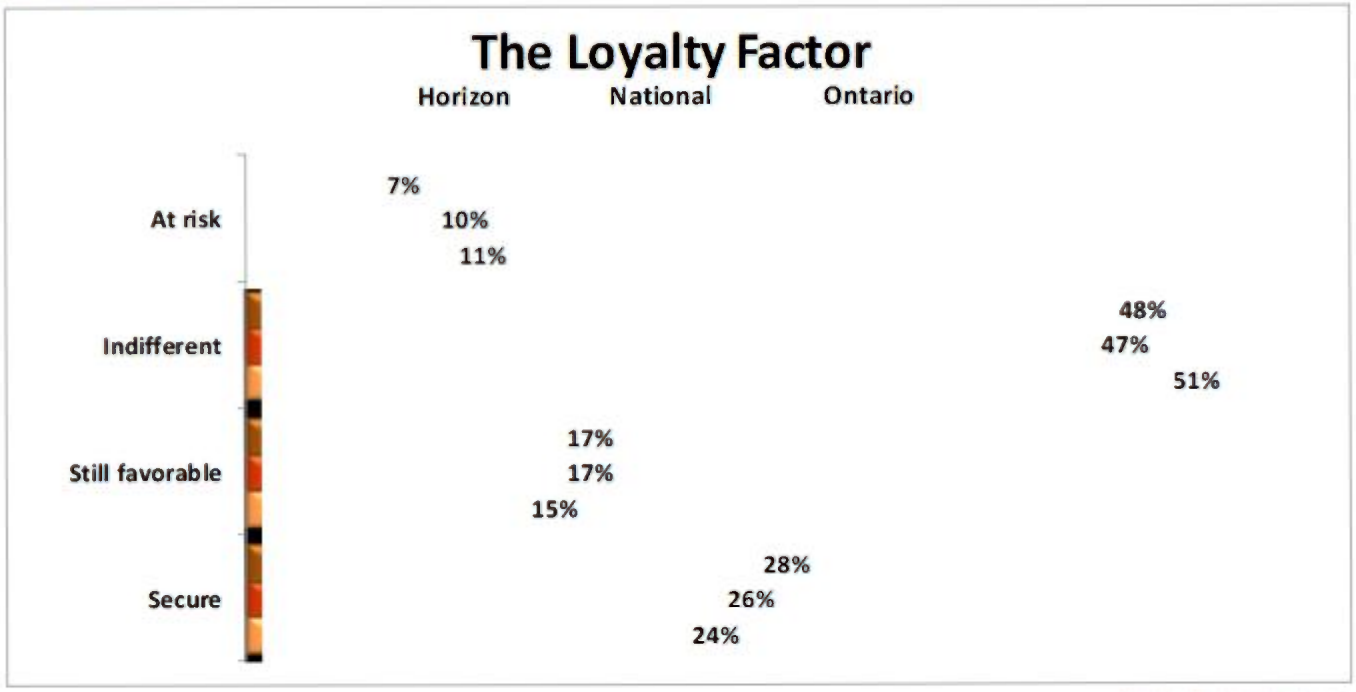


Loyalty is based on likelihood to:

- ***Satisfaction: overall satisfaction***
- ***Commitment: continue as a customer***
- ***Advocacy: willingness to recommend***

Customer Loyalty Groups				
	Secure	Favorable	Indifferent	At Risk
	Horizon			
2013	28%	17%	48%	7%
2012	27%	14%	51%	9%
2011	23%	9%	57%	11%
2010	20%	15%	57%	9%

Base: total respondents



Base: total respondents

Customer Loyalty Groups				
	Secure	**Favorable**	**Indifferent**	**At Risk**
Ontario				
2013	24%	15%	51%	11%
2012	20%	13%	53%	14%
2011	17%	13%	54%	16%
2010	21%	12%	52%	15%
National				
2013	26%	17%	47%	10%
2012	30%	13%	46%	11%
2011	28%	14%	46%	12%
2010	17%	14%	60%	9%

Base: total respondents



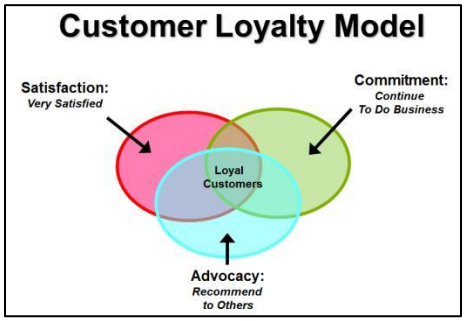
Secure customers' experiences and perceptions are distinct from those of Indifferent customers. There is yet an even greater gap between those identified as Secure versus At Risk.

- Problems are experienced and remain unresolved far more often by the Indifferent or At Risk segments in comparison to others. This is not an unusual finding.
- Other areas of interaction also revealed considerable differences among the segments. Consistently, Secure customers' perceptions are most positive.

Important attributes which shape perceptions about customer affinity			
	Overall Score	**Secure**	**At Risk**
Customer focused and treats customers as if they're valued	81%	95%	51%
Is pro-active in communicating changes and issues which may affect customers	82%	94%	59%
Deals professionally with customers' problems	86%	97%	62%
Works with customers to keep their energy costs affordable	70%	87%	40%
Quickly deals with issues that affect customers	84%	96%	60%
Delivers on its service commitments to customers	87%	97%	62%
Provides information and tools to help manage electricity consumption	83%	94%	61%
Is 'easy to do business with'	85%	98%	57%
Adapts well to changes in customer expectations	77%	91%	49%
The cost of electricity is reasonable when compared to other utilities	65%	81%	38%
Provides good value for your money	73%	89%	39%
Provides consistent reliable energy	91%	99%	80%
Operates a cost effective hydro-electric system	75%	91%	44%
Overall the utility provides excellent quality services	87%	98%	64%

Base:data from the full 2013 database from those respondents with an opinion

Customer commitment



Customer loyalty is a term that can be used to embrace a range of customer attitudes and behaviours. One of the metrics used to gauge loyalty is the measure of **retention,** or intention to buy again; this loyalty attitude is termed **commitment.**

Customer commitment to the local electricity supplier is a very important driver of customer loyalty in the electricity service industry. In a similar way to trust, commitment is considered an important ingredient in successful relationships. In simpler terms, commitment refers to the motivation to continue to do business with and maintain a relationship with a business partner i.e. the local utility.

For electric utilities, this measurement is about identifying the number of customers who feel that they "want to" vs "have to" do business with you. Potential benefits of commitment may include word of mouth communications - an important aspect of attitudinal loyalty. Committed customers have been known to demonstrate a number of beneficial behaviours, for example committed customers tend to:

- Come to you. One of the key benefits of establishing a good level of customer loyalty is that customers will come to you when they need a product or service.

- Validate information received from 3rd parties with information and expertise that you have.
- Try new products/initiatives.
- Perhaps they will even trust you when recommendations are made.
- Be more price tolerant.
- More receptivity of utility viewpoints on various issues.
- More tolerance of errors or issues that inevitably take a swipe at the utility.
- Stronger levels of perception regarding how the utility is managed.

Though customers can not physically leave you, they can emotionally leave you and when they do, it becomes an extreme challenge to garner their participation or support for utility initiatives.

Electricity customers' loyalty – … Is a company that you would like to continue to do business with			
	Horizon	**National**	**Ontario**
Top 2 Boxes: 'Definitely + Probably' would continue	85%	79%	80%
Definitely would continue	51%	47%	46%
Probably would continue	34%	31%	33%
Might or might not continue	5%	6%	6%
Probably would not continue	3%	4%	5%
Definitely would not continue	3%	6%	6%

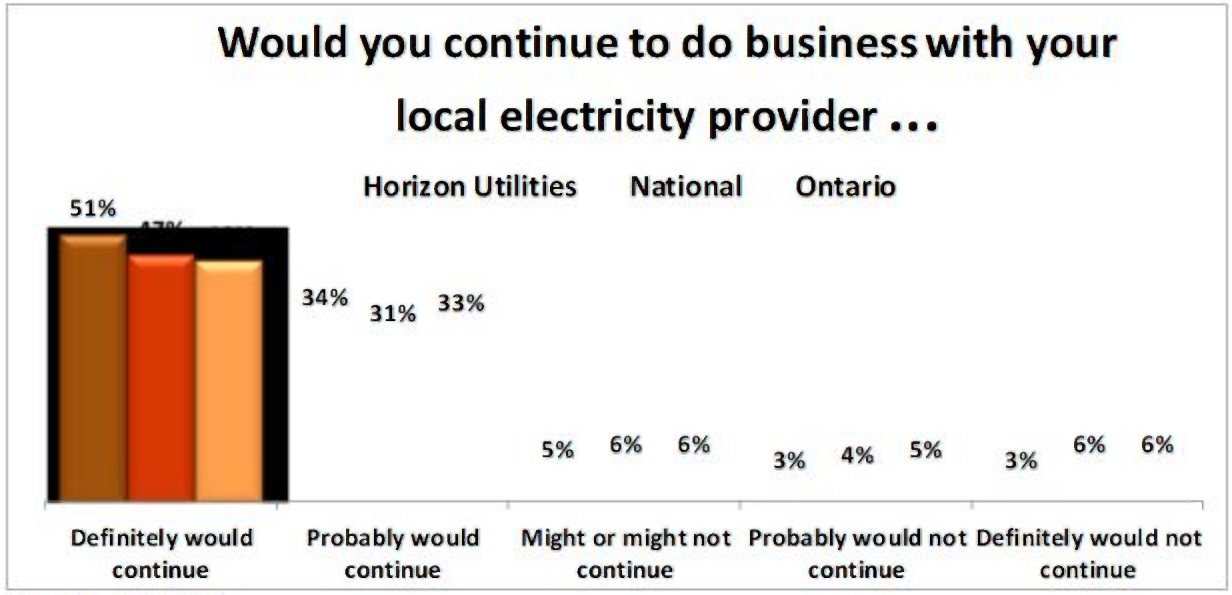
Base: total respondents

Electricity customers' loyalty – … Is a company that you would like to continue to do business with				
Horizon	**<$40K**	**$70K+**	**18-34**	**55+**
Top 2 Boxes: 'Definitely + Probably' would continue	90%	87%	89%	85%

Base: total respondents

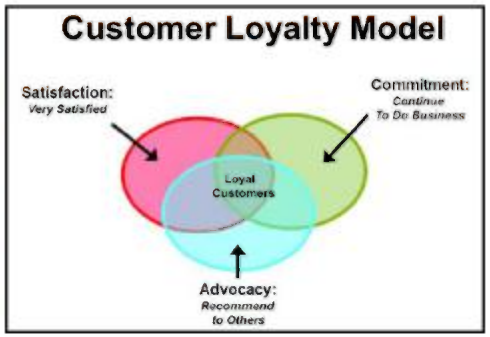
Electricity customers' loyalty – Is a company that you would like to continue to do business with				
Horizon	**2013**	**2012**	**2011**	**2010**
Top 2 boxes: 'Definitely + Probably' would continue	85%	86%	78%	87%

Base: total respondents



Base: total respondents

Word of mouth



Advocacy is one of the metrics measured in determining customer loyalty. Essentially, companies believe that a loyal customer is one that is spreading the value of the business to others, leading new people to the business and helping the company grow. Customer referrals, endorsements and spreading the word are extremely important forms of customer behaviour. For LDCs this is about generating positive referants about the LDC as a relevant and valuable enterprise.

When customers are loyal to a company, product or service, they not only are more likely to purchase from that company again, but they are more likely to recommend it to others – to openly share their positive feelings and experiences with others. In today's world, thanks to the Internet, they can tell and influence millions of people. That equates to new customers and revenue. The same holds true, if not more, when customers are disloyal. Disgruntled customers could share their negative experiences with an ever-widening audience, jeopardizing a company's reputation and resulting in fewer engaged customers and/or customers who are Favourable or Secure. Secure customers, typically are advocates and they are deeply connected and brand-involved.



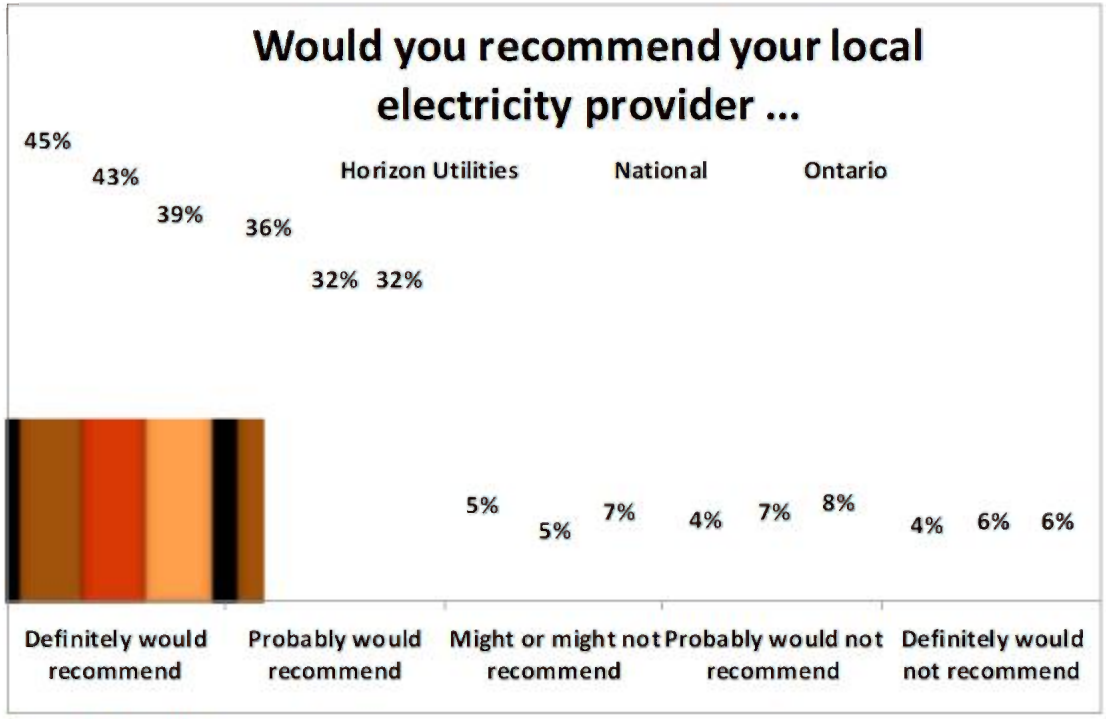
There are two forms of word of mouth which utilities need to understand. The first is Experience-based word of mouth which is the most common and most powerful form. It results from a customer's direct experience with the utility or the re-statement of a direct experience from a trusted source.

The second is Relay-based word of mouth. This is when customers pass along important messages to others based on what they have learned through the more traditional forms of communications. For example, if the utility was communicating an offer for "free LED lights" chances are high that the offer will be "relayed" to others through word of mouth.

For an electric utility, specific examples of potential positive advocacy behaviour include:

- *Recommending that other customers specifically locate in the geographic area that is serviced by that utility*
- *Supporting the utility's positions or actions on energy-related public issues, including the environment*
- *Supporting the utility's position on the location and construction of facilities*
- *Providing testimonials about positive experiences with the utility*

Would you tell me if you agree or disagree with the following statement? Horizon Utilities is a company that you would recommend to a friend or colleague …



Base: total respondents

Word of mouth communication is a very powerful form of communication and influence. When customers are speaking to other customers (or their peers) it is more credible, goes through less perceptual filters and can enhance the view of services or products provided better than marketing communication.

Electricity customers' loyalty – … is a company that you would recommend to a friend or colleague			
	Horizon	National	Ontario
Top 2 boxes: 'Definitely + Probably' would recommend	82%	75%	71%
Definitely would recommend	45%	43%	39%
Probably would recommend	36%	32%	32%
Might or might not recommend	5%	5%	7%
Probably would not recommend	4%	7%	8%
Definitely would not recommend	4%	6%	6%

Base: total respondents

Electricity customers' loyalty – is a company that you would recommend to a friend or colleague				
Horizon	**<$40K**	**$70K+**	**18-34**	**55+**
Top 2 boxes: 'Definitely + Probably' would recommend	85%	83%	83%	81%

Base: total respondents

Electricity customers' loyalty – is a company that you would recommend to a friend or colleague				
Horizon	**2013**	**2012**	**2011**	**2010**
Top 2 boxes: 'Definitely + Probably' would recommend	82%	81%	72%	68%

Base: total respondents

Corporate image

Organizations today are always under scrutiny and have to consider the reality AND perception of their image. In the simplest of terms, how you are seen by your stakeholders is your corporate image and reputation. The corporate image is a dynamic and profound affirmation of the nature, culture and structure of an organization. This applies equally to corporations, businesses, government entities, and non-profit organizations.

The corporate image communicates the organization's mission, the professionalism of its leadership, the caliber of its employees and its roles within the marketing environment or political landscape. Every organization has a corporate image, whether it wants one or not.

All companies survive on the strength of the relationships they build with their customers. To build and maintain a corporate image, a company must express its brand consistently in a wide range of ways including websites, advertising and "information" materials, but also customer service, the look and layout of the workplace and the way the company functions as a whole. Failure to do that can mean a business could, at worst, appear fraudulent, and at best not exploit the brand's potential.



When properly designed and managed, corporate image will accurately reflect the level of the organization's commitment to quality, excellence and relationships with its various stakeholders, including customers, employees, suppliers, partners, governing bodies, and the general public at large. As a result, corporate image is a critical concern for every organization, one deserving the same attention and commitment by senior management as any other vital issue.

Increasingly, organizations have realized that the management of a strong positive image with various stakeholders can be beneficial. Below are some of the attributes measured in the annual UtilityPULSE survey which are strongly linked to a utility's image.

Attributes strongly linked to a hydro utility's image			
	Horizon	**National**	**Ontario**
Is a respected company in the community	88%	83%	84%
Maintains high standards of business ethics	87%	81%	81%
A leader in promoting energy conservation	84%	80%	80%
Keeps its promises to customers and the community	85%	81%	82%
Beyond providing jobs and paying taxes, is socially responsible	84%	79%	79%
Is a trusted and trustworthy company	88%	83%	83%
Adapts well to changes in customer expectations	77%	74%	73%
Is 'easy to do business with'	86%	82%	81%
Overall the utility provides excellent quality services	87%	85%	83%
Operates a cost effective hydro-electric system	74%	72%	68%

Base: total respondents with an opinion

These attributes measure different facets of reputation such as the extent to which the company is providing excellent quality services, whether the company is known as leader in the industry and respected in the community, how the company delivers value, reliable service and support, how the company efficiently manages its business, the company's approach to making the world a better place - environmental and social commitments, and the emotional connection the company has with the people.

People feel better about themselves when they believe they are dealing with an organization that cares about "doing the right thing". Today, being a good corporate citizen requires more than business as usual, it requires investments in society and the environment.

Our research has shown when customers attribute positive feelings to a utility's corporate visual identity systems, when they think that marketing communication activities reflect corporate values, and when they perceive the company as socially responsible, they tend to form a favourable image of that organization. Our research also shows that customers put more emphasis on an LDC's brand image as an influencer of satisfaction and loyalty today than they did 10-15 years ago.



Corporate Credibility & Trust

No organization or company can plunge trust and credibility among its customers and stakeholders – and survive. Building and maintaining credibility and confidence make up a deliberate process that occurs over numerous interactions usually over a long period of time.

Establishing trust and credibility, whether with business partners, customers or regulators, is not achieved overnight. Creating credibility is a process, which advances only through honest, continuous communication between the utility, its regulators, and the public at large. Credible communications are informed and nurtured by diligent efforts on the utility's part to understand the legal and regulatory framework in which it operates. Public trust in their local utility is the degree to which the public believes that the utility will act in a particular manner because the utility has incorporated the public's interest into its own. The public trusts the utility to produce consistent and reliable electricity.

Attributes strongly linked to a hydro utility's image			
	Horizon	National	Ontario
Overall the utility provides excellent quality services	87%	85%	83%
Keeps its promises to customers and the community	85%	81%	82%
Customer-focused and treats customers as if they're valued	82%	76%	77%
Is a trusted and trustworthy company	88%	83%	83%

Base: total respondents with an opinion

Trust and credibility can be thought of as indicators of the degree of confidence stakeholders have in your organization's ability to deliver on its commitments. Trust and credibility are outcomes based on what your utility actually does, not what it might be doing.



Simul/UtilityPULSE research shows the under-pinning components which lead customers to believe an organization has credibility and can be trusted are: Knowledge, Integrity, Involvement and Trust.

Knowledge is captured by the utility's ability to demonstrate that it is actively aware of industry, regulatory and economic changes within the industry and how these might impact the lives of customers.

Integrity is established by demonstrating adherence to a code of conduct. It requires consistently acting in accordance with the values and goals that have been communicated to customers.

Involvement — Corporate Involvement is increasingly important to Canadian communities as it is an opportunity for their local utility to use their resources and man-power to benefit people at the community level. This helps to build credibility as customers see that the organization is acting and delivering on its commitments. This helps customers regard the utility with esteem and respect.

Trust — Trust is achieved through a track record of consistent and reliable performance, delivering on commitments and demonstrated accountability.

Using the four components of demonstrating Credibility and Trust, the resultant index shows that LDCs enjoy a high level of credibility and trust. As Benjamin Franklin said, “It takes many good deeds to build a good reputation, and only one bad one to lose it.”

Credibility and Trust Index
Knowledge The utility is seen as being knowledgeable about the services it provides, about what is happening in the industry, and how customers can reduce costs or create more value.
Integrity The utility is seen as an organization that will act in the best interests of its customers and can be counted on to provide services and resolve problems in a professional manner.
Involvement The utility is actively involved in the industry, in the community and in things that affect the customer.
Trust The utility is an organization that can be trusted and is worthy of respect.
Overall Horizon Utilities 85% [Ontario 82%; National 82%]

How can service to customers be improved?

Perception is an opinion about something viewed and assessed and it varies from customer to customer, as every customer has different beliefs towards certain services and products that play an important role in determining customer satisfaction.

Customers are more informed, more aware, more conscious of what's going on around big issues in the world around them and in this age of internet and social media, they are better equipped to influence service quality and outcomes. They have learned to compare products and services, to document and monitor customer service and satisfaction, and to request or demand higher quality.

Customer satisfaction is determined by the customers' perceptions and expectations of the quality of the products and services. In many cases, customer perception is subjective, but it provides some useful insights for organizations to develop their marketing strategies. Just as in previous years, respondents were asked once again what their utility could do to improve service.

And we are interested in knowing what you think are the one or two most important things 'your local utility' could do to improve service to their customers?

One or two most important things 'your local utility' could do to improve service	
Horizon	**% of all suggestions**
Better prices/lower rates	52%
Improve/simplify/clarify billing	8%
Concerns about SMART meters	7%
Information & incentives on energy conservation	7%
Remove hidden costs on bills	7%
Improve power reliability	6%
Better communication with customers	5%
Don't charge for previous debt	5%
Be more efficient	4%
Better on-line presence	4%
Staff related concerns	2%

Base: total respondents with suggestions

SMART Meters & SMART Grid

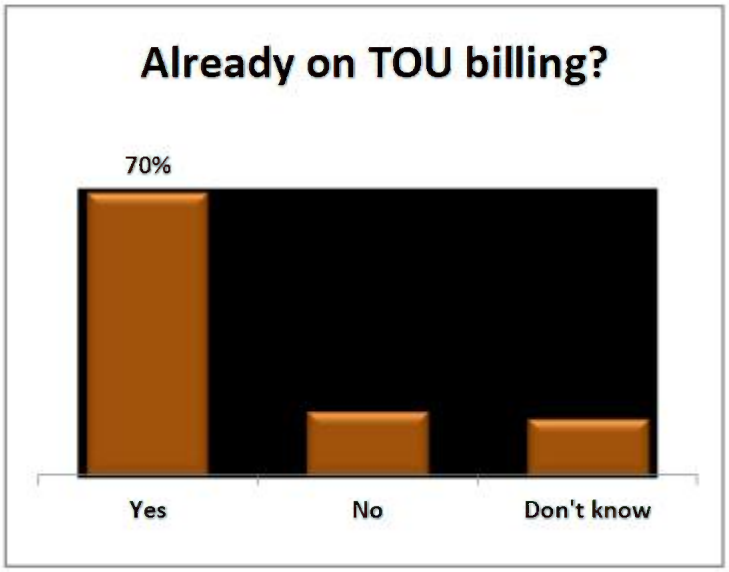
Consumers are used to paying different amounts during different times of day in a variety of settings. In larger cities, drivers pay more for parking when there is higher demand, such as during the day or during special events. Similarly, some highway toll charges increase during commuting hours, while drivers who drive across during off peak hours will save money. Customers even acknowledge that they will pay more for using their cell phone minutes during weekdays rather than nights and weekends.

Demand for energy is going up. Energy prices are climbing. What are customers to do?
Customers can respond to increases in energy prices in one of 3 ways:

(1) changing energy usage behaviour,
(2) investing in energy-using technologies and practices, or
(3) making no change to their energy usage.

Time-of-use (TOU) pricing was designed to reward consumers who shift their load to off-peak times. Electricity rates on weekends and overnight are about half of the cost during peak hours. This is supposed to be an economic incentive for people to shift electricity use to off-peak hours.
There is a direct correlation between customer familiarity with SMART meters and their favourable views toward the technology. While the majority of respondents could identify they were on TOU

billing, a significant proportion were not in the know. Lack of knowledge is a real barrier to ultimate acceptance and/or any type of behaviour modification.



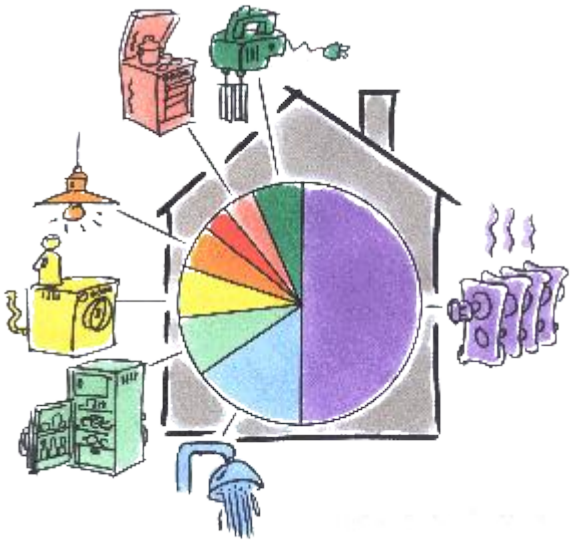


Base: An aggregate of respondents from 2013 participating LDCs

Do economic incentives, based on time-tiered pricing, have an impact on resource consumption patterns? Does awareness about electricity use change behaviours? Respondents of the 2013 survey seem to believe they have. *77% agree strongly or somewhat that Time-of-Use billing has changed the way in which they consume electricity on a day-to-day basis. [Base: Ontario LDC respondents]*

Time-of-Use billing has changed the way in which you consume electricity on a day-to-day basis	
	Ontario LDCs
Agree strongly	42%
Agree somewhat	35%
Neither / Neutral	2%
Disagree somewhat	10%
Disagree strongly	11%

Base: An aggregate of respondents from 2013 participating LDCs



Most residential energy use, most of the time, is invisible to the user. Most people have only a vague idea of how much energy they are using for different purposes and what sort of difference they could make by changing day-to-day behaviour or investing in efficiency measures. Hen Feedback is important so that energy usage becomes visible, thereby, creating more understanding and ultimately easier to exercise control.

When it comes to energy, people tend to overestimate the amount of energy used by devices that are "visible" to them and underestimate the amount of energy used by devices that are "not visible" to them. SMART metering is also a key element of SMART grid technology. This year's survey probed around the concept of SMART grid, its importance and support towards working with neighbouring utilities.

The survey data indicates that customer awareness and understanding of the benefits that can be derived from SMART grid technologies are still in an early stage. For the most part respondents were mostly unfamiliar or uninformed.

Level of knowledge about the SMART Grid		
	Ontario LDCs	**Horizon**
I have a fairly good understanding of what it is and how it might benefit homes and businesses	7%	7%
I have a basic understanding of what it is and how it might work	17%	18%
I've heard of the term, but don't know much about it	33%	30%
I have not heard of the term	42%	43%
Don't know	1%	2%

Base: An aggregate of respondents from 2013 participating LDCs / total respondents from the local utility

Next respondents were asked what degree of importance they attached to their local hydro utility in pursuing the implementation of the SMART Grid and its associated technologies.

The SMART Insight from this poll is: even though more than half the respondents did not know much about the SMART Grid, 53% [50% of Horizon respondents] felt it was very or somewhat important to pursue its implementation and 75% [73% of Horizon respondents] responded that they were very or somewhat supportive of their local utility working with neighbouring utilities to get the most value out of the SMART Grid.

Importance of pursuing implementation of the SMART Grid		
	Ontario LDCs	Horizon
Very important	23%	20%
Somewhat important	30%	30%
Neither important or unimportant	9%	7%
Somewhat unimportant	5%	10%
Unimportant	10%	17%
Don't know	23%	16%

Base: An aggregate of respondents from 2013 participating LDCs / total respondents from the local utility

Support towards working with neighbouring utilities on SMART Grid initiatives		
	Ontario LDCs	Horizon
Very supportive	38%	33%
Somewhat supportive	37%	40%
Neither supportive or unsupportive	4%	5%
Somewhat unsupportive	2%	5%
Unsupportive	6%	9%
Don't know	12%	7%

Base: An aggregate of respondents from 2013 participating LDCs / total respondents from the local utility

Energy Conservation & Efficiency



Improving energy efficiency does not mean that citizens have to give up or forgo activities to save energy, that is, “turn off the lights and put on another sweater”. Rather, new technologies and more effective behaviour will actually allow citizens to do more, improving their living conditions rather than reducing their comfort.

Reducing the amount of energy we use by choosing energy-efficient appliances and services, and ensuring we do not waste energy can make a big difference. It is possible for residents to cut energy use without compromising on performance, through changes in customer behaviour and by investing in more efficient energy technologies – effectively doing more with less.

This makes sense both for society as a whole and for businesses, individuals and families. Less energy use means lower energy bills. People simply need to be aware of their energy use.

Energy efficiency can be broken down into two areas:

1) better use of energy through improved energy-efficient technologies; and

2) energy saving through changes in customer awareness and behaviour.

Energy efficiency has been seen as primarily about technologies: using the best technology to consume less energy. Examples include changing a household furnace or air condition unit for one that consumes one third less energy, using low-energy light bulbs and avoiding keeping appliances in 'standby' mode. Respondents were asked what they have done or will do to conserve energy.

Efforts to conserve energy				
Ontario LDCs	**Yes**	**No**	**Already Done**	**Don't Know**
Install energy-efficient light bulbs or lighting equipment	20%	10%	69%	1%
Install timers on lights or equipment	15%	49%	35%	2%
Shift use of electricity to lower cost periods	21%	19%	57%	3%
Install window blinds or awnings	15%	26%	58%	1%
Install a programmable thermostat	15%	20%	63%	2%
Have an energy expert conduct an energy audit	9%	70%	18%	3%
Removing old refrigerator or freezer for free	14%	45%	37%	4%
Join the peaksaverPLUS™ program	18%	48%	21%	13%
Replacing furnace with a high efficiency model	13%	36%	48%	3%
Replacing air-conditioner with a high efficiency model	16%	39%	41%	4%
Use a coupon to purchase qualified energy saving products	33%	42%	21%	4%

Base: An aggregate of respondents from 2013 participating LDCs

New technologies will have little effect if users cannot be convinced to use them. Changing customer behaviour has to be driven by increasing awareness of the benefits of energy saving, both for the individual and for society. Awareness of the energy that we use as individuals, families, households or organizations is very important – as is the impact that can be made by not wasting energy – both individually and collectively.

Behaviour is one of the parameters with a direct relation to individual energy consumption. Individual behaviour in energy use is determined by a number of factors, the most important of which are attitude, income and energy pricing. Less directly related are energy policy (including taxation) and technology availability as these relate to pricing and income respectively. However education can influence attitude in order to change behaviour; it can also inform individuals about energy policy and technology which feeds into behavioural change.

SMART Feedback from participants shows, predictably, the most frequently mentioned barrier to energy conservation was upfront financial costs. Not having the upfront funds limits the household's ability to invest in new appliances and to make other energy efficiency retrofits.

One participant noted that, even with programs that provide free appliance disposal, "if you get rid of your old fridge, you don't pay for disposal, but you need money for the cost of the new appliance". Likewise, another respondent commented that limited upfront funds "affect all households - but are particularly strong for low income households where there is no money to invest in retrofits."

Another barrier to conservation described by the survey respondents was awareness of programs and issues related to energy conservation. Generally speaking, the respondents felt that often lower-income and senior-occupied households did not have access to sufficient information that would allow them to reduce or to shift electricity usage. The respondents noted that although the person may have intentions of wanting to do the right thing, they are not sure or do not know exactly what the right thing to do is.

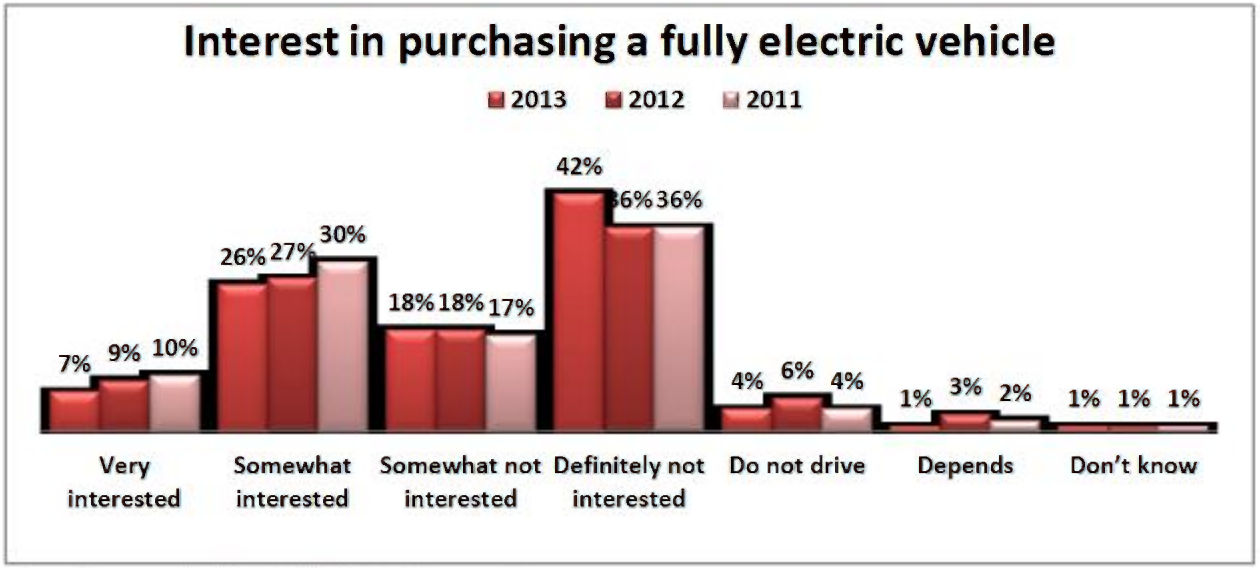
What are the 1 or 2 barriers to energy conservation experienced by Ontarians?	
	Ontario
Cost involved in making equipment/appliance changes	21%
Lifestyle changes / inconvenient	11%
Lack of interest or personal responsibility	8%
Lack of knowledge	7%
Waiting for better technology / Greener options	6%
Lack of information / confusion as to the "right" thing to do	5%
Not enough incentives	4%
Have an issue with Government policies	3%
None	12%
Don't know	29%

Base: total respondents from 2013 Ontario Benchmark survey

Purchasing an Electric Vehicle

A clear majority (60%) of car drivers are strongly not in favour of electric vehicles replacing conventional vehicles at this time. There is, however a significant minority (34%) who do favour such a development. None-the-less the EV is having an impact on travel and its influence is set to increase.

An income breakdown of the "positive support" data shows the strength of opinion in the higher income ranges. 45% of respondents in the $40k-$70k income range and 43% of those making $70K or more are in favour of EVs replacing conventional vehicles over time, and less than one quarter (22%) of wage earners in the under $40k category. Looking at age demographics, 22% of older respondents (55+) versus 47% of respondents aged 35-54 are in favour of EVs replacing conventional cars. 43% of those aged 18-34 are receptive to the idea of purchasing an electric vehicle.



Base: total respondents from 2013 Ontario Benchmark survey

When asked how long it would be before they would consider an EV as an option for their next car purchase, only 1 in 10 (11%) would consider an EV within the next 24 months.

Interest in purchasing a fully electric vehicle	Income <$40K	Income $40K<$70K	Income $70K +	Age 18-34	Age 35-54	Age 55+
Very interested	4%	10%	11%	14%	12%	3%
Somewhat interested	18%	35%	32%	29%	35%	19%
Somewhat not interested	17%	17%	21%	24%	21%	16%
Definitely not interested	46%	35%	34%	33%	28%	53%
Don't know	1%	0%	2%	0%	2%	1%

Base: total respondents from 2013 Ontario Benchmark survey

Length of time before purchasing a fully electric vehicle	Ontario
Immediately to next 6 months	1%
7 to 12 months	2%
13 to 24 months	8%
Over 24 months	84%
Depends	1%
Don't know	3%

Base: total respondents from 2013 Ontario Benchmark survey



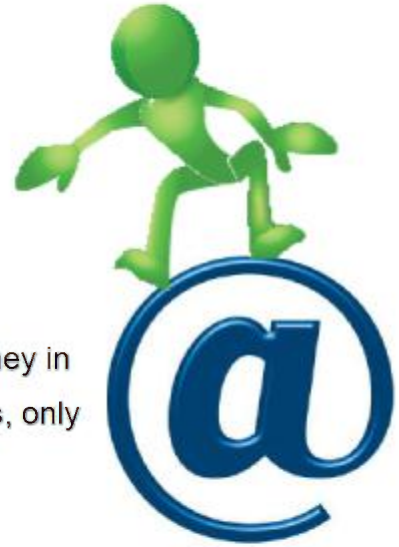
E-care and E-billing

For any service provider including electric utilities, using the Internet for online customer care and electronic billing involves a number of interrelated requirements, including a customer's ability to:

- receive and pay bills on the internet,
- sign up for and change their services using the internet,
- find answers to their questions online about their accounts, i.e. statements, payments, balances
- learn about products, services and topics, i.e., green energy, electricity pricing, etc.

Do you have access to the internet?		
	Ontario LDCs	Horizon
Yes	86%	81%
No	14%	19%

Base: An aggregate of respondents from 2013 participating LDCs / 90% of total respondents from the local utility



We asked respondents who were currently connected or had access to the internet if they in fact visited their local utility website. Out of all the respondents who had internet access, only 25% claim that they had actually been to their utility's website.

Over the past six months have you accessed your local utility website?		
	Ontario LDCs	Horizon
Yes	27%	25%
No	72%	74%

Base: An aggregate of respondents from 2013 participating LDCs / 90% of total respondents from the local utility

Does the average household customer feel comfortable enough with internet technology to believe it is the best place to get customer care or to receive and pay their bills?

Moving customer care and billing to the internet raises a number of questions and presents new opportunities to the utility industry.

- Is online billing and customer care a differentiator for utility providers?
- Can e-bills be used to improve customer loyalty by attracting customers to their website on a regular basis and thereby exposing customers to additional information, news, and education?
- Does the internet provide an environment where the most commonly asked general questions about a customer's hydro bill be highlighted or linked directly to the customer's bill?
- Can e-bills follow a cycle time that is customer driven? That is, could the customer determine the day in the billing cycle for the e-bill to be produced?

Likelihood of using the internet for future customer care needs for things such as:		
Top 2 Boxes: 'very + somewhat likely'	**Ontario LDCs**	**Horizon**
Setting up a new account	39%	31%
Arranging a move	47%	40%
Accessing information about your bill	59%	52%
Accessing information about your electricity usage	58%	48%
Accessing energy saving tips and advice	52%	45%
Learning more about SMART meters	49%	45%
Registering a complaint	43%	35%
Registering a compliment	48%	43%
Accessing information about Time Of Use rates	59%	50%
Maintaining information about your account or preferences	56%	49%
Paying your bill through the utility's website	35%	28%
Paying your bill using smart phone applications	23%	17%
Getting information about power outages	47%	38%

Base: An aggregate of respondents from 2013 participating LDCs / 90% of total respondents from the local utility

Ideally, utilities want customers to embrace e-billing and other electronic services; however, a hindrance on the most basic level will discourage customers from considering additional online

services, i.e. accessing SMART meter data. The goal is to inform customers of their electricity usage, and make them aware of the potential to conserve electricity.



Accessed SMART meter information from the utility's website		
	Ontario LDCs	**Horizon**
Yes	8%	9%
No	91%	90%

Base: An aggregate of respondents from 2013 participating LDCs / 90% of total respondents from the local utility

What utilities don't want to do is force their customers to contend with a time-consuming, labour-intense process. Instead, make it easy, quick and secure. A positive online experience will most likely lead to a better online relationship with customers that will grow over time. Inconsistent user experiences are harmful to customer confidence.

The respondents, who did access their SMART meter information, claimed they found it to be easy ('very + somewhat') to access their SMART meter information.

Ease of accessing SMART meter information on the utility's website		
	Ontario LDCs	**Horizon**
Top 2 Boxes: 'very + somewhat easy'	90%	87%

Base: An aggregate of respondents from 2013 participating LDCs / 90% of total respondents from the local utility



Respondents were asked about the likelihood of accessing SMART meter data on the website in future.

Likelihood of accessing SMART meter information on the utility's website in future		
	Ontario LDCs	**Horizon**
Top 2 Boxes: 'very + somewhat likely'	49%	38%
Bottom 2 Boxes: 'somewhat + very unlikely'	50%	59%

Base: An aggregate of respondents from 2013 participating LDCs / 90% of total respondents from the local utility

The banking industry is one industry that has entered the online environment with consumers earlier than most industries; and therefore, many lessons can be learned from that industry for utility providers, including security, FAQs, prompt e-mail response, online bill history, and mistakes to avoid.

In order to convert traditional billing and payment customers to a paperless, automated solution, utilities need to understand the reasons behind customers' reservations, such as:

- process is not user-friendly leading to a poor customer experience
- online registration is or could be a hassle
- the extra work of keeping track, downloading etc. in a time pressed society
- password fatigue for customers who just don't want to manage another log-in credential
- apprehension that no longer receiving a paper bill could increase the likelihood that they'll inadvertently miss a bill and/or payment
- unease that payment information will not be secure and could be easily hacked.

Consumers will eventually adopt electronic billing and online customer care as many industries begin providing consumer bills online, and critical mass is reached. However, customers still want to have the choice of receiving customer care from a live person. Even after they start using online technology, customers still want to be able to receive hard copies of their bills as a backup.

Using the internet for billing		
	Ontario LDCs	Horizon
I am already receiving my hydro bill electronically	10%	10%
I use on-line banking and will definitely be requesting that my bill be sent electronically	11%	8%
I use on-line banking but prefer to have paper statements	30%	28%
I prefer to have the paper copy of my bills	23%	29%
I don't use on-line banking	17%	23%

Base: An aggregate of respondents from 2013 participating LDCs / 90% of total respondents from the local utility

Because utilities serve a diverse demographic that includes households, businesses, all income levels, and people from all walks of life, understanding customers' concerns, needs and comfort levels will go a long way to ensuring that the solution is one that they will actually use. For example, interactive voice response (IVR) system with specific-language call flows, young working commuters might be more inclined to use mobile bill-pay, or those customers (e.g., senior citizens) who might not be as adept or comfortable with technology might prefer the ability to pay over the phone or in-person.

Understanding customer profiles will enable utilities to provide the right bill-pay options for them; thereby increasing usability rates--- and, the perception that they adapt well to changes in customer expectations.

Using the internet for billing		
Ontario LDCs	**18-34**	**55+**
I am already receiving my hydro bill electronically	19%	8%
I use on-line banking and will definitely be requesting that my bill be sent electronically	20%	7%
I use on-line banking but prefer to have paper statements	36%	24%
I prefer to have the paper copy of my bills	9%	29%
I don't use on-line banking	5%	24%
Don't know	10%	8%

Base: An aggregate of respondents from 2013 participating LDCs

If utility companies ensure that the electronic billing solutions they offer customers are easy to use, convenient, feature-rich, comprehensive and secure, adoption rates will surely increase.

Likelihood of the following to encourage customers to go paperless for billing purposes		
Top 2 Boxes: 'very + somewhat likely'	**Ontario LDCs**	**Horizon**
Providing a one-time financial incentive to switch	53%	45%
Being entered into a special draw for customers who make the switch	42%	34%
Learning more about the benefits to going green with paperless billing	46%	40%
A better understanding of the convenience of paperless billing	45%	38%

Base: An aggregate of respondents from 2013 participating LDCs / 90% of total respondents from the local utility

Customers are afraid if they don't receive a paper bill in the mail each month, they are going to forget to make a payment as well as, incur penalties and late fees or even harm their credit score. By proactively delivering information to customers, by phone, text, and email, customers will remain informed and in control of their billing and account status and be more likely to use additional online services. Also, giving customers online access to the prior 18 to 24 months of billing statements will alleviate concerns over losing a bill or needing old statements. Ensuring that a switch to online processes does not change anything for a customer is key; the idea is to make sure customers are provided with everything they have always had, plus a lot more.

Social Media

Social media is evolving at an incredible pace. Importantly, it seems to represent a shift in how people discover, read and share news, information and content. As customers increasingly turn to social channels to seek information and advice and to express opinions, there is no question that organizations must engage with those channels to deliver appropriate customer care and ensure positive experiences. Respondents of this year's survey were asked *"how likely they would use social media as a resource for energy efficiency tips or to help manage your electricity use"…*



Likelihood of using Social Media to gather information				
	Horizon	**Ontario LDCs**	**Ontario LDCs Age Group: 18-34**	**Ontario LDCs Age Group: 55+**
Very likely	4%	6%	10%	3%
Somewhat likely	7%	11%	17%	6%
Not likely	18%	20%	24%	17%
Not likely at all	68%	61%	48%	68%
Don't have social media account	3%	2%	0%	4%
Don't know	1%	1%	0%	1%

Base: An aggregate of respondents from 2013 participating LDCs / 90% of total respondents from the local utility

What do customers think about electricity costs?

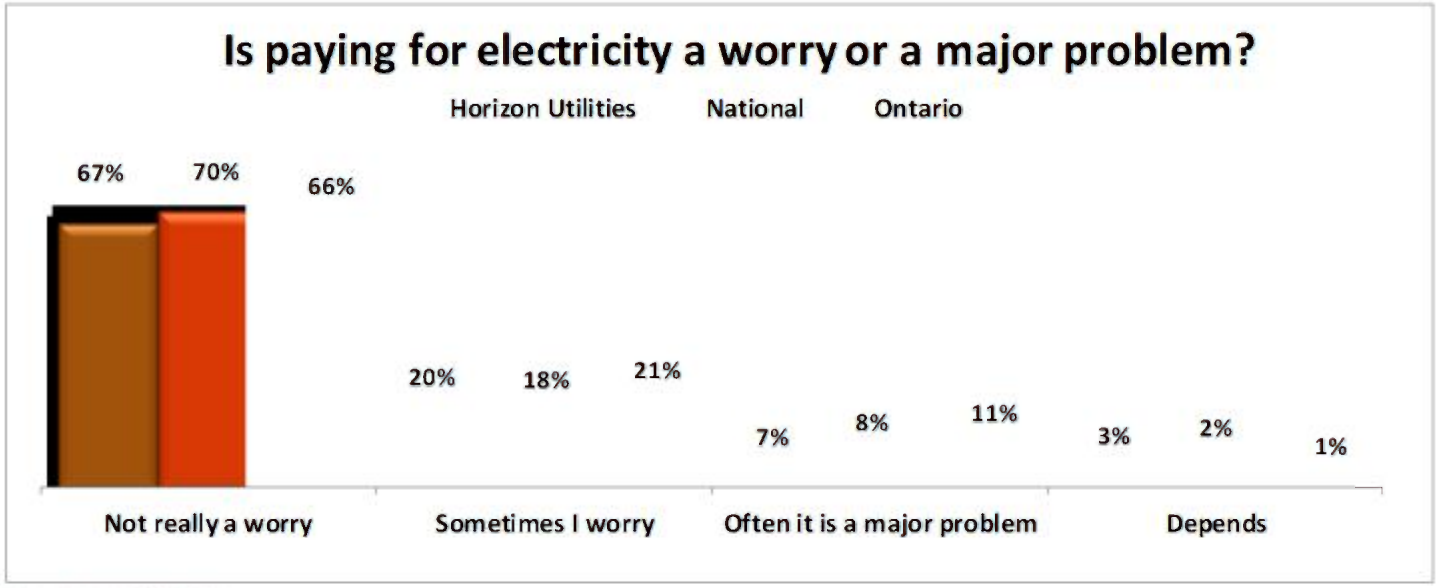
Today electric utilities are facing steadily, increasing costs to generate and deliver electricity. Utilities are building transmission lines, installing new equipment and fixing up power plants. While LDC's make continuous efficiency improvements and are working with regulators to contain costs and to keep electricity prices as low as possible, the fact is that rising electricity costs are becoming inevitable.

At a time when income growth seems to be stagnating, electricity is consuming a greater share of Canadians' after-tax income than at any time since the mid 1990's. Higher costs are being driven by both higher prices per kilowatt hour and greater electricity use at home, in roughly equal measure. While modern electronics and appliances require less electricity than older models, i.e. a new refrigerator runs on half the electricity of a model from the 1990's, houses have become bigger, which entail more air-conditioning and more electronics than before.

Next I am going to read a number of statements people might use about paying for their electricity. Which one comes closest to your own feelings, even if none is exactly right? Paying for electricity is not really a worry, Sometimes I worry about finding the money to pay for electricity, or Paying for electricity is often a major problem?

Is paying for electricity a worry or a major problem?				
	Not a worry	Sometimes	Often	Depends
	Horizon			
2013	67%	20%	7%	3%
2012	66%	23%	8%	1%
2011	59%	26%	11%	2%
2010	65%	24%	8%	1%

Base: total respondents



Base: total respondents

There are certain kinds of costs that hit fixed-income (those on disability income) and low-income people the most, and one of those things is energy costs, which are not discretionary. Ontario is one of several provinces to install “SMART” electricity meters on households. They promote better resource use by billing customers extra for energy consumed during peak daytime hours, however it means added financial pain for those who have little choice but to stay home on weekdays.

Is paying for electricity a worry or a major problem?				
	Not a worry	**Sometimes**	**Often**	**Depends**
		Horizon		
<$40,000	53%	32%	12%	2%
$40<$70,000	66%	24%	7%	3%
$70,000+	80%	12%	3%	3%

Base: total respondents

Customers have a right to expect more than the mere delivery of electricity. They have the right to expect efficiency, competence and value for money. Utilities seeking to become more customer-centric must go beyond the transactional relationship of customer pays a price and receives electricity. Becoming customer-centric involves offering customers a value proposition; a complete package, filled with lots of human-friendly usability elements, peace of mind, and top-notch customer service.

Is paying for electricity a worry or a major problem?				
	Not a worry	Sometimes	Often	Depends
Ontario				
2013	66%	21%	11%	1%
2012	59%	27%	11%	2%
2011	52%	31%	13%	3%
2010	67%	23%	8%	2%
National				
2013	70%	18%	8%	2%
2012	67%	22%	8%	2%
2011	63%	25%	8%	2%
2010	71%	20%	6%	1%

Base: 2013 Ontario and National benchmark surveys

What do small commercial customers think?

Residential and small business customers create the bulk of a utility's service transactions every day—and account for more than half of the energy consumed — understanding their needs and expectations is becoming more important than ever before.

Small Commercial Customer (General Service < 50kW Demand)

A small commercial customer is defined by the OEB as a non-residential customer in a less than 50 kW demand rate class. These customers are similar to the residential customer in that their bill does not have a demand component to it and their charges are based upon KWH of consumption. Most of these customers would occupy small storefront locations or offices

In the 15 years that UtilityPULSE has undertaken electric utility satisfaction surveys, the data has mostly supported that the small business owner behaves much in the same way as the residential customer. While there are typically more similarities between small commercial and residential accounts, there are some fundamental differences in these customer classed segments. This year's data shows a difference in satisfaction levels for customer service; commercial customers responded more favourably than residential. On the subject of bills and outages, residential respondents reported more outage problems and fewer billing problems than commercial customers.

Deposit requirements, monthly energy bills (and, therefore, energy usage), power quality, and reliability all directly impact a small business's financial situation. Unlike residential customers who tend to describe the cost of power interruptions in terms of a "inconvenience", commercial (and industrial) customers associate power interruptions with the cost of lost business, i.e., a loss in production is a loss in profits.

Likewise, based on the requirement of electricity to sustain business operations, there exists a difference in actual levels of demand response. For instance, small business and commercial users are unlikely to choose to decrease their electricity consumption if it is incompatible with efficient management of their business processes or threatens contracted deliveries to their primary product markets. In some cases, electricity consumption is a relatively small proportion of total input and operating costs, which substantially reduces the financial incentive for shutting down production during on peak pricing.

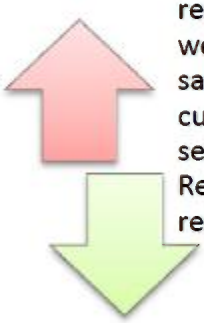
The tables associated with this report will contain Ontario LDC specific information as it relates to residential and commercial customers. Recognizing that smaller data samples are susceptible to greater data swings, for most LDCs there would be 60 or 90 responses from small commercial customers. We have compiled the following based on a group composite of all of our 2013 discussions with small commercial and residential customers.

Satisfaction: Pre & Post		
Satisfaction (Top 2 Boxes: 'very + somewhat satisfied')	Residential	Commercial
Initially	92%	93%
End of Interview	93%	94%

Base: total respondents from the full 2013 database

As it relates to the six attributes associated with customer service:

Very or fairly satisfied with…	Residential	Commercial
The time it took to contact someone	79%	83%
The time it took someone to deal with your problem	76%	81%
The helpfulness of the staff who dealt with your problem	78%	85%
The knowledge of the staff who dealt with your problem	79%	85%
The level of courtesy of the staff who dealt with your problem	86%	92%
The quality of information provided by the staff member	76%	83%



Overall Commerical respondents were more satisfied with customer service than Residential respondents

Base: total respondents from the full 2013 database

Overall satisfaction with most recent experience		
	Residential	Commercial
Top 2 Boxes: 'very + somewhat satisfied'	78%	81%
Bottom 2 Boxes: 'somewhat + very dissatisfied'	20%	17%

Base: total respondents from the full 2013 database

Comparisons between Residential and Commercial		
Loyalty Groups	**Residential**	**Commercial**
Secure	30%	29%
Still Favourable	13%	14%
Indifferent	51%	50%
At risk	6%	7%

Base: total respondents from the full 2013 database

Loyalty Model Factors	***Residential***	***Commercial***
Very/somewhat satisfied	92%	93%
Definitely/probably would continue	84%	83%
Definitely/probably would recommend	78%	79%

Base: total respondents from the full 2013 database

Outages & Bill problems	Residential	Commercial
Respondents with outage problems	29%	23%
Respondents with billing problems	9%	13%

Base: total respondents from the full 2013 database

Attempts to contact local utility…	Residential	Commercial
Respondents with outage problems	18%	37%
Respondents with billing problems	51%	69%

Base: total respondents from the full 2013 database



Residential respondents had reported more outage problems



Residential respondents reported fewer billing problems

Important attributes which describe operational effectiveness		
	Residential	Commercial
Provides consistent, reliable energy	96%	95%
Delivers on its service commitments to customers	89%	89%
Accurate billing	86%	88%
Quickly handles outages and restores power	87%	85%
Makes electrical safety a top priority	55%	66%
Uses responsible business practices	67%	75%
Is efficient at managing the hydro-electric system	72%	71%
Is a company that is 'easy to do business with'	85%	89%
Operates a cost effective hydro-electric system	61%	61%

Base: total respondents with an opinion from the full 2013 database

Important attributes which shape perceptions about corporate image		
	Residential	Commercial
Is a respected company in the community	85%	86%
Maintains high standards of business ethics	70%	76%
A leader in promoting energy conservation	74%	70%
Keeps its promises to customers and the community	72%	73%
Beyond creating jobs and paying taxes, is socially responsible	66%	65%
Is a trusted and trustworthy company	85%	87%
Adapts well to changes in customer expectations	62%	64%
Overall the utility provides excellent quality services	91%	92%

Base: total respondents with an opinion from the full 2013 database

Important attributes which shape perceptions about service quality and value		
	Residential	Commercial
Is pro-active in communicating changes and issues which may affect customers	79%	78%
Provides good value for money	69%	69%
Customer-focused and treats customers as if they're valued	75%	77%
Deals professionally with customers' problems	72%	82%
Quickly deals with issues that affect customers	71%	76%
Provides information and tools to help manage electricity consumption	82%	78%
Works with customers to keep their electricity costs affordable	61%	57%
The cost of electricity is reasonable when compared to other utilities	56%	53%

Base: total respondents with an opinion from the full 2013 database

Is paying for electricity a worry or a major problem?		
	Residential	**Commercial**
Not really a worry	70%	71%
Sometimes I worry	20%	19%
Often it is a major problem	6%	6%
Depends	3%	2%

Base: total respondents



Method

The findings in this report are based on telephone interviews conducted for Simul Corp. by Corsential between March 15, March 25, 2013, with 602 respondents who pay or look after the electricity bills from a list of residential and small and medium-sized business customers supplied by Horizon Utilities.

The sample of phone numbers chosen was drawn randomly to insure that each business or residential phone number on the list had an equal chance of being included in the poll.

The sample was stratified so that 85% of the interviews were conducted with residential customers and 15% with commercial customers.

In sampling theory, in 19 cases out of 20 (95% of polls in other words), the results based on a random sample of 602 residential and commercial customers will differ by no more than ±3.99 percentage points where opinion is evenly split.

This means you can be 95% certain that the survey results do not vary by more than 3.99 percentage points in either direction from results that would have been obtained by interviewing all Horizon Utilities residential and small and medium-sized commercial customers if the ratio of residential to commercial customers is 85%:15%.

The margin of error for the sub samples is larger. To see the error margin for subgroups use the calculator at http://www.surveysystem.com/sscalc.htm.

Interviewers reached 2,590 households and businesses from the customer list supplied by Horizon Utilities. The 602 who completed the interview represent a 23% response rate.

The findings for the Simul/UtilityPULSE National Benchmark of Electric Utility Customers are based on telephone interviews conducted March 13 through March 26, 2013, with adults throughout the country who are responsible for paying electric utility bills. The ratio of 85% residential customers and 15% small and medium-sized business customers in the National study reflects the ratios used in the local community surveys. The margin of error in the National poll is ±2.7 percentage points at the 95% confidence level.

For the National study, the sample of phone numbers chosen was drawn by recognized probability sampling methods to insure that each region of the country was

represented in proportion to its population and by a method that gave all residential telephone numbers, both listed and unlisted, an equal chance of being included in the poll.

The data were weighted in each region of the country to match the regional shares of the population.

The margin of error refers only to sampling error; other non-random forms of error may be present. Even in true random samples, precision can be compromised by other factors, such as the wording of questions or the order in which questions were asked.

Random samples of any size have some degree of precision. A larger sample is not always better than a smaller sample. The important rule in sampling is not how many respondents are selected but how they are selected. A reliable sample selects poll respondents randomly or in a manner that insures that everyone in the population being surveyed has an equal chance of being selected.

How can a sample of only several hundred truly reflect the opinions of thousands or millions of electricity customers within a few percentage points?

Measures of sample reliability are derived from the science of statistics. At the root of statistical reliability is probability, the odds of obtaining a particular outcome by chance alone. For example, the chances of having a coin come up heads in a single toss are 50%. A head is one of only two possible outcomes.

The chance of getting two heads in two coin tosses is less because two heads are only one of four possible outcomes: a head/head, head/tail, tail/head and tail/tail.

But as the number of coin tosses increases, it becomes increasingly more likely to get outcomes that are either close to or exactly half heads and half tails because there are more ways to get such outcomes. Sample survey reliability works the same way but on a much larger scale.

As in coin tosses, the most likely sample outcome is the true percentage of whatever we are measuring across the total customer base or population surveyed. Next most likely are outcomes very close to this true percentage. A statement of potential margin of error or sample precision reflects this.

Some pages in the computer tables also show the standard deviation (S.D.) and the standard error of the estimate (S.E.) for the findings. The standard deviation embraces the range where 68% (or approximately two-thirds) of the respondents would fall if the distribution of answers were a normal bell-shaped curve.

The spread of responses is a way of showing how much the result deviates from the "standard mean" or average. In the Horizon Utilities data on corporate image, Simul converted the answers to a point scale with 4 meaning agree strongly, 3 meaning agree somewhat and so on (see in the computer tables).

For example, the mean score is 3.65 for providing consistent, reliable energy. The average is 2.82 for working with customers to keep their energy costs affordable.

For reliable energy the standard deviation is 0.52. For affordable energy the S.D. is 0.98. These findings mean there is a wider range of opinion – meaning less consensus – about whether Horizon Utilities works with customers to keep their energy costs affordable than about whether Horizon Utilities energy supplies are reliable.

Beneath the S.D. in the tables is the standard error of the estimate. The S.E. is a measure of confidence or reliability, roughly equivalent to the error margin cited for sample sizes. The S.E. measures how far off the sample's results are from the standard deviation. The smaller the S.E., the greater the reliability of the data.

In other words, a low S.E. indicates that the answers given by respondents in a certain group (such as residential bill payers or women) do not differ much from the probable spread of the answers "predicted" in sampling and probability theory.

Certain questions pertaining to conservation and conservation efforts used an aggregate data approach whereby similar data sets were accumulated to form a larger sample size establishing a higher confidence interval, forecasting value and modeling data.

In these instances, all of the sub-datasets from the entire UtilityPULSE database for 2013 were concatenated in order to use the average of all the control samples for comparison. The cumulated population base for these questions was in excess of 6,000.

At a 95% confidence level the margin of error is ±1.23 and at a 99% confidence level the margin of error would be ±1.62. So the aggregate strategy has given a very good population sample size which better, or more accurately, reflects the true feelings and beliefs of the population as a whole.

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Culture, Leadership & Performance – Organizational Development	**Focus Groups, Surveys, Polls, Diagnostics**	**Customer Service Excellence**
Leadership development	Diagnostics ie. Change Readiness, Leadership Effectiveness, Managerial Competencies	Service Excellence Leadership
Strategic Planning	Surveys & Polls	Telephone Skills
Teambuilding	Customer Satisfaction and Loyalty Benchmarking Surveys	Customer Care
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Your personal contact is:

Sid Ridgley, CSP, MBA

Phone: (905) 895-7900 Fax: (905) 895-7970 E-mail: sidridgley@utilitypulse.com or sridgley@simulcorp.com

APPENDIX 4-2 – CONTRACTOR AND DEVELOPERS SATISFACTION SURVEY



Contractors & Developers Satisfaction Survey

March 2013

Horizon Utilities Corporation

horizon UTILITIES Looking beyond...



Horizon Utilities
Contractors & Developers
Satisfaction Survey

The primary objective of the Electric Utility Customer Satisfaction Survey for Contractors & Developers is to provide information that will support discussions about improving customer care at every level in your utility.

The survey analysis contained in this report is intended to assist decision makers in improving various processes, touch points and standards which affect customer satisfaction. Making tangible changes is the key to improved satisfaction levels.

This is privileged and confidential material and no part may be used outside of Horizon Utilities without written permission from UtilityPULSE, the electric utility survey division of Simul Corporation.

All comments and questions should be addressed to:

Sid Ridgley, Simul / UtilityPULSE

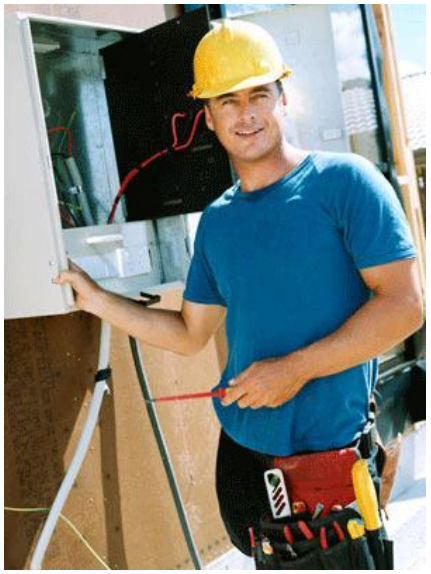
Toll free: 1-888-291-7892 or Local: 905-895-7900

Email: sidridgley@utilitypulse.com



Results…

Contractors and Developers, like every other customer segment have increasing expectations. Increasing expectations about timeliness, professionalism, value for money, trust, credibility and more. Since 2009, Horizon Utilities has examined the reactions of their contractor and developer customer segments. This focused practice of soliciting feedback helps the professionals at Horizon Utilities to track progress that is being made, assess the value of changes, and gain better insight into their contractor/developer needs and wants.



The survey was conducted in February (2013) and is based on one-on-one telephone interviews. For this year, notification of the potential for being contacted to complete a survey was sent out to a list of contractors and developers by Horizon. The good news is, the contractor response rate was 66% of those contacted while the developer rate was 20%. While we were able to increase the respondent sample size for electrical contractors by 20% the reality is, there is insufficient responses from developers to produce meaningful charts, graphs and analyses. However, the developer data received is included in Horizon's "Overall" scores.



❒ *Customer Satisfaction*

What is this thing called Customer Satisfaction? Actually it is two things: the consistent delivery of products & services at the agreed upon quality, time and price levels [we call these the tangibles] AND the consistent professional interaction with the customer [we call these the intangibles]. Which is more important?

Organizations which are product/service focused typically emphasize the flawless delivery of the contracted product. This is called a transactional focus. For example, when a contractor calls for a disconnect and it is executed just as agreed upon, then the transaction is successful. By all measures, one can say the job was done to requirements. However, if a contractor calls for a disconnect and it happens just as agreed upon, however the contractor felt/believed that the interaction was unprofessional, can the same be said that it was a successful transaction? We believe not.

While the transactional measure of the above example suggests the transaction was successful, the relationship measure would tell us that the transaction was not. The conclusion, both are important – but – it starts with delivering the product/service. We believe that, since 2009, Horizon professionals have moved from a strong customer transactional focus to one which recognizes that (for contractors) relationship is also very important. The results of this year's survey show that



Horizon professionals are focused on doing the job AND creating a meaningful relationship with contractors.

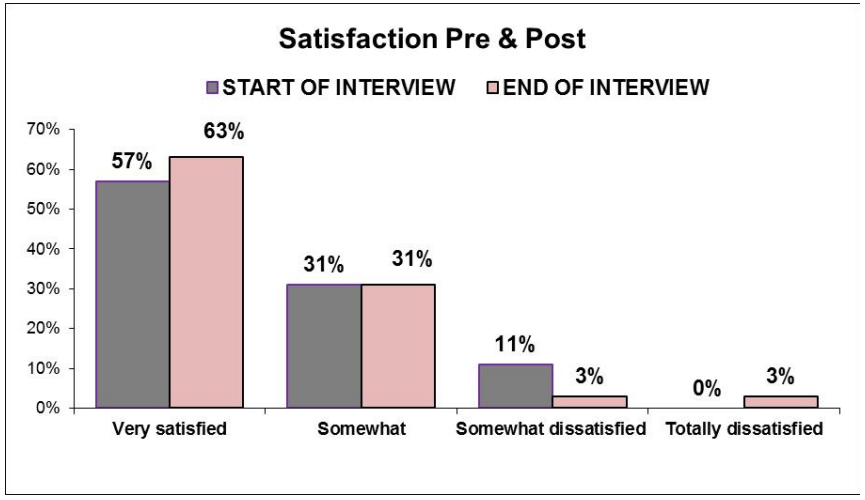
This is the third time Horizon Utilities has undertaken the Contractor & Developer Satisfaction Survey; key questions from the previous survey (2011) were retained. All questions on customer care expectations are based only on responses from those who had contact with Horizon Utilities.

The initial customer satisfaction rating given by respondents is 89% 'very + fairly' satisfied rating. Asking the same question towards the end of the survey, thereby giving more context to a respondent's mindset of the utility, changed the rating to 94%.

A couple of key conclusions:

1- The uplift from pre and post ratings demonstrates as customer understanding about the utility and those aspects deemed as important grow, so too will the ratings for satisfaction.

2- Horizon has made some definite progress since the last survey.



Base: total respondents



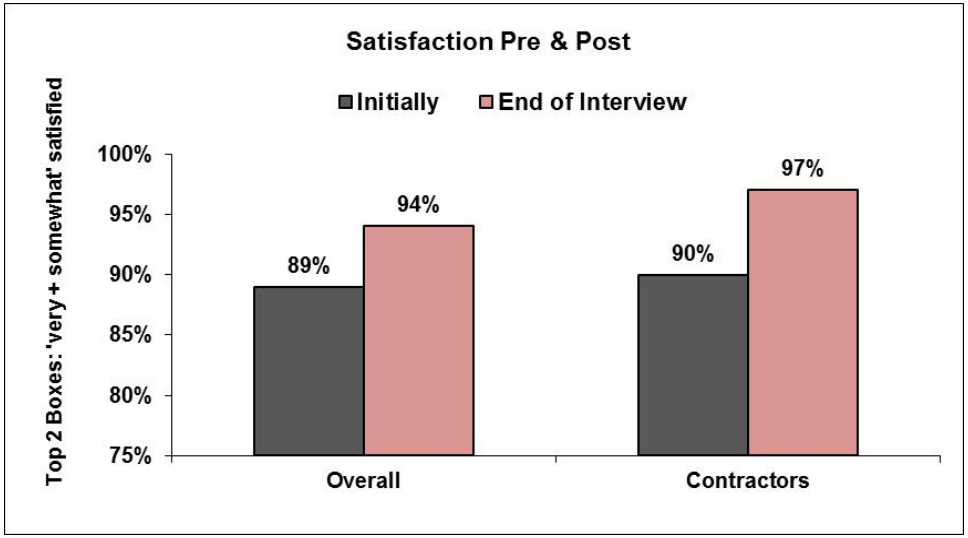
Satisfaction with Horizon Utilities			
Top 2 boxes: 'very + somewhat satisfied'	**Overall 2013**	**Overall 2011**	**Overall 2009**
Initially	89%	85%	78%
End of Interview	94%	89%	88%

Base: total respondents

Satisfaction with Horizon Utilities			
Top 2 boxes: 'very + somewhat satisfied'	**Contractors 2013**	**Contractors 2011**	**Contractors 2009**
Initially	90%	92%	80%
End of Interview	97%	92%	84%

Base: total respondents

It is important to note that 30 Contractors participated in the survey. As with any survey, smaller numbers can produce wider swings in data. However, UtilityPULSE does complete a number of surveys for various customer segments (including contractors), as such, we believe the findings throughout this report are consistent with other research we have completed.



Base: total respondents



Having a contractor post-satisfaction score of 97% in 2013 (compared to 92% in 2011) is wonderful, we do however have to recognize that smaller data samples do produce wider data swings. None-the-less we believe that improvement has been made over 2011.

In 2011, the contractor pre and post satisfaction scores did not change. In 2013 the pre-satisfaction score was 90% (2% lower than 2011) but ended up at 97% (7% uptick, 5% higher than 92%). We believe there are 2 *transactional factors* and 2 *enterprise attribute factors* that facilitated the uptick.

From a *transactional perspective* Horizon professionals have improved in 2 important areas: "the knowledge level of the Horizon representative" and "the quality of information and advice given". From an *enterprise attribute perspective*, i.e., perception about the company, increases over 2011 were in the attributes: "Horizon is a company that is easy to do business with" and "Horizon representatives are knowledgeable, professional and courteous".

The survey results should be viewed as largely positive; however, this year's survey did probe those who did express dissatisfaction with the overall services received by Horizon Utilities as to whether they would like to have a representative call them; only 1 Developer asked to be contacted.

Overall 94% of Contractors and Developers expressed satisfaction, while 6% reported they were either somewhat or totally dissatisfied. However, upon examining the trend amongst only those



respondents who were “very satisfied”, the top 4 attributes that drive satisfaction or dissatisfaction are:

1- Horizon is a company that is easy to do business with
2- Horizon representatives are knowledgeable, professional and courteous
3- Horizon delivers on its service commitments to customers
4- Horizon deals professionally with customers’ problems

In particular, attributes 1 & 2 (above) were seen as the most important to respondents who were “very satisfied” with Horizon. The truth is, all 10 attributes that we measured are important, however, the top 4 drivers of satisfaction for contractors/developers are listed above. The reality is, *being easy to do business with* AND *being knowledgeable, professional and courteous* are the attributes most strongly correlated to satisfaction or dissatisfaction. Having a strategy and game-plan to increase the contractor/developer viewpoint about Horizon on those top 4 attributes will be rewarded with higher levels of satisfaction.

Overall Satisfaction/Dissatisfaction with Horizon Utilities		
	Overall	**Contractors**
Top 2 boxes: ‘very + somewhat satisfied’	94%	97%
Bottom 2 boxes: ‘somewhat + totally dissatisfied’	6%	3%

Base: total respondents asked about satisfaction at the end of the interview



❒ *Contacting Horizon Utilities*

Of all those who had contact with Horizon Utilities over the past 12 months, Contractors cited a high incidence of contact at 97%. One of the reasons for this is, we concentrated on getting survey respondents from a list of contractors who were identified as customers with more frequent interactions with Horizon.

Percentage of Respondents indicating that they had contacted a Horizon Utilities representative in the past year			
	Overall 2013	**Overall 2011**	**Overall 2009**
Yes	94%	78%	90%
No	6%	22%	10%

Base: total respondents

Percentage of Respondents indicating that they had contacted a Horizon Utilities representative in the past year		
Contractors	**2013**	**2011**
Yes	97%	92%
No	3%	8%

Base: total contractors

Those who had contact with Horizon Utilities were also asked for the reason of their most recent contact. The most popular reason for contact was metering (24%), to order a connect or disconnect of service (15%), and service upgrade (15%).



Reasons cited for contacting Horizon Utilities in the past 12 months	
	Contractors
To order a connect or disconnect	17%
Metering	28%
Customer service	3%
Service question	14%
Service upgrades	17%
Maintenance or repair request	3%
Locates	7%
Scheduling	3%
Other (installations, engineering advice, design issues, new development issues, approvals)	41%

Base: total respondents who contacted Horizon Utilities in the past 12 months

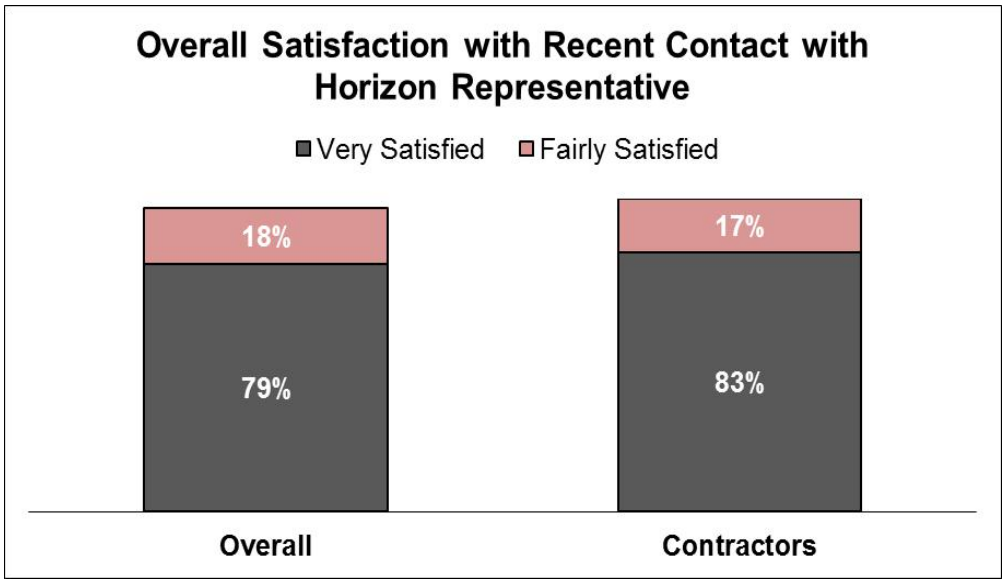
Customer Care Expectations

Superior customer service is an essential source of strength as companies continue to cope with an economic environment of slow growth, higher demands from customers, and a squeeze on profits. Our research shows that customers are looking for consistently high-quality interactions with frontline employees – with trust and credibility being very important. Once again, respondents' overall satisfaction about *recent contact with a Horizon Representative* is high at 97%, unchanged from 2011.

Overall Satisfaction with recent contact with Horizon Representative		
2013	**Overall**	**Contractors**
Top 2 boxes: 'very satisfied + somewhat satisfied'	97%	100%

Base: total respondents who contacted Horizon Utilities in the past 12 months





Base: total respondents who contacted Horizon Utilities in the past 12 months

Satisfaction levels with various aspects of customer service provided by Horizon Utilities are generally high; ranging from 82 to 97 percent. Keeping customers satisfied means not only fielding orders, billing inquiries, and new account applications, but also resolving issues and complaints quickly and efficiently.



Customer care expectations from those respondents who contacted Horizon Utilities		
Top 2 boxes: 'very satisfied + somewhat satisfied'	**Overall**	**Contractors**
The call was answered quickly	94%	97%
The knowledge level of the Horizon representative	97%	100%
The level of courtesy provided by the Horizon representative	97%	100%
The quality of information and advice given	94%	97%
The response time in answering questions and providing services	82%	83%
The consistency by which Horizon representatives interpret policies or regulations	85%	86%

Base: total respondents who contacted Horizon Utilities in the past 12 months

Overall, satisfaction scores amongst respondent Contractors have improved from the 2011 ratings. A note of caution however; while satisfaction scores from contractors about calls being answered more quickly increased by 10%, satisfaction scores on response time in getting questions answered incurred an 8% decrease; the utility needs to ensure that the ability to deal with calls once answered by supplying necessary answers and/or information to callers gets handled efficiently and promptly.



Contractors:

Customer care expectations from those respondents who contacted Horizon Utilities			
Top 2 boxes: 'very satisfied + somewhat satisfied'	**2013**	**2011**	**2009**
The call was answered quickly	97%	87%	76%
The knowledge level of the Horizon representative	100%	83%	84%
The level of courtesy provided by the Horizon representative	100%	96%	96%
The quality of information and advice given	97%	87%	92%
The response time in answering questions and providing services	83%	91%	84%
The consistency by which Horizon representatives interpret policies or regulations	86%	83%	80%

Base: total respondents who contacted Horizon Utilities in the past 12 months

When one quickly scans the tables above, it is clear that the lowest rated factor relates to "response time". For the professionals at Horizon, this is an opportunity area on which to focus, but to be fair, the same could be said for most organizations. Time is a precious commodity. As such, there is more pressure to extend hours of service beyond a "core". However, it would be incorrect to assume that "response time" has to be a human to human interaction all the time. When your website strategy & development ensures that frequently asked questions are answered easily and completely, then the need for, human-to-human response drops dramatically.



New for 2013 is the Customer Experience Rating. The CER is based on a number of factors that are related to the interaction between a customer and a Horizon professional. The CER for Horizon professionals is 88%. On the surface this rating appears to be very high (and it is). But put the rating in context – it would mean that about 9 out of 10 customers have a belief that they will have a good to excellent experience dealing with a Horizon professional. However, 1 in 10 is not anticipating a good to excellent experience, and as such could be even more challenging to serve.



The challenge is to recognize that every interaction is an opportunity to build confidence and trust with a customer. Customers, especially contractors, have long memories. So while an excellent transaction today creates a positive experience today, the perception created is that future transactions will be excellent too which is how you want your customers to feel. The corollary here however, is that a negative experience today will more than dampen expectations about future transactions, hence the need to continually monitor customer service quality and adapt to increase levels of expectations.



Every survey participant was given a series of attributes describing Horizon Utilities and asked to what extent did they agree or disagree with the attributes describing the utility. Overall the 2013 attribute scores have improved over 2011. Marked improvements over 2011 scores occurred in the following attributes:

- *+15 points* *Provides good value for your money*
- *+8 points* *Deals professionally with customers' problems*
- *+8 points* *Horizon is a company that is easy to do business with*
- *+7 points* *Delivers on its service commitments to customers*

Attributes describing Horizon Utilities		
Top 2 boxes: Agree 'strongly' + 'somewhat'	**Overall**	**Contractors**
Deals professionally with customers' problems	94%	94%
Customer-focused and treats customers as if they're valued	87%	88%
Provides good value for your money	87%	90%
Delivers on its service commitments to customers	91%	92%
Beyond creating jobs and paying taxes is a socially responsible company	85%	86%
Is a trusted and trustworthy company	95%	95%
Horizon representatives are knowledgeable, professional and courteous	94%	95%
Horizon is a company that is easy to do business with	90%	91%
Is pro-active in communicating changes and issues that may affect customers	81%	82%
Adapts well to changes in customer expectations	81%	81%

Base: total respondents with an opinion



It is no secret that “trust” and “credibility” are very important to your customers. Frankly having a discussion about what makes you trusted and what makes you credible is, in our opinion, a worthwhile developmental activity.



What may not be common knowledge is how the electrical contractor community themselves have been working on improving their perception of “trust” and “credibility” with their customers. And they are making progress.

In a survey completed in July 2012, contractors identified a major shift, as it relates to the job that has/is occurring. That shift is the belief that their customers expect them to be partners and participate fully in the project – not just be a product installer. Hence, contractors are included and consulted about various projects much earlier in the customer’s process than ever before. This means there will be increasing pressure on people, like Horizon professionals, to deliver timely information from knowledgeable people. It is our belief that there will be increasing expectations that Horizon act more like a partner than a supplier.



The very high ratings on the two factors of “trust” and “representatives that are knowledgeable” are a source of comfort, because Horizon and its professionals are trusted. However, when we look at the expectation of being a “partner” versus a “supplier”, then two opportunity areas emerge. The two attributes with the lowest scores:

- Is pro-active in communicating changes and issues that may affect customers – 81%
- Adapts well to changes in customer expectations – 81%.

We believe that failure to be pro-active and/or to understand the customer’s situation will have a negative effect on satisfaction and loyalty.

❒ ***Comparing contact with other utilities***

Human nature being what it is, we do like to make comparisons of self to others. As service providers there is some salvation knowing that you are performing better than other similar service providers but in a different industry. In addition, the rankings/ratings can lead to better discussions about what aspects of service could be improved.

The primary goal has to be to deliver outstanding service and value to your customers, regardless of what other utility-like entities may be doing. But comparisons do give us insight into the mindset of the contractor when they have to contact a number of utility-like entities. 2013 results reaffirm Horizon has done well.



Respondents were asked to compare their experiences with other utility-like services to their experiences with Horizon Utilities. These results can be useful for managers wishing to see how their service compares with others and, in doing so, generate questions and insights that could lead to higher levels of performance for Horizon.

Contacted one of the following in the past year:		
	Overall	Contractors
Gas Utility	51%	43%
Cable Company	37%	30%
Other Electric Utility	74%	80%

Base: total respondents

Comparison of Gas Utility vs Horizon Utilities Experience		
	Overall	Contractors
Much Better	28%	31%
Better	22%	31%
About the same	39%	31%
Slightly worse	0%	0%
Much worse	6%	8%
Don't know	6%	0%

Base: total respondents that in the past year have contacted a gas company



Comparison of Cable company vs Horizon Utilities Experience		
	Overall	Contractors
Much Better	23%	33%
Better	23%	33%
About the same	46%	33%
Slightly worse	0%	0%
Much worse	0%	0%
Don't know	8%	0%

Base: total respondents that in the past year have contacted a cable company

It should be noted that of the 30% of Contractors who said they had contacted a Cable company representative, over two-thirds (66%) indicated their experience with Horizon was much better or better than that with their cable company.

Comparison of Other Electric Utility vs Horizon Utilities Experience		
	Overall	Contractors
Much Better	35%	38%
Better	23%	21%
About the same	27%	25%
Slightly worse	15%	17%
Much worse	0%	0%
Don't know	0%	0%

Base: total respondents that in the past year have contacted another utility

80% of Contractors said that they had contacted another electric utility, yet over half (58%) had a much better or better experience with Horizon Utilities than the other utility.



❒ ***Importance of some value-added activities***

Value added services can be a differentiator, increase affinity, and improve the value proposition to customers. However, such new or additional services must essentially be meaningful. Such services must not only be innovative, they must effectively and pragmatically meet the needs - no more, no less - of those subscribing to them.

In other research that UtilityPULSE has conducted in the electric utility industry, it is true, that customers expect their utility to be pro-active, knowledgeable about what is going on in the industry, and keeping an eye out for future trends. Customers know, at least deep down, there is no such thing as status quo – hence the belief that everything needs to be updated. In addition given that time is a valued commodity, any value-added activity that saves customers time while simultaneously educating and informing, are going to be seen as valuable.

The following section serves to examine the perception of importance of certain current offerings made by Horizon Utilities, these are:

- Providing seminars on subjects such as green energy
- Improving the website to automate requests for connects, disconnects or service
- Improving the website with self-help information such as having a library for policies, forms and procedures



- Horizon actively participating in local electrical, construction or developer associations

- ***Importance of providing seminars on subjects such as green energy***

Alternative energy is moving forward because it must. Consumers, businesses and governments alike are widely acknowledging that cleaner, more sustainable sources of energy are needed. Overall 71% felt it was important for Horizon Utilities to provide seminars on subjects such as green energy to communicate the specific benefits of purchasing renewable energy products and energy efficiency technologies and services.



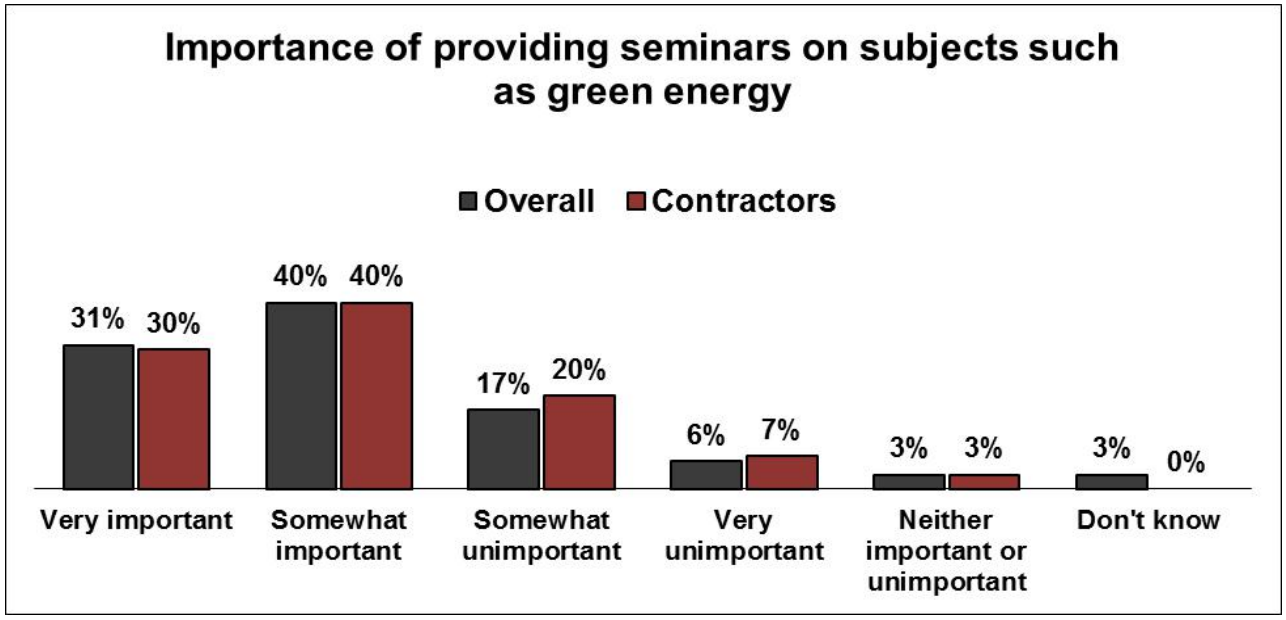
Not much has changed since 2009 when it was about 70%. Though 4 years has passed the reality is, the hunger for information on green energy remains strong.

End-use customers (i.e., residential, small commercial) often site cost as the great barrier for adopting products and services that reduce consumption. A knowledgeable contractor could have opportunities to dispel many of the myths which exist.



Importance of providing seminars on subjects such as green energy		
	Overall	Contractors
Top 2 boxes: ‘very important + somewhat important’	71%	70%
Bottom 2 boxes: ‘somewhat unimportant + very unimportant’	23%	27%
Neither important or unimportant	3%	3%
Don’t know	3%	0%

Base: total respondents



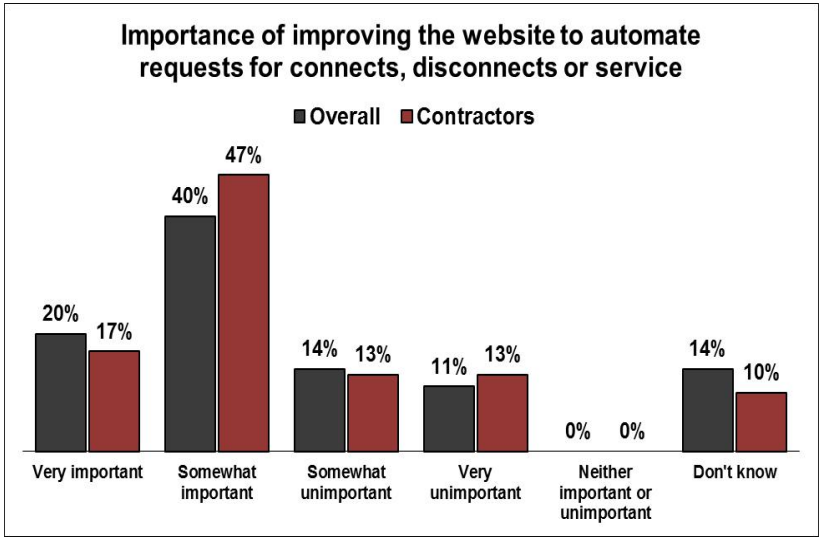


❖ ***Importance of improving the website to automate requests for connects, disconnects or service***

Importance of improving the website to automate requests for connects, disconnects or service	Overall	Contractors
Top 2 boxes: 'very important + somewhat important'	60%	63%
Bottom 2 boxes: somewhat unimportant + very unimportant'	26%	27%
Neither important or unimportant	0%	0%
Don't know	14%	10%

Base: total respondents

Customers have come to expect high levels of service, where the click of a mouse provides instant response. Provision of electrical services is no different. Increasingly, different types of customers are expecting different levels of service. Automating the execution of connect and disconnect services via web access was seen as important by 60% of those surveyed. In 2011, it was at the two-thirds level (67%).

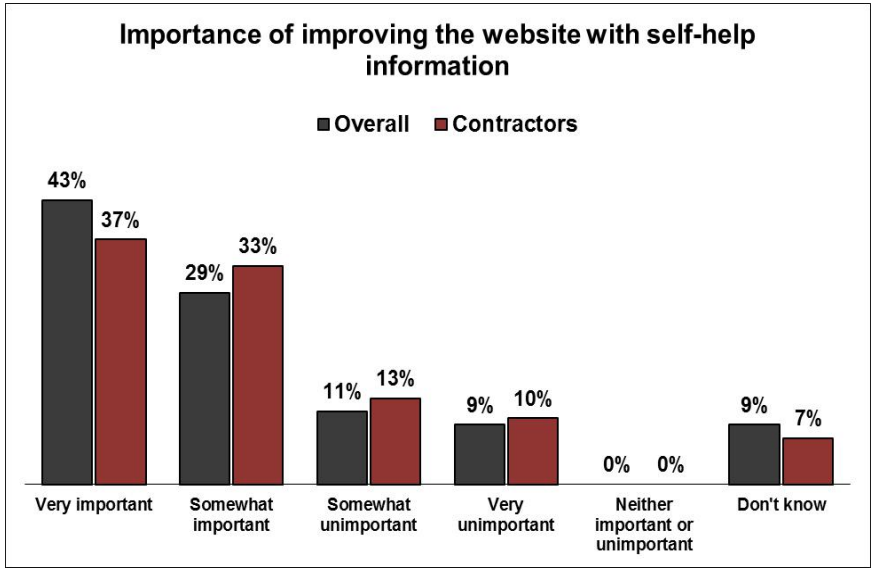




❖ ***Importance of improving the website with self-help information such as having a library for policies, forms and procedures***

Importance of improving the website with self-help information		
	Overall	**Contractors**
Top 2 boxes: 'very important + somewhat important'	71%	70%
Bottom 2 boxes: 'somewhat unimportant + very unimportant'	20%	23%
Neither important or unimportant	0%	0%
Don't know	9%	7%

Base: total respondents



A well-designed resource library can be a key factor in converting website visitors to changing the perception of timely response. At worst, resource centers can be tough to navigate and difficult to search, leaving visitors frustrated and only too happy



to seek their information elsewhere. Improving the user experience by making the library easy to browse, search and navigate is significant, as well as allowing user interactions like commenting, resource ratings, social network sharing which are quickly becoming key features in the ever expanding social media context.

- ***Importance of Horizon actively participating in local electrical, construction or developer associations***

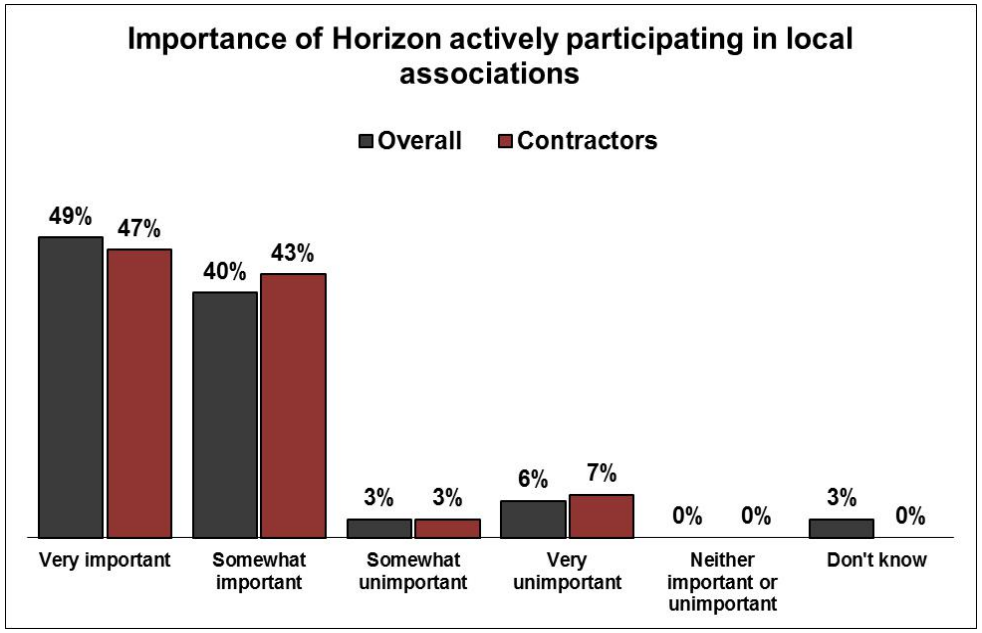
Beyond the theoretical reputational boost, corporate involvement in local associations does provide strategic value. There is an opportunity to get acquainted with others in the field, gain perspective from them and from speakers and programs that address specific hot topics, legislative and/or industry standards issues and other pertinent current events. This sentiment is backed by Contractors and Developers. Overall 89% of the respondents agreed it was important for Horizon Utilities to actively participate in local associations.

The truth of the matter is, the electrical contractor job is shifting from product buyer & installer to specifier & designer in many project situations. One could say that an electric contractor has a bigger say in the products that are used in a project today than they did even a short 5 years ago. This is evidenced by the frequency that electrical contractors are involved in the early stages of a design/build project.



Importance of Horizon actively participating in local electrical, construction or developer associations	Overall	Contractors
Top 2 boxes: 'very important + somewhat important'	89%	90%
Bottom 2 boxes: 'somewhat unimportant + very unimportant'	9%	10%
Neither important or unimportant	0%	0%
Don't know	3%	0%

Base: total respondents



At one time, one could argue that the electrical contractor job was relatively simple and relatively easy. Well no more. It is no longer simple and easy. Building systems are interlocked with communication links and data hubs – complicated. Contractors are expected to have a broad range of expertise. The bottom line? Contractors appreciate working with suppliers and other professionals who understand their everyday challenges.



❒ *Service Improvements*

No organization can ever assume that it is ever complete or final. The concept of continuous improvement is drawn from the respected Japanese industrial philosophy known as Kaizen. By applying a willingness to always seek improvements, Horizon Utilities will continuously evolve to accommodate new breakthroughs in energy research, new innovations in technology, and evolving best practices in efficiency, conservation and customer service.

One or two most important things Horizon Utilities could do to improve service	Overall	Contractors
Timelier/faster response	17%	13%
More / Better communication / Information	3%	3%
Better service	3%	0%
Longer hours / after service hours	3%	3%
Easier accessibility/direct contact	6%	7%
Other (includes: more responsive/ flexible, lower costs, knowledgeable representatives)	29%	30%
Satisfied with service	23%	23%
Nothing	17%	20%
Don't know	6%	3%

Base: total respondents



Appendix A: Recommendations for Next Time

This includes our thoughts about making improvement to the methodology and processes around conducting future surveys for these customer segments.

Appendix B: Operational Recommendations

We believe that the real value of gathering survey information is the debate and dialogue that ensues between professionals who are committed to and engaged in delivering the promises of the organization to the target customer segment. None-the-less we have included a number of recommendations as “fuel for thought”.

Electric utilities are not immune to the shifts in societal attitudes towards organizations that exist in their community. They expect the utility and its people to understand their needs and wants, to provide high quality and reliable services (and to do this safely). When a contractor contacts you for a locate, or connect, do they expect more? Absolutely.

We encourage you to take the time, discuss the data, and determine ways to leverage the results from your 2013 customer satisfaction survey.



Sid Ridgley
Simul / UtilityPULSE Telephone: 905-895-7900 Email: sidridgley@utilitypulse.com



Appendix A: Recommendations for next time

1. Having a valid name or as a minimum a contact name will get better results.
2. Sample sizes were very small. We need to increase the sample size especially for Developers.
3. Send a pre-notification letter/postcard to customers (if name is unknown) letting them know about the upcoming survey and how they could go about updating their contact information in advance of the survey being conducted.
4. An option that could be mentioned in the pre-notification letter/postcard is to allow customers to go online and update their information themselves. This can be done through a unique online form on your website.
5. Consider using internal resources (during slower times) and/or using summer students to update the contact name/information.
6. For contractors it may be more effective to solicit feedback upon the completion of each project. Instead of trying to conduct a survey every couple of years, implement a system of continuous follow-up. We could talk to you about using an independent & objective 3rd party "rolling system".



Appendix B: Operational & Other Recommendations:

1- Improve the accuracy of Customer Contact Information.

2- It could be worthwhile to know how your customers are using technology i.e., texting, emails. There may be opportunities to speed up response times for certain processes. For example would it be worthwhile to text an electrical contractor 1 hour before the scheduled time for a connect or disconnect?

3- Recognize that the contractor's role has shifted, as such, conduct informal lunch n'learn and/or breakfast meetings simply to gather intelligence about the industry.

4- Consider actually hosting 1 of the OEL chapter meetings at your location. This would hold true for Developer accounts as well.

5- Questions and opportunities around Green energy, energy conservation and more are of interest to Contractors and Developers. Targeted information sessions/seminars would be a value-added activity.

6- Customers – whether they be electrical Contractors, or Developers – appreciate one point of contact.

7- Contractors and Developers appreciate a simplified fee structure. A review could be in order.

8- Recognizing that it may be possible for electrical contractors to work with more than 1 Professional at Horizon, we would recommend instilling some consistency (doesn't have to be rigid conformance) to things such as email taglines and contact information.



9- Undertake a review of all correspondence (print, electronic) that goes to Contractors and Developers and simply ask yourself is there a consistency of branding? Format?

10- Evaluate the possibility of small/modest sponsorship for various associations that these target customers belong to.

11- Take a look at your website to determine what "self-service" or "automation" options can be added or improved e.g., request for connect or disconnect, library of forms. Any website self-help features available must be easy to access and simple to use. We'll provide a cautionary note on this recommendation – data dumping forms and information on a website for these customer groups could actually cause dissatisfaction.

12- While it would be nice to have a full self-service website, we believe that respondents to this survey have the habit of "calling" when they need information. While some website improvements may be undertaken, we believe, until customers' habits change, the priority should be on improving the primary channel for contacting Horizon Utilities.

13- Tie future improvements to the feedback received in this survey. This would demonstrate that you listen, you reflect on the feedback and you act on the feedback. Electrical contractors get surveyed by others and as such, often will harbor the belief that "nothing happens anyway".

14- We recommend working with your internal communications department to develop a communique that could be distributed to electrical contractors, (like a new article or bulletin), outlining some of the findings.



Method

The findings in this report are based on telephone interviews conducted for Simul Corp. by Consumer Contact Ltd. between January 30 and February 12, 2013 with 35 respondents (30 Contractors; and 5 Developers).

The sample of phone numbers chosen was drawn randomly to insure that each business phone number on the list had an equal chance of being included in the poll.

In sampling theory, in 19 cases out of 20 (95% of polls in other words), the results based on a random sample of 35 (out of a population of 3,500) commercial customers will differ by no more than ±16.6 percentage points where opinion is evenly split.

This means you can be 95% certain that the survey results do not vary by more than 16.6 percentage points in either direction from results that would have been obtained by interviewing all Horizon Utilities customers.

The margin of error for the sub samples is larger. To see the error margin for subgroups use the calculator at http://www.surveysystem.com/sscalc.htm.

Interviewers reached 38 businesses from the 69 eligible customers supplied by Horizon Utilities and Simul/UtilityPULSE. The 35 who completed the interview represent a 92% response rate.

The margin of error refers only to sampling error; other non-random forms of error may be present. Even in true random samples, precision can be compromised by other factors, such as the wording of questions or the order in which questions were asked.

Random samples of any size have some degree of precision. A larger sample is not always better than a smaller sample. The important rule in sampling is not how many respondents are selected but how they are selected. A reliable sample selects poll respondents randomly or in a manner that insures that everyone in the population being surveyed has an equal chance of being selected.

How can a sample of only several hundred truly reflect the opinions of thousands or millions of electricity customers within a few percentage points?

Measures of sample reliability are derived from the science of statistics. At the root of statistical reliability is probability, the odds of obtaining a particular outcome



by chance alone. For example, the chances of having a coin come up heads in a single toss are 50%. A head is one of only two possible outcomes.

The chance of getting two heads in two coin tosses is less because two heads are only one of four possible outcomes: a head/head, head/tail, tail/head and tail/tail.

But as the number of coin tosses increases, it becomes increasingly more likely to get outcomes that are either close to or exactly half heads and half tails because there are more ways to get such outcomes. Sample survey reliability works the same way but on a much larger scale.

As in coin tosses, the most likely sample outcome is the true percentage of whatever we are measuring across the total customer base or population surveyed. Next most likely are outcomes very close to this true percentage. A statement of potential margin of error or sample precision reflects this.

Some pages in the computer tables also show the standard deviation (S.D.) and the standard error of the estimate (S.E.) for the findings. The standard deviation embraces the range where 68% (or approximately two-thirds) of the respondents would fall if the distribution of answers were a normal bell-shaped curve.

The spread of responses is a way of showing how much the result deviates from the "standard mean" or average. In the Horizon Utilities data on corporate image, Simul converted the answers to a point scale with 4 meaning agree strongly, 3 meaning agree somewhat and so on (see in the computer tables).

For example, the mean score is 3.79 for “is a trusted and trustworthy company”. The average is 3.48 for “provides good value for your money”.

For delivers on its service commitments to customers the standard deviation is 0.70. For deals professionally with customer’s problems the S.D. is 0.45. These findings mean there is a wider range of opinion – meaning less consensus – about whether Horizon Utilities delivers on its service commitments to customers than about whether Horizon Utilities deals professionally with customer’s problems.



Beneath the S.D. in the tables is the standard error of the estimate. The S.E. is a measure of confidence or reliability, roughly equivalent to the error margin cited for sample sizes. The S.E. measures how far off the sample's results are from the standard deviation. The smaller the S.E., the greater the reliability of the data.

In other words, a low S.E. indicates that the answers given by respondents in a certain group (such as contractors, developers) do not differ much from the probable spread of the answers "predicted" in sampling and probability theory.

Data in isolation are not as useful as findings compared with other data. To facilitate comparisons, Simul applied significance testing in the computer analysis to highlight where Horizon Utilities bill payers differ significantly from respondents in other Simul/UtilityPULSE surveys.



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ADDITIONAL DETAILS ON OPERATING COSTS

OVERVIEW OF ADDITIONAL DETAILS ON OPERATING COSTS

As stated in section 2.7.3 of the Chapter 2 Filing Requirements, the Board requires further detail on the following items:

- Employee Compensation;
- Shared Services and Corporate Cost Allocation;
- Purchase of Non Affiliate Services;
- One-time Costs;
- Regulatory Costs;
- Low Income Energy Assistance Programs ("LEAP"); and
- Charitable and Political Donations.

This Tab of Exhibit 4 includes a Schedule for each of these categories of costs.

EMPLOYEE COMPENSATION

Horizon Utilities' compensation cost drivers are comprised of: annual negotiated pay increases and wage progressions for unionized employees; non-union inflationary adjustment increases, and non-union incentive payouts based on performance results. Horizon Utilities' compensation philosophy is to assure internal equity and external competitiveness through a total compensation program of both pay and benefits that will help attract and retain high performing talent; motivate employee performance; and focus and reward achievements that support the organization's business goals and objectives.

Horizon Utilities participates in a variety of surveys and certain of these are of such a confidential nature that we cannot disclose the results but more so that we cannot disclose the existence of such survey. In addition, Horizon Utilities engages a third-party compensation consultant from Mercer to inform the non-union salary structure and annual adjustments relative to appropriate market comparators and economic outlook.

Other Compensation and Benefits

Other compensation comprises overtime and additional premium payments for on-call and shift work as well as industry standard group insurance benefits including pension; health; dental; long-term disability and life insurance; and post-employment benefits (retiree benefits). The cost drivers for the increase in this category, year-over-year, incorporate increases in benefit rates, in particular annual group insurance benefit rate increases and OMERS pension plan contribution rates. Year-over-year wage increases also result in an overall increase in benefit expenditures as many of these costs are calculated as a percentage of employee wages.

Horizon Utilities expects that, assuming no major change in actuarial assumptions, the post-retirement benefit expense will increase from 2011 to 2019 as active members accumulate more years of service, and as the membership base ages and moves closer to retirement. For more information, please refer to the Eckler Actuarial Report in Appendix 4-4.1 of this Exhibit.

Horizon Utilities' Total Compensation Program

The total compensation program is designed to support the organization's compensation philosophy of ensuring internal and external competitiveness of both pay and benefits that will motivate and reward performance aligned with critical business objectives, and attract and retain the right mix of skills and talent to successfully deliver organizational results

The Mercer Compensation Letters, included as Appendix 4-5 of this Exhibit, summarizes Horizon Utilities' participation in recent reviews of compensation levels. Horizon Utilities reviews its compensation practices on an annual basis through participation in various salary surveys (as mentioned above) and engages Mercer to complete an independent review of executive and non-executive total compensation against competitive market compensation data.

Inflationary Adjustments and Merit Increases

The salary structure for non-union employees consists of various pay grades representing jobs of similar scope and responsibility. A formalized framework exists to evaluate positions and place them within a pay grade. This ensures internal equity among various salaried positions throughout the company. Base salaries are directly tied to an individual's demonstrated competencies to operate at an effective level. As a performance driven organization, non-union employees achieve base line salary increases through demonstrated competency and skill development as appropriate for their position and their experience.

Pay grades are adjusted annually based on an inflationary adjustment set in consultation with a third party compensation specialist that factors market and economic conditions. Merit increases rewards employees performance and behaviour through a permanent increase to base salary within the range for the pay grade. Horizon Utilities conducts annual performance reviews to determine merit increases.

Horizon Utilities has a formal and disciplined approach in awarding merit increases to individuals. Each Director reviews the performance of each of their respective non-union employees, taking into consideration the remarks and comments from the employee's direct supervisor who conducted the review. Individual Directors are provided a "salary pool" based on the overall percentage payroll increase as budgeted. The departmental Director makes a merit increase recommendation for each employee that is reviewed with his or her respective

Executive Management Team ("EMT") member. The overall percentage payroll increase budgeted for non-union employees is informed by competitive market data.

The EMT reviews each individual merit pay increase recommendation in a roundtable assessment to provide consistency across the organization. This assessment includes a discussion of each employee and their respective performance based on: demonstrated behaviours and competencies that support the core values; working with others across the organization; teamwork; leadership capabilities; and potential to be considered for future advancement/development in the organization. Once the executive review is concluded, management informs its respective employees individually and discusses future development plans, as appropriate.

Incentive Based Pay

All non-union employees participate in an incentive pay program. An incentive based performance culture is encouraged by aligning employee efforts with the corporate vision and the short and long-term goals of the company. Corporate objectives are set out annually that align to corporate strategies for success and continued growth. Horizon Utilities uses a balanced scorecard approach to setting corporate and individual objectives to ensure alignment with results supporting the four strategic pillars: "best performing utility"; "easy to do business with"; "grow our business profitability"; and "great place to work".

Collective Agreement

IBEW Local 636 represents the unionized workforce at Horizon Utilities. Horizon Utilities' collective agreement with unionized staff provides for negotiated wage increases and employee step progressions. The current collective agreement is in effect from June 1, 2011 to May 31, 2015. Labour wages are the result of a collective bargaining process and future wage increase estimates are based on factors such as recent settlements reached in the Hamilton area and Ontario, both within and outside of the industry, and in consideration of the Consumer Price Index. Horizon Utilities continues to research recent collective bargaining outcomes with relevant comparator organizations that will inform the collective bargaining strategy. Negotiations with IBEW Local 636 will commence early in 2015.

Benefits

Benefits plans and programs are comprehensive and representative of industry standards, an important consideration for attracting and retaining employees. Benefits include: OMERS pension contributions, medical insurance, life insurance, vacation and leave policies, and a company-sponsored retirement plan. These plans are designed to address the health and wellness needs of the employee population and to remain competitive in the marketplace.

Employer-paid compulsory levies such as Employment Insurance, Canada Pension Plan, Employer Health Tax and Workplace Safety Insurance Premiums are also included in benefits expenditures.

Performance Management Program

Management/Professional/Supervisory/Administrative Employees

Horizon Utilities' performance management program aligns employee performance goals and objectives to the attainment of strategic business objectives. The performance management program clarifies job responsibilities, performance and competency standards, and articulates specific annual objectives set through two-way dialogue between employee and supervisor. The program also provides for regular feedback to employees about their performance, establishes employee developmental needs, and encourages continuous learning.

Unionized Employees

All unionized employees have a formal performance review on a minimum of an annual basis to discuss their performance including areas that require improvement to meet job and/or performance goals.

Training and Development

Significant investments have been and continue to be made in the training and development of its employees in order to maintain a highly productive and skilled workforce. The employee base consists of skilled trades, technical staff, and professional/administrative staff. Training costs for the trades are primarily associated with developing competency and proficiency, in

order to conduct work safely and efficiently. However, across the organization, employees are being impacted by new technologies and industry changes that require new skills. Horizon Utilities makes appropriate investments in training for current and newly hired employees to develop and enhance the skills required to utilize new technologies being introduced to support operational and customer service process improvements and business sustainment.

Workforce Plan:

Horizon Utilities outlined its WLSP in its 2011 CoS Application (EB-2010-0131). This strategy identified the need and intent to be proactive and strategic as it relates to investment in future resources within the skilled trades. Horizon Utilities has updated this plan to include a continued focus on skilled trades and the assessment of new skillsets required with the introduction of new technology across the organization. Matching resource capability with work demands in the electrical distribution sector often requires long planning timeframes to accommodate competition for talent and long lead times for training, knowledge transfer, and proficiency. Horizon Utilities' WLSP provides reasonable projections of retirements, attrition and hiring requirements for the Test Years 2015 through 2019 and regularly assessing the availability of resources and identifying strategies to mitigate risk through workforce planning is critically important to sustaining business operations. Horizon Utilities reviews and refines its WLSP on an annual basis. The WLSP is provided in Appendix 4-3 of this Exhibit.

Employee Compensation and Benefits

The employee complement, compensation, and benefits are set out in Tables 4-53 and 4-54 below (corresponding to the Board's Appendix 2-K). Total compensation is calculated as the sum of the compensation components for 2011 through to 2013 Actual. Budgeted figures have been used for the 2014 to 2019 period. Horizon Utilities assumes an inflationary rate for all salaries, wages, and benefits of [redacted] for 2014 and [redacted] for 2015 – 2019.

Calculation of FTE

Tables 4-53 and 4-54 (the Board's Appendix 2-K) below provide detailed information on Horizon Utilities' work force using the FTE metric. Horizon Utilities provided a similar table in its 2011 CoS Application using the 'headcount' metric. Horizon Utilities has reviewed its methodology for more consistent reporting of FTE and has restated its 2011 headcount of 413 to 412.1.

Horizon Utilities has aligned its definition of an FTE with that outlined in the Board's *Filing Guide for Electricity Distributors' Reporting and Record Keeping Requirements* (the "Guide") dated April 3, 2012. The Guide outlines that temporary, permanent, part-time and full-time staff should be included in the FTE calculations. Horizon Utilities has followed this guide and calculates FTE as follows:

FTE = Actual Paid Hours / (Regular Weekly Scheduled Hours X 52 weeks)

As an example, if a full time position were paid for 1,820 hours in 2011 and the regular weekly scheduled hours were 35, the 2011 FTE would be 1,820 / (35 hours X 52 weeks) = 1.0 FTE; for a part-time individual who worked 500 hours in 2011 the FTE would be 500 / (35 hours X 52 weeks) = 0.27 FTE.

Appendix 2-K excludes CDM employees, Customer Care employees, students, independent contractors and all other Horizon Utilities employees working directly for affiliates of Horizon Utilities. The details pertaining to the treatment of CDM and Customer Care are discussed in Tab 4, Schedule 3 in this Exhibit.

Horizon Utilities engages independent contractors to provide interim support for vacancies that are difficult to fill (i.e., labour market) and minimize business disruption. However, these resources are not included in Appendix 2-K.

Table 4-53 – Chapter 2 Filing Requirement- Appendix 2-K – Horizon Utilities' Employee Complement and Compensation - 2011 Board-Approved - 2014 Bridge Year

	Last Rebasing Year 2011-Board Approved	Last Rebasing Year 2011 Actual	2012 Actuals	2013 Actuals	2014 Bridge Year
Number of Employees (FTEs including Part-Time)					
Management (including executive)	67.0	62.8	66.0	65.7	77.0
Non-Management (union and non-union)	282.1	265.0	266.7	268.9	277.5
Total	349.1	327.8	332.7	334.6	354.5
Total Salary and Wages including overtime and incentive pay					
Management (including executive)	$ 8,387,295	$ 8,057,110	$ 8,572,299	$ 9,018,046	$ 9,904,725
Non-Management (union and non-union)	$ 21,443,982	$ 20,664,274	$ 21,050,205	$ 23,116,212	$ 23,731,287
Total	$ 29,831,277	$ 28,721,383	$ 29,622,505	$ 32,134,258	$ 33,636,011
Total Benefits (Current + Accrued)					
Management (including executive)	$ 1,902,998	$ 1,970,084	$ 2,244,892	$ 2,490,296	$ 2,769,927
Non-Management (union and non-union)	$ 5,918,229	$ 5,512,762	$ 6,167,404	$ 6,802,019	$ 7,139,563
Total	$ 7,821,226	$ 7,482,845	$ 8,412,296	$ 9,292,315	$ 9,909,490
Total Compensation (Salary, Wages, & Benefits)					
Management (including executive)	$ 10,290,293	$ 10,027,194	$ 10,817,192	$ 11,508,342	$ 12,674,651
Non-Management (union and non-union)	$ 27,362,210	$ 26,177,035	$ 27,217,609	$ 29,918,232	$ 30,870,850
Total	$ 37,652,503	$ 36,204,229	$ 38,034,801	$ 41,426,573	$ 43,545,501

Table 4-54 – Chapter 2 Filing Requirement- Appendix 2-K – Horizon Utilities' Employee Complement and Compensation - 2015 Test Year – 2019 Test Year

	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Number of Employees (FTEs including Part-Time)					
Management (including executive)	77.0	77.0	77.0	77.0	77.0
Non-Management (union and non-union)	270.8	268.3	267.3	267.3	267.3
Total	347.8	345.3	344.3	344.3	344.3
Total Salary and Wages including overtime and incentive pay					
Management (including executive)	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]
Non-Management (union and non-union)	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]
Total	$ 33,808,561	$ 34,470,180	$ 35,339,657	$ 36,322,399	$ 37,339,426
Total Benefits (Current + Accrued)					
Management (including executive)	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]
Non-Management (union and non-union)	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]
Total	$ 10,024,679	$ 10,252,949	$ 10,603,484	$ 10,907,691	$ 11,228,386
Total Compensation (Salary, Wages, & Benefits)					
Management (including executive)	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]
Non-Management (union and non-union)	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]
Total	$ 43,833,240	$ 44,723,129	$ 45,943,141	$ 47,230,090	$ 48,567,812

Total Compensation Variances 2011 - 2014 Bridge Year

2011 Actual versus 2011 Board-Approved

The 2011 Actual total compensation was $1,448,274 or 3.8% lower than Board-Approved due to delays in hiring new and replacement staff. The following sections outline details associated with total compensation costs and FTE in Table 4-53 above.

2011 Total Compensation

The 2011 workforce had 21.3 fewer FTE than the 2011 Board-Approved as a result of vacant positions within the organization, and corresponding lower than approved total compensation costs. The variance above is comprised of: (i) total benefit costs of $338,381; and (ii) total salary and wages (including overtime and incentive) of $1,109,894.

2011 Change in Workforce

Horizon Utilities experienced an employee turnover rate of 7.72% in 2011. The turnover rate refers to voluntary and involuntary terminations (including retirements). The turnover rate was largely responsible for the compensation variance and vacancy rate.

Labour market conditions resulted in delays in hiring numerous positions in the organization largely due to the lack of available candidates with the desired skills, experiences, and aptitudes. Changes in organizational requirements for some of the positions necessitated a modification of job specifications which extended the recruitment cycle into the following year (i.e., the positions remained vacant in 2011).

2011 FTE Actual versus 2011 Board-Approved

The FTE level for the Management workforce was lower than expected by 4.2 FTE due to vacancies experienced in 2011.

The level of FTE in the Non-Management workforce was lower than expected by 17.1 FTE due to vacancies experienced in 2011.

The internal interview process and in some cases subsequent promotions into vacant positions also resulted in further movement among employees contributing to the delay in hiring permanent replacements.

2011 Apprentice Positions

Horizon Utilities advanced the hiring of trades employees in order to have qualified personnel available to replace trades employees as they retired and to support the increasing distribution capital program.

In 2011, Horizon Utilities amended its recruitment practices to adopt best practices (e.g. to include physical testing) to better assess potential candidates. This process change created a delay in recruiting efforts for apprentice positions. Horizon Utilities generally recruits for a group of apprentices, rather than one at a time, in order to realize cost efficiencies (e.g. to combine testing activities for several candidates for/on a common date). Horizon Utilities completed the recruitment and selection of a group of apprentices in the first quarter of 2012.

Table 4-55 details the vacant apprentice positions in 2011:

Table 4-55 – Apprentice Positions Deferred from 2011 to 2012

Category	Job Title	Count of Positions	Start Date
Union	Apprentice Line Maintainer	3	1/23/2012
Union	Apprentice Substation Maintainer	1	1/23/2012
Union	Apprentice Cable Splicer	2	1/23/2012

2012 Actual versus 2011 Actual

The two key drivers of the $1,830,572 or 5.1% increase compared to 2011 as identified in Table 4-53 above were the filling of vacancies and increases in total compensation costs. The following sections provide the details associated with changes in total compensation costs and FTE in for this period.

2012 Compensation Changes

For 2012, salary bands were adjusted by 3.0% for the non-union workforce as informed by independent competitive market-based data provided in Tab 2, Schedule 2 of this Exhibit.

In accordance with the Collective Agreement, unionized employees received a 2.9% base wage increase effective June 1, 2012. Further details on the Collective Agreement are provided in Tab 2, Schedule 2, page 6.

For 2012, total benefits increased by $929,451 or 12.4% over 2011 largely due to higher benefit premiums and benefit costs driven by wage increases, such as the OMERS pension contribution rates, as discussed in Tab 2, Schedule 2, page 7 of this Exhibit.

2012 Change in Workforce Year-Over-Year

In 2012, Horizon Utilities experienced an employee turnover rate of 6.92%, a decrease from 7.72% in 2011.

FTE Comparison 2011 vs. 2012

The 2012 workforce consisted of an additional 4.9 FTE beyond those reported in 2011. The details of this variance by employee category are described below.

The Management workforce consisted of an additional 3.2 FTE in 2012 as compared to 2011. This variance is attributed to: the hiring of new positions; filling positions that were vacant in 2011 and/or vacancies carried over from 2011; offset by vacancies not filled in 2012.

The Non-Management level workforce consisted of an additional 1.7 FTE compared to 2011. This variance is attributed to: the hiring of new positions; filling positions that were vacant in 2011 and/or vacancies carried over from 2011; offset by vacancies not filled in 2012.

As positions become vacant through attrition or internal movement, management conducts a review and assessment to determine whether replacement is required or whether

opportunities exist for consolidation of work, reallocation of the position to a more value-added role, or position elimination.

2013 Actual versus 2012 Actual

Total Compensation Variances

The key drivers of the $3,391,772 or 8.9% increase compared to 2012, as detailed in Table 4-53, were: salary and wage increases ($1,284,833); the related cost of benefits which included premium increases ($880,019); overtime costs ($757,160); and an increase of 1.9 FTE ($239,283). Increases to salaries and wages are further discussed in Tab 2, Schedule 2, and overtime costs related to storm activities are further discussed in Tab 3, Schedule 3 of this Exhibit. The following sections provide details associated with changes in total compensation costs and FTE in Table 4-53 for this period.

2013 Compensation Changes

Salary bands were adjusted by 2.2% for the non-union workforce for 2013 as informed by independent competitive market-based data as referenced in Tab 2, Schedule 2 of this Exhibit.

In accordance with the Collective Agreement, unionized employees received a 3.1% wage increase.

Total benefits increased by $880,019 or 10.5% over 2012, primarily due to higher benefits premiums and benefits costs driven by wage increases for 2013 discussed further in this Schedule.

2013 Change in Workforce Year-Over-Year

In 2013, the turnover rate was 5.88%, which decreased from 6.92% in 2012.

FTE Comparison 2013 vs. 2012

The 2013 workforce increased by almost 1.9 FTE from 2012. The details of this variance by employee category are described below.

The Management FTE level decreased by 0.3 FTE from 2012 to 2013.

The Non-Management level workforce increased by 2.2 FTE compared to 2012. This variance is attributed to the hiring of new positions, filling positions that were vacant during 2012 and/or vacancies carried over from 2012 which is offset by positions reductions and/or vacancies not filled in 2013.

2014 Bridge Year versus 2013 Actual

The key drivers of the $2,118,928 or 5.1% forecasted increase compared to 2013, as detailed in Table 4-53, are: an increase of 19.9 FTE ($1,473,980); salary and wage increases ($775,728); and the related cost of benefits ($617,175), offset by a reduction in overtime ($683,785). Increases to salaries and wages are further discussed in Tab 2, Schedule 2 of this Exhibit.

The 2014 workforce will consist of an additional 19.9 FTE as compared to 2013. This assumes that all positions are fully staffed and that new positions are filled as of the budgeted hire date.

The Management workforce consisted of an additional 11.3 FTE compared to 2013. This variance is attributed to: the hiring of new positions; and filling positions that were vacant during 2013 and/or vacancies carried over from 2013; offset by position reductions. There is an addition of three new positions and six vacancies carried over from 2013 which are assumed to be filled in 2014.

The Non-Management workforce consists of an additional 8.6 FTE compared to 2013. This variance is attributed to: the hiring of new positions; and filling positions that were vacant during 2013 and/or vacancies carried over from 2013; offset by positions reductions. In 2014, there is an addition of six new positions and two vacancies carried over from 2013 which are assumed to be filled in 2014. To support the GIS and ERP projects, five temporary positions will be added in 2014.

As positions become vacant through attrition or internal movement, management conducts a review and assessment to determine if replacement is required or opportunities exist for consolidation of work, reallocation of the position to a more value-added role, or position elimination. Seven positions will be permanently eliminated due to the implementation of

productivity improvements or strategic outsourcing as detailed in Tab 3, Schedule 4 of this Exhibit.

Detailed Explanation for Additional New Positions in 2014

- The Manager Engineering Systems & Asset Records will be responsible for the deployment, operation, administration, and continued development of key enterprise systems. This individual will ensure that GIS and Network Operating/OMS (OMS and SCADA) systems provide facility information, network surveillance and operating information and control tools that are current, accurate, reliable and responsive on a "24x7 availability" basis, as discussed in Tab 3, Schedule 3, page 56 of this Exhibit.
- The Supervisor, Engineering Systems will be responsible for ensuring the optimal function, performance, reliability, availability and security of Horizon Utilities' GIS, OMS and SCADA software systems and databases for users throughout the organization. This individual will lead and manage GIS/OMS Developers, as discussed in Tab 3, Schedule 3, page 57 of this Exhibit.
- The Supervisor, Design Technician will be responsible for the oversight, administration and co-ordination of technical designs. This position is responsible for: the technical competence in the design of capital projects; ensuring designs are completed with adequate lead times and within capital budget requirements; monitoring project estimates vs. actual costs; assisting in the preparation of capital and operating budget; and the health and safety management of staff and contractors managed by engineering including safety auditing and incident investigation This position also provides coaching mentoring and guidance to the team of Engineering Technicians, as discussed in Tab 3, Schedule 3, page 59 of this Exhibit.
- The Distribution Engineer - Wholesale Metering and Communications will be directly involved with distribution system design, calculation of losses, and the completion of totalization tables for the IESO. This position is responsible for the completion and maintenance of all required IESO documentation including the databases for all IESO-registered Wholesale Metering points and will perform engineering and analytical studies related to wholesale power metering equipment.

- Two Engineering Design Technicians will be responsible for the engineering design and construction of capital and maintenance projects on the electrical distribution system, required as a result of the increase in renewal capital investments, as discussed in Tab 3, Schedule 3, page 59 of this Exhibit.
- Two GIS Developers will provide system and database administration to develop, secure, maintain, analyze, support and ensure the availability of corporate utility distribution information systems which includes GIS and related digital/spatial systems/applications/programs, as discussed in Tab 3, Schedule 3 of this Exhibit.
- There are currently two Records Coordinators in the Asset Records function. Horizon Utilities requires one additional Records Coordinator. This position will be responsible to organize, investigate and retrieve required documentation for GIS records staff in support of their duties to update records based on as built construction documents, as discussed in Tab 3, Schedule 3 of this Exhibit.

Total Compensation Variances 2015 - 2019

2015 Test Year vs. 2014 Bridge Year

The key drivers of the $287,739 or 0.7% increase compared to 2014, as detailed in Table 4-54, were: salary and wage increases ($689,475) offset by a decrease of 7 FTE ($657,413) and the related cost of benefits ($115,189). Increases to salaries and wages are further discussed in Tab 2, Schedule 2 of this Exhibit.

The 2015 work force will consist of 7 fewer FTE than 2014. The details of this variance are described below:

The Non-Management level workforce will decrease by 7 FTE as explained by: a reduction of 4 FTE (temporary) that are no longer required as a result of the completion of the GIS and ERP projects; and a further reduction of 3 C&M FTE resulting from expected attrition through retirements without replacement as a result of increased capacity created by developing apprentices and productivity achievements as discussed in Tab 3, Schedule 4 of this Exhibit.

2016 Test Year vs. 2015 Test Year

The key drivers of the anticipated $889,889 or 2% increase compared to 2015, as detailed in Table 4-54, are: salary and wage increases ($843,098) offset by the decrease of 3 FTE ($227,904) and the related cost of benefits ($228,270). Increases to salaries and wages are further discussed in Tab 2, Schedule 2 of this Exhibit.

The 2016 workforce will consist of 2.5 fewer FTE than 2015. The Non-Management level workforce will decrease by 2.0 FTE in C&M due to expected attrition through retirements without replacement as a result of increased capacity from developing apprentices and productivity improvements and by 0.5 FTE resulting from the completion of the GIS project.

2017 Test Year vs. 2016 Test Year

The key drivers of the anticipated $1,220,012 or 2.7% increase compared to 2016, as detailed in Table 4-54, are: salary and wage increases ($871,991) offset by the decrease of 1.0 FTE ($73,970) and the related cost of benefits ($350,535). Increases to salaries and wages are further discussed in Tab 2, Schedule 2 of this Exhibit.

The 2017 workforce will consist of 1.0 less FTE than 2016. The Non-Management level workforce will decrease by 1.0 FTE in C&M due to expected attrition through retirement without replacement as a result of increased capacity from developing apprentices.

2018 Test Year vs. 2017 Test Year

The key drivers of the anticipated $1,286,949 or 2.8% increase compared to 2017, as detailed in Table 4-54, are: salary and wage increases ($896,386) and the related cost of benefits ($304,207). Increases to salaries and wages are further discussed in Tab 2, Schedule 2 of this Exhibit.

There is no expected change in the FTE level between 2017 and 2018.

2019 Test Year vs. 2018 Test Year

The key drivers of the anticipated $1,337,722 or 2.8% increase compared to 2018, as detailed in Table 4-54, are: salary and wage increases ($923,333); and the related cost of benefits

($320,695). Increases to salaries and wages are further discussed in Tab 2, Schedule 2 of this Exhibit.

There is no expected change in the FTE level between 2018 and 2019.

Employee Benefit Programs

The standard group insurance benefits for employees include: health; dental; long-term disability and life insurance; and post-employment benefits (retiree benefits). Horizon Utilities' employees are members of the OMERS Pension Plan. The cost drivers for the increase in this category, year-over-year, incorporate increases mandated by the OMERS Pension Plan, annual group insurance benefit rate increases, as well as increases in statutory benefits costs. Year-over-year wage increases also result in an overall increase in benefit expenditures as many of these costs are calculated as a percentage of employee wages. The change in FTE from 2013 to 2014 is the primary driver of the benefit cost increase in 2014. The year over year FTE changes were identified in Table 4-53 and 4-54. Horizon Utilities has provided the OMERS pension contribution rate information for the 2011 to 2013 period in Table 4-14. The cost of these benefits is summarized in Table 4-56 below:

Table 4-56 – Cost of Employee Benefit Programs 2011 – 2019

	2011 Board-Approved	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year
Life, Health*, LTD	3,606,445	3,347,772	3,620,459	3,877,825	4,047,765
OMERS Pension	2,215,285	2,252,717	2,818,939	3,270,736	3,625,336
Statutory: CPP, EI, EHT, WSIB	1,999,496	1,882,357	1,972,899	2,143,755	2,236,389
TOTAL BENEFIT COSTS	**7,821,226**	**7,482,845**	**8,412,296**	**9,292,315**	**9,909,490**

	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
Life, Health*, LTD	4,102,656	4,206,158	4,402,001	4,532,495	4,674,684
OMERS Pension	3,679,746	3,762,557	3,859,723	3,967,795	4,078,894
Statutory: CPP, EI, EHT, WSIB	2,242,277	2,284,234	2,341,760	2,407,400	2,474,808
TOTAL BENEFIT COSTS	**10,024,679**	**10,252,949**	**10,603,484**	**10,907,691**	**11,228,386**

* Includes post-retirement benefits

The primary driver of the year-over-year increase in benefits costs is the result of increases in employer contribution rates mandated by the OMERS Pension Plan in 2011, 2012 and 2013. OMERS costs represent 57% of the total benefits increase from 2011 to 2014. The contribution rates are provided in Table 4-14. At the time of this filing, it is unknown whether OMERS will increase contribution rates in the 2015 – 2019 Test Years. OMERS costs increased by $566,222, $451,797 and $354,600 in 2012, 2013 and 2014 respectively. In 2012, the cost increase is attributed to a 1.6% increase in contribution rates of $435,000 and year-over-year salary, wage and FTE increases of $131,222. In 2013, the cost increase is attributed to a 0.9% increase in contribution rates of $262,000 and year-over-year salary, wage and FTE increases of $189,797. In 2014, the cost increase of $354,600 is attributed to increased FTE.

There have been no material changes to Horizon Utilities' group benefits plan coverage since the 2011 Board-Approved year. Horizon Utilities engages in annual discussions with its group benefits provider regarding the renewal of health, dental, and vision coverage. Horizon Utilities has been successful in managing these benefit costs, with a slight reduction in premiums in 2012 compared to 2011, no premium increase in 2013 and modest increases in 2014 and beyond, in an environment of rising benefits costs. Horizon Utilities has experienced a total increase of 1.8% in healthcare premiums for active employees from 2011 to 2014 while statistics, provided by Great West Life, indicate that in 2011 alone average group market

premiums increased by 3.8%. Life, Health and Long term Disability benefits represent 29% of the total benefit increase from 2011 to 2014.

The overall cost of statutory employer paid benefits (i.e. CPP, EI, EHT, WSIB) is increasing year-over-year and driving benefits costs higher. The key drivers are: annual increase in maximum contribution rates for CPP and EI; WSIB rate increases in 2011, 2012 and 2013 as well as increases in maximum insurable earnings in each year; and increases in EHT as a result of increases in total payroll. Statutory employer paid benefits costs represents 15% of the total benefit increase from 2011 to 2014.

Current Accounting Treatment of Post-Employment Benefits

Horizon Utilities adopted the IFRS Employee Benefits standard IAS 19 effective January 1, 2011. The impact on the transition to IFRS is further discussed in Exhibit 6, Tab 2, Schedule 1. Under IFRS, the cost of employee future benefits is expensed as earned by employees based on employment service and is recorded as an expense in OM&A. Actuarial gains and losses in 2011 and beyond are recognized directly into Other Comprehensive Income ("OCI") under MIFRS. Formerly under CGAAP, such gains and losses (valuation increases in the liability) would have been amortized into OM&A over the estimated average remaining service life ("EARSL") of employees. This is not permitted under IFRS.

Actuarial gains and losses result from decreases or increases in the present value of the defined-benefit obligation as a result of changes in underlying actuarial assumptions and experience-based adjustments. Examples of causes of actuarial gains and losses include:

- Unexpectedly high or low actual rates of employee turnover, early retirement, or mortality, or increases in salaries, benefits (if the formal or constructive terms of the plan provide for inflationary benefit increases), or medical costs;

- The effect of changes to assumptions concerning benefit payment options;

- The effect of changes in estimates of future employee turnover, early retirement or mortality, or of increases in salaries, benefits (if the formal or constructive terms of a plan provide for inflationary benefit increases), or medical costs; and

- The effect of changes in the discount rate (described below).

Horizon Utilities has engaged Eckler, a firm of consultants and actuaries with considerable experience in the field of pensions and benefits, to assist in the development of the overall actuarial assumptions in determining the post-employment benefit cost including financial assumptions based on market expectations at the end of the reporting period. Significant assumptions underlying the valuation of the post-employment benefit liability include:

- Mortality assumptions determined by reference to the best estimate of the mortality of plan members during and after employment;

- A discount rate referenced to market yields at the end of the reporting period on high quality corporate bonds, or where there is no deep market in such bonds, by reference to market yields on government bonds;

- Assumptions about expected salaries and benefits reflect the terms of the plan and future salary increases; and

- Medical cost assumptions incorporating future changes resulting from inflation and specific changes in medical costs.

An actuarial valuation of the employee future benefit obligation is undertaken every three years by Eckler. The most recent actuarial report prepared by Eckler is attached as Appendix 4-4.1 to this Exhibit. The assumptions underlying the valuation of the employee future benefits obligations are disclosed in the annual audited financial statements (see Note 13 of the 2013 Horizon Utilities audited financial statements provided as Appendices 10.1, 10.2 and 10.3 in Exhibit 1.

SHARED SERVICES AND CORPORATE COST ALLOCATION

EDO receives and provides services from/to its affiliate companies in order to realize economies of scale, manage costs, and maintain service levels. Board Appendix 2-N presents a summary of Management Fees charged by or to EDO.

Management Fees in 2013 comprise: (i) fees in place at the time that Horizon Utilities' 2011 CoS Application (EB-2010-0131) ("2011 CoS Application") was approved as summarized below under Table 4-57, and (ii) other Management Fees for which customized calculations were developed for each fee, such as fees recovered from HESI.

The amounts for Management Fees for the 2014 Bridge Year and the 2015 through 2019 Test Years were derived systematically using a rigorous modeling approach as described in the Transfer Pricing Study. This report was completed in March 2014 by Stratsolver Corporation and is filed as Appendix 4-6.1 to this Exhibit. Stratsolver Corporation is a company located in Mississauga, Ontario that offers Financial Analysis Consulting Services. Appropriate allocators were derived for each underlying cost account to produce a fair quantification of costs allocated to or from EDO. The Transfer Pricing Study also identifies, for each Management Fee, the counterparty to EDO, the specific service components and the allocation methodology used.

Horizon Utilities is comprised of: EDO; CDM; Customer Care operations ("CC"); and a general partnership interest (>99.9%) in the Solar Sunbelt General Partnership ("SSGP"). The resources, activities, and financial accounts of the CDM, CC and SSGP are tracked separately from EDO for the purposes of this Application. Consequently the financial interactions between EDO and CDM, CC, and SSGP are included in the Transfer Pricing Study.

Furthermore, EDO: (i) receives services from the parent company of Horizon Utilities, HHI; and (ii) provides certain services to its affiliated entities Hamilton Utilities Corporation, Hamilton Hydro Services Inc., and HESI. These services and related fees are described in the Transfer Pricing Study.

The following table provides the Management Fee amounts charged by or to EDO:

Table 4-57 – Summary of Net Management Fees

Charged To	Charged By	2011 Board-Approved	2013 Actual	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
EDO	CC	$ 6,980,650	$ 7,356,864	$ 8,337,813	$ 8,549,854	$ 9,082,495	$ 9,013,584	$ 9,145,439
CC	EDO	$ (600,490)	$ (624,750)	$(1,049,001)	$(1,082,146)	$(1,108,693)	$(1,143,978)	$(1,156,582)
EDO	HHI	$ -	$ -	$ 242,509	$ 249,311	$ 256,313	$ 263,519	$ 270,611
HUC	EDO	$ (19,776)	$ (17,547)	$ (22,459)	$ (23,817)	$ (24,414)	$ (25,063)	$ (25,586)
HHSI	EDO	$ (75,170)	$ (53,060)	$ (47,314)	$ (50,169)	$ (51,428)	$ (52,796)	$ (53,902)
CDM	EDO	$ (200,000)	$ (312,120)	$ (462,825)	$ (477,163)	$ (488,807)	$ (504,475)	$ (509,690)
SSGP	EDO	$ (113,000)	$ (51,144)	$ (26,206)	$ (27,179)	$ (27,867)	$ (28,555)	$ (29,096)
HESI CDM	EDO	$ -	$ (53,401)	$ -	$ -	$ -	$ -	$ -
HESI MSP	EDO	$ -	$ (28,000)	$ (44,898)	$ (45,745)	$ (48,514)	$ (48,806)	$ (49,998)
TOTAL		**$ 5,972,214**	**$ 6,216,842**	**$ 6,927,618**	**$ 7,092,946**	**$ 7,589,085**	**$ 7,473,430**	**$ 7,591,196**

Legend:

CC	Customer Care
CDM	Conservation & Demand Management
EDO	Electricity Distribution Operations
HESI CDM	Horizon Energy Solutions Inc. – CDM Services
HESI MSP	Horizon Energy Solutions Inc. – Meter Service Provider
HHI	Horizon Holdings Inc.
HHSI	Hamilton Hydro Services Inc.
HUC	Hamilton Utilities Corporation
SSGP	Solar Sunbelt General Partnership

Table 4-58 below identifies Management Fee variances for the following:

- 2015 Test Year vs. 2011 Board-Approved
- 2015 Test Year vs. 2013 Actual
- Test Year vs. Prior Test Year

Table 4-58 – Summary of Net Management Fee Variances 2011 – 2019

		2015 Test Year vs		Variances to Prior Year			
Charged To	**Charged By**	**2011 Board-Approved**	**2013 Actual**	**2016 Test Year**	**2017 Test Year**	**2018 Test Year**	**2019 Test Year**
EDO	CC	$ 1,357,163	$ 980,949	$ 212,041	$ 532,641	$ (68,911)	$ 131,855
CC	EDO	$ (448,511)	$ (424,251)	$ (33,145)	$ (26,547)	$ (35,285)	$ (12,604)
EDO	HHI	$ 242,509	$ 242,509	$ 6,802	$ 7,003	$ 7,206	$ 7,092
HUC	EDO	$ (2,683)	$ (4,911)	$ (1,359)	$ (597)	$ (649)	$ (523)
HHSI	EDO	$ 27,856	$ 5,747	$ (2,855)	$ (1,259)	$ (1,368)	$ (1,106)
CDM	EDO	$ (262,825)	$ (150,705)	$ (14,338)	$ (11,644)	$ (15,668)	$ (5,216)
SSGP	EDO	$ 86,794	$ 24,938	$ (972)	$ (689)	$ (687)	$ (541)
HESI CDM	EDO	$ -	$ 53,401	$ -	$ -	$ -	$ -
HESI MSP	EDO	$ (44,898)	$ (16,898)	$ (846)	$ (2,769)	$ (292)	$ (1,192)
TOTAL		**$ 955,404**	**$ 710,776**	**$ 165,328**	**$ 496,139**	**$ (115,655)**	**$ 117,767**

Horizon Utilities has provided explanations of the variances identified in Table 4-58 below.

2015 Test Year vs. 2011 Board-Approved

The Net Management Fee amount in 2015 of $6,927,618 is $955,404 higher than the 2011 Board-Approved amount of $5,972,214 mainly due to: a) a higher net charge between Customer Care and EDO ($928,428) due to a non-recurring recovery in 2011 of retailer costs incurred in prior years; b) refinements to the allocation methodology described in the Transfer Pricing Study; c) higher costs for postage as identified in Tab 3, Schedule 3 of this Exhibit; d) other inflationary cost increases; and e) a Management Fee from HHI to EDO in 2014 of $231,798 in 2014 as explained and justified in the Transfer Pricing Study at Appendix 4-6.1. These increases are partially offset by higher recoveries to be realized by EDO as a result of increased CDM activities ($262,825).

2015 Test Year vs. 2013 Actual

The Net Management Fee amount in 2015 is forecasted to be $6,927,618, which is $710,776 higher than the 2013 Actual amount of $6,216,842 mainly due to: (i) a higher net charge between Customer Care and EDO ($556,698) due to refinements to the allocation methodology described in the Transfer Pricing Study and inflationary cost increases; and (ii) the aforementioned Management Fee from HHI to EDO ($242,509 in 2015) offset by (iii) a higher

Management Fee received from CDM ($150,705) as described in the Transfer Pricing Study at Appendix 4-6.1.

2016 Test Year vs. 2015 Test Year

The Net Management Fee amount forecasted for the 2016 Test Year of $7,092,946 is $165,328 or 2.4% higher than the 2015 Test Year amount of $6,927,618. This is primarily due to inflationary cost increases, consistent with the assumptions described in Tab 1, Schedule 1 of this Exhibit, with the exception of postage which is assumed to increase by $0.02 per unit annually during the Test Years. Inflationary impacts during the Test Years are mitigated by through Customer Service productivity initiatives described in Tab 3, Schedule 4 of this Exhibit, such as the implementation of a Call Centre outsourced overflow solution. One Customer Service Representative position will be eliminated in each year from 2014 to 2018, with the capacity being provided by a third-party Call Centre service provider at lower cost.

2017 Test Year vs. 2016 Test Year

The Net Management Fee amount forecasted for the 2017 Test Year of $7,589,085 is $496,139 higher than the 2016 Test Year amount of $7,092,946. This is primarily due to a higher Management Fee from Customer Care resulting from EDO's share of one-time incremental expenditures corresponding to the development of the CIS upgrade (as described in Tab 2, Schedule 2 of this Exhibit) which is essential for EDO's business needs. Annual inflation, consistent with the assumptions described in Tab 1, Schedule 1 of this Exhibit, also contributes to the increase, and is partially mitigated by the aforementioned Customer Care productivity initiatives.

2018 Test Year vs. 2017 Test Year

The Net Management Fee amount forecasted for the 2018 Test Year of $7,473,430 is $115,655 lower than the 2017 Test Year amount of $7,589,085. This decrease is primarily due to lower non-recurring Customer Care expenditures in 2017, such as the 2017 expenditures corresponding to the CIS upgrade, offset by inflationary cost increases, which are mitigated by the aforementioned Customer Care productivity initiatives.

2019 Test Year vs. 2018 Test Year

The Net Management Fee amount forecasted for the 2019 Test Year of $7,591,196 is $117,767 higher than the 2018 Test Year amount of $7,473,430 mainly due to inflationary cost increases, partially offset by productivity savings achieved through the aforementioned Customer Care productivity initiatives.

Reconciliation of Revenue in Appendix 2-N

The Board's Filing Requirements require applicants to provide a reconciliation of the revenue in Appendix 2-N to the amounts included in Other Revenue in Exhibit 3, Tab 3, Schedule 1. No such revenues have been included in Exhibit 3, Tab 1, Schedule 1 in compliance with the Board's Decision in Horizon Utilities' 2011 CoS Application (EB-2010-0131), which directed the utility to include all such revenues as OM&A offsets rather than Other Revenue.

Board of Directors Costs

Horizon Utilities confirms that there are no Board of Directors costs for affiliated entities included in its costs.

A summary of charges to affiliates for services provided for each year is provided in Tables 4-59 to 4-68, corresponding to the Board's Appendix 2-N. Horizon Utilities has provided Appendix 2-N for the 2011 Board-Approved year, historical years 2011, 2012 and 2013; for the 2014 Bridge Year; and for the 2015-2019 Test Years.

Table 4-59 – Chapter 2 - Appendix 2-N - Shared Services/Corporate Cost Allocations 2011 Board-Approved

Name of Company		Service Offered	Pricing Methdology	Price for the Service	Cost for the Service	Percentage Allocation
From	To			$	$	%
EDO - Horizon Utilities Corporation	Hamilton Utilities Corporation	Financial Services Procurement Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of # of purchase orders proportional share of # of claims proportional share of # of employees			
Total Charged to Hamilton Utilities Corporation				**$ 24,273**		**0.00**
EDO - Horizon Utilities Corporation	Hamilton Hydro Services Inc. (HHSI)	Financial Services Procurement Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of # of purchase orders proportional share of # of claims proportional share of # of employees			
Total Charged to HHSI				**$ 75,170**		**0.00**
EDO - Horizon Utilities Corporation	Customer Care - Horizon Utilities Corporation	Executive Financial Services - Executive Financial Services Procurement Supply Chain Corporate Services - Executive Healthy Workplace & Safety Human Resources	budgeted costs to provide the service			
Total Charged to Customer Care - Horizon Utilities Corporation				**$ 620,266**		**0.00**
EDO - Horizon Utilities Corporation	CDM - Horizon Utilities Corporation	Executive Financial Services - Executive Financial Services Procurement Supply Chain Corporate Services - Executive Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of time spent proportional share of time spent proportional share of # of purchase orders proportional share of # of purchase orders proportional share of time spent proportional share of # of claims proportional share of # of employees			
Total Charged to CDM - Horizon Utilities Corporation				**$ 200,000**		**0.00**
EDO - Horizon Utilities Corporation	Solar Sunbelt General Partnership	Executive Financial Services - Executive Financial Services Procurement Supply Chain	proportional share of time spent proportional share of time spent proportional share of time spent proportional share of # of purchase orders proportional share of # of purchase orders			
Total Charged to Solar Sunbelt General Partnership				**$ 113,000**		**0.00**
EDO - Horizon Utilities Corporation	Meter Services - Horizon Energy Services Inc.	Financial Services Customer Care - Billing Meter Assets and inside Service Customer Connections MV90 Procurement Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent			
Total Charged to Meter Services - Horizon Energy Services Inc.				**$ -**		**0.00**
EDO - Horizon Utilities Corporation	CDM Services - Horizon Energy Services Inc.	Financial Services Procurement Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent			
Total Charged to CDM Services - Horizon Energy Services Inc.				**$ -**		**0.00**
Customer Care - Horizon Utilities Corporation	EDO - Horizon Utilities Corporation	Billing Credit and Collections Customer Service Executive / Corporate Meter Reading	budgeted costs to provide the service			
Total Charged by Customer Care - Horizon Utilities Corporation				**$ 6,980,650**		**0.00**

Table 4-60 – Chapter 2 - Appendix 2-N - Shared Services/Corporate Cost Allocations 2011 Actual

Name of Company		Service Offered	Pricing Methdology	Price for the Service	Cost for the Service	Percentage Allocation
From	To			$	$	%
EDO - Horizon Utilities Corporation	Hamilton Utilities Corporation	Financial Services Procurement Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of # of purchase orders proportional share of # of claims proportional share of # of employees			
Total Charged to Hamilton Utilities Corporation				**$ 24,273**		**0.00**
EDO - Horizon Utilities Corporation	Hamilton Hydro Services Inc. (HHSI)	Financial Services Procurement Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of # of purchase orders proportional share of # of claims proportional share of # of employees			
Total Charged to HHSI				**$ 51,000**		**0.00**
EDO - Horizon Utilities Corporation	Customer Care - Horizon Utilities Corporation	Executive Financial Services - Executive Financial Services Procurement Supply Chain Corporate Services - Executive Healthy Workplace & Safety Human Resources	budgeted costs to provide the service			
Total Charged to Customer Care - Horizon Utilities Corporation				**$ 600,489**		**0.00**
EDO - Horizon Utilities Corporation	CDM - Horizon Utilities Corporation	Executive Financial Services - Executive Financial Services Procurement Supply Chain Corporate Services - Executive Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of time spent proportional share of time spent proportional share of # of purchase orders proportional share of # of purchase orders proportional share of time spent proportional share of # of claims proportional share of # of employees			
Total Charged to CDM - Horizon Utilities Corporation				**$ 249,135**		**0.00**
EDO - Horizon Utilities Corporation	Solar Sunbelt General Partnership	Executive Financial Services - Executive Financial Services Procurement Supply Chain	proportional share of time spent proportional share of time spent proportional share of time spent proportional share of # of purchase orders proportional share of # of purchase orders			
Total Charged to Solar Sunbelt General Partnership				**$ 113,304**		**0.00**
EDO - Horizon Utilities Corporation	Meter Services - Horizon Energy Services Inc.	Financial Services Customer Care - Billing Meter Assets and inside Service Customer Connections MV90 Procurement Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent			
Total Charged to Meter Services - Horizon Energy Services Inc.				**$ -**		**0.00**
EDO - Horizon Utilities Corporation	CDM Services - Horizon Energy Services Inc.	Financial Services Procurement Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent			
Total Charged to CDM Services - Horizon Energy Services Inc.				**$ 17,838**		**0.00**
Customer Care - Horizon Utilities Corporation	EDO - Horizon Utilities Corporation	Billing Credit and Collections Customer Service Executive / Corporate Meter Reading	budgeted costs to provide the service			
Total Charged by Customer Care - Horizon Utilities Corporation				**$ 6,612,467**		**0.00**

Table 4-61 – Chapter 2 - Appendix 2-N - Shared Services/Corporate Cost Allocations 2012 Actual

Name of Company		Service Offered	Pricing Methdology	Price for the Service	Cost for the Service	Percentage Allocation
From	To			$	$	%
EDO - Horizon Utilities Corporation	Hamilton Utilities Corporation	Financial Services Procurement Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of # of purchase orders proportional share of # of claims proportional share of # of employees			
Total Charged to Hamilton Utilities Corporation				**$ 17,203**		**0.00**
EDO - Horizon Utilities Corporation	Hamilton Hydro Services Inc. (HHSI)	Financial Services Procurement Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of # of purchase orders proportional share of # of claims proportional share of # of employees			
Total Charged to HHSI				**$ 52,020**		**0.00**
EDO - Horizon Utilities Corporation	Customer Care - Horizon Utilities Corporation	Executive Financial Services - Executive Financial Services Procurement Supply Chain Corporate Services - Executive Healthy Workplace & Safety Human Resources	budgeted costs to provide the service			
Total Charged to Customer Care - Horizon Utilities Corporation				**$ 612,500**		**0.00**
EDO - Horizon Utilities Corporation	CDM - Horizon Utilities Corporation	Executive Financial Services - Executive Financial Services Procurement Supply Chain Corporate Services - Executive Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of time spent proportional share of time spent proportional share of # of purchase orders proportional share of # of purchase orders proportional share of time spent proportional share of # of claims proportional share of # of employees			
Total Charged to CDM - Horizon Utilities Corporation				**$ 305,494**		**0.00**
EDO - Horizon Utilities Corporation	Solar Sunbelt General Partnership	Executive Financial Services - Executive Financial Services Procurement Supply Chain	proportional share of time spent proportional share of time spent proportional share of time spent proportional share of # of purchase orders proportional share of # of purchase orders			
Total Charged to Solar Sunbelt General Partnership				**$ 80,439**		**0.00**
EDO - Horizon Utilities Corporation	Meter Services - Horizon Energy Services Inc.	Financial Services Customer Care - Billing Meter Assets and inside Service Customer Connections MV90 Procurement Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent			
Total Charged to Meter Services - Horizon Energy Services Inc.				**$ 28,000**		**0.00**
EDO - Horizon Utilities Corporation	CDM Services - Horizon Energy Services Inc.	Financial Services Procurement Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent			
Total Charged to CDM Services - Horizon Energy Services Inc.				**$ 70,513**		**0.00**
Customer Care - Horizon Utilities Corporation	EDO - Horizon Utilities Corporation	Billing Credit and Collections Customer Service Executive / Corporate Meter Reading	budgeted costs to provide the service			
Total Charged by Customer Care - Horizon Utilities Corporation				**$ 7,299,834**		**0.00**

Table 4-62 – Chapter 2 - Appendix 2-N - Shared Services/Corporate Cost Allocations 2013 Actual

Name of Company		Service Offered	Pricing Methdology	Price for the Service	Cost for the Service	Percentage Allocation
From	To			$	$	%
EDO - Horizon Utilities Corporation	Hamilton Utilities Corporation	Financial Services Procurement Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of # of purchase orders proportional share of # of claims proportional share of # of employees			
Total Charged to Hamilton Utilities Corporation				**$ 17,547**		**0.00**
EDO - Horizon Utilities Corporation	Hamilton Hydro Services Inc. (HHSI)	Financial Services Procurement Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of # of purchase orders proportional share of # of claims proportional share of # of employees			
Total Charged to HHSI				**$ 53,060**		**0.00**
EDO - Horizon Utilities Corporation	Customer Care - Horizon Utilities Corporation	Executive Financial Services - Executive Financial Services Procurement Supply Chain Corporate Services - Executive Healthy Workplace & Safety Human Resources	budgeted costs to provide the service			
Total Charged to Customer Care - Horizon Utilities Corporation				**$ 624,750**		**0.00**
EDO - Horizon Utilities Corporation	CDM - Horizon Utilities Corporation	Executive Financial Services - Executive Financial Services Procurement Supply Chain Corporate Services - Executive Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of time spent proportional share of time spent proportional share of # of purchase orders proportional share of # of purchase orders proportional share of time spent proportional share of # of claims proportional share of # of employees			
Total Charged to CDM - Horizon Utilities Corporation				**$ 312,120**		**0.00**
EDO - Horizon Utilities Corporation	Solar Sunbelt General Partnership	Executive Financial Services - Executive Financial Services Procurement Supply Chain	proportional share of time spent proportional share of time spent proportional share of time spent proportional share of # of purchase orders proportional share of # of purchase orders			
Total Charged to Solar Sunbelt General Partnership				**$ 51,144**		**0.00**
EDO - Horizon Utilities Corporation	Meter Services - Horizon Energy Services Inc.	Financial Services Customer Care - Billing Meter Assets and inside Service Customer Connections MV90 Procurement Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent			
Total Charged to Meter Services - Horizon Energy Services Inc.				**$ 28,000**		**0.00**
EDO - Horizon Utilities Corporation	CDM Services - Horizon Energy Services Inc.	Financial Services Procurement Healthy Workplace & Safety Human Resources	proportional share of time spent proportional share of time spent proportional share of time spent proportional share of time spent			
Total Charged to CDM Services - Horizon Energy Services Inc.				**$ 53,401**		**0.00**
Customer Care - Horizon Utilities Corporation	EDO - Horizon Utilities Corporation	Billing Credit and Collections Customer Service Executive / Corporate Meter Reading	budgeted costs to provide the service			
Total Charged by Customer Care - Horizon Utilities Corporation				**$ 7,356,864**		**0.00**

Table 4-63 – Chapter 2 - Appendix 2-N - Shared Services/Corporate Cost Allocations 2014 Bridge Year

Name of Company		Service Offered	Pricing Methdology	Price for the Service	Cost for the Service	Percentage Allocation
From	To			$	$	%
EDO - Horizon Utilities Corporation	Hamilton Utilities Corporation	Financial Services	proportional share of # of purchase orders	$ 12,432		0.3%
		Procurement	proportional share of # of purchase orders	$ 2,662		0.3%
		Healthy Workplace & Safety	proportional share of # of claims	$ 1,882		0.3%
		Human Resources	proportional share of # of employees	$ 4,962		0.3%
Total Charged to Hamilton Utilities Corporation				**$ 21,937**		**0.3%**
EDO - Horizon Utilities Corporation	Hamilton Hydro Services Inc. (HHSI)	Financial Services	proportional share of # of purchase orders	$ 26,140		0.7%
		Procurement	proportional share of # of purchase orders	$ 5,622		0.7%
		Healthy Workplace & Safety	proportional share of # of claims	$ 3,978		0.7%
		Human Resources	proportional share of # of employees	$ 10,469		0.7%
Total Charged to HHSI				**$ 46,209**		**0.7%**
EDO - Horizon Utilities Corporation	Customer Care - Horizon Utilities Corporation	Executive	budgeted costs to provide the service	$ 91,603		8.7%
		Financial Services - Executive		$ 40,609		8.7%
		Financial Services		$ 412,242		8.8%
		Procurement		$ 81,030		8.8%
		Supply Chain		$ 69,723		8.7%
		Corporate Services - Executive		$ 47,070		8.7%
		Healthy Workplace & Safety		$ 74,464		8.8%
		Human Resources		$ 194,829		8.8%
Total Charged to Customer Care - Horizon Utilities Corporation				**$ 1,011,570**		**8.8%**
EDO - Horizon Utilities Corporation	CDM - Horizon Utilities Corporation	Executive	proportional share of time spent	$ 40,484		3.9%
		Financial Services - Executive	proportional share of time spent	$ 17,621		3.9%
		Financial Services	proportional share of # of purchase orders	$ 181,134		3.9%
		Procurement	proportional share of # of purchase orders	$ 35,335		3.9%
		Supply Chain	proportional share of # of purchase orders	$ 31,598		3.9%
		Corporate Services - Executive	proportional share of time spent	$ 20,638		3.9%
		Healthy Workplace & Safety	proportional share of # of claims	$ 32,887		3.9%
		Human Resources	proportional share of # of employees	$ 86,375		3.9%
Total Charged to CDM - Horizon Utilities Corporation				**$ 446,072**		**0.3%**
EDO - Horizon Utilities Corporation	Solar Sunbelt General Partnership	Executive	proportional share of time spent	$ 3,296		0.3%
		Financial Services - Executive	proportional share of time spent	$ 1,606		0.3%
		Financial Services	proportional share of time spent	$ 15,300		0.3%
		Procurement	proportional share of # of purchase orders	$ 3,126		0.3%
		Supply Chain	proportional share of # of purchase orders	$ 2,161		0.3%
Total Charged to Solar Sunbelt General Partnership				**$ 25,489**		**0.3%**
EDO - Horizon Utilities Corporation	Meter Services - Horizon Energy Services Inc.	Financial Services	proportional share of time spent	$ 11,629		0.3%
		Customer Care - Billing	proportional share of time spent	$ 9,392		0.3%
		Meter Assets and inside Service	proportional share of time spent	$ 2,638		0.3%
		Customer Connections	proportional share of time spent	$ 6,673		0.3%
		MV90	proportional share of time spent	$ 592		0.3%
		Procurement	proportional share of time spent	$ 2,832		0.3%
		Healthy Workplace & Safety	proportional share of time spent	$ 2,645		0.3%
		Human Resources	proportional share of time spent	$ 6,339		0.3%
Total Charged to Meter Services - Horizon Energy Services Inc.				**$ 42,741**		**0.3%**
EDO - Horizon Utilities Corporation	CDM Services - Horizon Energy Services Inc.	Financial Services	proportional share of time spent	$ 15,692		0.4%
		Procurement	proportional share of time spent	$ 3,802		0.4%
		Healthy Workplace & Safety	proportional share of time spent	$ 3,506		0.4%
		Human Resources	proportional share of time spent	$ 8,402		0.4%
Total Charged to CDM Services - Horizon Energy Services Inc.				**$ 31,402**		**0.4%**
Customer Care - Horizon Utilities Corporation	EDO - Horizon Utilities Corporation	Billing	budgeted costs to provide the service	$ 2,189,708		70.6%
		Credit and Collections		$ 790,950		70.6%
		Customer Service		$ 2,648,601		70.3%
		Executive / Corporate		$ 1,739,818		71.9%
		Meter Reading		$ 506,318		70.6%
		Return on assets		$ 196,193		
Total Charged by Customer Care - Horizon Utilities Corporation				**$ 8,071,587**		**70.8%**
Horizon Holdings Inc.	EDO - Horizon Utilities Corporation	Executive Oversight and Support Services	proportional share of time spent	$ 231,798		41.2%
Total Charged by Horizon Holdings Inc.				**$ 231,798**		**41.2%**

Table 4-64 – Chapter 2 - Appendix 2-N - Shared Services/Corporate Cost Allocations 2015 Test Year

Name of Company		Service Offered	Pricing Methdology	Price for the Service	Cost for the Service	Percentage Allocation
From	To			$	$	%
EDO - Horizon Utilities Corporation	Hamilton Utilities Corporation	Financial Services	proportional share of # of purchase orders	$ 12,664		0.3%
		Procurement	proportional share of # of purchase orders	$ 2,756		0.3%
		Healthy Workplace & Safety	proportional share of # of claims	$ 1,976		0.3%
		Human Resources	proportional share of # of employees	$ 5,063		0.3%
Total Charged to Hamilton Utilities Corporation				**$ 22,459**		**0.3%**
EDO - Horizon Utilities Corporation	Hamilton Hydro Services Inc. (HHSI)	Financial Services	proportional share of # of purchase orders	$ 26,632		0.7%
		Procurement	proportional share of # of purchase orders	$ 5,822		0.7%
		Healthy Workplace & Safety	proportional share of # of claims	$ 4,176		0.7%
		Human Resources	proportional share of # of employees	$ 10,684		0.7%
Total Charged to HHSI				**$ 47,314**		**0.7%**
EDO - Horizon Utilities Corporation	Customer Care - Horizon Utilities Corporation	Executive	budgeted costs to provide the service	$ 92,827		8.7%
		Financial Services - Executive		$ 40,801		8.7%
		Financial Services		$ 430,611		8.8%
		Procurement		$ 83,722		8.8%
		Supply Chain		$ 68,294		8.7%
		Corporate Services - Executive		$ 48,438		8.7%
		Healthy Workplace & Safety		$ 77,343		8.8%
		Human Resources		$ 206,965		8.8%
Total Charged to Customer Care - Horizon Utilities Corporation				**$ 1,049,001**		**8.8%**
EDO - Horizon Utilities Corporation	CDM - Horizon Utilities Corporation	Executive	proportional share of time spent	$ 41,028		3.9%
		Financial Services - Executive	proportional share of time spent	$ 17,706		3.9%
		Financial Services	proportional share of # of purchase orders	$ 189,375		3.9%
		Procurement	proportional share of # of purchase orders	$ 36,499		3.9%
		Supply Chain	proportional share of # of purchase orders	$ 30,955		3.9%
		Corporate Services - Executive	proportional share of time spent	$ 21,232		3.9%
		Healthy Workplace & Safety	proportional share of # of claims	$ 34,136		3.9%
		Human Resources	proportional share of # of employees	$ 91,893		3.9%
Total Charged to CDM - Horizon Utilities Corporation				**$ 462,825**		**0.3%**
EDO - Horizon Utilities Corporation	Solar Sunbelt General Partnership	Executive	proportional share of time spent	$ 3,339		0.3%
		Financial Services - Executive	proportional share of time spent	$ 1,612		0.3%
		Financial Services	proportional share of time spent	$ 15,906		0.3%
		Procurement	proportional share of # of purchase orders	$ 3,234		0.3%
		Supply Chain	proportional share of # of purchase orders	$ 2,115		0.3%
Total Charged to Solar Sunbelt General Partnership				**$ 26,206**		**0.3%**
EDO - Horizon Utilities Corporation	Meter Services - Horizon Energy Services Inc.	Financial Services	proportional share of time spent	$ 12,308		0.3%
		Customer Care - Billing	proportional share of time spent	$ 9,646		0.3%
		Meter Assets and inside Service	proportional share of time spent	$ 2,731		0.3%
		Customer Connections	proportional share of time spent	$ 7,128		0.3%
		MV90	proportional share of time spent	$ 608		0.3%
		Procurement	proportional share of time spent	$ 2,929		0.3%
		Healthy Workplace & Safety	proportional share of time spent	$ 2,750		0.3%
		Human Resources	proportional share of time spent	$ 6,797		0.3%
Total Charged to Meter Services - Horizon Energy Services Inc.				**$ 44,898**		**0.3%**
EDO - Horizon Utilities Corporation	CDM Services - Horizon Energy Services Inc.	Financial Services	proportional share of time spent	$ -		0.4%
		Procurement	proportional share of time spent	$ -		0.4%
		Healthy Workplace & Safety	proportional share of time spent	$ -		0.4%
		Human Resources	proportional share of time spent	$ -		0.4%
Total Charged to CDM Services - Horizon Energy Services Inc.				**$ -**		**0.0%**
Customer Care - Horizon Utilities Corporation	EDO - Horizon Utilities Corporation	Billing	budgeted costs to provide the service	$ 2,259,822		70.6%
		Credit and Collections		$ 808,684		70.6%
		Customer Service		$ 2,775,483		70.3%
		Executive / Corporate		$ 1,826,344		71.9%
		Meter Reading		$ 465,753		70.6%
		Return on assets		$ 201,727		
Total Charged by Customer Care - Horizon Utilities Corporation				**$ 8,337,813**		**70.8%**
Horizon Holdings Inc.	EDO - Horizon Utilities Corporation	Executive Oversight and Support Services	proportional share of time spent	$ 242,509		41.2%
Total Charged by Horizon Holdings Inc.				**$ 242,509**		**41.2%**

Table 4-65 – Chapter 2 - Appendix 2-N - Shared Services/Corporate Cost Allocations 2016 Test Year

Name of Company		Service Offered	Pricing Methdology	Price for the Service	Cost for the Service	Percentage Allocation
From	To			$	$	%
EDO - Horizon Utilities Corporation	Hamilton Utilities Corporation	Financial Services	proportional share of # of purchase orders	$ 13,453		0.3%
		Procurement	proportional share of # of purchase orders	$ 2,835		0.3%
		Healthy Workplace & Safety	proportional share of # of claims	$ 2,034		0.3%
		Human Resources	proportional share of # of employees	$ 5,495		0.3%
Total Charged to Hamilton Utilities Corporation				**$ 23,817**		**0.3%**
EDO - Horizon Utilities Corporation	Hamilton Hydro Services Inc. (HHSI)	Financial Services	proportional share of # of purchase orders	$ 28,287		0.7%
		Procurement	proportional share of # of purchase orders	$ 5,990		0.7%
		Healthy Workplace & Safety	proportional share of # of claims	$ 4,299		0.7%
		Human Resources	proportional share of # of employees	$ 11,594		0.7%
Total Charged to HHSI				**$ 50,169**		**0.7%**
EDO - Horizon Utilities Corporation	Customer Care - Horizon Utilities Corporation	Executive	budgeted costs to provide the service	$ 94,947		8.7%
		Financial Services - Executive		$ 41,700		8.7%
		Financial Services		$ 445,541		8.8%
		Procurement		$ 83,455		8.8%
		Supply Chain		$ 76,469		8.7%
		Corporate Services - Executive		$ 49,598		8.7%
		Healthy Workplace & Safety		$ 79,272		8.8%
		Human Resources		$ 211,164		8.8%
Total Charged to Customer Care - Horizon Utilities Corporation				**$ 1,082,146**		**8.8%**
EDO - Horizon Utilities Corporation	CDM - Horizon Utilities Corporation	Executive	proportional share of time spent	$ 41,956		3.9%
		Financial Services - Executive	proportional share of time spent	$ 18,095		3.9%
		Financial Services	proportional share of # of purchase orders	$ 195,809		3.9%
		Procurement	proportional share of # of purchase orders	$ 36,309		3.9%
		Supply Chain	proportional share of # of purchase orders	$ 34,728		3.9%
		Corporate Services - Executive	proportional share of time spent	$ 21,738		3.9%
		Healthy Workplace & Safety	proportional share of # of claims	$ 34,980		3.9%
		Human Resources	proportional share of # of employees	$ 93,549		3.9%
Total Charged to CDM - Horizon Utilities Corporation				**$ 477,163**		**0.3%**
EDO - Horizon Utilities Corporation	Solar Sunbelt General Partnership	Executive	proportional share of time spent	$ 3,419		0.3%
		Financial Services - Executive	proportional share of time spent	$ 1,648		0.3%
		Financial Services	proportional share of time spent	$ 16,516		0.3%
		Procurement	proportional share of # of purchase orders	$ 3,257		0.3%
		Supply Chain	proportional share of # of purchase orders	$ 2,339		0.3%
Total Charged to Solar Sunbelt General Partnership				**$ 27,179**		**0.3%**
EDO - Horizon Utilities Corporation	Meter Services - Horizon Energy Services Inc.	Financial Services	proportional share of time spent	$ 12,538		0.3%
		Customer Care - Billing	proportional share of time spent	$ 9,854		0.3%
		Meter Assets and inside Service	proportional share of time spent	$ 2,810		0.3%
		Customer Connections	proportional share of time spent	$ 7,334		0.3%
		MV90	proportional share of time spent	$ 641		0.3%
		Procurement	proportional share of time spent	$ 2,914		0.3%
		Healthy Workplace & Safety	proportional share of time spent	$ 2,819		0.3%
		Human Resources	proportional share of time spent	$ 6,834		0.3%
Total Charged to Meter Services - Horizon Energy Services Inc.				**$ 45,745**		**0.3%**
EDO - Horizon Utilities Corporation	CDM Services - Horizon Energy Services Inc.	Financial Services	proportional share of time spent	$ -		0.4%
		Procurement	proportional share of time spent	$ -		0.4%
		Healthy Workplace & Safety	proportional share of time spent	$ -		0.4%
		Human Resources	proportional share of time spent	$ -		0.4%
Total Charged to CDM Services - Horizon Energy Services Inc.				**$ -**		**0.0%**
Customer Care - Horizon Utilities Corporation	EDO - Horizon Utilities Corporation	Billing	budgeted costs to provide the service	$ 2,306,665		70.6%
		Credit and Collections		$ 828,426		70.6%
		Customer Service		$ 2,860,272		70.3%
		Executive / Corporate		$ 1,883,199		71.9%
		Meter Reading		$ 474,977		70.6%
		Return on assets		$ 196,314		
Total Charged by Customer Care - Horizon Utilities Corporation				**$ 8,549,854**		**70.8%**
Horizon Holdings Inc.	EDO - Horizon Utilities Corporation	Executive Oversight and Support Services	proportional share of time spent	$ 249,311		41.2%
Total Charged by Horizon Holdings Inc.				**$ 249,311**		**41.2%**

Table 4-66 – Chapter 2 - Appendix 2-N - Shared Services/Corporate Cost Allocations 2017 Test Year

Name of Company		Service Offered	Pricing Methdology	Price for the Service	Cost for the Service	Percentage Allocation
From	To			$	$	%
EDO - Horizon Utilities Corporation	Hamilton Utilities Corporation	Financial Services	proportional share of # of purchase orders	$ 13,765		0.3%
		Procurement	proportional share of # of purchase orders	$ 2,913		0.3%
		Healthy Workplace & Safety	proportional share of # of claims	$ 2,091		0.3%
		Human Resources	proportional share of # of employees	$ 5,645		0.3%
Total Charged to Hamilton Utilities Corporation				**$ 24,414**		**0.3%**
EDO - Horizon Utilities Corporation	Hamilton Hydro Services Inc. (HHSI)	Financial Services	proportional share of # of purchase orders	$ 28,943		0.7%
		Procurement	proportional share of # of purchase orders	$ 6,154		0.7%
		Healthy Workplace & Safety	proportional share of # of claims	$ 4,420		0.7%
		Human Resources	proportional share of # of employees	$ 11,910		0.7%
Total Charged to HHSI				**$ 51,428**		**0.7%**
EDO - Horizon Utilities Corporation	Customer Care - Horizon Utilities Corporation	Executive	budgeted costs to provide the service	$ 97,068		8.7%
		Financial Services - Executive		$ 42,612		8.7%
		Financial Services		$ 456,196		8.8%
		Procurement		$ 86,514		8.8%
		Supply Chain		$ 78,202		8.7%
		Corporate Services - Executive		$ 50,763		8.7%
		Healthy Workplace & Safety		$ 81,186		8.8%
		Human Resources		$ 216,151		8.8%
Total Charged to Customer Care - Horizon Utilities Corporation				**$ 1,108,693**		**8.8%**
EDO - Horizon Utilities Corporation	CDM - Horizon Utilities Corporation	Executive	proportional share of time spent	$ 42,884		3.9%
		Financial Services - Executive	proportional share of time spent	$ 18,489		3.9%
		Financial Services	proportional share of # of purchase orders	$ 200,464		3.9%
		Procurement	proportional share of # of purchase orders	$ 37,657		3.9%
		Supply Chain	proportional share of # of purchase orders	$ 35,516		3.9%
		Corporate Services - Executive	proportional share of time spent	$ 22,244		3.9%
		Healthy Workplace & Safety	proportional share of # of claims	$ 35,815		3.9%
		Human Resources	proportional share of # of employees	$ 95,738		3.9%
Total Charged to CDM - Horizon Utilities Corporation				**$ 488,807**		**31.0%**
EDO - Horizon Utilities Corporation	Solar Sunbelt General Partnership	Executive	proportional share of time spent	$ 3,499		0.3%
		Financial Services - Executive	proportional share of time spent	$ 1,685		0.3%
		Financial Services	proportional share of time spent	$ 16,923		0.3%
		Procurement	proportional share of # of purchase orders	$ 3,369		0.3%
		Supply Chain	proportional share of # of purchase orders	$ 2,391		0.3%
Total Charged to Solar Sunbelt General Partnership				**$ 27,867**		**0.3%**
EDO - Horizon Utilities Corporation	Meter Services - Horizon Energy Services Inc.	Financial Services	proportional share of time spent	$ 12,858		0.3%
		Customer Care - Billing	proportional share of time spent	$ 11,667		0.3%
		Meter Assets and inside Service	proportional share of time spent	$ 2,892		0.3%
		Customer Connections	proportional share of time spent	$ 7,547		0.3%
		MV90	proportional share of time spent	$ 636		0.3%
		Procurement	proportional share of time spent	$ 3,026		0.3%
		Healthy Workplace & Safety	proportional share of time spent	$ 2,889		0.3%
		Human Resources	proportional share of time spent	$ 7,000		0.3%
Total Charged to Meter Services - Horizon Energy Services Inc.				**$ 48,514**		**0.3%**
EDO - Horizon Utilities Corporation	CDM Services - Horizon Energy Services Inc.	Financial Services	proportional share of time spent	$ -		0.4%
		Procurement	proportional share of time spent	$ -		0.4%
		Healthy Workplace & Safety	proportional share of time spent	$ -		0.4%
		Human Resources	proportional share of time spent	$ -		0.4%
Total Charged to CDM Services - Horizon Energy Services Inc.				**$ -**		**0.0%**
Customer Care - Horizon Utilities Corporation	EDO - Horizon Utilities Corporation	Billing	budgeted costs to provide the service	$ 2,709,146		70.6%
		Credit and Collections		$ 847,141		70.6%
		Customer Service		$ 2,937,750		70.3%
		Executive / Corporate		$ 1,912,721		71.9%
		Meter Reading		$ 484,341		70.6%
		Return on assets		$ 191,395		
Total Charged by Customer Care - Horizon Utilities Corporation				**$ 9,082,495**		**70.8%**
Horizon Holdings Inc.	EDO - Horizon Utilities Corporation	Executive Oversight and Support Services	proportional share of time spent	$ 256,313		41.2%
Total Charged by Horizon Holdings Inc.				**$ 256,313**		**41.2%**

Table 4-67 – Chapter 2 - Appendix 2-N - Shared Services/Corporate Cost Allocations 2018 Test Year

Name of Company		Service Offered	Pricing Methdology	Price for the Service	Cost for the Service	Percentage Allocation
From	To			$	$	%
EDO - Horizon Utilities Corporation	Hamilton Utilities Corporation	Financial Services	proportional share of # of purchase orders	$ 14,105		0.3%
		Procurement	proportional share of # of purchase orders	$ 2,997		0.3%
		Healthy Workplace & Safety	proportional share of # of claims	$ 2,153		0.3%
		Human Resources	proportional share of # of employees	$ 5,809		0.3%
Total Charged to Hamilton Utilities Corporation				**$ 25,063**		**0.3%**
EDO - Horizon Utilities Corporation	Hamilton Hydro Services Inc. (HHSI)	Financial Services	proportional share of # of purchase orders	$ 29,658		0.7%
		Procurement	proportional share of # of purchase orders	$ 6,332		0.7%
		Healthy Workplace & Safety	proportional share of # of claims	$ 4,551		0.7%
		Human Resources	proportional share of # of employees	$ 12,255		0.7%
Total Charged to HHSI				**$ 52,796**		**0.7%**
EDO - Horizon Utilities Corporation	Customer Care - Horizon Utilities Corporation	Executive	budgeted costs to provide the service	$ 99,303		8.7%
		Financial Services - Executive		$ 43,564		8.7%
		Financial Services		$ 467,741		8.8%
		Procurement		$ 88,055		8.8%
		Supply Chain		$ 80,098		8.7%
		Corporate Services - Executive		$ 51,989		8.7%
		Healthy Workplace & Safety		$ 83,223		8.8%
		Human Resources		$ 230,005		8.8%
Total Charged to Customer Care - Horizon Utilities Corporation				**$ 1,143,978**		**8.8%**
EDO - Horizon Utilities Corporation	CDM - Horizon Utilities Corporation	Executive	proportional share of time spent	$ 43,863		3.9%
		Financial Services - Executive	proportional share of time spent	$ 18,901		3.9%
		Financial Services	proportional share of # of purchase orders	$ 205,521		3.9%
		Procurement	proportional share of # of purchase orders	$ 38,299		3.9%
		Supply Chain	proportional share of # of purchase orders	$ 36,379		3.9%
		Corporate Services - Executive	proportional share of time spent	$ 22,778		3.9%
		Healthy Workplace & Safety	proportional share of # of claims	$ 36,705		3.9%
		Human Resources	proportional share of # of employees	$ 102,028		3.9%
Total Charged to CDM - Horizon Utilities Corporation				**$ 504,475**		**0.3%**
EDO - Horizon Utilities Corporation	Solar Sunbelt General Partnership	Executive	proportional share of time spent	$ 3,584		0.3%
		Financial Services - Executive	proportional share of time spent	$ 1,723		0.3%
		Financial Services	proportional share of time spent	$ 17,359		0.3%
		Procurement	proportional share of # of purchase orders	$ 3,441		0.3%
		Supply Chain	proportional share of # of purchase orders	$ 2,448		0.3%
Total Charged to Solar Sunbelt General Partnership				**$ 28,555**		**0.3%**
EDO - Horizon Utilities Corporation	Meter Services - Horizon Energy Services Inc.	Financial Services	proportional share of time spent	$ 13,191		0.3%
		Customer Care - Billing	proportional share of time spent	$ 10,701		0.3%
		Meter Assets and inside Service	proportional share of time spent	$ 2,976		0.3%
		Customer Connections	proportional share of time spent	$ 7,766		0.3%
		MV90	proportional share of time spent	$ 651		0.3%
		Procurement	proportional share of time spent	$ 3,078		0.3%
		Healthy Workplace & Safety	proportional share of time spent	$ 2,961		0.3%
		Human Resources	proportional share of time spent	$ 7,484		0.3%
Total Charged to Meter Services - Horizon Energy Services Inc.				**$ 48,806**		**0.3%**
EDO - Horizon Utilities Corporation	CDM Services - Horizon Energy Services Inc.	Financial Services	proportional share of time spent	$ -		0.4%
		Procurement	proportional share of time spent	$ -		0.4%
		Healthy Workplace & Safety	proportional share of time spent	$ -		0.4%
		Human Resources	proportional share of time spent	$ -		0.4%
Total Charged to CDM Services - Horizon Energy Services Inc.				**$ -**		**0.0%**
Customer Care - Horizon Utilities Corporation	EDO - Horizon Utilities Corporation	Billing	budgeted costs to provide the service	$ 2,494,308		70.6%
		Credit and Collections		$ 867,980		70.6%
		Customer Service		$ 3,024,825		70.3%
		Executive / Corporate		$ 1,944,914		71.9%
		Meter Reading		$ 493,845		70.6%
		Return on assets		$ 187,711		
Total Charged by Customer Care - Horizon Utilities Corporation				**$ 9,013,584**		**70.8%**
Horizon Holdings Inc.	EDO - Horizon Utilities Corporation	Executive Oversight and Support Services	proportional share of time spent	$ 263,519		41.2%
Total Charged by Horizon Holdings Inc.				**$ 263,519**		**41.2%**

Table 4-68 – Chapter 2 - Appendix 2-N - Shared Services/Corporate Cost Allocations 2019 Test Year

Name of Company		Service Offered	Pricing Methdology	Price for the Service	Cost for the Service	Percentage Allocation
From	To			$	$	%
EDO - Horizon Utilities Corporation	Hamilton Utilities Corporation	Financial Services	proportional share of # of purchase orders	$ 14,360		0.3%
		Procurement	proportional share of # of purchase orders	$ 3,074		0.3%
		Healthy Workplace & Safety	proportional share of # of claims	$ 2,209		0.3%
		Human Resources	proportional share of # of employees	$ 5,943		0.3%
Total Charged to Hamilton Utilities Corporation				**$ 25,586**		**0.3%**
EDO - Horizon Utilities Corporation	Hamilton Hydro Services Inc. (HHSI)	Financial Services	proportional share of # of purchase orders	$ 30,197		0.7%
		Procurement	proportional share of # of purchase orders	$ 6,494		0.7%
		Healthy Workplace & Safety	proportional share of # of claims	$ 4,670		0.7%
		Human Resources	proportional share of # of employees	$ 12,541		0.7%
Total Charged to HHSI				**$ 53,902**		**0.7%**
EDO - Horizon Utilities Corporation	Customer Care - Horizon Utilities Corporation	Executive	budgeted costs to provide the service	$ 101,544		8.7%
		Financial Services - Executive		$ 44,679		8.7%
		Financial Services		$ 474,951		8.8%
		Procurement		$ 90,223		8.8%
		Supply Chain		$ 80,893		8.7%
		Corporate Services - Executive		$ 53,191		8.7%
		Healthy Workplace & Safety		$ 85,116		8.8%
		Human Resources		$ 225,984		8.8%
Total Charged to Customer Care - Horizon Utilities Corporation				**$ 1,156,582**		**8.8%**
EDO - Horizon Utilities Corporation	CDM - Horizon Utilities Corporation	Executive	proportional share of time spent	$ 44,841		3.9%
		Financial Services - Executive	proportional share of time spent	$ 19,382		3.9%
		Financial Services	proportional share of # of purchase orders	$ 208,635		3.9%
		Procurement	proportional share of # of purchase orders	$ 39,234		3.9%
		Supply Chain	proportional share of # of purchase orders	$ 36,728		3.9%
		Corporate Services - Executive	proportional share of time spent	$ 23,298		3.9%
		Healthy Workplace & Safety	proportional share of # of claims	$ 37,530		3.9%
		Human Resources	proportional share of # of employees	$ 100,041		3.9%
Total Charged to CDM - Horizon Utilities Corporation				**$ 509,690**		**0.3%**
EDO - Horizon Utilities Corporation	Solar Sunbelt General Partnership	Executive	proportional share of time spent	$ 3,669		0.3%
		Financial Services - Executive	proportional share of time spent	$ 1,768		0.3%
		Financial Services	proportional share of time spent	$ 17,650		0.3%
		Procurement	proportional share of # of purchase orders	$ 3,530		0.3%
		Supply Chain	proportional share of # of purchase orders	$ 2,478		0.3%
Total Charged to Solar Sunbelt General Partnership				**$ 29,096**		**0.3%**
EDO - Horizon Utilities Corporation	Meter Services - Horizon Energy Services Inc.	Financial Services	proportional share of time spent	$ 13,451		0.3%
		Customer Care - Billing	proportional share of time spent	$ 11,326		0.3%
		Meter Assets and inside Service	proportional share of time spent	$ 3,056		0.3%
		Customer Connections	proportional share of time spent	$ 7,975		0.3%
		MV90	proportional share of time spent	$ 665		0.3%
		Procurement	proportional share of time spent	$ 3,159		0.3%
		Healthy Workplace & Safety	proportional share of time spent	$ 3,031		0.3%
		Human Resources	proportional share of time spent	$ 7,334		0.3%
Total Charged to Meter Services - Horizon Energy Services Inc.				**$ 49,998**		**0.3%**
EDO - Horizon Utilities Corporation	CDM Services - Horizon Energy Services Inc.	Financial Services	proportional share of time spent	$ -		0.4%
		Procurement	proportional share of time spent	$ -		0.4%
		Healthy Workplace & Safety	proportional share of time spent	$ -		0.4%
		Human Resources	proportional share of time spent	$ -		0.4%
Total Charged to CDM Services - Horizon Energy Services Inc.				**$ -**		**0.0%**
Customer Care - Horizon Utilities Corporation	EDO - Horizon Utilities Corporation	Billing	budgeted costs to provide the service	$ 2,598,211		70.6%
		Credit and Collections		$ 871,576		70.6%
		Customer Service		$ 3,046,592		70.3%
		Executive / Corporate		$ 1,930,781		71.9%
		Meter Reading		$ 501,252		70.6%
		Return on assets		$ 197,027		
Total Charged by Customer Care - Horizon Utilities Corporation				**$ 9,145,439**		**70.8%**
Horizon Holdings Inc.	EDO - Horizon Utilities Corporation	Executive Oversight and Support Services	proportional share of time spent	$ 270,611		41.2%
Total Charged by Horizon Holdings Inc.				**$ 270,611**		**41.2%**

PURCHASE OF NON-AFFILIATE SERVICES

All supplier and contractor expenditures have been sourced and procured using the activities, practices and processes defined within Horizon Utilities' Corporate Procurement and Corporate Expenditure Approval Policies. All procurements of services and materials are supported by an approved Purchase Order ("PO") prior to any commitments, with the exception of services and materials provided for Legal, Consulting, Recruiting, Utilities (water, gas, hydro and telephone), Regulatory, Financial, and Employee benefits. See Appendix 4-7 for Horizon Utilities' Corporate Procurement Policy and Appendix 4-8 for the Corporate Expenditure Approval Policy.

Tables 4-69, 4-70 and 4-71 identify transactions over $300,000 for non-affiliate services and materials that were procured without a competitive tender for the 2011, 2012 and 2013 Actual. All of these transactions are sole-source purchases. Justifications for a sole source purchase can include:

- Only one contractor or supplier is capable of providing the required service (e.g. the IESO is the sole supplier of electricity to LDCs; OMERS is the sole pension plan for municipal employees in Ontario).
- The supplier is the only source for specialized equipment or material.
- The supplier is the preferred choice for equipment, material or service.
- Only a particular brand or part is compatible with existing equipment.
- The requested product is an integral repair part or accessory compatible with existing equipment.

Sole sourced purchases of services and materials are supported by an agreement between both parties. These expenditures have been sourced and procured in compliance with Horizon Utilities' Corporate Procurement and Corporate Expenditure Approval Policies.

Table 4-69 – 2011 Non-Affiliate Services over $300,000 Procured Without a Competitive Tender

Supplier	Nature of Product or Services	Activity	Methodology Used	2011 Expense
HYDRO ONE NETWORKS INC	Transmitter Provider	Service Provider	Sole Source	$5,251,732
CITY OF HAMILTON	Municipal Consents & Permits	Service Provider	Sole Source	$3,570,774
GREAT WEST LIFE ASSURANCE CO.	Employees Benefits Program	Service Provider	Sole Source	$2,988,417
ONTARIO MUN EMPL RETIREMENT BD	Employees Retirement Plan	Service Provider	Sole Source	$2,566,195
MEARIE GROUP, THE	Employees Benefits Program	Service Provider	Sole Source	$1,680,380
CANADA POST CORPORATION	Mail/Courier Services	Service Provider	Sole Source	$1,166,160
ONTARIO ENERGY BOARD	Provincial Regulator	Service Provider	Sole Source	$658,690
BELL CANADA	Phone Services	Service Provider	Sole Source	$422,984
Total				**$18,305,332**

Table 4-70 – 2012 Non-Affiliate Services over $300,000 Procured Without a Competitive Tender

Supplier	Nature of Product or Services	Activity	Priced By	2012 Spend
HYDRO ONE NETWORKS INC	Transmitter Provider	Service Provider	Sole Source	$ 6,389,743
HYDRO ONE NETWORKS INC	Joint Lease Rentals	Service Provider	Sole Source	$ 3,388,412
ONTARIO MUN EMPL RETIREMENT BD	Employees Retirement Plan	Service Provider	Sole Source	$ 3,243,447
GREAT WEST LIFE ASSURANCE CO.	Employees Benefits Program	Service Provider	Sole Source	$ 2,801,992
MEARIE GROUP, THE	Employees Benefits Program	Service Provider	Sole Source	$ 1,883,784
CANADA POST CORP	Mail/Courier Services	Service Provider	Sole Source	$ 1,512,232
CITY OF HAMILTON	MC's & Permits	Service Provider	Sole Source	$ 1,023,000
ONTARIO ENERGY BOARD	Provincial Regulator	Service Provider	Sole Source	$ 603,429
BELL CANADA	Phone Services	Service Provider	Sole Source	$ 369,721
Total				**$ 21,215,760**

Table 4-71 – 2013 Non-Affiliate Services over $300,000 Procured Without a Competitive Tender

Supplier	Nature of Product or Services	Activity	Methodology Used	2013 Expense
HYDRO ONE NETWORKS INC	Transmitter Provider	Service Provider	Sole Source	$8,044,880
ONTARIO MUN EMPL RETIREMENT BD	Employees Retirement Plan	Service Provider	Sole Source	$3,755,809
GREAT WEST LIFE ASSURANCE CO.	Employees Benefits Program	Service Provider	Sole Source	$3,345,172
MEARIE GROUP, THE	Employees Benefits Program	Service Provider	Sole Source	$1,833,216
CANADA POST CORPORATION	Mail/Courier Services	Service Provider	Sole Source	$1,557,881
CITY OF HAMILTON	Municipal Consents & Permits	Service Provider	Sole Source	$1,037,366
ONTARIO ENERGY BOARD	Provincial Regulator	Service Provider	Sole Source	$615,489
WSIB WORKPLACE SAFETY AND INSURANCE	Workplace Insurance	Service Provider	Sole Source	$432,446
BELL CANADA	Phone Services	Service Provider	Sole Source	$357,220
HYDRO ONE NETWORKS INC	Joint Lease Rentals	Service Provider	Sole Source	$357,150
Total				**$21,336,630**

ONE-TIME COSTS

With the exception of costs related to this Application discussed below under Regulatory Costs, Horizon Utilities is not proposing to recover any other one-time costs in this Application over a period of time. The estimated cost for completing this Application is being amortized over a period of five years.

REGULATORY COSTS

Regulatory costs include on-going expenses incurred in connection with Decisions and Orders on Cost Awards for hearings, proceedings, technical sessions, and other matters before the Board or other regulatory bodies. Annual assessment fees paid to the Board are the largest item included in this expenditure category. Other costs include:

- Board costs pursuant to Section 30 of the *Ontario Energy Board Act, 1998*;
- legal and consulting costs for regulatory matters; and
- Intervenor costs.

Table 4-72 below provides regulatory costs that are included in the Uniform System of Accounts ("USoA") within accounts 5655, 5620 and 5630.

Regulatory costs in the 2015 through 2019 Test Years are estimated to be $1,150,000, a decrease of $45,000 from the 2014 Bridge Year. Table 4-72, below identifies the incremental costs expected to be incurred for this Application. Horizon Utilities proposes to recover these costs evenly over the 2015 - 2019 Test Years, as identified in the section on "One Time Costs".

Horizon Utilities has not included the costs of regulatory staff or other staff working on regulatory applications in Account 5655. These costs are included in Accounts 5605, 5610, and 5615.

- One-Time Costs for this Custom IR Application

Horizon Utilities estimates that it will incur incremental costs of $2,759,704 in respect of this Application. This estimate includes special studies, reports, preparation, defence and adjudication costs, as well as Board and intervenor costs. Increases in costs were budgeted as it is expected that there will be increased requirements for legal and consulting support due to the complexity of this Application and its effective duration. Horizon Utilities identifies these as "one-time" costs under Regulatory. These costs will have been incurred and expensed in 2013 and 2014 but are excluded from the OM&A amounts reported for those years in this Exhibit. Horizon Utilities is requesting recovery of these costs over the five Test Years included in this Custom IR Application (from 2015 through 2019 inclusive). One-fifth ($551,941) of the total

amount incurred is included as an expense to OM&A in each of the years 2015 through 2019 inclusive.

Table 4-72, below, corresponding to the Board's Appendix 2-M, provides a summary of estimated one-time costs related to Horizon Utilities' Custom IR Application for recovery in years 2015 through 2019.

Table 4-72 – Chapter 2 – Appendix 2-M - Regulatory Cost Schedule 2011 – 2019

	Regulatory Cost Category	USoA Account	USoA Account Balance	Ongoing or One-time Cost? [2]	Last Rebasing Year (2011 Board Approved)	Year 2012 Actual	Most Current Actual Year 2013	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(J)	(L)	(N)	(P)	(R)
1	OEB Annual Assessment	5655		On-Going	$ 591,848	$ 576,900	$ 567,694	$ 600,000	$ 600,000	$ 600,000	$ 600,000	$ 600,000	$ 600,000
2	OEB Section 30 Costs (Applicant-originated)	5655		One-Time	$ 46,445	$ 26,529	$ 26,280	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
3	OEB Section 30 Costs (OEB-initiated)	5655		On-Going	$ 16,680	$ -	$ 20,714	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
4	Expert Witness costs for regulatory matters	5655		One-Time	$ 150,427	$ -	$ 25,000						
5	Legal costs for regulatory matters	5630		One-Time	$ 451,275	$ 185,918	$ 154,487						
5A	Legal costs for regulatory matters	5630		On-Going			$ 132,546	$ 175,000	$ 175,000	$ 175,000	$ 175,000	$ 175,000	$ 175,000
6	Consultants' costs for regulatory matters	5630		On-Going	$ 19,476	$ 146,835	$ 37,399	$ 170,000	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 125,000
7	Operating expenses associated with staff resources allocated to regulatory matters			On-Going	$ -	$ -	$ 71,248	$ 41,000	$ 41,000	$ 41,000	$ 41,000	$ 41,000	$ 41,000
8	Operating expenses associated with other resources allocated to regulatory matters [1]	5620		On-Going	$ -	$ -	$ 142,907	$ 109,000	$ 109,000	$ 109,000	$ 109,000	$ 109,000	$ 109,000
9	Other regulatory agency fees or assessments	5655			$ -	$ -							
10	Any other costs for regulatory matters (please define)	5655/5630		One-Time	$ -	$ -	$ 527,726						
11	Intervenor costs	5655/5630		One-Time	$ 291,799	$ 4,263	$ 20,229						
12	Sub-total - Ongoing Costs [3]		$ -		$ 628,004	$ 723,735	$ 972,508	$ 1,145,000	$ 1,100,000	$ 1,100,000	$ 1,100,000	$ 1,100,000	$ 1,100,000
13	Sub-total - One-time Costs [4]		$ -		$ 939,946	$ 216,710	$ 753,722	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
14	Total		$ -		$ 1,567,950	$ 940,445	$ 1,726,230	$ 1,195,000	$ 1,150,000	$ 1,150,000	$ 1,150,000	$ 1,150,000	$ 1,150,000

Please fill out the following table for all <u>one-time</u> costs related to this cost of service application to be amortized over the test year plus the IRM period.

		Historical Year(s)	2014 Bridge Year	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
4	Expert Witness costs							
5	Legal costs	$ 154,487	$ 400,000					
6	Consultants' costs	$ 552,726	$ 1,000,000					
7	Incremental operating expenses associated with staff resources allocated to this application.		$ 52,492					
8	Incremental operating expenses associated with other resources allocated to this application. [1]		$ 50,000					
11	Intervenor costs		$ 550,000					

LOW INCOME ENERGY ASSISTANCE PROGRAMS

Horizon Utilities has actively supported LEAP since 2011. Customer Care works closely with the lead agencies, namely the United Way of Burlington and Greater Hamilton and the United Way of St. Catharines and Thorold and the three intake agencies; Community Care Services in St. Catharines, the North Hamilton Community Health Centre and Neighbor 2 Neighbor Centre in Hamilton. Horizon Utilities' employees meet with these groups regularly and, as a result, Horizon Utilities is able to connect the community support groups with customers in need of these programs.

The Customer Service department has developed processes to interface with LEAP agencies and others such as the City of Hamilton Utility Arrears program, ensuring the timely delivery of financial assistance to low-income customers in need across Horizon Utilities' service territory. Horizon Utilities leverages these processes and relationships to assist community partners in program outreach communications such as the dispersal of food gift cards to qualifying low-income customers after the December 2013 ice storm.

In 2013, Horizon Utilities provided $124,863 in LEAP funding which assisted 332 families in Hamilton and St. Catharines by providing financial support.

Eligible intake agencies also have access to the Late Payment Settlement fund to supplement funding they have received from LEAP. United Way Toronto administers the Late Payment Settlement fund and disperses the amounts directly to the intake agencies. Horizon Utilities assisted an additional 404 families in 2013 with approximately $160,000 through this fund.

As prescribed by the Board, Horizon Utilities contributes 0.12% of the Board-Approved distribution revenue requirement annually to LEAP. The contributions for the 2015 through 2019 Test Years are forecast to be $135,547, $142,354, $146,092, $148,704, and $153,459, respectively.

Horizon Utilities submits annual LEAP reporting to the Board in compliance with the 2013 LEAP Manual. Horizon Utilities is compliant with the Board's requirements regarding financial assistance opportunities in conjunction with social agencies, CDM initiatives, and customer service changes specific to low-income sector customers.

Prior to 2011, Horizon Utilities supported the Winter Warmth program, in partnership with Community Care Services in St. Catharines and the North Hamilton Community Health Centre in Hamilton as the intake agencies. Horizon Utilities confirms that there are no amounts included in the revenue requirements for the Test Years for Winter Warmth or any other such legacy programs.

CHARITABLE AND POLITICAL DONATIONS

Horizon Utilities has not included any charitable or political donations in the revenue requirement for the Test Years, other than contributions to programs that provide assistance to low income consumers as identified in the preceding Schedule of this Exhibit. The following Table 4-73 summarizes the LEAP donations from 2011 Board-Approved through the 2019 Test Year.

Table 4-73 – LEAP Donations 2011 – 2019

	2011 Board Approved	2011 Actual	2012 Actual	2013 Actual	2014 Bridge Year
LEAP	$ 122,667	$ 122,667	$ 123,528	$ 124,863	$ 129,000

	2015 Test Year	2016 Test Year	2017 Test Year	2018 Test Year	2019 Test Year
LEAP	$ 135,547	$ 142,354	$ 146,092	$ 148,704	$ 153,459

APPENDIX 4-3 – WORKFORCE LABOUR STRATEGY AND PLAN

Workforce Labour Strategy and Plan

December 2013

Overview of Workforce Planning

Workforce planning is the process of identifying the workforce capacity and capability required to achieve Horizon Utilities' strategic goals and objectives. Workforce planning is an integral part of Horizon Utilities' business planning process. It considers the size and skill of the workforce required to deliver business results and meet customer expectations. The purpose of the Workforce Labour Strategy and Plan ("WLSP") is to identify workforce-related risks and develop mitigating actions to ensure that the right people — those with the skills and capabilities necessary to meet organizational objectives — are available when needed and at the right cost, to deliver successful business outcomes.

Through effective workforce planning, Horizon Utilities seeks to understand high-level trends and changes, both in the labour market and internally, that will affect the availability of resources required to deliver organizational outcomes. This is primarily accomplished through the annual five-year financial and business planning process that includes a review of resources against organizational goals and priorities. This process is informed by annual reporting on workforce demographics and key metrics such as: age; tenure; retirement eligibility; and attrition. Workforce planning identifies the HR strategies and action plans required to mitigate workforce risks and deliver optimum business results.

Horizon Utilities' WLSP is prepared on a headcount basis to fully account for discrete permanent positions within each department for the purposes of workforce planning. This is in contrast to the Ontario Energy Board's (the "Board") Appendix 2-K, included in this Application in Exhibit 4, Tab 4, Schedule 2, which is prepared on a Full Time Equivalent ("FTE") basis in accordance with Chapter 2 of the Board's Filing Requirements for Electricity Distribution Rate Applications and includes both permanent and temporary employees but excludes Customer Care employees that are included in the WLSP. Customer Care, which is part of the Customer Service functional business unit, is an affiliated business to Electricity Distribution Operations ("EDO"); which charges EDO for services through a management fee. Employees in Customer Care are not considered to be EDO employees in the 2015 Cost of Service Application. Notwithstanding this business model, Customer Care is a critical department for the purposes of workforce planning and an integral part of Horizon Utilities business.

The widely recognized "Power In Motion Labour Market Information Study" ("LMI") conducted by the Electricity Sector Council[1] indicates that Canada's electricity sector faces the prospect of a prolonged period of increasing competition for professional and skilled workers, prompted by an aging labour force and a diminishing supply of suitably trained and educated young workers. Previously, the electricity sector has benefited from its ability to attract and retain young talent. Today, conditions are changing with increasing competition for talent, not only from within the sector, but also from the broader renewable energy and construction industries. Talented younger workers have considerably more career choices. Horizon Utilities' employee demographics are similar to those described in the LMI study; Horizon Utilities faces similar challenges to those presented above.

Matching workforce capability with work demands in the electricity distribution sector often requires long planning timeframes to accommodate competition for talent and long lead times for training, knowledge transfer, and proficiency. Regularly assessing the availability of internal resources and identifying strategies to mitigate risk through workforce planning is critically important to sustaining business operations.

Summary of 2011 – 2013 Workforce Planning - Issues and Action Plans

Horizon Utilities filed its last CoS Application in 2011 (EB-2010-0131). Horizon Utilities advanced a significant asset renewal program in the 2011 application, in order to address a growing back-log of distribution assets that were either at or beyond the end-of-life. Horizon Utilities further identified that additional trades and technical staff would be required to undertake these asset renewal projects. The WLSP filed with the 2011 CoS Application focused on: the resource challenges to meet the needs of the asset renewal projects; and the anticipated trades and technical staff retirements spanning over a five year period. The mitigating action plans that were developed in reference to the latter issue were to:

1. Hire apprentices to ensure that Horizon Utilities would have a pool of qualified and trained replacement resources for the trades staff expected to retire; and
2. Balance internal and outsourced resources to support the increased capital work.

Based on this plan, in 2011 to 2013 Horizon Utilities undertook the following action to respond to resource challenges and ensure business continuity:

[1] Electricity Sector Council (now known as Electricity Human Resources Canada) is located in Ottawa, Ontario and provides research and resources to the Canadian electricity industry including the 2008 Labour Market Industry Study and the 2011 Labour Market Information Study (updated in 2012).

1. Hired an additional 13 Apprentices to support Construction and Maintenance (6), Network Operations (6) and Customer Connections (1)
2. Developed and communicated enhancements to the Apprenticeship Program, including revised forms, processes and roles to facilitate a more standardized and rigorous approach to developing apprentices and balancing on-the-job training with academic requirements; and
3. Outsourced 25% of capital work.

These mitigating actions have enabled Horizon Utilities to ensure the availability of skilled resources to successfully achieve business objectives and priorities.

Workforce Planning 2014 to 2019

Horizon Utilities continues to focus on workforce planning that addresses the challenges associated with the availability of resources to deliver business results and meet customer expectations. The challenges identified in 2011 above remain relevant for workforce planning from 2014 to 2019. In addition, organizational resource needs to effectively leverage new technology have been identified as an emerging challenge. The introduction of new technology contributes to process improvements and increased workforce capacity that support Horizon Utilities' four strategic pillars as detailed in Horizon Utilities' People Strategy document, Appendix 4-20. The WLSP serves to identify new skills required to realize the benefits of new technologies as well as action plans to address skill gaps through training, development, and recruitment.

Retirements and Attrition

Retirements continue to be a challenge for the electricity sector, and demographic data provided in Tables 1, 2 and 3 below supports that this challenge persists for Horizon Utilities as well. Details related to retirements and attrition are based on the following assumptions:

- Employees are deemed "eligible to retire" for an unreduced early pension based on the Ontario Municipal Employees Retirement System ("OMERS") criteria as follows:
    i. Age + service = "90 Factor" (minimum age 55); or
    ii. 30 years of service (minimum age 55); or
    iii. 65 years of age;
- 30% of the employees deemed "eligible to retire" will retire in any given year;
- Historic non-retirement attrition rates are applied to the forecast projections; and

- Demographics based on headcount as at December 31, 2013.

Table 1 provides the age distribution of Horizon Utilities' workforce and this is generally comparable to that which is included in the LMI study. Horizon Utilities has a relatively old workforce, has 57% of employees age 45 or older and 23% under the age of 35, as compared to 53% and 25% respectively, in the electricity sector. In recognizing this demographic within Horizon Utilities, the Workforce Plan needs to adjust accordingly for the timelines of retirement of the current workforce to ensure that there is a balance of skilled and knowledgeable staff for business continuity.

Table 1: Horizon Utilities' Employee Age Distribution

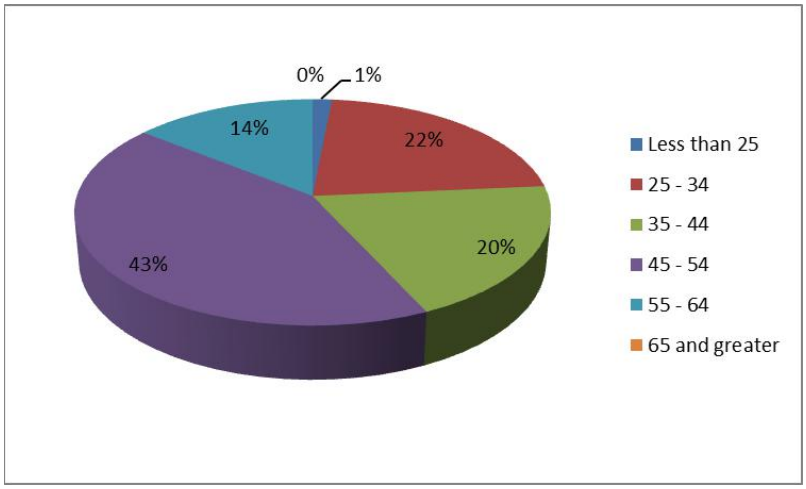

Table 2 summarizes the 2011 to 2013 actual retirements and the 2014 to 2019 forecast retirements (based on the assumptions provided above). Horizon Utilities is forecasting that a total of 79 employees will retire by 2019.

Table 2: Retirements

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Eligible to Retire	26	29	32	33	36	39	48	54	52
Retirements - Actual Forecast	9	11	9	10	11	12	14	16	16
% of Eligible Employees	35%	38%	28%	30%	31%	31%	29%	30%	31%

Table 3 provides actual non-retirement attrition rates (voluntary and involuntary separations) from 2011 to 2013 expressed as a percentage of total headcount. The average non-retirement attrition rate for the last 5 years (3.8%) is used as an indicator to predict future attrition rates for 2014 to 2019.

Table 3: Attrition Rate (excluding Retirements)

Attrition	2011	2012	2013	2014	2015	2016	2017	2018	2019
Number of Employees	19	16	14	16	15	15	15	15	15
Percentage	4.85%	4.04%	3.50%	3.80%	3.80%	3.80%	3.80%	3.80%	3.80%

The summary data in Tables 1, 2 and 3 above provide an overview of the current workforce demographics and trends which informs the 2014 to 2019 forecasts. The forecast data is used to anticipate workforce gaps and to develop action plans to mitigate workforce risks through the budget and business planning process including the reallocation of existing positions/headcount and/or the justification of new positions/headcount as provided in Exhibit 4, Tab 3, Schedule 3.

Skilled Trades Workforce

Horizon Utilities has apprentices in three departments: Construction and Maintenance; Customer Connections; and Engineering and Operating. The majority of apprentices are in the Construction and Maintenance department. Horizon Utilities has a particular focus on ensuring the organization has the appropriate mix of journeypersons and apprentices; given the length of time required to complete the apprenticeship program and achieve proficiency in skilled trades (5 – 7 years), in order to ensure business continuity.

Construction and Maintenance

An aging workforce and increasing capital investment requirements are not uncommon challenges in the electricity sector. Construction and Maintenance will utilize a multi-pronged approach to meet this challenge, including: apprentice hiring with appropriate levels of management oversight; outsourcing of work to pre-approved contractors; increased capacity and efficiency through process improvement; and on-going management and reduction of non-productive time as discussed in Exhibit 4, Tab 3, Schedule 4.

The average age of the trades workforce is 44 years, with 40% of the workforce over 50 years of age. Twenty-eight employees are under 30 years of age, 22 of whom are apprentices. Apprentice hiring is planned to ensure the ratio of apprentices to experienced journeypersons is maintained at an appropriate level of 1:3.

Horizon Utilities has identified that it will need to increase its investment in renewal distribution capital expenditures between 2014-2019 as discussed in Exhibit 2, Tab 1, Schedule 1. This will require approximately six additional positions: three inspectors to oversee the completion of the additional contracted work; and three splicers to perform the XLPE termination work. This increase in headcount will be offset by retirements, with an overall reduction in Construction and Maintenance headcount of 4.6% over the 2014-2019 time period.

Apprentice Development and Contribution to Workforce Capacity

It is critical that Horizon Utilities continues to hire an appropriate number of apprentices to sustain a proficient and competent workforce. The Program was revised in 2013 to provide more structured governance; improved mentorship; and enhanced apprentice performance development. Key elements of the Apprentice Program include an Apprentice Council comprised of management and apprentice representatives; and the Trades and Technical Coordinator who oversees the program.

It is necessary to provide additional safety oversight on job sites to safely integrate apprentices into the workforce. This naturally reduces the pace of work with an associated impact on output/productivity. Apprentices develop skills and competency through structured training and mentoring, and: as their contribution level to workforce output increases; the level of oversight required on job sites declines; and/ or until they become a fully trained journeyperson.

Table 4 below provides the number of Apprentices required in the 2014 Bridge Year and the 2015 to 2019 Test Years, along with the number of journeypersons based on anticipated retirements in conjunction with apprentices progressing to journeypersons.

Table 4: Construction and Maintenance Apprentice and Journeyperson Schedule (2011 – 2019)

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Number of Apprentices	25	25	22	18	11	10	9	14	18
Number of Journeypersons	69	66	65	68	75	75	85	70	67
Total	94	91	87	86	86	85	94	84	85
Anticipated Apprentice Hires	0	6	0	2	3	4	5	6	6

Customer Connections

The average age of the skilled trades workforce is 47 years, with 38% of the workforce over 50 years of age. Two employees are under 30 years of age, one of whom is an apprentice. Apprentices will be hired to fill the vacancies left by retiring meter persons at the time of retirement.

Workforce planning has enabled Customer Connections to optimize its workforce to best meet changing business demands. Specifically, operating efficiencies attributed to the e-mobile project have resulted in the reduction of one meter person and the reallocation of two meter persons to other roles as detailed in Exhibit 4, Tab 3, Schedule 4. Customer Connections' forecast is stable with regard to FTE levels from 2014 to 2019.

Productivity and work flow improvements have also been achieved with the implementation of this project from 2011 to 2013 through

- The ability to directly dispatch electronic service orders to staff in the field;
- The ability for workers to enter field data directly into systems;
- The reduction of more than 30,000 paper orders annually; and

- The elimination of clerical data entry and rework due to the reduction of manual errors and automation and
- Increased tool time with the elimination of multiple trips to the office

Table 5 below illustrates the number of apprentices hired between 2011 and 2013 and the anticipated apprentice hiring schedule from 2014 – 2019 to ensure a competent and qualified workforce is available to perform the required work.

Table 5: Customer Connections Apprentice and Journeyperson Schedule (2011 – 2019)

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Number of Apprentices	2	2	1	1	2	2	3	4	4
Number of Journeypersons	14	13	13	12	11	11	10	9	9
Total	16	15	14	13	13	13	13	13	13
Anticipated Apprentice Hires	1	0	0	0	1	1	1	1	1

Engineering and Operating

The average age of the skilled trades workforce is 47 years, with 39% of the workforce over 50 years of age. Five employees are under 30 years of age, all of whom are apprentices. Apprentices will be hired to fill the vacancies left by retiring operators at the time of retirement.

The operator headcount will be reduced by one due to the retirement of an operator who will not be replaced in 2014. Going forward, as operators retire or leave the organization, apprentices will be hired as replacements. Table 6 below illustrates the number of apprentices hired between 2011 and 2013 and the anticipated apprentice hiring schedule from 2014 – 2019.

Table 6: Engineering and Operating Apprentice and Journeyperson Schedule (2011 – 2019)

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Number of Apprentices	4	6	5	4	5	5	4	3	1
Number of Journeypersons	14	12	13	13	12	12	13	14	16
Total	18	18	18	17	17	17	17	17	17
Anticipated Apprentice Hires	2	2	0	1	2	0	1	0	0

New Technology

Horizon Utilities has identified the opportunity to leverage new technologies to improve processes and workforce capacity across the organization. As new technologies and software platforms are introduced, workforce planning enables the organization to assess requirements relative to existing skillsets and identify potential gaps. This review results in the development of action plans and HR strategies that considers the following options:

- Develop the requisite skills through training and cross-training of internal resources; and
- Acquire skills externally through recruitment and/or outsourcing.

Developing and/or acquiring the requisite skills to support the new technologies facilitates: a seamless implementation and minimal business disruption; opportunities for employees to learn new skills; and increased workforce capacity and process efficiencies as provided in Exhibit 4, Tab2 Schedule 2; Exhibit 4, Tab 3, Schedule 3; and Exhibit 4, Tab 4, Schedule 2.

Conclusion

Horizon Utilities' workforce is one of its largest assets; workforce planning is a key business process to mitigate workforce risks and maximize the optimization of human resources. Systematic workforce planning improves decision-making and investment in the workforce at both the corporate and departmental level, which ultimately improves business effectiveness.

Workforce planning provides for a prudent review and evaluation of resources to meet business requirements and considers opportunities for consolidation of work, reallocation of positions to more value-added roles, position elimination or outsourcing.

Workforce planning also serves to inform HR strategies and priorities to ensure that there is sufficient and sustainable capability and capacity in the workforce to deliver organizational objectives, now and in the future.

APPENDIX 4-4.1 – ECKLER ACTUARIAL REPORT ON POST-RETIREMENT BENEFITS AS AT DECEMBER 31, 2011

Horizon Utilities Corporation
Actuarial Report on Post-Retirement Benefits as at December 31, 2011

February 2012

Prepared by:

Eckler

CONSULTANTS + ACTUARIES

Wafaa Babcock, FSA FCIA
Kwame Smart, FSA FCIA

Eckler Ltd.
110 Sheppard Avenue East, Suite 900
Toronto, Ontario
M2N 7A3

Eckler

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Section 1. INTRODUCTION

We are pleased to present our actuarial report on the Non-Pension Post-Retirement Benefits for Horizon Utilities Corporation as at December 31, 2011. Also included are the related amounts for Hamilton Utilities Corporation, Hamilton Community Energy, Horizon Energy Solutions Inc. and Horizon Holdings Inc.

The purpose of this report is to provide the disclosure for financial statement purposes for Horizon Utilities Corporation and its related companies and to outline the impact of the transition to the International Accounting Standard Number 19 ("IAS19") as at January 1, 2012. The following is provided in the report:

- the benefit expense for the 2011 fiscal year,
- the value of the accrued benefit liability as at December 31, 2011, and
- the estimated benefit expense for the 2012 fiscal year.

The results are intended for the management of Horizon Utilities Corporation to use for these purposes only.

It was brought to our attention that the opening accrued benefit (liability) asset we were accumulating differed from those on Horizon Utilities' books. We have adjusted our numbers and are now using the same January 1, 2011 accrued benefit (liability) asset. In addition, there have been some changes to the 2011 expense from the amounts first calculated to account for amounts included on Horizon Utilities' books in 2011. It was confirmed by Horizon Utilities that such changes in amounts are not material.

This report has been prepared in accordance with the requirements of Section 3461 of the Canadian Institute of Chartered Accountants Handbook ("CICA 3461") and as per IAS19 under the International Financial Reporting Standards ("IFRS").

The post-retirement benefits that are provided and that we have included in our valuation are the life insurance and supplementary health benefits. Supplementary health benefits include prescription drug, major medical, hospital, dental, and vision care coverage. The main provisions of the benefit plans are summarised in Section 8.

ESTIMATED 2012 BENEFIT COST AND ADOPTION OF IFRS

Starting January 1, 2012 Horizon Utilities Corporation and its related companies will be adopting IFRS for its financial statements disclosure. In anticipation of this event, we have prepared the estimated benefit expense for the 2012 fiscal year in accordance with IFRS, with comparative figures for the 2011 fiscal year.

Horizon Utilities has indicated that it will be applying the IFRS 1 exemption which permits recognition of all cumulative actuarial gains and losses as at January 1, 2011 through an adjustment to retained earnings.

Under IFRS three approaches for the recognition of actuarial gains and losses are permitted for the financial statements:

1) Approach 1 - The 10% corridor approach which amortizes any gains or losses in excess of 10% of the greater of the assets or obligations at the end of the prior year.

2) Approach 2 - Immediate recognition in profit and loss and recognized in the benefit expense. Under this method the amount of gain or loss experience in the year will be reflected in the annual benefit expense rather than amortized over future years, as with Approach 1.

3) Approach 3 - Immediate recognition in other comprehensive income. Under this method actuarial gains or losses will be recognized immediately in retained earnings and are not reclassified to profit and loss in a subsequent year.

Horizon Utilities has selected Approach 3 where future actuarial gains and losses will be recognized under IAS19 by immediate recognition in other comprehensive income.

With the transition to IAS19, a change was made to the attribution method. Under CICA, the attribution method was to accrue benefits over the period from the date of hire to the date of attaining full eligibility for benefits, which is at age 55 with 20 years of service.

The attribution method under IAS19, uses the period from the date at which service first contributes towards earning a benefit, to date of full eligibility, i.e. from age 35 (or later) to age 55 with 20 years of service. The result of the change in the attribution method for Horizon Utilities is to lower the accrued benefit obligation, but to increase the service cost.

PRESENTATION OF RESULTS

We have shown the results of the valuation split by the five legal entities for the company's internal reporting as follows:

- Hamilton Utilities Corporation ("HUC"),
- Hamilton Community Energy ("HCE"),
- Horizon Utilities Corporation ("Horizon"),
- Horizon Energy Solutions Inc. ("HESI"), and
- Horizon Holdings Inc. ("Holdings").

Respectfully submitted,

Wafaa Babcock, FSA FCIA

Kwame Smart, FSA FCIA

February 2012

Section 2. EXECUTIVE SUMMARY

Based on the data, methods and assumptions outlined in this report, the table below sets out the results of this valuation:

2011 Benefit Expense (CICA)

	HUC	HCE	Horizon	HESI	Holdings	Total
Service cost	$0	$0	$382,200	$0	$0	$382,200
Interest cost	2,500	0	1,045,900	0	0	1,048,400
Amortization of net (gain)/loss	(900)	0	42,800	0	0	41,900
2011 Benefit Expense	**$1,600**	**$0**	**$1,470,900**	**$0**	**$0**	**$1,472,500**

Accrued Benefit Liability as at December 31, 2011 (CICA)

	HUC	HCE	Horizon	HESI	Holdings	Total
Accrued benefit obligation	($56,300)	($22,600)	($22,768,600)	$0	($900)	**($22,848,400)**
Plan assets at fair value	0	0	0	0	0	**0**
Funded status	**($56,300)**	**($22,600)**	**($22,768,600)**	**0**	**($900)**	**($22,848,400)**
Unamortized net transition obligation	0	0	0	0	0	
Unamortized net (gain)/loss	(16,000)	21,128	5,770,047	0	900	**5,776,075**
Unamortized impact of benefit changes	0	0	0	0	0	**0**
Accrued benefit (liability) asset	**($72,300)**	**($1,472)**	**($16,998,553)**	**$0**	**$0**	**($17,072,325)**

Reconciliation of Accrued Benefit Liability as at December 31, 2011 (CICA)

	HUC	HCE	Horizon	HESI	Holdings	Total
Accrued benefit (liability) at start	($75,100)	($1,472)	($16,670,189)	$0	$0	($16,746,761)
MINUS: 2011 Benefit cost	1,600	0	1,470,900	0	0	1,472,500
PLUS: Premiums paid in 2011	4,400	0	1,142,536	0	0	1,146,936
Accrued benefit (liability) asset at December 31, 2011	**($72,300)**	**($1,472)**	**($16,998,553)**	**$0**	**$0**	**($17,072,325)**

Estimated 2012 Benefit Expense (IAS 19)

	HUC	HCE	Horizon	HESI	Holdings	Total
Service cost	$0	$300	$484,500	$0	$0	$484,800
Interest cost	2,400	900	971,300	0	0	974,600
Amortization of net (gain)/loss	0	0	0	0	0	0
2012 Benefit Expense	**$2,400**	**$1,200**	**$1,455,800**	**$0**	**$0**	**$1,459,400**

Section 3. ACTUARIAL OPINION

In our opinion,

- the data on which the this report is based are sufficient and reliable for the purposes of this report;
- the assumptions used are, in aggregate, appropriate for the purposes of this report;
- the methods employed in the valuation are appropriate for the purposes of this report;
- the valuation conforms with the requirements of Section 3461 of the CICA Handbook and under IAS19.

We are not aware of any subsequent events that would have a material impact on the valuation results presented herein. Emerging experience, differing from the assumptions, will result in gains or losses which will be revealed in future valuations.

This report has been prepared, and this opinion has been given in accordance with accepted actuarial practice.

Wafaa Babcock, FSA, FCIA — Date: February 27, 2012

Kwame Smart, FSA, FCIA — Date: 27/02/2012

Section 4. VALUATION RESULTS

I. CICA Valuation results

2011 Benefit Cost

	HUC	HCE	Horizon	HESI	Holdings	Total
Current service cost	$0	$0	$382,200	$0	$0	$382,200
Interest cost	2,500	0	1,045,900	0	0	1,048,400
Actuarial (gains)/losses	10,100	21,500	2,739,936	0	900	2,772,436
Elements of future benefit costs before adjustments to recognize the long-term nature of future benefit costs	**$12,600**	**$21,500**	**$4,168,036**	**$0**	**$900**	**$4,203,036**
Difference between actuarial loss recognized for year and actual actuarial loss on accrued benefit obligation for year	(11,000)	(21,500)	(2,697,136)	0	(900)	(2,730,536)
Subtotal	(11,000)	(21,500)	(2,697,136)	0	(900)	(2,730,536)
Defined benefit cost recognized	**$1,600**	**$0**	**$1,470,900**	**$0**	**$0**	**$1,472,500**

Alternatively, the 2011 Benefit Cost can be outlined as follows:

	HUC	HCE	Horizon	HESI	Holdings	Total
Service cost	$0	$0	$382,200	$0	$0	$382,200
Interest cost	2,500	0	1,045,900	0	0	1,048,400
Amortization of net (gain)/loss	(900)	0	42,800	0	0	41,900
2011 Benefit Expense	**$1,600**	**$0**	**$1,470,900**	**$0**	**$0**	**$1,472,500**

Accrued Benefit Obligation as at December 31, 2011

	Drugs	Other Health	Dental	Vision	Life Insurance	Total
HUC	$25,600	$7,600	$20,200	$1,900	$1,000	$56,300
HCE	12,200	2,000	7,400	900	100	22,600
Horizon	7,798,200	2,198,800	5,767,700	429,100	6,574,800	22,768,600
HESI	0	0	0	0	0	0
Holdings	500	100	300	0	0	900
Total	**$7,836,500**	**$2,208,500**	**$5,795,600**	**$431,900**	**$6,575,900**	**$22,848,400**

Reconciliation of Accrued Benefit Obligation

	HUC	HCE	Horizon	HESI	Holdings	Total
Accrued benefit obligation at January 1, 2011	$48,100	$1,100	$19,743,100	$0	$0	$19,792,300
Current service cost	0	0	382,200	0	0	382,200
Interest cost	2,500	0	1,045,900	0	0	1,048,400
2011 Contributions made (i.e. premiums paid)	(4,400)	0	(1,142,536)	0	0	(1,146,936)
Actuarial (gains)/losses	10,100	21,500	2,739,936	0	900	2,772,436
Total	**$56,300**	**$22,600**	**$22,768,600**	**$0**	**$900**	**$22,848,400**

Reconciliation of Unamortized Actuarial Losses (Gains)

	HUC	HCE	Horizon	HESI	Holdings	Total
Unamortized loss (gain) at start	($18,400)	($400)	$3,067,700	$0	$0	$3,048,900
Adjustment due to change in opening numbers	(8,600)	28	5,211	0	0	(3,361)
PLUS: New loss (gain) in 2011	10,100	21,500	2,739,936	0	900	2,772,436
MINUS: Amortization for 2011	(900)	0	42,800	0	0	41,900
Unamortized loss (gain) at December 31, 2011	**($16,000)**	**$21,128**	**$5,770,047**	**$0**	**$900**	**$5,776,075**

Reconciliation of Accrued Benefit Obligation to Accrued Benefit Liability – December 31, 2011

	HUC	HCE	Horizon	HESI	Holding	Total
Accrued benefit obligation	($56,300)	($22,600)	($22,768,600)	$0	($900)	**($22,848,400)**
Plan assets at fair value	0	0	0	0	0	**0**
Funded status	**($56,300)**	**($22,600)**	**($22,768,600)**	**$0**	**($900)**	**($22,848,400)**
Unamortized net transition obligation	0	0	0	0	0	
Unamortized net (gain)/loss	(16,000)	21,128	5,770,047	0	900	**5,776,075**
Unamortized impact of benefit changes	0	0	0	0	0	0
Accrued benefit (liability) asset	**($72,300)**	**($1,472)**	**($16,998,553)**	**$0**	**$0**	**($17,072,325)**

Reconciliation of Accrued Benefit Liability as of December 31, 2011

	HUC	HCE	Horizon	HESI	Holdings	Total
Accrued benefit (liability) at start	($75,100)	($1,472)	($16,670,189)	$0	$0	($16,746,761)
MINUS: 2011 Benefit cost	1,600	0	1,470,900	0	0	1,472,500
PLUS: Premiums paid in 2011	4,400	0	1,142,536	0	0	1,146,936
Accrued benefit (liability) asset at December 31, 2011	**($72,300)**	**($1,472)**	**($16,998,553)**	**$0**	**$0**	**($17,072,325)**

Trend Rate Sensitivity

The Impact of a 1% increase in the drug, health and dental trend rates is a follows:

	HUC	HCE	Horizon	HESI	Holdings	Total
2011 Service and interest cost	$200	$0	$207,400	$0	$0	$207,600
Accrued benefit obligation	$6,300	$900	$3,032,500	$0	300	$3,040,000

The Impact of a 1% decrease in the drug, health and dental trend rates is a follows:

	HUC	HCE	Horizon	HESI	Holdings	Total
2011 Service and interest cost	($300)	$0	($162,600)	$0	$0	($162,900)
Accrued benefit obligation	($5,400)	($800)	($2,404,200)	$0	($200)	($2,410,600)

Discount Rate Sensitivity

The Impact of a 1% increase in the discount rate on the accrued benefit obligation as of December 31, 2011 is as follows:

	HUC	HCE	Horizon	HESI	Holdings	Total
Accrued benefit obligation	($5,700)	($900)	($3,324,800)	$0	($200)	($3,331,600)

The Impact of 1% decrease in the discount rate on the accrued benefit obligation as of December 31, 2011 is as follows:

	HUC	HCE	Horizon	HESI	Holdings	Total
Accrued benefit obligation	$6,800	$1,000	$4,283,500	$0	$300	$4,291,600

I. IAS 19 Valuation results

Opening Balance Sheet as at January 1, 2011

	HUC	HCE	Horizon	HESI	Holdings	Total
Defined benefit obligation	($48,000)	($1,100)	($18,787,200)	$0	$0	($18,836,300)
Plan assets at fair value	0	0	0	0	0	**0**
Funded status	**($48,000)**	**($1,100)**	**($18,787,200)**	**$0**	**$0**	**($18,836,300)**
Unamortized net (gain)/loss	0	0	0	0	0	**0**
Defined benefit (liability) asset	**($48,000)**	**($1,100)**	**($18,787,200)**	**0**	**0**	**($18,836,300)**

2011 Benefit Expense – for Comparative Purposes

	HUC	HCE	Horizon	HESI	Holdings	Total
Service cost	$0	$300	$402,100	$0	$0	$402,400
Interest cost	2,500	100	1,025,700	0	0	1,028,300
Amortization of net (gain)/loss	0	0	0	0	0	0
2011 Benefit expense	**$2,500**	**$400**	**$1,427,800**	**$0**	**$0**	**$1,430,700**

December 31, 2011 Balance Sheet

	HUC	HCE	Horizon	HESI	Holdings	Total
Defined benefit obligation	($56,100)	($22,500)	($21,666,200)	$0	$0	**($21,744,800)**
Plan assets at fair value	0	0	0	0	0	**0**
Funded status	**(56,100)**	**(22,500)**	**(21,666,200)**	**0**	**0**	**(21,744,800)**
Unamortized net (gain)/loss	0	0	0	0	0	**0**
Defined benefit (liability) asset	**($56,100)**	**($22,500)**	**($21,666,200)**	**$0**	**$0**	**($21,744,800)**

Reconciliation of Accrued Benefit Liability as at December 31, 2011

	HUC	HCE	Horizon	HESI	Holdings	Total
Defined benefit (liability) at start	($48,000)	($1,100)	($18,787,200)	$0	$0	($18,836,300)
MINUS: 2011 Benefit cost	2,500	400	1,427,800	0	0	1,430,700
PLUS: Premiums paid in 2011	4,400	0	1,142,536	0	0	1,146,936
PLUS: Gains (losses) recognized in OCI	(10,000)	(21,000)	(2,593,736)	0	0	(2,624,736)
Accrued benefit (liability) asset at December 31, 2011	**($56,100)**	**($22,500)**	**($21,666,200)**	**$0**	**$0**	**($21,744,800)**

Estimated 2012 Benefit Expense

	HUC	HCE	Horizon	HESI	Holdings	Total
Service cost	$0	$300	$484,500	$0	$0	$484,800
Interest cost	2,400	900	971,300	0	0	974,600
Amortization of net (gain)/loss	0	0	0	0	0	0
2012 Benefit expense	**$2,400**	**$1,200**	**$1,455,800**	**$0**	**$0**	**$1,459,400**

Section 5. MEMBERSHIP DATA

We received employee and retiree data from Horizon Utilities Corporation as at December 31, 2011. We reviewed the data for internal consistency and reasonableness against the data used in the last valuation as at December 31, 2007.

Below is a summary of the data used for this valuation:

ACTIVE EMPLOYEES*

	Number of Employees			Average	Average	No. Fully
	Males	Females	Total	Age	Service	Eligible
HUC	1	3	4	43.0	1.1	0
HCE	4	0	4	50.0	3.7	0
Horizon	272	124	396	44.0	14.0	32
HESI	1	0	1	53.5	1.6	0
Holdings	3	0	3	38.6	4.0	0
Total	**281**	**127**	**408**	**44.1**	**13.7**	**32**

*All active employees and retirees are resident in Ontario.

RETIRED EMPLOYEES

	Number	Average Age	Percent over age 65	Percent with health coverage	Percent with family coverage**
HUC	1	65.2	100.0%	100.0%	100.0%
HCE	1	59.4	0.0%	100.0%	100.0%
St. Catharines (part of Horizon)	77	73.5	76.6%	24.7%	78.9%
Horizon (excluding St.Catharines)	171	69.5	62.6%	95.3%	81.6%
Total	**250**	**70.7**	**66.8%**	**73.6%**	**81.5%**

**Percentage based on these with health coverage only.

Section 6. VALUATION METHODS

ACTUARIAL COST METHOD

CICA: The Accrued Benefit Obligation and Current Service Cost were determined using the projected benefit method, pro-rated on service. This method is stipulated in Section 3461 of the Canadian Institute of Chartered Accountants Handbook.

Under this method, the projected post-retirement benefit is deemed to be earned on a pro-rata basis over the years of service from hire date to the date of full eligibility which is at age 55 with 20 years of service.

IAS 19: Under IAS19, the projected post-retirement benefit is deemed to be earned on a pro-rata basis from the date at which service first contributes towards earning a benefit, to date of full eligibility, i.e. from age 35 (or later) to age 55 with 20 years of service.

ACCRUED BENEFIT OBLIGATION

A liability is calculated as the actuarial present value of claims expected to be provided in retirement for all current active employees and current retirees as well as their eligible dependants.

CICA: The Accrued Benefit Obligation is the sum of the total liability for all retirees plus the proration of liabilities for active employees for years of service to the valuation date over the years of service to their date of full eligibility.

IAS 19: The Accrued Benefit Obligation is the sum of the total liability for all retirees plus the proration of liabilities for active employees for years of service accrual over the lesser of 20 years of service or for the period from the date that service first contributes toward earning a benefit to their date of full eligibility.

CURRENT SERVICE COST

The annual current service cost is the present value of the post-retirement benefits allocated to a single year of service, for all active employees who have not attained full eligibility.

ANNUAL BENEFIT COST OR EXPENSE

The annual benefit cost or expense is the sum of the service cost, one year's interest costs and any amortizations of gains/losses (none are amortized under the IAS19 method selected by Horizon Utilities). The interest cost is adjusted appropriately for the expected amount of payments made during the year.

Section 7. CLAIMS COST DEVELOPMENT AND CLAIMS EXPERIENCE

DEVELOPING THE AVERAGE CLAIM

The development of the average claim costs used to determine the benefit obligation and current service costs is described below:

First, we established the average number of retirees and dependents eligible for benefits for each of 2009, 2010 and 2011 by averaging the number eligible at the beginning and at the end of each year. We will call the average number of retirees and dependents eligible each year, the "number eligible". We established the number eligible for St. Catharines Hydro Inc. separately from the remaining retirees and dependents under Horizon Utilities Corporation.

Next, for each of drugs, other health benefits, dental and vision, we increased the claims paid for 2009, 2010 and 2011 using the trend factor applicable to each benefit to produce a claim amount comparable to that at the end of the current year. Claims were analyzed separately for St. Catharines Hydro Inc., and for remaining retirees and dependents of Horizon Utilities Corporation.

The trended claim amounts for each benefit and for each of years 2009, 2010 and 2011 were divided by the appropriate number eligible to produce the per eligible cost for each benefit.

We then averaged the 2009, 2010 and 2011 per eligible cost to produce the average claim cost for each benefit.

Finally, the average claim costs were increased for taxes and administration expenses.

REDUCTION OF DRUG CLAIM COSTS AT AGE 65

The average drug claim costs for Horizon Utilities Corporation (excluding St. Catharines retirees and dependents) were adjusted to provide a pre-age 65 and a post-age 65 rate to account for a reduction in benefits from the plan once a retiree is eligible for the Ontario Drug Benefit (ODB) Plan. To determine these amounts, we estimated that 62.4% of retirees and dependents eligible to receive benefits will be over the age of 65 and that drug claims will reduce by 50% at age 65. No such adjustment was required for St. Catharines Hydro Inc. retirees.

CLAIM COSTS PER ELIGIBLE RETIREE AND DEPENDENT

	Horizon, HUC , HEC	St. Catharines
Drugs	$1,200.67	$1,819.36
Other Health Benefits	$198.52	$269.57
Dental	$598.97	$964.75
Vision	$79.08	$133.33

These rates are assumed to be for an eligible retiree of average age at the valuation date. With respect to the Horizon Utilities' retirees, we have also applied an assumed aging factor of 2.5% per annum from age 55 for drugs and other health benefits, e.g. the current claim average for a 55 year old for other health benefits is $139.18 ($198.52 reduced by 2.5% per annum from the average age of retirees with health benefits which was 69.4); and the current claim average for a 65 year old for drugs is $538.79 ($1,200.67 reduced by 2.5% per annum from the average cage of retirees with drugs which was 69.4 and reduced by 50% to account for the ODB subsidy.

No aging factor was applied to the claim costs for St. Catharines' retirees.

CLAIMS EXPERIENCE

Below is the annualized claims data used in this valuation to develop the average claim costs. The claims data was provided by Horizon Utilities Corporation and Great West Life.

Hamilton Utilities Corporation (HUC)

Year	Drugs	Health Care	Vision Care	Dental	Total
2009	$177,982	$33,857	$19,547	$139,217	**$370,603**
2010	$178,137	$55,467	$17,487	$138,899	**$389,990**
2011	$203,809	$51,695	$22,090	$142,078	**$419,672**

St. Catharines

Year	Drugs	Health Care	Vision Care	Dental	Total
2009	$76,756	$12,957	$5,137	$35,817	**$130,667**
2010	$57,499	$7,693	$5,227	$29,459	**$99,878**
2011	$38,245	$6,092	$3,391	$27,836	**$75,564**

Section 8. ACTUARIAL ASSUMPTIONS

GENERAL ASSUMPTIONS

Valuation Date

December 31, 2011

Discount Rate

4.5% per annum at December 31, 2011; 5.3% per annum at December 31, 2010

Mortality

Mortality is assumed to be in accordance with the 1994 Uninsured Pensioners Mortality Table with generational projections as at December 31, 2011. At December 31, 2011, the same mortality table was assumed, but with no projections. Mortality rates are applied on a sex-distinct basis.

Rates of Retirement

Rates of retirement were based on the following table:

Age	% Retiring
50-54	0.0000
55-59	0.0446
60	0.1065
61	0.1065
62	0.1074
63	0.1183
64	0.1305
65	1.0000

Rates of Termination:

The Ontario medium termination scale was used, but adjusted so there are no terminations from age 55. Selected rates of termination are displayed below.

Age	Rate
20	0.300
25	0.200
30	0.112
35	0.063
40	0.034
45	0.018
50	0.012
55	0.000

Disability Rates

No disability rates have been used.

Marital Status

80% of active employees are assumed to be married when they retire. For current retirees, the actual coverage status was used. For retirees with family coverage, we assumed that the retiree had only one dependent.

Spouse's Age

Female spouses were assumed to be three years younger than the retiree, male spouses assumed to be three year older than the retiree.

Spouse's Benefit after Death of Retiree

No benefit is payable to the spouse after the death of the retiree. For retirees of St. Catharines, benefits are assumed to continue until the earlier of 30 months (10 years for Union) and the date the retiree would have reached age 65.

Full Eligibility

Age 55 and 20 years of service.

Sales Tax

8.00%

Premium Tax

2.00%

HEALTH BENEFIT ASSUMPTIONS

Health Care Cost Trend Rate

Prescription Drugs:	At December 31, 2011: 6.00% in 2012 grading linearly by 0.5% per year to 4% At December 31, 2010: 6.00% in 2011 grading linearly to 4.00% in 2 years
Other Medical Benefits:	4.00%
Vision Care:	0.00%

These rates reflect an underlying long-term assumed rate of inflation of 3.00% per annum.

Aging Factor

It was assumed that average claim costs would increase at 2.5% per year from age 55 to account for higher costs as a retiree ages. The aging factor applies only to Prescription drugs and other medical benefits. No aging factor was used for the benefits applicable to St. Catharines' retirees.

Decrease at age 65

A decrease of 50% in drug claims was assumed to occur at age 65 to account for the Ontario Drug Benefit Plan. For retirees under the St. Catharines plan, no decrease at age 65 was needed.

Health Administration

7.5% per annum

DENTAL BENEFIT ASSUMPTIONS

Dental Cost Trend Rate

4.00% per annum

Dental Administration

7.5% per annum

LIFE INSURANCE BENEFITS

Salary Increases

Salaries were assumed to increase at the rate of 3.0% per annum.

Life Administration

5.00% of the benefit amount

Life Insurance

Insurance coverage was assumed to continue beyond age 65 for all current retirees. For all union employees hired prior to July 1, 2001, and non-union employees hired prior to October 1, 2001, insurance coverage upon retirement was assumed to continue for life. For all other employees, insurance coverage was assumed to end at age 65.

Former St. Catharines Employees

We have assumed that former employees of St. Catharines Hydro Inc. will be eligible for benefits under the Horizon Utilities Corporation plan upon retirement.

Section 9. POST-RETIREMENT BENEFITS SUMMARY

The following is a summary of benefits based on information provided by Horizon Utilities. Review of these provisions relative to the terms of the Great-West Life contract is currently in progress.

I. HORIZON UTILITIES CORPORATION

PART A – ELIGIBILITY AND BENEFIT TERMS

For: Hamilton Utilities Corporation, Hamilton Community Energy, Non-Union Employees of Hamilton Hydro Inc. at the time of the merger of Feb. 28, 2005 AND all Non-Union Employees of Horizon Utilities Inc. hired after Feb. 28, 2005

(Note: Benefits for employees of St. Catharines Hydro Inc. at the time of the merger retiring before May 31, 2008 are covered in Part II)

Eligibility

- Be a non-union employee on the date of retirement.
- Employees must apply for and receive an OMERS pension with a minimum of 20 years service with an OMERS employer or Hamilton Utilities Corporation or its subsidiaries to be eligible for benefits.

Benefit Term

- Employees hired before October 1, 2001 will have all retiree benefits described in this summary provided until death.
- Employees hired on or after October 1, 2001 will have retiree benefits, as summarized in this note, provided from retirement to the age of 65.

For: All Union Employees of Hamilton Hydro Inc. at the time of the merger of Feb. 28, 2005 AND all Union Employees of Horizon Utilities Inc. hired after Feb. 28, 2005

Eligibility

- Employees must have a minimum of 20 years' service with Hamilton Utilities Corporation or its predecessors to be eligible for benefits.

Benefit Term

- Employees hired before July 1, 2001 will have all retiree benefits described in this summary provided until death.
- Employees hired on or after July 1, 2011 will have retiree benefits, as summarized in this note, provided from retirement to age of 65.

PART B – SPOUSE COVERAGE AND PREMIUMS

Spouse/Dependent Coverage

- Only to spouse/dependents who were receiving benefits at the time of employee's retirement and;
- Spouse/dependent coverage continues as long as the retired employee is eligible to receive benefits as described in the above section. No benefit continuation is provided to the spouse or beneficiary on the death of the retired employee (although, a maximum of 6 months coverage may be provided based on employer discretion).

Premiums

- All premiums in respect of an eligible retiree, their spouse and dependents are fully paid by Hamilton Utilities Corporation and/or its subsidiaries.

PART C – BENEFITS

Life Insurance

- Employees who retire with less than 10 years service are covered for $2,000.
- Employees with longer than ten years service and hired on or after March 1, 1980 are initially covered for 50% of their final annual salary reducing by 2.5% a year for ten years.
- If the employee was hired before March 1, 1980 but on or after May 1, 1967, the benefit is 50% of final annual salary.
- If the employee was hired before May 1, 1967 the benefit is 70% of the amount of coverage the employee was entitled to immediately prior to retirement.

Years of service includes service under Superseded plan (i.e., prior to March 1, 1980).

Supplementary Health Benefits

Eligible retirees are reimbursed for supplementary health costs as described in the current Retiree Benefit Booklet. This is summarized below:

Prescription Drugs • Deductible • Co-insurance • Maximum amount • Dispensing fee	 Nil 100% reimbursement Unlimited Maximum $8.50 per prescription No benefits paid for drugs eligible under the Ontario Drug benefit Act
Major Medical • Deductible per year • Co-insurance • Maximum amount • Out-of-hospital nurse care maximum • Physiotherapy • Hearing aids	 Nil 100% reimbursement Unlimited $10,000 maximum per calendar year $1,500 maximum per calendar year $300 in any 5 year period
Hospital	Only for Out of Country
Out of Country Coverage	Yes - including hospital rooms at semi-private
Out of Province Coverage	Yes
Dental • Coverage • Fee Guide • Co-insurance • Maximum amount	 Routine and Major Level 1Treatment Current 100% reimbursement for Routine Treatment and 50% of Major Level 1 Treatment Unlimited
Vision Care • Deductible • Co-insurance • Lens, Frames and contact lens maximum amount • Contact lens for special conditions	 Nil 100% reimbursement $275 in any 24 month period $825 lifetime maximum

II. FORMER EMPLOYEES AND RETIREES OF ST. CATHARINES HYDRO INC.

Active employees who were former employees of St. Catharines Hydro, retiring after May 31, 2008 are eligible for benefits under the Horizon Utilities Corporation plan. Their benefits are outlined under Part I. The remainder of this Part II applies to former employees of St. Catharines who have or will retire by May 31, 2008.

PART A – ELGIBILITY AND BENEFIT TERM

Eligibility

- Employees retiring under the OMERS Pension Plan up to May 31, 2008 are eligible for post-retirement life insurance as well as post-retirement health and dental benefits.

Benefit Term

- Life Insurance coverage is provided for the life of the retiree.
- Health and dental coverage is provided only to age 65.

PART B – SURVIVOR COVERAGE AND PREMIUMS

Survivor/Dependent Coverage

- Health and dental coverage for an eligible dependant of a deceased member with Union status will continue for 10 years or if earlier, until the deceased member would have attained age 65;
- Health and dental coverage for an eligible dependant of a deceased member with Management status will continue for 30 months or if earlier until the deceased member would have attained age 65;

Premiums

- All premiums in respect of an eligible retiree, their spouse and dependents are fully paid by Horizon Utilities Corporation.

PART C – BENEFITS

Life Insurance

- An employee who retires with less than 10 years service is covered for $2,000.
- An employee with longer than ten years service and was never in the superseded plan or an employee who was insured under (active) Plan Options 2, 3, or 4 are initially covered for 50% of their final annual earnings reducing by 2.5% a year for ten years.
- An employee who was insured under the superseded plan and was hired on or after May 1, 1967 and elected coverage under (active) Plan Option 1 would have a benefit of 50% of final annual earnings.
- An employee who was insured under the superseded plan and was hired before May 1, 1967 and elected coverage under Plan Option 1, the benefit is 70% of the amount of coverage the employee was entitled to immediately prior to retirement.

Supplementary Health Benefits

Eligible retirees are reimbursed for supplementary health and dental costs with the highlights summarized below:

Prescription Drugs	
• Deductible	Nil
• Co-insurance	100% reimbursement
• Maximum amount	Unlimited (there are yearly or lifetime maximums on smoking cessation products and erectile dysfunction drugs)
• Dispensing Fee	$6.75 per prescription
Major Medical	
• Deductible per year	Nil
• Co-insurance	100% reimbursement
• Maximum amount	Unlimited
• Out-of-hospital nurse care maximum	75% of charge subject to $5,000 maximum per calendar year
• Physiotherapy	$24/visit
• Hearing aids	$500 per 24 months
Hospital	Semi-private/private and Out of Country
Dental	
• Coverage	Routine, Major/Crowns and Caps, Restorative services and Orthodontic
• Fee Guide	Current
• Co-insurance	100% reimbursement for Routine Treatment, 50% of Major/Crowns and Caps, Restorative services and Orthodontic
• Maximum amount for Routine	Unlimited for Union members, $3,000 per annum combined with Restorative for Non-Union members
• Maximum amount for Restorative	$1,600 per annum for Union members, $3,000 per annum combined with Routine for Non-Union members
• Maximum amount for Orthodontic	$2,250 lifetime maximum
Vision Care	
• Deductible	Nil
• Co-insurance	100% reimbursement
• Lens, Frames and contact lens maximum amount	$275 in any 24 month period
• Laser Eye Surgery	Can use eye care amount

APPROVAL

I have read the above benefit summary and confirm that it agrees with the plan provisions which were in effect on December 31, 2011.

Signed _____ Date February 23, 2012

SARAH HUGHES, VP FINANCE
Name
Horizon Utilities Corporation

APPENDIX 4-4.2 – ECKLER LETTER - 2013 DISCLOSURE

Eckler Ltd.
110 Sheppard Avenue East, Suite 900
Toronto, Ontario M2N 7A3
Canada

www.eckler.ca

Writer's Tel 416 696 3055
Email wbabcock@eckler.ca

January 8, 2014

Mr. Peter Vallieres, C.P.A., C.A.
Director, Financial Reporting & Accounting
Horizon Utilities Corporation
55 John Street North
P. O. Box 2249, Station LCD1
Hamilton, ON
L8N 3E4

Dear Peter:

Re: 2013 Financial Information under IAS 19 for the Post-Retirement Benefits

We are pleased to provide you with the financial information for each of the five legal entities related to Horizon Utilities Corporation listed below under International Accounting Standards No. 19 ("IAS 19"). The disclosures reflect the final amendments to IAS 19 which were effective for financial periods beginning on or after January 1, 2013.

In particular this letter provides the following for each of the legal entities in accordance with IAS 19:

1. Fiscal 2013 year-end defined benefit liability and defined benefit expense, as well as comparator year information for Fiscal 2012 and Fiscal 2011 in accordance with IAS 19;

2. Fiscal 2013 defined benefit expense information for key management personnel as required under IAS 24;

3. Estimated 2014 defined benefit expense;

4. The impact of a one-percentage point change in the assumed trend rates on the Defined Benefit Obligation (the "DBO") as at December 31, 2013 and the 2013 current service cost and interest cost elements of the defined benefit expense; and

5. The impact of a one-percentage point change in the discount rate on the DBO as at December 31, 2013;

All of the above can be found in the attached Appendix A.

In this document, please note the following abbreviations for each of the five legal entities:

- **HUC** refers to Hamilton Utilities Corporation;
- **HCE** refers to Hamilton Community Energy;
- **Horizon** refers to Horizon Utilities Corporation;
- **HESI** refers to Horizon Energy Solutions Inc.;
- **Holdings** refer to Horizon Holdings Inc.

Valuation of Post-Retirement Benefits

A full valuation of the plan was prepared as at December 31, 2011 and is summarized in our report dated February 2012. Our letter dated January 9, 2013 included disclosure information with respect to Fiscal 2012, which was extrapolated from the December 31, 2011 valuation. The DBO as of December 31, 2013 presented in this letter was also extrapolated from results of the December 31, 2011 valuation summarized in the report.

Defined Benefit Liability as of January 1, 2013

Horizon Utilities confirmed that for the "Horizon" and "Holdings" legal entities, the actual defined benefit liability reported on the financial statements at the end of Fiscal 2012, differed slightly from the amounts provided in our letter dated January 9, 2013.

The difference in the defined benefit liability for the Horizon entity is a result of an over-statement of premiums paid related to this entity by $8,548. We have adjusted Other Comprehensive Income in Fiscal 2013 to account for this difference.

The difference in the defined benefit liability for the Holdings entity is a result of the obligation of $900 that existed under CICA 3461 as of December 31, 2011, before the transition to IAS 19 at January 1, 2012. With the transition to IAS 19, the obligation for this entity was re-measured and the resulting obligation was $0. We have adjusted Other Comprehensive Income in Fiscal 2013 to account for this difference.

Key Management Personnel Expense – IAS 24

Appendix A provides a summary of the defined benefit expense related to the key management personnel identified by Horizon for Fiscal 2013 for reporting in accordance with IAS 24. Please note that these amounts were also extrapolated from results from the December 31, 2011 valuation and therefore reflect extrapolated financial amounts for personnel who were identified as key management as of December 31, 2011. These amounts correspond to the total defined benefit expense reported for Fiscal 2013.

The amounts for Fiscal 2013 are based on a discount rate of 4.00% per annum. This was the discount rate applicable as of December 31, 2012.

Fiscal 2014 Estimated Disclosure Information

We have used the same methods, provisions and assumptions used for the December 31, 2013 year-end to estimate the Fiscal 2014 defined benefit expense. In particular, a discount rate of 4.85% per annum and mortality in accordance with 90% of the 1994 Uninsured Pensioners Mortality Table with generational projections using 150% of Scale AA.

Premiums Paid

Horizon Utilities provided us with actual premiums paid in 2013 with respect to each entity. These amounts are as follows:

Legal Entity	HUC	HCE	Horizon	HESI	Holdings	Total
2013 Premiums Paid	$4,278	$4,278	$1,076,254	$0	$0	$1,084,810

Membership Data

The same data used for the full valuation as of December 31, 2011 was used for the disclosure as of December 31, 2013. Horizon Utilities confirmed that there was not significant movement in the membership data between December 31, 2011 and December 31, 2013.

At the time of the December 31, 2011 valuation, we received employee and retiree data from Horizon Utilities Corporation as at December 31, 2011 and reviewed it for internal consistency and reasonableness against the data used in the prior valuation as at December 31, 2007.

The number of active and retired employees as of December 31, 2011 is shown below:

Legal Entity	HUC	HCE	Horizon	HESI	Holdings	Total
Active members	4	4	396	1	3	408
Retired members	1	1	248	0	0	250
Total	**5**	**5**	**644**	**1**	**3**	**658**

Our valuation report dated February 2012 provides a more detailed summary of the membership data of each legal entity.

Assumptions

To determine the DBO as of December 31, 2013, we have applied the same methodology and assumptions used for the December 31, 2011 valuation and Fiscal 2011 and 2012 year-end disclosures, with the exception of the discount rate and the mortality decrement assumption.

A discount rate of 4.00% per annum was used as of December 31, 2012. We have updated the discount rate as of December 31, 2013 to be 4.85% per annum, which reflects the estimated yield on high quality bonds at December 31, 2013. The change in discount rate had the effect of decreasing the total DBO by approximately $3,108,100 at December 31, 2013.

The UP94 mortality table with generational improvements using Scale AA was used as of December 31, 2012. A recent Canadian mortality study showed a marked improvement in longevity when compared to the current tables being used. The final table will not be released until 2014, but the Canadian Institute of Actuaries has recommended that adjustments to the standard UP94 generational improvements with scale AA can be used in the interim to reflect the improved longevity experience. As a result, as of December 31, 2013 we have used a mortality assumption of 90% of the 1994 Uninsured Pensioners Mortality Table with generational projections using 150% of Scale AA . The change to the mortality table had the effect of increasing the DBO by approximately $1,336,500 at December 31, 2013.

A summary of the assumptions is listed in the attached Appendix B.

Claims

We have compared the average claims experience over the period 2010 to 2013, to the average claim rates used in the valuation as of December 31, 2011 increased with appropriate trend rate assumptions, and determined the claim rates used in the prior valuation are still appropriate.

The December 31, 2011 report contains a more detailed summary of the development of the average claim costs and the claims experience data.

Plan Provisions

The attached Appendix C provides a summary of the post-retirement benefits in effect as of December 31, 2013. From our understanding, there were no significant changes to the benefits during the past year.

Actuarial Cost Method

The defined benefit obligation and current service cost were determined using the projected benefit method, pro-rated on service. This is the method stipulated under IAS 19.

Under this method, the projected post-retirement benefit is deemed to be earned on a pro-rata basis over the years of service to date of full eligibility. The appropriate date of full eligibility for this plan is detailed in the December 31, 2011 valuation report.

Actuarial Opinion

In my opinion,

- the data on which the results are based are sufficient and reliable for the purposes of this disclosure;
- the assumptions used are, in aggregate, appropriate for the purposes of this disclosure;
- the methods employed in the valuation are appropriate for the purposes of this disclosure;
- the valuation conforms with the requirements of the International Accounting Standards Number 19.

I am not aware of any subsequent events that would have a material impact on the valuation results presented herein. Emerging experience, differing from the assumptions, will result in gains or losses which will be revealed in future valuations.

These results have been prepared, and this opinion has been given in accordance with accepted actuarial practice.

If you require additional information or have any questions, please do not hesitate to contact me.

Yours truly,





Wafaa Babcock, FSA FCIA

Kwame Smart, FSA FCIA

WB/kb
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Copy: Nicole Kennedy, Eckler Ltd.

APPENDIX A – Hamilton Utilities Corporation

HUC - Adjustment to retained earnings at January 1, 2012	$
Initial adjustment to retained earnings at January 1, 2011	18,500
Adjustment for experience under CICA in 2011	(2,300)
Total adjustment to retained earnings at January 1, 2012	**16,200**

*The above adjustment to retained earnings was made in respect of the transition to IAS 19 reporting

HUC - Year-end Disclosure Information	Fiscal 2011	Fiscal 2012	Fiscal 2013
Discount rate at start of period	5.30%	4.50%	4.00%
Discount rate at end of period	4.50%	4.00%	4.85%
	$	**$**	**$**
Reconciliation of defined benefit obligation			
Defined benefit obligation at start of period	48,000	56,100	57,400
Service cost	0	0	0
Interest cost	2,500	2,400	2,200
Benefits paid	(4,400)	(4,300)	(4,278)
Expected defined benefit obligation (end of period)	46,100	54,200	55,322
Actuarial loss (gain) from changes in financial assumptions	10,000	3,200	(4,900)
Actuarial loss (gain) from changes in demographic assumptions	0	0	6,178
Defined benefit obligation at end of period	**56,100**	**57,400**	**56,600**
Reconciliation of plan assets			
Fair value of plan assets at start of period	0	0	0
Actual return on plan assets	0	0	0
Employer contributions	4,400	4,300	4,278
Employee contributions	0	0	0
Benefits paid	(4,400)	(4,300)	(4,278)
Fair value of plan assets at end of period	**0**	**0**	**0**
Defined benefit expense for period			
Service cost in the Income Statement			
Current service cost	0	0	0
Past service cost	0	0	0
Interest on the net defined benefit liability in the Income Statement			
Interest income on plan assets	0	0	0
Interest cost on defined benefit obligation	2,500	2,400	2,200
Defined benefit expense reflected in Income Statement	**2,500**	**2,400**	**2,200**
Remeasurements of the net defined benefit liability in OCI:			
Return on plan assets excluding amounts included in interest income	0	0	0
Actuarial loss/(gain) from changes in financial assumptions	10,000	3,200	(4,900)
Actuarial loss/(gain) from changes in demographic assumptions	0	0	6,178
Remeasurements of the net defined benefit liability in OCI	**10,000**	**3,200**	**1,278**
Reconciliation of funded status			
Fair value of plan assets at end of period	0	0	0
Defined benefit obligation at end of period	(56,100)	(57,400)	(56,600)
Surplus/(Deficit)	**(56,100)**	**(57,400)**	**(56,600)**
Reconciliation of Defined Benefit Liability			
Defined benefit asset/(liability) at start of period	(48,000)	(56,100)	(57,400)
Adjustment to OCI to reflect change in opening numbers	0	0	0
Defined benefit expense reflected in Income Statement	(2,500)	(2,400)	(2,200)
Remeasurements of the net defined benefit liability in OCI	(10,000)	(3,200)	(1,278)
Plus: Premiums paid in period	4,400	4,300	4,278
Defined benefit asset/(liability) at end of period	**(56,100)**	**(57,400)**	**(56,600)**

APPENDIX A – Hamilton Community Energy

HCE - Adjustment to retained earnings at January 1, 2012	$
Initial adjustment to retained earnings at January 1, 2011	400
Adjustment for experience under CICA in 2011	(21,428)
Total adjustment to retained earnings at January 1, 2012	**(21,028)**

*The above adjustment to retained earnings was made in respect of the transition to IAS 19 reporting

HCE - Year-end Disclosure Information	Fiscal 2011	Fiscal 2012	Fiscal 2013
Discount rate at start of period	5.30%	4.50%	4.00%
Discount rate at end of period	4.50%	4.00%	4.85%
	$	**$**	**$**
Reconciliation of defined benefit obligation			
Defined benefit obligation at start of period	1,100	22,500	19,800
Service cost	300	300	300
Interest cost	100	900	700
Benefits paid	0	(4,300)	(4,278)
Expected defined benefit obligation (end of period)	1,500	19,400	16,522
Actuarial loss (gain) from changes in financial assumptions	21,000	400	(600)
Actuarial loss (gain) from changes in demographic assumptions	0	0	78
Defined benefit obligation at end of period	**22,500**	**19,800**	**16,000**
Reconciliation of plan assets			
Fair value of plan assets at start of period	0	0	0
Actual return on plan assets	0	0	0
Employer contributions	0	4,300	4,278
Employee contributions	0	0	0
Benefits paid	0	(4,300)	(4,278)
Fair value of plan assets at end of period	**0**	**0**	**0**
Defined benefit expense for period			
Service cost in the Income Statement			
Current service cost	300	300	300
Past service cost	0	0	0
Interest on the net defined benefit liability in the Income Statement			
Interest income on plan assets	0	0	0
Interest cost on defined benefit obligation	100	900	700
Defined benefit expense reflected in Income Statement	**400**	**1,200**	**1,000**
Remeasurements of the net defined benefit liability in OCI:			
Return on plan assets excluding amounts included in interest income	0	0	0
Actuarial loss/(gain) from changes in financial assumptions	21,000	400	(600)
Actuarial loss/(gain) from changes in demographic assumptions	0	0	78
Remeasurements of the net defined benefit liability in OCI	**21,000**	**400**	**(522)**
Reconciliation of funded status			
Fair value of plan assets at end of period	0	0	0
Defined benefit obligation at end of period	(22,500)	(19,800)	(16,000)
Surplus/(Deficit)	**(22,500)**	**(19,800)**	**(16,000)**
Reconciliation of Defined Benefit Liability			
Defined benefit asset/(liability) at start of period	(1,100)	(22,500)	(19,800)
Adjustment to OCI to reflect change in opening numbers	0	0	0
Defined benefit expense reflected in Income Statement	(400)	(1,200)	(1,000)
Remeasurements of the net defined benefit liability in OCI	(21,000)	(400)	522
Plus: Premiums paid in period	0	4,300	4,278
Defined benefit asset/(liability) at end of period	**(22,500)**	**(19,800)**	**(16,000)**

APPENDIX A – Horizon Utilities Corporation

Horizon - Adjustment to retained earnings at January 1, 2012	$
Initial adjustment to retained earnings at January 1, 2011	(2,111,800)
Adjustment for experience under CICA in 2011	(2,555,847)
Total adjustment to retained earnings at January 1, 2012	**(4,667,647)**

*The above adjustment to retained earnings was made in respect of the transition to IAS 19 reporting

Horizon - Year-end Disclosure Information	Fiscal 2011	Fiscal 2012	Fiscal 2013
Discount rate at start of period	5.30%	4.50%	4.00%
Discount rate at end of period	4.50%	4.00%	4.85%
	$	**$**	**$**
Reconciliation of defined benefit obligation			
Defined benefit obligation at start of period	18,787,200	21,666,200	23,867,500
Service cost	402,100	484,500	575,300
Interest cost	1,025,700	971,300	955,300
Benefits paid	(1,142,536)	(1,119,500)	(1,076,254)
Expected defined benefit obligation (end of period)	19,072,464	22,002,500	24,321,846
Actuarial loss (gain) from changes in financial assumptions	2,593,736	1,865,000	(3,102,600)
Actuarial loss (gain) from changes in demographic assumptions	0	0	1,330,254
Defined benefit obligation at end of period	**21,666,200**	**23,867,500**	**22,549,500**
Reconciliation of plan assets			
Fair value of plan assets at start of period	0	0	0
Actual return on plan assets	0	0	0
Employer contributions	1,142,536	1,119,500	1,076,254
Employee contributions	0	0	0
Benefits paid	(1,142,536)	(1,119,500)	(1,076,254)
Fair value of plan assets at end of period	**0**	**0**	**0**
Defined benefit expense for period			
Service cost in the Income Statement			
Current service cost	402,100	484,500	575,300
Past service cost	0	0	0
Interest on the net defined benefit liability in the Income Statement			
Interest income on plan assets	0	0	0
Interest cost on defined benefit obligation	1,025,700	971,300	955,300
Defined benefit expense reflected in Income Statement	**1,427,800**	**1,455,800**	**1,530,600**
Remeasurements of the net defined benefit liability in OCI:			
Return on plan assets excluding amounts included in interest income	0	0	0
Actuarial loss/(gain) from changes in financial assumptions	2,593,736	1,865,000	(3,102,600)
Actuarial loss/(gain) from changes in demographic assumptions	0	0	1,330,254
Remeasurements of the net defined benefit liability in OCI	**2,593,736**	**1,865,000**	**(1,772,346)**
Reconciliation of funded status			
Fair value of plan assets at end of period	0	0	0
Defined benefit obligation at end of period	(21,666,200)	(23,867,500)	(22,549,500)
Surplus/(Deficit)	**(21,666,200)**	**(23,867,500)**	**(22,549,500)**
Reconciliation of Defined Benefit Liability			
Defined benefit asset/(liability) at start of period	(18,787,200)	(21,666,200)	(23,858,952)
Adjustment to OCI to reflect change in opening numbers	0	0	(8,548)
Defined benefit expense reflected in Income Statement	(1,427,800)	(1,455,800)	(1,530,600)
Remeasurements of the net defined benefit liability in OCI	(2,593,736)	(1,865,000)	1,772,346
Plus: Premiums paid in period	1,142,536	1,119,500	1,076,254
Defined benefit asset/(liability) at end of period	**(21,666,200)**	**(23,867,500)**	**(22,549,500)**

APPENDIX A – Horizon Energy Solutions Inc.

HESI - Adjustment to retained earnings at January 1, 2012	$
Initial adjustment to retained earnings at January 1, 2011	0
Adjustment for experience under CICA in 2011	0
Total adjustment to retained earnings at January 1, 2012	**0**

*The above adjustment to retained earnings was made in respect of the transition to IAS 19 reporting

HESI - Year-end Disclosure Information	Fiscal 2011	Fiscal 2012	Fiscal 2013
Discount rate at start of period	5.30%	4.50%	4.00%
Discount rate at end of period	4.50%	4.00%	4.85%
	$	**$**	**$**
Reconciliation of defined benefit obligation			
Defined benefit obligation at start of period	0	0	0
Service cost	0	0	0
Interest cost	0	0	0
Benefits paid	0	0	0
Expected defined benefit obligation (end of period)	0	0	0
Actuarial loss (gain) from changes in financial assumptions	0	0	0
Actuarial loss (gain) from changes in demographic assumptions	0	0	0
Defined benefit obligation at end of period	**0**	**0**	**0**
Reconciliation of plan assets			
Fair value of plan assets at start of period	0	0	0
Actual return on plan assets	0	0	0
Employer contributions	0	0	0
Employee contributions	0	0	0
Benefits paid	0	0	0
Fair value of plan assets at end of period	**0**	**0**	**0**
Defined benefit expense for period			
Service cost in the Income Statement			
Current service cost	0	0	0
Past service cost	0	0	0
Interest on the net defined benefit liability in the Income Statement			
Interest income on plan assets	0	0	0
Interest cost on defined benefit obligation	0	0	0
Defined benefit expense reflected in Income Statement	**0**	**0**	**0**
Remeasurements of the net defined benefit liability in OCI:			
Return on plan assets excluding amounts included in interest income	0	0	0
Actuarial loss/(gain) from changes in financial assumptions	0	0	0
Actuarial loss/(gain) from changes in demographic assumptions	0	0	0
Remeasurements of the net defined benefit liability in OCI	**0**	**0**	**0**
Reconciliation of funded status			
Fair value of plan assets at end of period	0	0	0
Defined benefit obligation at end of period	0	0	0
Surplus/(Deficit)	**0**	**0**	**0**
Reconciliation of Defined Benefit Liability			
Defined benefit asset/(liability) at start of period	0	0	0
Adjustment to OCI to reflect change in opening numbers	0	0	0
Defined benefit expense reflected in Income Statement	0	0	0
Remeasurements of the net defined benefit liability in OCI	0	0	0
Plus: Premiums paid in period	0	0	0
Defined benefit asset/(liability) at end of period	**0**	**0**	**0**

APPENDIX A – Horizon Holdings Inc.

Holdings - Adjustment to retained earnings at January 1, 2012	$
Initial adjustment to retained earnings at January 1, 2011	0
Adjustment for experience under CICA in 2011	0
Total adjustment to retained earnings at January 1, 2012	**0**

*The above adjustment to retained earnings was made in respect of the transition to IAS 19 reporting

Holdings - Year-end Disclosure Information	Fiscal 2011	Fiscal 2012	Fiscal 2013
Discount rate at start of period	5.30%	4.50%	4.00%
Discount rate at end of period	4.50%	4.00%	4.85%
	$	**$**	**$**
Reconciliation of defined benefit obligation			
Defined benefit obligation at start of period	0	0	0
Service cost	0	0	0
Interest cost	0	0	0
Benefits paid	0	0	0
Expected defined benefit obligation (end of period)	0	0	0
Actuarial loss (gain) from changes in financial assumptions	0	0	0
Actuarial loss (gain) from changes in demographic assumptions	0	0	0
Defined benefit obligation at end of period	**0**	**0**	**0**
Reconciliation of plan assets			
Fair value of plan assets at start of period	0	0	0
Actual return on plan assets	0	0	0
Employer contributions	0	0	0
Employee contributions	0	0	0
Benefits paid	0	0	0
Fair value of plan assets at end of period	**0**	**0**	**0**
Defined benefit expense for period			
Service cost in the Income Statement			
Current service cost	0	0	0
Past service cost	0	0	0
Interest on the net defined benefit liability in the Income Statement			
Interest income on plan assets	0	0	0
Interest cost on defined benefit obligation	0	0	0
Defined benefit expense reflected in Income Statement	**0**	**0**	**0**
Remeasurements of the net defined benefit liability in OCI:			
Return on plan assets excluding amounts included in interest income	0	0	0
Actuarial loss/(gain) from changes in financial assumptions	0	0	0
Actuarial loss/(gain) from changes in demographic assumptions	0	0	0
Remeasurements of the net defined benefit liability in OCI	**0**	**0**	**0**
Reconciliation of funded status			
Fair value of plan assets at end of period	0	0	0
Defined benefit obligation at end of period	0	0	0
Surplus/(Deficit)	**0**	**0**	**0**
Reconciliation of Defined Benefit Liability			
Defined benefit asset/(liability) at start of period	0	0	(900)
Adjustment to OCI to reflect change in opening numbers	0	0	900
Defined benefit expense reflected in Income Statement	0	0	0
Remeasurements of the net defined benefit liability in OCI	0	0	0
Plus: Premiums paid in period	0	0	0
Defined benefit asset/(liability) at end of period	**0**	**0**	**0**

APPENDIX A – Total Disclosure for all Legal Entities

Total - Adjustment to retained earnings at January 1, 2012	$
Initial adjustment to retained earnings at January 1, 2011	(2,092,900)
Adjustment for experience under CICA in 2011	(2,579,575)
Total adjustment to retained earnings at January 1, 2012	**(4,672,475)**

*The above adjustment to retained earnings was made in respect of the transition to IAS 19 reporting

Total - Year-end Disclosure Information	Fiscal 2011	Fiscal 2012	Fiscal 2013
Discount rate at start of period	5.30%	4.50%	4.00%
Discount rate at end of period	4.50%	4.00%	4.85%
	$	**$**	**$**
Reconciliation of defined benefit obligation			
Defined benefit obligation at start of period	18,836,300	21,744,800	23,944,700
Service cost	402,400	484,800	575,600
Interest cost	1,028,300	974,600	958,200
Benefits paid	(1,146,936)	(1,128,100)	(1,084,810)
Expected defined benefit obligation (end of period)	19,120,064	22,076,100	24,393,690
Actuarial loss (gain) from changes in financial assumptions	2,624,736	1,868,600	(3,108,100)
Actuarial loss (gain) from changes in demographic assumptions	0	0	1,336,510
Defined benefit obligation at end of period	**21,744,800**	**23,944,700**	**22,622,100**
Reconciliation of plan assets			
Fair value of plan assets at start of period	0	0	0
Actual return on plan assets	0	0	0
Employer contributions	1,146,936	1,128,100	1,084,810
Employee contributions	0	0	0
Benefits paid	(1,146,936)	(1,128,100)	(1,084,810)
Fair value of plan assets at end of period	**0**	**0**	**0**
Defined benefit expense for period			
Service cost in the Income Statement			
Current service cost	402,400	484,800	575,600
Past service cost	0	0	0
Interest on the net defined benefit liability in the Income Statement			
Interest income on plan assets	0	0	0
Interest cost on defined benefit obligation	1,028,300	974,600	958,200
Defined benefit expense reflected in Income Statement	**1,430,700**	**1,459,400**	**1,533,800**
Remeasurements of the net defined benefit liability in OCI:			
Return on plan assets excluding amounts included in interest income	0	0	0
Actuarial loss/(gain) from changes in financial assumptions	2,624,736	1,868,600	(3,108,100)
Actuarial loss/(gain) from changes in demographic assumptions	0	0	1,336,510
Remeasurements of the net defined benefit liability in OCI	**2,624,736**	**1,868,600**	**(1,771,590)**
Reconciliation of funded status			
Fair value of plan assets at end of period	0	0	0
Defined benefit obligation at end of period	(21,744,800)	(23,944,700)	(22,622,100)
Surplus/(Deficit)	**(21,744,800)**	**(23,944,700)**	**(22,622,100)**
Reconciliation of Defined Benefit Liability			
Defined benefit asset/(liability) at start of period	(18,836,300)	(21,744,800)	(23,937,052)
Adjustment to OCI to reflect change in opening numbers	0	0	(7,648)
Defined benefit expense reflected in Income Statement	(1,430,700)	(1,459,400)	(1,533,800)
Remeasurements of the net defined benefit liability in OCI	(2,624,736)	(1,868,600)	1,771,590
Plus: Premiums paid in period	1,146,936	1,128,100	1,084,810
Defined benefit asset/(liability) at end of period	**(21,744,800)**	**(23,944,700)**	**(22,622,100)**

APPENDIX A – Key Management Personnel Expense, Estimated 2014 Expense, Sensitivities

Key Management Personnel Benefit Expense in accordance with IAS 24

Name of Key Management Employees	Fiscal 2011	Fiscal 2012	Fiscal 2013
	$	$	$
Max Cananzi	400	400	400
John Basilio	5,400	5,300	6,400
Sarah Hughes	400	400	0
Danielle Gammon	0	0	0
Indy Butany-DeSouza	300	300	400
Neil Freeman	0	0	0
Scott Knapman	0	0	0
Kathy Lerette	7,100	7,200	8,100
Eileen Campbell	6,000	6,000	7,000
Brenda Schacht	0	0	0
Total	**19,600**	**19,600**	**22,300**

Estimated 2014 Benefit Expense

2014 Estimated Premiums Paid	HUC	HCE	Horizon	HESI	Holdings	Total
	$	$	$	$	$	$
Es imated premiums paid in 2014	4,300	4,300	1,076,300	0	0	1,084,900

Components of Estimated 2014 Defined Benefit Expense	HUC	HCE	Horizon	HESI	Holdings	Total
	$	$	$	$	$	$
Service Cost in he Income Statement:						
Current service cost	0	300	528,700	0	0	529,000
Past service cost	0	0	0	0	0	0
Interest on the net defined benefit liability in the Income Statement:						
Interest income	0	0	0	0	0	0
Interest expense	2,600	700	1,093,200	0	0	1,096,500
2014 Defined Benefit Expense Reflected in Income Statement	**2,600**	**1,000**	**1,621,900**	**0**	**0**	**1,625,500**
Remeasurements of he net defined benefit liability in OCI:						
Return on plan assets excluding amounts included in interest income	0	0	0	0	0	0
Actuarial loss/(gain) from changes in financial assump ions	0	0	0	0	0	0
Actuarial loss/(gain) from changes in demographic assump ions	0	0	0	0	0	0
2014 Remeasurements of the net defined benefit liability in OCI	**0**	**0**	**0**	**0**	**0**	**0**

Trend Rate and Discount Rate Sensitivities

Trend Rate Sensitivities	HUC	HCE	Horizon	HESI	Holdings	Total
	$	$	$	$	$	$
One percentage point increase in trend rates:						
Effect on total of service cost and interest cost in period	300	100	285,000	0	0	285,400
Effect on defined benefit obligation at end of period	7,900	1,000	3,527,400	0	0	3,536,300
One percentage point decrease in trend rates:						
Effect on total of service cost and interest cost in period	(200)	(100)	(218,500)	0	0	(218,800)
Effect on defined benefit obligation at end of period	(6,700)	(900)	(2,785,900)	0	0	(2,793,500)

Discount Rate Sensitivities	HUC	HCE	Horizon	HESI	Holdings	Total
	$	$	$	$	$	$
One percentage point increase in discount rate:						
Effect on defined benefit obligation at end of period	(6,000)	(600)	(3,320,000)	0	0	(3,326,600)
One percentage point decrease in discount rate:						
Effect on defined benefit obligation at end of period	7,100	700	4,247,400	0	0	4,255,200

APPENDIX B

ASSUMPTIONS

General Assumptions

Discount Rate

4.85% per annum at December 31, 2013;
4.00% per annum at December 31, 2012;
4.50% per annum at December 31, 2011

Mortality

As of December 31, 2013, mortality is assumed to be in accordance with 90% of the 1994 Uninsured Pensioners Mortality Table with generational projections using 150% of Scale AA. Mortality rates are applied on a sex-distinct basis.

As of December 31, 2012 and December 31, 2011, mortality was assumed to be in accordance with the 1994 Uninsured Pensioners Mortality Table with generational projections using Scale AA. Mortality rates were applied on a sex-distinct basis.

Rates of Retirement

Rates of retirement were based on the following table:

Age	% Retiring
50-54	0.0000
55-59	0.0446
60	0.1065
61	0.1065
62	0.1074
63	0.1183
64	0.1305
65	1.0000

Rates of Termination:

The Ontario medium termination scale was used, but adjusted so there are no terminations from age 55. Selected rates of termination are displayed below.

Age	Rate
20	0.300
25	0.200
30	0.112
35	0.063
40	0.034
45	0.018
50	0.012
55	0.000

Disability Rates

No disability rates have been used.

Marital Status

80% of active employees are assumed to be married when they retire. For current retirees, the actual coverage status was used. For retirees with family coverage, we assumed that the retiree had only one dependent.

Spouse's Age

Female spouses were assumed to be three years younger than the retiree, male spouses assumed to be three year older than the retiree.

Spouse's Benefit after Death of Retiree

No benefit is payable to the spouse after the death of the retiree. For retirees of St. Catharines, benefits are assumed to continue until the earlier of 30 months (10 years for Union) and the date the retiree would have reached age 65.

Full Eligibility

Age 55 and 20 years of service.

Sales Tax

8.00%

Premium Tax

2.00%

Health Benefit Assumptions

Health Care Cost Trend Rate

Prescription Drugs:	At December 31, 2013: 5.00% in 2014 grading linearly by 0.5% per year to 4%
	At December 31, 2012: 5.50% in 2013 grading linearly by 0.5% per year to 4%
	At December 31, 2011: 6.00% in 2012 grading linearly by 0.5% per year to 4%
Other Medical Benefits:	4.00%
Vision Care:	0.00%

These rates reflect an underlying long-term assumed rate of inflation of 3.00% per annum.

Aging Factor

It was assumed that average claim costs would increase at 2.5% per year from age 55 to account for higher costs as a retiree ages. The aging factor applies only to Prescription drugs and other medical benefits. No aging factor was used for the benefits applicable to St. Catharines' retirees.

Decrease at age 65

A decrease of 50% in drug claims was assumed to occur at age 65 to account for the Ontario Drug Benefit Plan. For retirees under the St. Catharines plan, no decrease at age 65 was needed.

Health Administration

7.5% per annum

Dental Benefit Assumptions

Dental Cost Trend Rate

4.00% per annum

Dental Administration

7.5% per annum

Life Insurance Benefits

Salary Increases

Salaries were assumed to increase at the rate of 3.0% per annum.

Life Administration

5.00% of the benefit amount

Life Insurance

Insurance coverage was assumed to continue beyond age 65 for all current retirees. For all union employees hired prior to July 1, 2001, and non-union employees hired prior to October 1, 2001, insurance coverage upon retirement was assumed to continue for life. For all other employees, insurance coverage was assumed to end at age 65.

Former St. Catharines Employees

We have assumed that former employees of St. Catharines Hydro Inc. will be eligible for benefits under the Horizon Utilities Corporation plan upon retirement.

APPENDIX C

SUMMARY OF BENEFITS

The following is a summary of benefits based on information provided by Horizon Utilities. Review of these provisions relative to the terms of the Great-West Life contract is currently in progress.

I. HORIZON UTILITIES CORPORATION

PART A – ELIGIBILITY AND BENEFIT TERMS

For: Hamilton Utilities Corporation, Hamilton Community Energy, Non-Union Employees of Hamilton Hydro Inc. at the time of the merger of Feb. 28, 2005 AND all Non-Union Employees of Horizon Utilities Inc. hired after Feb. 28, 2005

(Note: Benefits for employees of St. Catharines Hydro Inc. at the time of the merger retiring before May 31, 2008 are covered in Part II)

Eligibility

- Be a non-union employee on the date of retirement.
- Employees must apply for and receive an OMERS pension with a minimum of 20 years of service with an OMERS employer or Hamilton Utilities Corporation or its subsidiaries to be eligible for benefits.

Benefit Term

- Employees hired before October 1, 2001 will have all retiree benefits described in this summary provided until death.
- Employees hired on or after October 1, 2001 will have retiree benefits, as summarized in this note, provided from retirement to the age of 65.

For: All Union Employees of Hamilton Hydro Inc. at the time of the merger of Feb. 28, 2005 AND all Union Employees of Horizon Utilities Inc. hired after Feb. 28, 2005

Eligibility

- Employees must have a minimum of 20 years of service with Hamilton Utilities Corporation or its predecessors to be eligible for benefits.

Benefit Term

- Employees hired before July 1, 2001 will have all retiree benefits described in this summary provided until death.
- Employees hired on or after July 1, 2001 will have retiree benefits, as summarized in this note, provided from retirement to age of 65.

PART B – SPOUSE COVERAGE AND PREMIUMS

Spouse/Dependent Coverage

- Only to spouse/dependents who were receiving benefits at the time of employee's retirement and;
- Spouse/dependent coverage continues as long as the retired employee is eligible to receive benefits as described in the above section. No benefit continuation is provided to the spouse or beneficiary on the death of the retired employee (although, a maximum of 6 months coverage may be provided based on employer discretion).

Premiums

- All premiums in respect of an eligible retiree, their spouse and dependents are fully paid by Hamilton Utilities Corporation and/or its subsidiaries.

PART C – BENEFITS

Life Insurance

- Employees who retire with less than 10 years of service are covered for $2,000.
- Employees with longer than ten years of service and hired on or after March 1, 1980 are initially covered for 50% of their final annual salary reducing by 2.5% a year for ten years.
- If the employee was hired before March 1, 1980 but on or after May 1, 1967, the benefit is 50% of final annual salary.
- If the employee was hired before May 1, 1967 the benefit is 70% of the amount of coverage the employee was entitled to immediately prior to retirement.

Years of service includes service under Superseded plan (i.e., prior to March 1, 1980).

Supplementary Health Benefits

Eligible retirees are reimbursed for supplementary health costs as described in the current Retiree Benefit Booklet. This is summarized below:

Prescription Drugs • Deductible • Co-insurance • Maximum amount • Dispensing fee	 Nil 100% reimbursement Unlimited Maximum $8.50 per prescription No benefits paid for drugs eligible under the Ontario Drug benefit Act
Major Medical • Deductible per year • Co-insurance • Maximum amount • Out-of-hospital nurse care maximum • Physiotherapy • Hearing aids	 Nil 100% reimbursement Unlimited $10,000 maximum per calendar year $1,500 maximum per calendar year $300 in any 5 year period
Hospital	Only for Out of Country
Out of Country Coverage	Yes - including hospital rooms at semi-private
Out of Province Coverage	Yes
Dental • Coverage • Fee Guide • Co-insurance • Maximum amount	 Routine and Major Level 1Treatment Current 100% reimbursement for Routine Treatment and 50% of Major Level 1 Treatment Unlimited
Vision Care • Deductible • Co-insurance • Lens, Frames and contact lens maximum amount • Contact lens for special conditions	 Nil 100% reimbursement $275 in any 24 month period $825 lifetime maximum

II. FORMER EMPLOYEES AND RETIREES OF ST. CATHARINES HYDRO INC.

Active employees who were former employees of St. Catharines Hydro, retiring after May 31, 2008 are eligible for benefits under the Horizon Utilities Corporation plan. Their benefits are outlined under Part I. The remainder of this Part II applies to former employees of St. Catharines who have or will retire by May 31, 2008.

PART A – ELGIBILITY AND BENEFIT TERM

Eligibility

- Employees retiring under the OMERS Pension Plan up to May 31, 2008 are eligible for post-retirement life insurance as well as post-retirement health and dental benefits.

Benefit Term

- Life Insurance coverage is provided for the life of the retiree.
- Health and dental coverage is provided only to age 65.

PART B – SURVIVOR COVERAGE AND PREMIUMS

Survivor/Dependent Coverage

- Health and dental coverage for an eligible dependant of a deceased member with Union status will continue for 10 years or if earlier, until the deceased member would have attained age 65;
- Health and dental coverage for an eligible dependant of a deceased member with Management status will continue for 30 months or if earlier until the deceased member would have attained age 65;

Premiums

- All premiums in respect of an eligible retiree, their spouse and dependents are fully paid by Horizon Utilities Corporation.

PART C – BENEFITS

Life Insurance

- An employee who retires with less than 10 years of service is covered for $2,000.
- An employee with longer than ten years of service and was never in the superseded plan or an employee who was insured under (active) Plan Options 2, 3, or 4 are initially covered for 50% of their final annual earnings reducing by 2.5% a year for ten years.
- An employee who was insured under the superseded plan and was hired on or after May 1, 1967 and elected coverage under (active) Plan Option 1 would have a benefit of 50% of final annual earnings.
- An employee who was insured under the superseded plan and was hired before May 1, 1967 and elected coverage under Plan Option 1, the benefit is 70% of the amount of coverage the employee was entitled to immediately prior to retirement.

Supplementary Health Benefits

Eligible retirees are reimbursed for supplementary health and dental costs with the highlights summarized below:

Prescription Drugs	
Deductible	Nil
Co-insurance	100% reimbursement
Maximum amount	Unlimited (there are yearly or lifetime maximums on smoking cessation products
Dispensing Fee	$8.50 per prescription
Major Medical	
Deductible per year	Nil
Co-insurance	100% reimbursement
Maximum amount	Unlimited
Out-of-hospital nurse care maximum	75% of charge subject to $5,000 maximum per calendar year
Physiotherapy	$24/visit
Hearing aids	$500 per 24 months
Hospital	Semi-private/private and Out of Country
Dental	
Coverage	Routine, Major/Crowns and Caps, Restorative services and Orthodontic
Fee Guide	Current
Co-insurance	100% reimbursement for Routine Treatment, 50% of Major/Crowns and Caps, Restorative services and Orthodontic
Maximum amount for Routine	Unlimited for Union members, $3,000 per annum combined with Restorative for Non-Union members
Maximum amount for Restorative	$1,600 per annum for Union members, $3,000 per annum combined with Routine for Non-Union members
Maximum amount for Orthodontic	$2,250 lifetime maximum
Vision Care	
Deductible	Nil
Co-insurance	100% reimbursement
Lens, Frames and contact lens maximum amount	$280 in any 24 month period
Laser Eye Surgery	Can use eye care amount

APPENDIX 4-4.3 – ECKLER LETTER - UPDATE TO ACTUARIAL STUDY FOR 2013 ACTUAL RESULTS

Eckler Ltd.
110 Sheppard Avenue East, Suite 900
Toronto, Ontario M2N 7A3
Canada

www.eckler.ca

Writer's Tel 416 696 4043
Email ksmart@eckler.ca

March 21, 2014

Peter Vallieres
Horizon Utilities Corporation
55 John Street North
P. O. Box 2249, Station LCD1
Hamilton, ON
L8N 3E4

Dear Peter:

Re: 2019 Cost of Service Application – Post-Retirement Benefits – Update for 2013 actual results

As requested, we have updated our September 16, 2013 letter with respect to the projected cost of service application amounts. The change we have made was with regards to the December 31, 2013 Defined Benefit Obligation ("DBO") which we set to be equal to the actual December 31, 2013 accounting disclosure amounts. This change has been reflected in the DBO for the years to follow.

Please note:

1. We have included benefit expense for each of the years 2011 to 2019 inclusive, split between Executive, Management, Union, Non-Union, and Retired employees.

2. As per prior instructions, we have excluded members from Hamilton Utilities Corporation, Hamilton Energy Solutions Inc., Hamilton Community Energy, Horizon Holdings Inc., and employees in the Conservation and Demand Management group. For reconciliation to the disclosure purposes, these individuals are shown as Excluded Actives.

3. As requested, we have not updated the projected benefit expense information for fiscal years 2014-2019. These amounts may differ from the amounts that will ultimately be reported on your income statement in future years. Please note that due to the change in mortality table and discount rate established for the disclosure as at December 31, 2013, we expect a change in the expense, specifically for 2014, from that provided in this letter.

4. We have also provided a reconciliation of the Defined Benefit Obligation ("DBO") by group from December 31, 2012 to December 31, 2019, which has been changed from that of our September 16, 2013 letter to accommodate the change made in the analysis to reflect the actual DBO at December 31, 2013.

The required information can be found in the attached Appendix A.

Methods and Assumptions

The projected benefit expense and DBO provided in this letter were extrapolated from the results of the December 31, 2011 valuation outlined in our report dated February 2012, and the December 31, 2012 year-end disclosure outlined in our January 9, 2013 letter, with exception of the discount rate.

The discount rates used for the 2011 benefit expense, the 2012 benefit expense and the 2013 benefit expense were based on the estimated yield on high quality bonds at each applicable date (December 31, 2010 for the 2011 expense, December 31, 2011 for the 2012 expense and December 31, 2012 for the 2013 benefit expense). The 2011 benefit expense was based on a rate of 5.30% per annum, the 2012

benefit expense was based on a rate of 4.50% per annum, and the 2013 benefit expense is based on a rate of 4.00% per annum.

The discount rate used to value the DBO at December 31, 2013 is based on a rate of 4.85% and mortality in accordance with 90% of the 1994 Uninsured Pensioners Mortality Table with generational projections using 150% of Scale AA, which are consistent with the assumptions used for the year-end disclosures.

The mortality table used for the fiscal year 2014-2019 figures are in accordance with the 1994 Uninsured Pensioners Mortality Table with generational projections using Scale AA.

The discount rate used as of January 1, 2014 to December 31, 2019 is based the average expected yield on high quality bonds over the period December 31, 2012 to December 31, 2019 and based on bonds with maturities matching the expected timing of the future cash flows from the plan. An average rate of 4.75% per annum was assumed as of January 1, 2014 to December 31, 2019. This rate is used to determine the benefit expense for fiscal years 2014 to 2019.

Membership Data

We have used the membership data from the full valuation of the plan as of December 31, 2011, which was used to determine the December 31, 2012 year-end disclosure to do the projections in this analysis. We have identified those active employees who are Executive and Management employees from the material you provided on July 3, 2013.

The allocation as at December 31, 2011 of plan members used in our projections are as follows:

Group	Number
Executive	8
Management	62
Non-Union	41
Union	281
Retiree	250
Excluded Actives	16
Total Members	658

Plan Provisions

Plan provisions are outlined in our 2013 disclosure letter of January 8, 2014.

Please note the following in our results attached:

- The 2011 expense (under both CICA and IAS) was determined based on an older valuation - the December 31, 2008 valuation. The data in that report differed from the data of the December 31, 2011 valuation. We have thus allocated the expense between Executive, Management and Non-union in the same proportion to that allocation for the 2012 expense.

- For members of each group expected to retire in the future, we have kept such individuals within the same group as they originated as active members. Thus, in the Defined Benefit Obligation reconciliation, benefit payments appear in the reconciliation for the non-retiree groups.

If you require additional information or have any questions, please do not hesitate to contact me or Wafaa Babcock (416) 696-3055.

Yours truly,



Kwame Smart, FSA FCIA

Copy: Danielle Gammon, Horizon Utilities Corporation
Wafaa Babcock, Eckler Ltd.
Nicole Kennedy, Eckler Ltd.

J:\Horizon Utilities\Pension\Corr14\2019 Cost of Service Application (update March 2014).docx

APPENDIX A

RESULTS

Benefit Expense for Fiscal Years 2011 to 2019

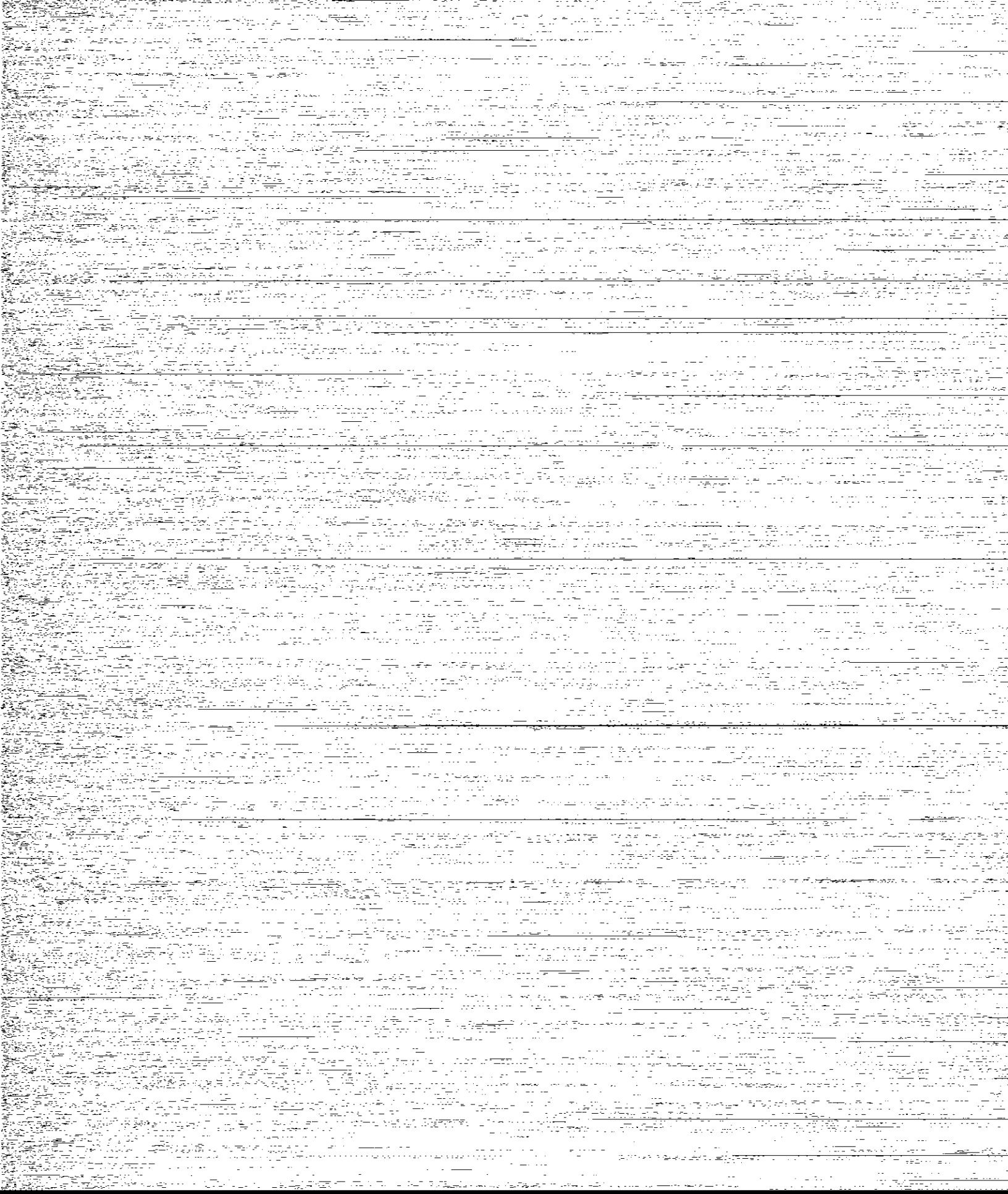
	2011 (CICA)	2011 (IAS)	2012	2013	2014
Executive	24,900	24,700	21,800	24,900	24,000
Management	117,900	116,900	102,900	118,900	114,100
Non-Union	61,200	60,700	53,400	61,500	59,400
Union	727,000	720,000	716,300	817,900	794,500
Retirees	535,200	501,900	554,900	498,900	518,100
Excluded Actives	6,500	6,600	10,100	11,700	11,200
Total	**$1,472,700**	**$1,430,800**	**$1,459,400**	**$1,533,800**	**$1,521,300**

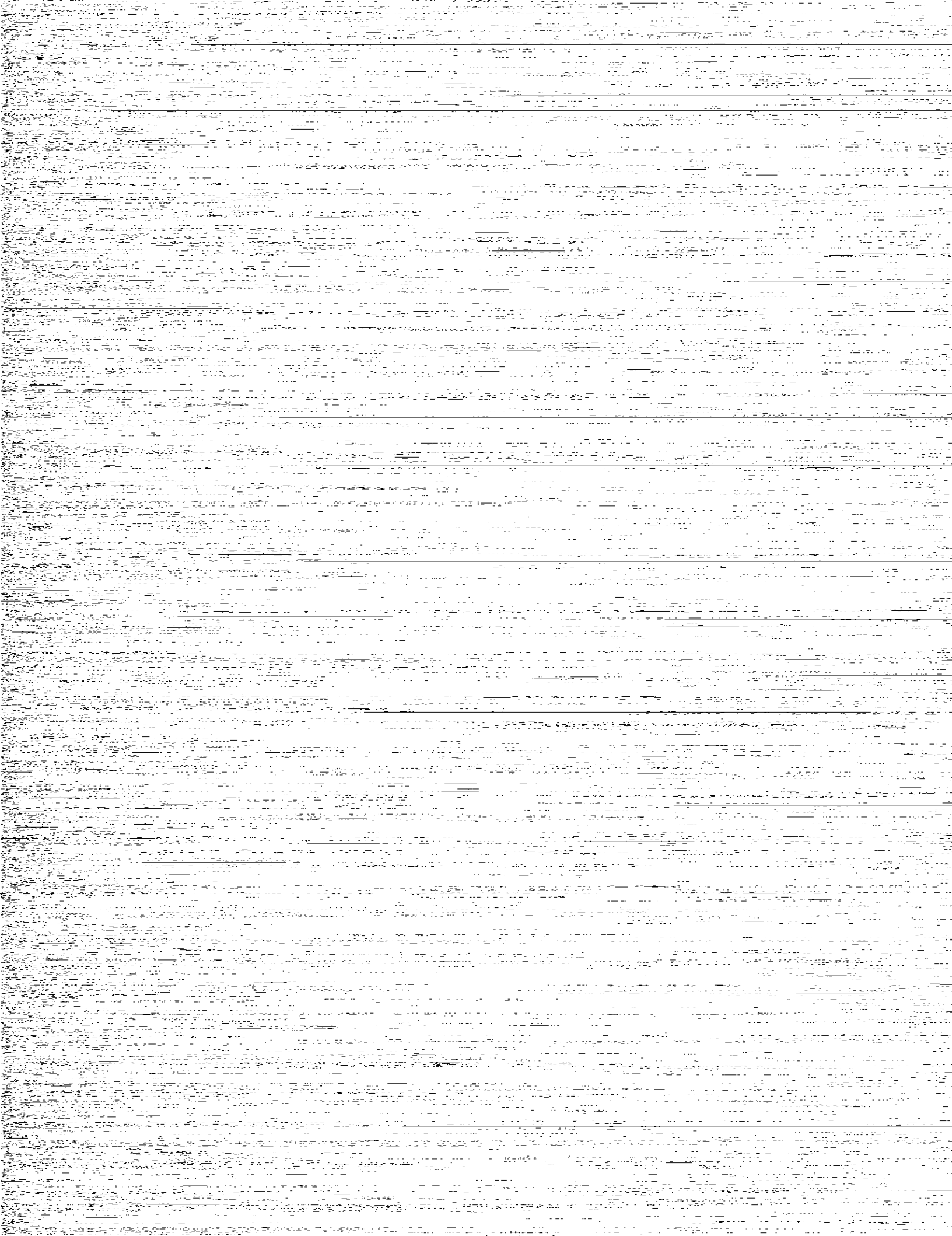
	2015	2016	2017	2018	2019
Executive	25,700	27,400	29,300	31,200	33,200
Management	122,300	130,900	140,100	149,600	159,600
Non-Union	63,700	68,300	73,100	78,100	83,400
Union	850,000	908,200	969,300	1,033,300	1,100,200
Retirees	491,700	465,400	439,200	413,100	387,000
Excluded Actives	12,000	12,800	13,700	14,600	15,700
Total	**$1,565,400**	**$1,613,000**	**$1,664,700**	**$1,719,900**	**$1,779,100**

Defined Benefit Obligation (DBO) Reconciliation for 2012 to 2019

	Executive	Management	Non-Union	Union	Retirees	Excluded Actives	Total
DBO at December 31, 2012	**$278,800**	**$1,145,400**	**$575,800**	**$8,819,200**	**$13,021,500**	**$104,000**	**$23,944,700**
Service Cost	13,200	70,400	37,100	447,600	0	7,300	575,600
Interest Cost	11,700	48,500	24,400	370,300	498,900	4,400	958,200
Benefit Payments	(390)	(1,660)	(880)	(12,780)	(1,068,900)	(200)	(1,084,810)
Actuarial (gain)/loss	(40,410)	(138,640)	(67,020)	(922,620)	(589,300)	(13,600)	(1,771,590)
DBO at December 31, 2013	**$262,900**	**$1,124,000**	**$569,400**	**$8,701,700**	**$11,862,200**	**$101,900**	**$22,622,100**
Service Cost	11,400	60,700	32,300	387,700	0	6,300	498,400
Interest Cost	12,600	53,400	27,100	406,800	518,100	4,900	1,022,900
Benefit Payments	(800)	(3,300)	(1,700)	(25,100)	(1,078,000)	(300)	(1,109,200)
DBO at December 31, 2014	**$286,100**	**$1,234,800**	**$627,100**	**$9,471,100**	**$11,302,300**	**$112,800**	**$23,034,200**
Service Cost	11,900	63,600	33,800	406,100	0	6,600	522,000
Interest Cost	13,800	58,700	29,900	443,900	491,700	5,400	1,043,400
Benefit Payments	(1,300)	(5,400)	(2,700)	(40,800)	(1,068,200)	(500)	(1,118,900)
DBO at December 31, 2015	**$310,500**	**$1,351,700**	**$688,100**	**$10,280,300**	**$10,725,800**	**$124,300**	**$23,480,700**
Service Cost	12,500	66,600	35,400	425,400	0	6,900	546,800
Interest Cost	14,900	64,300	32,900	482,800	465,400	5,900	1,066,200
Benefit Payments	(1,800)	(7,800)	(3,900)	(58,200)	(1,026,800)	(700)	(1,099,200)
DBO at December 31, 2016	**$336,100**	**$1,474,800**	**$752,500**	**$11,130,300**	**$10,164,400**	**$136,400**	**$23,994,500**
Service Cost	13,100	69,800	37,100	445,600	0	7,200	572,800
Interest Cost	16,200	70,300	36,000	523,700	439,200	6,500	1,091,900
Benefit Payments	(2,400)	(10,300)	(5,200)	(76,700)	(1,005,400)	(1,000)	(1,101,000)
DBO at December 31, 2017	**$363,000**	**$1,604,600**	**$820,400**	**$12,022,900**	**$9,598,200**	**$149,100**	**$24,558,200**
Service Cost	13,700	73,100	38,900	466,800	0	7,500	600,000
Interest Cost	17,500	76,500	39,200	566,500	413,100	7,100	1,119,900
Benefit Payments	(3,200)	(13,700)	(7,000)	(100,900)	(973,400)	(1,300)	(1,099,500)
DBO at December 31, 2018	**$391,000**	**$1,740,500**	**$891,500**	**$12,955,300**	**$9,037,900**	**$162,400**	**$25,178,600**
Service Cost	14,400	76,600	40,700	489,000	0	7,900	628,600
Interest Cost	18,800	83,000	42,700	611,200	387,000	7,800	1,150,500
Benefit Payments	(4,100)	(17,900)	(9,100)	(131,200)	(952,200)	(1,700)	(1,116,200)
DBO at December 31, 2019	**$420,100**	**$1,882,200**	**$965,800**	**$13,924,300**	**$8,472,700**	**$176,400**	**$25,841,500**

APPENDIX 4-5 – MERCER COMPENSATION LETTERS





Martin Beraldo
Senior Associate

161 Bay Street
P.O. Box 501
Toronto, Ontario M5J 2S5
+1 416 868 2924
Fax +1 416 868 7671
www.mercer.ca

MERCER

31 August 2011

Marjorie Richards
Vice President, Corporate Services
Horizon Utilities Corporation
55 John St. North
Hamilton, ON L8R 3M8

Private & Confidential

Subject: Projected Non-Union Salary Increases for 2012

Dear Marjorie,

As per your request, we are pleased to provide you with commentary and considerations in regards to non-union salary and structure budget adjustments for 2012. Based on the results of Mercer's 2012 Compensation Planning Survey, we expect base salary budget increases in 2012 to range from 2.9- 3.2%, approximately 0.1- 0.2% above 2011 actual results. As well, we expect overall structural increases to range from 1.9- 2.4%, approximately 0.1- 0.2% below 2011 actual results.

Nationally, these projections are based on a number of key findings including:

- Of those organizations planning for base salary increases in 2011, overall increases are 3.0%. This is an increase from the 2.9% increase projected for 2011 this time last year and the same as the 3.0% reported last December.
- The differentiation gap between increases by employee groups is closing. Increases for 2012 are projected to be 3.1% for all employee groups; traditionally Executives have received higher increases.
- Salary freezes will not be as prevalent in 2012, with more than 98% of organizations planning to provide increases in 2012. Executives continue to have the highest percentage of salary freezes with 5% in 2011, declining to less than 2% in 2012.
- The Oil and Gas and Natural Resources industries continue to have the highest salary increase budgets in 2011, as well as highest projections for 2012.
- Salary increases in the Utility industry exceeds the national average, however projected salary structure increases are more modest than in past years.

We anticipate that Ontario Local Distribution Companies (LDCs) will align with the GTA statistics provided, with little differentiation between employee levels. Specifically, salary increases of approximately 2.8- 3.0% and structure increases of 2.1- 2.3%.

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The following table presents the National, Greater Toronto Area ("GTA") and National Utilities 2011 actual and 2012 projected market budget and structure increase levels:

		Base Salary Increase Budgets		Structure Increases	
		2011 Actual	2012 Projected	2011 Actual	2012 Projected
National	***All Employees***	***3.0%***	***3.1%***	***2.3%***	***2.3%***
	Executives	3.1%	3.1%	2.6%	2.3%
	Management	3.0%	3.1%	2.3%	2.3%
	Professional (Sales & Non-Sales)	3.0%	3.1%	2.3%	2.3%
	Office/Clerical/Technician	2.9%	3.1%	2.3%	2.3%
	Trade/Production/Service	3.1%	3.1%	2.3%	2.4%
GTA	***All Employees***	***2.8%***	***2.9%***	***2.3%***	***2.3%***
	Executives	2.9%	3.0%	2.6%	2.3%
	Management	2.8%	2.9%	2.2%	2.3%
	Professional (Sales & Non-Sales)	2.8%	2.9%	2.2%	2.2%
	Office/Clerical/Technician	2.8%	2.9%	2.2%	2.3%
	Trade/Production/Service	2.8%	2.9%	2.2%	2.3%
Utilities *(National)*	***All Employees***	***2.9%***	***3.1%***	***2.4%***	***2.0%***
	Executives	3.4%	3.2%	1.7%	1.9%
	Management	2.8%	3.2%	2.2%	2.0%
	Professional (Sales & Non-Sales)	2.8%	3.2%	2.4%	2.0%
	Office/Clerical/Technician	2.7%	3.1%	2.9%	2.1%
	Trade/Production/Service	2.7%	3.0%	2.2%	2.1%

We trust this information meets your needs at this time and if you have any further questions or would like clarification, please do not hesitate to contact me.

Sincerely,

[redacted]

Martin Beraldo

Copy:
Michael Thompson, Mercer; Joanna Glavin, Mercer

Quin Ma
Senior Associate

161 Bay Street, P.O. Box 501
Toronto, Ontario M5J 2S5
Tel +1 416 868 2899
Fax +1 416 868 7671
quin.ma@mercer.com
www.mercer.ca

MERCER

19 October 2012

Brenda Schacht
Vice-President, Human Resources
Horizon Utilities Corporation
55 John St. North
Hamilton, ON L8R 3M8

Private & Confidential

Subject: Projected Non-Union Salary Increases for 2013

Dear Brenda,

As requested, we are pleased to provide you with commentary and considerations with regards to non – union salary and structure budget adjustments for 2013. Based on the results of Mercer's 2013 Compensation Planning Survey, we expect base salary budget increases in 2013 to range from 2.9- 3.5%, approximately 0 – 0.5% below actual results observed in 2012. As well, we expect overall structural increases to range from 2.1 - 2.6%, approximately 0 - 0.1% below 2012 actual results.

Nationally, these projections are based on a number of key findings including:

- The national average base salary increase in 2012 is 3.2%. This is a slight increase from the 3.1% projected at this time last year for 2012, and the 3.1% reported in the updated 2012 projected figures last November. Current projections for 2013 indicate that budgets will remain at 3.2%.
- In the last couple of years, we have seen the differentiation gap between employee groups narrow; however, in 2012 Executives and Management groups are receiving higher increases than the national average — 3.4% and 3.3% respectively. Projections for 2013 indicate less differentiation with increases ranging from 3.1% to 3.2% across all employee groups.
- Both the Oil and Gas and Natural Resources industries continue to have the highest salary increase budgets in 2012, as well as some of the highest projections for 2013. These industries have also seen a larger year-over-year change compared to many other industries.

We anticipate that Ontario Local Distribution Companies (LDCs) will align with the GTA statistics provided, with little differentiation between employee levels. Specifically in 2013, projected salary increases of approximately 2.9- 3.0% and structure increases of 2.1- 2.2%.

The following table presents the National, Greater Toronto Area ("GTA") and National Utilities 2012 actual and 2013 projected market budget and structure increase levels:

		Base Salary Increase Budgets		Structure Increases	
		2012 Actual	2013 Projected	2012 Actual	2013 Projected
National	*All Employees*	3.2%	3.2%	2.4%	2.3%
	Executives	3.4%	3.2%	2.5%	2.2%
	Management	3.3%	3.2%	2.5%	2.4%
	Professional (Sales & Non-Sales)	3.2%	3.2%	2.4%	2.3%
	Office/Clerical/Technician	3.2%	3.1%	2.4%	2.3%
	Trade/Production/Service	3.1%	3.1%	2.4%	2.4%
GTA	*All Employees*	2.9%	3.0%	2.3%	2.2%
	Executives	3.0%	3.0%	2.5%	2.1%
	Management	3.0%	3.0%	2.4%	2.2%
	Professional (Sales & Non-Sales)	2.9%	3.0%	2.3%	2.2%
	Office/Clerical/Technician	2.9%	2.9%	2.2%	2.2%
	Trade/Production/Service	2.8%	2.9%	2.2%	2.2%
Utilities (National)	*All Employees*	3.3%	3.3%	2.4%	2.5%
	Executives	4.0%	3.5%	2.1%	2.2%
	Management	3.3%	3.3%	2.3%	2.4%
	Professional (Sales & Non-Sales)	3.3%	3.4%	2.4%	2.5%
	Office/Clerical/Technician	3.0%	3.1%	2.5%	2.5%
	Trade/Production/Service	3.1%	3.1%	2.7%	2.6%

We trust this information meets your needs at this time and if you have any further questions or would like clarification, please do not hesitate to contact me.

Sincerely,

Quin Ma

Copy:
Michael Thompson, Mercer

Nara Sousa Capouillez
Senior Associate

161 Bay Street, P.O. Box 501
Toronto, Ontario M5J 2S5
+1 416 868 2648
Fax +1 416 868 7671
www.mercer.ca

07 October 2013

Brenda Schacht
Vice-President, Human Resources
Horizon Utilities Corporation
55 John St. North
Hamilton, ON L8R 3M8

Private & Confidential

Subject: Projected Non-Union Salary Increases for 2014

Dear Brenda,

As requested, we are pleased to provide you with commentary and considerations with regards to non-union salary and structure budget adjustments for 2014. Based on the results of Mercer's 2014 Compensation Planning Survey, we expect base salary budget increases in 2014 to range from 2.5 - 3.2%, approximately 0 - 0.3% below actual results observed in 2013. As well, we expect overall structural increases to range from 2.0 - 2.5%, approximately 0 - 0.3% below 2013 actual results.

Nationally, these projections are based on a number of key findings including:

- The national average base salary increase in 2013 is 3.2%. This is on par with the 3.2% projected at this time last year for 2013. Current projections for 2014 indicate that budget increases will decrease slightly to 3.1%.
- In the last year, we saw the differentiation gap between employee groups begin to increase, contrary to the previous trend. In 2013, Executives and Management groups continue to receive higher increases than the national average — 3.4% and 3.3% respectively. Projections for 2014 indicate increases ranging from 3.0% to 3.3% across all employee groups.
- The Oil and Gas industry continues to have the highest average salary increase budget in 2013 with 4.3%, and the highest projection for 2014 of 4.2%. Interestingly, the utilities industry had the second highest increase in 2013 with 3.5%, and the second highest projection for 2014 as well, with 3.3%.

The following table presents the National, Greater Toronto Area ("GTA") and National Utilities 2013 actual and 2014 projected market budget and structure increase levels:

		Base Salary Increase Budgets		Structure Increase	
		2013 Actual	2014 Projected	2013 Actual	2014 Projected
National	*All Employees*	3.2%	3.1%	2.3%	2.2%
	Executives	3.4%	3.2%	2.4%	2.3%
	Management	3.3%	3.3%	2.3%	2.2%
	Professional (Sales & Non-Sales)	3.1%	3.1%	2.3%	2.2%
	Office/Clerical/Technician	3.2%	3.2%	2.3%	2.2%
	Trade/Production/Service	3.0%	3.0%	2.4%	2.2%
GTA	*All Employees*	2.9%	2.9%	2.2%	2.1%
	Executives	3.1%	3.0%	2.2%	2.2%
	Management	3.0%	3.0%	2.2%	2.1%
	Professional (Sales & Non-Sales)	2.9%	2.9%	2.1%	2.1%
	Office/Clerical/Technician	2.8%	2.8%	2.1%	2.1%
	Trade/Production/Service	2.7%	2.7%	2.2%	2.1%
Utilities (National)	*All Employees*	3.5%	3.3%	2.2%	2.3%
	Executives	3.9%	3.6%	2.6%	2.4%
	Management	3.5%	3.3%	2.1%	2.2%
	Professional (Sales & Non-Sales)	3.5%	3.4%	2.0%	2.2%
	Office/Clerical/Technician	3.3%	3.1%	2.2%	2.3%
	Trade/Production/Service	3.2%	3.0%	2.5%	2.4%

We trust this information meets your needs at this time and if you have any further questions or would like clarification, please do not hesitate to contact me.

Sincerely,
Nara Sousa-Capouillez

Copy:
Michael Thompson, Mercer

Michael A. Thompson
Partner

161 Bay St., PO Box 501
Toronto ON M5J 2S5
416 868 2563 Fax 416 868 9634
michael.a.thompson@mercer.com
www.mercer.ca

Ms. Brenda Schacht
Vice-President, Human Resources
Horizon Utilities Corporation
55 John St. North
Hamilton, ON L8R 3M8

28 October 2013

Private & Confidential

Subject: Compensation consulting services on behalf of Horizon Utilities Corporation

Dear Brenda,

As requested, and in preparation of your Ontario Energy Board (OEB) rate filings, the following letter summarizes the scope of work that Mercer has completed for Horizon Utilities Corporation ("Horizon") as it relates to executive and non-executive compensation decisions made for fiscal year 2012 and 2013.

In 2012, the management of Horizon engaged Mercer to review the total cash compensation (i.e. base salaries and short-term incentives) for its executive team. The purpose of this review was to assess the competitiveness of Horizon's compensation programs, and to update a similar review conducted in 2010. This compensation review employed standard market analysis methodologies used by Mercer in conducting similar reviews for other organizations, and included competitive market compensation data for the following executive roles:

- CEO
- SVP & Chief Financial Officer
- VP, Business Development
- VP, Utilities Operations
- VP, Regulatory
- VP, Human Resources
- VP, Finance
- VP, Customer Services

Mercer's analysis relied upon current incumbent compensation data provided to Mercer by Horizon, and the competitiveness of current practices included comparisons to proprietary Mercer compensation surveys.

In October 2012, Mercer discussed the results of the executive compensation review with Horizon's VP, Human Resources, President & CEO and the Board to establish individual compensation arrangements.

Mercer has also provided commentary and considerations with regards to non-union salary and structure budget adjustments for 2013 and 2014. The information provided was based on the results of Mercer's 2013-2014 Compensation Planning Survey, and included the National, Greater Toronto Area ("GTA") and National Utilities actual and projected market budget and structure increase levels.

In addition to the executive compensation review and salary budget increases report mentioned above, Horizon has also participated in the 2012 Canada MBD survey. The MBD ("Mercer Benchmark Database") is the premier general industry database for evaluating and creating competitive compensation offerings. The 2012 database contains data for over 535 thousand employees in 1,085 organizations and provides:

- Base pay, incentive, and total direct compensation information for more than 1,100 positions
- Analyses by industry, assets, revenue/sales, operating expenses/budget, gross premiums, total employment, geographic region, and metropolitan area
- Year-over-year comparisons by position
- Long-term incentive prevalence and valuation

In 2013, Horizon participated in the "Executive Short-Term Incentive Plan Design Survey" conducted by Mercer and sponsored by London Hydro, and is currently participating in the Total Compensation Survey that is being conducted by Mercer and sponsored by Hydro One.

Ongoing Compensation Consulting Services

Mercer has continued to provide Horizon with ongoing compensation consulting services beyond the deliverables outlined in this letter. It includes, but is not limited to:

- Ad-hoc compensation planning
- Ad-hoc compensation benchmarking and market pricing

Market Analysis Methodology

This section outlines the methodology used to benchmark the competitiveness of Horizon's pay policy.

The goal of any competitiveness review is to map positions to an appropriate competitive data source(s) and document the relative positioning and identify any misalignments. Cash compensation levels (i.e., base salary and annual incentives) tend to be aligned with the scope and complexity of the individual position and, as such to the extent possible we analyzed market data specific to the individual position.

Consistent with the previous review, Mercer benchmarked target and actual compensation levels within the executive positions of Horizon against survey data from Mercer's Canadian Mercer Benchmark Database (MBD). We did not reference the US market as this would be beyond the scope of a typical market review; furthermore, we note that the US market typically exhibits different pay structures and practices than the Canadian market.

Market Analysis and Comparator Markets

Cash compensation surveys are conducted annually by Mercer and other firms to provide data on a wide range of compensation practices in the market. The most typical methodology requests participating organizations match their jobs to established benchmark job descriptions in the survey. Once a reasonable match has been identified, the participating organization then submits the current compensation levels (base salary, job rate, bonus award, target bonus, etc.) for all incumbents in the respective jobs.

In addition to compensation data, companies also provide specific organizational characteristics which enable Mercer to segment the survey results in order to create data samples that are relevant to the scope and complexity of the company being analyzed (i.e., Horizon). Typically, the data is segmented by industry, and by organization size, usually measured by revenue.

To provide an objective analysis, several data sources (e.g., Mercer's survey data, proprietary survey data, publicly disclosed data, etc.) are often used to provide independent views of the market. We note, however, that these data sources represent different samples and methodologies such that simple aggregation of the results is generally not appropriate.

When analyzing companies, the typical market practice is to consider companies that are one-half to two times the revenue of the target company (i.e., Horizon) – this range is generally considered an appropriate estimate of the scope and complexity of the organization. For purposes of this analysis, Mercer has reduced the overall revenue of Horizon for comparison purposes by the approximate amount of flow-through revenue. This reduced revenue scope better approximates the value-added of the business, and provides a conservative view of the pay market. For some positions that have accountability for managing total revenue, however, we do note that this reduced revenue range may understate the scope (i.e., finance, treasury positions).

For purposes of market analyses, Horizon positions were compared against both private and public sectors. Specifically:

- **Private Sector (2012 Mercer Benchmark Database):** Included organizations in a variety of industries with annual revenues comparable to Horizon
  - Revenue scope utilized was approximately ($30 - $500M) 1/4 to 4x that of Horizon's net distribution revenue of $115 million
  - The Greater Toronto Area ("GTA") was considered to generate an adequate and appropriate data set
- **Public Sector (2012 Mercer Benchmark Database):** Includes public sector and not-for-profit organizations
  - Ontario and national scopes were considered respectively in order to generate an appropriate data set

Summary of Work

The following section summarizes the work conducted by Mercer based on projects and analyses outlined above.

May 2012

- Broad based compensation benchmarking through participation in Mercer's Canadian Mercer Benchmark Database (MBD)
  - As discussed with the Horizon Board and in accordance with Mercer's recommendations regarding compensation strategy, it was agreed that Horizon's compensation levels should be competitive with the market median of a blend of the public sector and private sector comparator organizations

October 2012

- Executive Compensation Analysis to review total cash compensation levels for 9 executive roles. The review included base salaries and short – term incentives.

July 2013

- Participated in the "Executive Short-Term Incentive Plan Design Survey" conducted by Mercer and sponsored by London Hydro and Burlington Hydro
  - The survey was conducted in May / June 2013, and asked 16 participants companies to provide details of the executive's STIP (i.e. metrics and measures) and total cash compensation data for 5 positions
- Currently participating in the Total Compensation Survey that is being conducted by Mercer and sponsored by Hydro One
  - The survey is in its final stages, and will provide comprehensive total compensation data on 32 positions, across 15 participant companies

2012 – 2013

Ongoing Compensation Consulting Services

Mercer has continued to provide Horizon with ongoing compensation consulting services beyond the deliverables outlined in this letter. These projects were conducted by Mercer in 2012 and 2013 and did not constitute Mercer recommendations, as it related to Horizon's 2012-2013 compensation decisions, as follows:

- Ad-hoc market pricings for various non-bargaining positions
- Discussions regarding projected salary budget and policy increases for 2012, 2013 and a forecast for 2014

Brenda, we trust the information provided is helpful. Please let us know if you have any questions.

Sincerely,

Michael A. Thompson
Partner

Copy: Nara Sousa-Capouillez (Mercer)

APPENDIX 4-6.1 – TRANSFER PRICING STUDY

Stratsolver

Transfer Pricing Study

Management Fees between Horizon Utilities' Electricity Distribution Operations and Affiliated Entities

Prepared for Horizon Utilities Corporation

March 19, 2014

Anthony Suidan
Stratsolver Corporation
PO Box 20009, RPO Dundas-Clayhill
Mississauga, ON L5B 4L7
905-609-0077, 905-615-8661 (Fax)
zas@stratsolver.com

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Section 1: Executive Summary

Electricity Distribution Operations ("EDO"), Horizon Utilities' largest line of business, provides professional services to seven affiliated business units, of which three are lines of business of Horizon Utilities and four reside in affiliated companies. In addition, EDO receives professional services from two affiliated business units, one delivered by another line of business of Horizon Utilities and the other by an affiliated company.

Conventional cost allocation accounting methodology is used for the calculation of management fees on the basis of fully allocated costs, according to physical quantity drivers or percentage distribution of revenue, cost or direct work time. In either case, the cost allocation basis is proportional to the quantity of work performed. Cost markups to direct operating expenses are consistent with Ontario Energy Board requirements regarding fully allocated costs, including the cost of capital.

Table 1 summarizes the current multi-year management fee budget at the Horizon group of companies. During the accounting process of consolidation, management fee revenues and expenses are eliminated. In Table 1, these charges are totaled in order to provide the reader with additional perspective on their relative magnitudes.

The management fee of the greatest magnitude is charged by the Customer Care line of business to Electricity Distribution Operations. This management fee is budgeted at $8.1 million in 2014 and is expected to increase to $9.1 million by 2019.

In total, $9.9 million in annual management fees between EDO and affiliated businesses are expected to be transacted within in 2014, increasing to $11.2 million by 2019.

Table 1

Executive Summary: EDO-related Management Fees

Management Fee	Description	2013A	2014B	2015B	2016B	2017B	2018B	2019B
CC-EDO	Customer Care to Electricity Distribution Operations	$ 7,357k	$ 8,072k	$ 8,338k	$ 8,550k	$ 9,082k	$ 9,014k	$ 9,145k
EDO-CC	Electricity Distribution Operations to Customer Care	$ 625k	$ 1,012k	$ 1,049k	$ 1,082k	$ 1,109k	$ 1,144k	$ 1,157k
HHI-EDO Core	Horizon Holdings to Electricity Distribution Operations Core	$ -	$ 232k	$ 243k	$ 249k	$ 256k	$ 264k	$ 271k
EDO-HUC	Electricity Distribution Operations to Hamilton Utilities	$ 18k	$ 11k	$ 11k	$ 11k	$ 12k	$ 12k	$ 12k
EDO-HHSI	Electricity Distribution Operations to Hamilton Hydro Services	$ 53k	$ 58k	$ 59k	$ 63k	$ 65k	$ 66k	$ 68k
EDO-CDM	Electricity Distribution Operations to Conservation and Demand Management (CDM)	$ 312k	$ 446k	$ 463k	$ 477k	$ 489k	$ 504k	$ 510k
EDO-SSGP	Electricity Distribution Operations to Solar Sunbelt General Partnership	$ 51k	$ 25k	$ 26k	$ 27k	$ 28k	$ 29k	$ 29k
EDO-HESI CDM	Electricity Distribution Operations to Horizon Energy Solutions CDM	$ 53k	$ 31k					
EDO-HESI MSP	Electricity Distribution Operations to Horizon Energy Solutions Meter Service Provider	$ 28k	$ 43k	$ 45k	$ 46k	$ 49k	$ 49k	$ 50k
Total EDO-related Management Fees		**$ 8,497k**	**$ 9,929k**	**$ 10,233k**	**$ 10,506k**	**$ 11,089k**	**$ 11,081k**	**$ 11,241k**

Section 2: Background

2.1 Introduction

This section contains an overview of corporate structure in order to provide context, terms and definitions for the understanding of the exchange of services and fees among Horizon Utilities' affiliates. The scope of this report is then described, followed by a review of the consultant's role as well as an overview of calculation methodology. In Section 3, each management fee transacted between EDO and affiliated businesses is described in greater detail.

2.2 Hamilton Utilities Corporation

Hamilton Utilities Corporation ("HUC") is a holding company owned by the City of Hamilton. HUC has investments in two entities, Hamilton Hydro Services Incorporated ("HHSI") and Horizon Holdings Incorporated ("HHI"). HHSI provides energy services in the areas of thermal energy generation and distribution, as well as sentinel light rentals and maintenance for the City of Hamilton.

2.3 Horizon Holdings Incorporated

Horizon Holdings Incorporated ("HHI") is a holding company which comprises Horizon Energy Solutions Incorporated ("HESI"), Horizon Solar Corp ("HSC") and Horizon Utilities Corporation ("Horizon Utilities"). HESI's lines of business are sentinel light rentals and maintenance for the City of St. Catharines, electric meter service provider ("HESI MSP") services, the operation of the conservation and demand management ("HESI CDM") program for an unaffiliated electricity distributor, and management services for the Solar Sunbelt General Partnership (SSGP). HSC has a nominal partnership interest in SSGP (less than 0.1%) and is of negligible magnitude and relevance for purposes of this report.

2.4 Horizon Utilities Corporation

Horizon Utilities consists of four lines of business residing within a single legal entity: Electricity Distribution Operations ("EDO"), Customer Care, Conservation and Demand Management ("CDM") and a 99.9%-plus partnership interest in Solar Sunbelt General Partnership ("SSGP"). EDO, the electricity distribution utility for Hamilton and St. Catharines, is the major operating unit of the Horizon group of companies and is regulated by the OEB. Major functions situated within EDO include those typically constituting shared services such as Finance, Information Technology, and Human Resources; accordingly, EDO is a major service provider to affiliated businesses.

2.5 Report Scope

The affiliated businesses of EDO consist of the separate legal entities HUC, HHSI, HHI and HESI, as well as the operations of Customer Care, CDM and SSGP within the same Horizon Utilities legal entity as EDO. These affiliated businesses exchange amongst each other services which are accounted for via transfer prices and cost allocations (or "management fees"). This report addresses the management fees for services transacted between EDO and affiliated businesses. The level of detail is intended to provide the reader with a thorough overview without financial modeling minutiae.

2013 forecast management fees appear in this report for comparison purposes only. These fees were not derived from the model used to determine the fees for 2014 through 2019.

2.6 Methodology

For the purpose of management fee calculations, the general ledger coding consists of three components: company (i.e. line of business), cost center (i.e. department) and account (i.e. expense category).

Cost allocations embedded in management fees are applied selectively by cost center and account via cost allocation ratios. Examples of cost allocation ratios include the estimated percentage of work time of FTEs who carried out tasks on behalf of multiple businesses, the percentage of FTEs who received services, the percentage of customers towards which the costs were incurred, the percentage of total revenue generated by a business unit, and the percentage of total purchase orders issued by a company.

The cost rates displayed in the report tables are straight averages of the proportions applied across cost accounts. In cases where more than one cost driver was used, the average rate displayed in the tables is of high-level directional information value.

Some management fees include a markup to direct operating costs, consistent with OEB requirements on fully allocated costs. An example of a markup is the return on net assets rate included in the intercompany management fee from Customer Care to EDO.

2.7 Consultant's Role

Anthony Suidan, the Stratsolver consultant who prepared this report, worked at arm's length capacity with Horizon Utilities' staff to validate the transfer pricing and cost allocation logic. A computer model was developed for Horizon Utilities by Stratsolver for the purpose of dynamic calculation of management fees. The model is maintained by Horizon staff with the most recent versions of the payroll database, relevant physical quantity data, and the six-year, account-level budget.

3.1 Customer Care services provided to EDO

Horizon Utilities' Customer Care line of business invoices EDO for professional services rendered ("CC-EDO").

The functions which Customer Care performs for EDO are billing, call center, meter reading, and credit and collection operations.

Embedded within this management fee is the cost of the business functions applied in the management fee from EDO to Customer Care (described in section 3.2). These business functions are integral to operation of the Customer Care line of business.

In addition to its work for EDO, Customer Care provides services to the City of Hamilton for water billing and to Waterloo North Hydro ("WNH") for payment processing.

Because City of Hamilton residents receive a single bill for electricity and water charges, the percentage of electricity billing customers is a key cost allocation ratio for departments which serve a combination of EDO and City of Hamilton water billing customers.

A WNH cost allocation driven by hourly rates, logged time, and individual costs is a deduction from the EDO allocation for the Customer Care cost center which performs the WNH work.

Customer Care has managerial departments which span a range of operating departments; some perform work exclusively for EDO customers while others perform work for both EDO and non-EDO customers. These departments capture the compensation costs of Customer Care's staff, separately and distinctly from EDO's staffing costs. The costs of managerial departments within Customer Care are allocated according to the degree to which their subordinate departments perform work for EDO customers weighted by the percentage of total FTEs at those subordinate departments.

The leading executive of Customer Care also provides oversight to CDM, HESI CDM and HESI MSP. The costs for this executive reside in Customer Care and not within EDO.

Table 3.1.1 presents the computation of the rate of return on net fixed assets, based on OEB-prescribed cost of capital rates in effect as at October 31, 2013. This rate is used to derive a markup applied to the CC-EDO direct operating cost allocations which applies solely to assets in the Customer Care line of business, which are distinct from EDO assets included in the Rate Base of this rate application.

Table 3.1.1

		After Tax	Pre Tax
Short-term Debt	4%		2.46%
Long-term Debt	56%		3.42%
Equity	40%	8.98%	12.22%
Weighted Average			**6.90%**
Tax Rate	*26.50%*		

Table 3.1.2 summarizes the current multi-year CC-EDO management fee budget and the calculation methodology which underlies it.

Table 3.1.2

CC services provided to EDO

Management Fee	Cost Center	Description	Average Rate	FTE-Equiv	2013A	2014B	2015B	2016B	2017B	2018B	2019B
CC-EDO	300	Customer Service and Customer Connections - Executive	71 5%	0.7 FTE		$ 1,356k	$ 1,397k	$ 1,435k	$ 1,469k	$ 1,509k	$ 1,519k
	301	Customer Care - Corporate	73 3%	0.7 FTE		$ 383k	$ 430k	$ 448k	$ 444k	$ 436k	$ 411k
	302	Customer Care - Billing	70 6%	12.0 FTE		$ 2,190k	$ 2,260k	$ 2,307k	$ 2,709k	$ 2,494k	$ 2,598k
	303	Customer Care - Customer Service	70 3%	25.3 FTE		$ 2,649k	$ 2,775k	$ 2,860k	$ 2,938k	$ 3,025k	$ 3,047k
	304	Customer Care - Meter Reading	70 6%	na		$ 506k	$ 466k	$ 475k	$ 484k	$ 494k	$ 501k
	305	Customer Care - Credit and Collections	70 6%	7.1 FTE		$ 791k	$ 809k	$ 828k	$ 847k	$ 868k	$ 872k
Total FTE-Equivalents and Cost				45.8 FTE		$ 7,875k	$ 8,136k	$ 8,354k	$ 8,891k	$ 8,826k	$ 8,948k
Markup to direct operating costs						$ 196k	$ 202k	$ 196k	$ 191k	$ 188k	$ 197k
Total Management Fee					**$ 7,357k**	**$ 8,072k**	**$ 8,338k**	**$ 8,550k**	**$ 9,082k**	**$ 9,014k**	**$ 9,145k**
Net Assets Deployed to EDO						$ 2,795k	$ 2,848k	$ 2,763k	$ 2,689k	$ 2,628k	$ 2,759k
Return on Net Assets Deployed to EDO						7.0%	7.1%	7.1%	7.1%	7.1%	7.1%

Methodology

(1) Selectively charge out a proportion of the operating cost of CC300/301/302/303/304/305 to EDO and then apply a markup based on return on net assets
(2) For CC302/303/304/305, allocate operating costs based on the proportion of the customer base with electric meters: 68.9%.
(3) For CC303, back out Waterloo North Hydro-related operating costs from the operating cost allocation: 0.4%
(4) Allocate corporate CC300/301 operating costs per the FTE distribution of their subordinate regulated and unregulated CCs which provide electricity distribution services.
(5) The OEB's existing cost of capital policy and prescribed return on net assets rate was applied across all budget years: 6.9%.

3.2 EDO services provided to Customer Care

EDO invoices Customer Care for professional services ("EDO-CC").

EDO performs purchasing, human resources and executive oversight services for Customer Care. The Finance department's cost allocation is driven by a combination of the percentage of total purchase orders issued by Customer Care and the percentage of total FTEs in Customer Care serviced by other EDO cost centers. All other cost allocations from EDO to Customer Care are primarily driven by Customer Care's percentage of total FTEs serviced by EDO administrative functions.

Table 3.2 summarizes the current multi-year EDO-CC management fee budget and the calculation methodology which underlies it.

Table 3.2

EDO services provided to CC

Management Fee	Cost Center	Description	Average Rate	FTE-Equiv	2013A	2014B	2015B	2016B	2017B	2018B	2019B
EDO-CC	100	Executive	8.7%	0.2 FTE		$ 92k	$ 93k	$ 95k	$ 97k	$ 99k	$ 102k
	200	Financial Services - Executive	8.7%	0.1 FTE		$ 41k	$ 41k	$ 42k	$ 43k	$ 44k	$ 45k
	205	Financial Services	8 8%	0.4 FTE		$ 412k	$ 431k	$ 446k	$ 456k	$ 468k	$ 475k
	543	Procurement	8 8%	1.1 FTE		$ 81k	$ 84k	$ 83k	$ 87k	$ 88k	$ 90k
	593	Supply Chain	8.7%	0.1 FTE		$ 70k	$ 68k	$ 76k	$ 78k	$ 80k	$ 81k
	600	Corporate Services - Executive	8.7%	0.3 FTE		$ 47k	$ 48k	$ 50k	$ 51k	$ 52k	$ 53k
	601	Healthy Workplace & Safety	8 8%	0.5 FTE		$ 74k	$ 77k	$ 79k	$ 81k	$ 83k	$ 85k
	620	Human Resources	8 8%	1.5 FTE		$ 195k	$ 207k	$ 211k	$ 216k	$ 230k	$ 226k
Total Management Fee				**4.2 FTE**	**$ 625k**	**$ 1,012k**	**$ 1,049k**	**$ 1,082k**	**$ 1,109k**	**$ 1,144k**	**$ 1,157k**

Methodology

(1) Customer Care percentage of POs multiplied by CC205 total payroll.

(2) Customer Care percentage of POs multiplied by CC205 FTEs.

(3) Customer Care percentage of FTEs multiplied by CC100/200/543/593/600/601/620 total payroll.

(4) Customer Care percentage of FTEs multiplied by CC100/200/543/593/600/601/620 FTEs.

(5) CC-weighted percentage of total payroll cost from (1) and (3) multiplied by selected payroll account values of CC100/200/205/543/593/600/601/620.

(6) CC-weighted percentage of FTEs from (2) and (4) multiplied by non-payroll, operating cost account values of CC100/200/205/543/593/600/601/620.

3.3 HHI services provided to EDO core operations

The HHI holding company office invoices EDO's OEB rate-regulated operations for professional services rendered ("HHI-EDO Core"). These services include the fulfillment of EDO's Government Relations function and the oversight of EDO's Corporate Communications group.

HHI employees provide certain core services to EDO, as well as services to other business units of Horizon Utilities. An allocation of their payroll and non-payroll, but only staffing-related cost, is applied to EDO's core operations based on percentage of estimated work time. Non-staffing-related HHI holding company operating expenses are not part of the cost allocation and are not charged to EDO's core operations.

Table 3.3 summarizes the current multi-year HHI-EDO Core management fee budget and the calculation methodology which underlies it.

Table 3.3

HHI services provided to EDO core operations

Management Fee	Cost Center	Description	Average Rate	FTE-Equiv	2013A	2014B	2015B	2016B	2017B	2018B	2019B
HHI-EDO Core	400	Business Development - Executive	41 2%	1.1 FTE		$ 232k	$ 243k	$ 249k	$ 256k	$ 264k	$ 271k
Total Management Fee				**1.1 FTE**	**$ -**	**$ 232k**	**$ 243k**	**$ 249k**	**$ 256k**	**$ 264k**	**$ 271k**

Methodology

(1) HHI percentage of FTE estimated work time on EDO core operations multiplied by CC400 total payroll.

(2) HHI percentage of FTE estimated work time on EDO core operations multiplied by CC400 FTEs.

(3) Percentage of total payroll cost from (1) multiplied by selected payroll account values of CC400.

(4) Percentage of FTEs from (2) multiplied by non-payroll, staffing cost-related account values of CC400.

3.4 EDO services provided to HUC

EDO invoices the HUC holding company office for professional services rendered ("EDO-HUC").

EDO performs purchasing and human resources services for HUC. The Finance and Procurement department cost allocations are driven by the percentage of total purchase orders issued by HUC. Human Resources department cost allocations from EDO to HUC are driven by HUC's percentage of total FTEs.

Table 3.4 summarizes the current multi-year EDO-HUC management fee budget and the calculation methodology which underlies it.

Table 3.4

EDO services provided to HUC

Management Fee	Cost Center	Description	Average Rate	FTE-Equiv	2013A	2014B	2015B	2016B	2017B	2018B	2019B
	205	Financial Services	0.2%	0.0 FTE		$ 7k	$ 7k	$ 7k	$ 7k	$ 7k	$ 8k
EDO-HUC	543	Procurement	0.2%	0.0 FTE		$ 1k	$ 1k	$ 1k	$ 2k	$ 2k	$ 2k
	620	Human Resources	0.2%	0.1 FTE		$ 3k	$ 3k	$ 3k	$ 3k	$ 3k	$ 3k
Total Management Fee				**0.1 FTE**	**$ 18k**	**$ 11k**	**$ 11k**	**$ 11k**	**$ 12k**	**$ 12k**	**$ 12k**

Methodology

(1) HUC percentage of POs multiplied by selected CC205/543 payroll.
(2) HUC percentage of POs multiplied by selected CC205/543 FTEs.
(3) HUC percentage of FTEs multiplied by selected CC620 payroll.
(4) HUC percentage of FTEs multiplied by selected CC620 FTEs.
(5) CC-weighted percentage of payroll cost from (1) and (3) multiplied by payroll account values of CC205/543/620.
(6) Total percentage of FTEs from (2) and (4) multiplied by non-payroll, operating cost account values of CC205/543/620.

3.5 EDO services provided to HHSI

EDO invoices HHSI for professional services rendered ("EDO-HHSI").

EDO performs purchasing and human resources services for HHSI. The Finance and Procurement department cost allocations are driven by the percentage of total purchase orders issued by HHSI. Human Resources department cost allocations from EDO to HHSI are driven by HHSI's percentage of total FTEs.

Table 3.6 summarizes the current multi-year EDO-HHSI management fee budget and the calculation methodology which underlies it.

Table 3.6

EDO services provided to HHSI

Management Fee	Cost Center	Description	Average Rate	FTE-Equiv	2013A	2014B	2015B	2016B	2017B	2018B	2019B
	205	Financial Services	1.0%	0.2 FTE		$ 36k	$ 37k	$ 39k	$ 40k	$ 41k	$ 41k
EDO-HHSI	543	Procurement	1.0%	0.1 FTE		$ 8k	$ 8k	$ 8k	$ 9k	$ 9k	$ 9k
	620	Human Resources	1.0%	0.1 FTE		$ 14k	$ 15k	$ 16k	$ 16k	$ 17k	$ 17k
Total Management Fee				**0.3 FTE**	**$ 53k**	**$ 58k**	**$ 59k**	**$ 63k**	**$ 65k**	**$ 66k**	**$ 68k**

Methodology

(1) HHSI percentage of POs multiplied by selected CC205/543 payroll.
(2) HHSI percentage of POs multiplied by selected CC205/543 FTEs.
(3) HHSI percentage of FTEs multiplied by selected CC620 payroll.
(4) HHSI percentage of FTEs multiplied by selected CC620 FTEs.
(5) CC-weighted percentage of payroll cost from (1) and (3) multiplied by payroll account values of CC205/543/620.
(6) Total percentage of FTEs from (2) and (4) multiplied by non-payroll, operating cost account values of CC205/543/620.

3.6 EDO services provided to CDM

CDM refers to the business function which delivers conservation and demand management programs funded by the Ontario Power Authority in EDO's service territory.

EDO invoices CDM for professional services rendered ("EDO-CDM").

EDO performs purchasing, human resources and executive oversight services for CDM. Cost allocations from EDO to CDM are driven by CDM's percentage of total FTEs serviced by EDO's administrative functions.

Table 3.7 summarizes the current multi-year EDO-CDM management fee budget and the calculation methodology which underlies it.

Table 3.7

EDO services provided to CDM

Management Fee	Cost Center	Description	Average Rate	FTE-Equiv	2013A	2014B	2015B	2016B	2017B	2018B	2019B
EDO-CDM	100	Executive	3 9%	0.1 FTE		$ 40k	$ 41k	$ 42k	$ 43k	$ 44k	$ 45k
	200	Financial Services - Executive	3 9%	0.0 FTE		$ 18k	$ 18k	$ 18k	$ 18k	$ 19k	$ 19k
	205	Financial Services	3 9%	0.8 FTE		$ 181k	$ 189k	$ 196k	$ 200k	$ 206k	$ 209k
	543	Procurement	3 9%	0.3 FTE		$ 35k	$ 36k	$ 36k	$ 38k	$ 38k	$ 39k
	593	Supply Chain	3 9%	0.0 FTE		$ 32k	$ 31k	$ 35k	$ 36k	$ 36k	$ 37k
	600	Corporate Services - Executive	3 9%	0.1 FTE		$ 21k	$ 21k	$ 22k	$ 22k	$ 23k	$ 23k
	601	Healthy Workplace & Safety	3 9%	0.2 FTE		$ 33k	$ 34k	$ 35k	$ 36k	$ 37k	$ 38k
	620	Human Resources	3 9%	0.4 FTE		$ 86k	$ 92k	$ 94k	$ 96k	$ 102k	$ 100k
Total Management Fee				**1.9 FTE**	**$ 312k**	**$ 446k**	**$ 463k**	**$ 477k**	**$ 489k**	**$ 504k**	**$ 510k**

Methodology

(1) CDM percentage of FTEs multiplied by CC100/200/205/543/593/600/601/620 total payroll.

(2) CDM percentage of FTEs multiplied by CC100/200/205/543/593/600/601/620 FTEs.

(3) Total percentage of payroll cost from (1) multiplied by payroll account values of CC100/200/205/543/593/600/601/620.

(4) Total percentage of FTEs from (2) multiplied by non-payroll operating cost account values of CC100/200/205/543/593/600/601/620.

3.7 EDO services provided to SSGP

EDO invoices SSGP for professional services rendered ("EDO-SSGP").

EDO performs purchasing and executive oversight services for SSGP. Cost allocations from EDO to SSGP are driven by SSGP's operating cost as a percentage of total HHI consolidated operating cost. The allocation ratio is only applied in proportion to selected EDO FTEs deemed to provide services to SSGP.

Table 3.8 summarizes the current multi-year EDO-SSGP management fee budget and the calculation methodology which underlies it.

Table 3.8

EDO services provided to SSGP

Management Fee	Cost Center	Description	Average Rate	FTE-Equiv	2013A	2014B	2015B	2016B	2017B	2018B	2019B
	100	Executive	0 3%	0.0 FTE		$ 3k	$ 3k	$ 3k	$ 3k	$ 4k	$ 4k
	200	Financial Services - Executive	0 3%	0.0 FTE		$ 2k	$ 2k	$ 2k	$ 2k	$ 2k	$ 2k
EDO-SSGP	205	Financial Services	0 3%	0.0 FTE		$ 15k	$ 16k	$ 17k	$ 17k	$ 17k	$ 18k
	543	Procurement	0 3%	0.0 FTE		$ 3k	$ 3k	$ 3k	$ 3k	$ 3k	$ 4k
	593	Supply Chain	0 3%	0.0 FTE		$ 2k	$ 2k	$ 2k	$ 2k	$ 2k	$ 2k
Total Management Fee				**0.1 FTE**	**$ 51k**	**$ 25k**	**$ 26k**	**$ 27k**	**$ 28k**	**$ 29k**	**$ 29k**

Methodology

(1) SSGP total operating cost percentage of HHI Consolidated total operating cost applied to total payroll of selected FTEs in CC100/200/205/543/593.

(2) SSGP total operating cost percentage of HHI Consolidated total operating cost applied to selected FTEs in CC100/200/205/543/593.

(3) Total percentage of payroll cost from (1) multiplied by payroll account values of CC100/200/205/543/593.

(4) Total percentage of FTEs from (2) multiplied by non-payroll, operating cost account values of CC100/200/205/543/593.

3.8 EDO services provided to HESI CDM

EDO invoices HESI's CDM unit for professional services rendered ("EDO-HESI CDM").

EDO performs purchasing, human resources and executive support services for HESI's CDM unit. Cost allocations from EDO to HESI CDM are driven by HESI CDM's estimated operating cost as a percentage of total HHI consolidated operating cost.

Table 3.9 summarizes the current multi-year EDO-HESI CDM management fee budget and the calculation methodology which underlies it.

Table 3.9

EDO services provided to HESI CDM

Management Fee	Cost Center	Description	Average Rate	FTE-Equiv	2013A	2014B	2015B	2016B	2017B	2018B	2019B
EDO-HESI CDM	205	Financial Services	0.4%	0.1 FTE		$ 16k					
	543	Procurement	0.4%	0.0 FTE		$ 4k					
	601	Healthy Workplace & Safety	0.4%	0.0 FTE		$ 4k					
	620	Human Resources	0.4%	0.0 FTE		$ 8k					
Total Management Fee				**0.2 FTE**	**$ 53k**	**$ 31k**					

Methodology

(1) Calculate HESI operating cost percentage of HHI Consolidated operating cost.
(2) Calculate HESI CDM revenue percentage of total HESI revenue.
(3) HESI CDM operating cost percentage of HHI Consolidated operating cost computed as (1) multiplied by (2).
(4) HESI CDM operating cost percentage of HHI Consolidated operating cost applied to total payroll of selected FTEs in CC205/543/601/620.
(5) HESI CDM operating cost percentage of HHI Consolidated operating cost applied to selected FTEs in CC205/543/601/620.
(6) Total percentage of payroll cost from (4) multiplied by payroll account values of CC205/543/601/620.
(7) Total percentage of FTEs from (5) multiplied by non-payroll, operating cost account values of CC205/543/601/620.

3.9 EDO services provided to HESI MSP

EDO invoices HESI's Meter Service Provider unit for professional services rendered ("EDO-HESI MSP").

EDO performs purchasing, human resources, selected Customer Care operations and executive support services for HESI's MSP unit. Cost allocations from EDO to HESI MSP are driven by HESI MSP's estimated operating cost as a percentage of total HHI consolidated operating cost.

Table 3.10 summarizes the current multi-year EDO-HESI MSP management fee budget and the calculation methodology which underlies it.

Table 3.10

EDO services provided to HESI MSP

Management Fee	Cost Center	Description	Average Rate	FTE-Equiv	2013A	2014B	2015B	2016B	2017B	2018B	2019B
EDO-HESI CDM	205	Financial Services	0 3%	0.0 FTE		$ 12k	$ 12k	$ 13k	$ 13k	$ 13k	$ 13k
	302	Customer Care - Billing	0 3%	0.1 FTE		$ 9k	$ 10k	$ 10k	$ 12k	$ 11k	$ 11k
	310	Meter Assets and inside Service	0 3%	0.0 FTE		$ 3k	$ 3k	$ 3k	$ 3k	$ 3k	$ 3k
	311	Customer Connections	0 3%	0.1 FTE		$ 7k	$ 7k	$ 7k	$ 8k	$ 8k	$ 8k
	315	MV90	0 3%	0.0 FTE		$ 1k	$ 1k	$ 1k	$ 1k	$ 1k	$ 1k
	543	Procurement	0 3%	0.0 FTE		$ 3k	$ 3k	$ 3k	$ 3k	$ 3k	$ 3k
	601	Healthy Workplace & Safety	0 3%	0.0 FTE		$ 3k	$ 3k	$ 3k	$ 3k	$ 3k	$ 3k
	620	Human Resources	0 3%	0.0 FTE		$ 6k	$ 7k	$ 7k	$ 7k	$ 7k	$ 7k
Total Management Fee				**0.3 FTE**	**$ 28k**	**$ 43k**	**$ 45k**	**$ 46k**	**$ 49k**	**$ 49k**	**$ 50k**

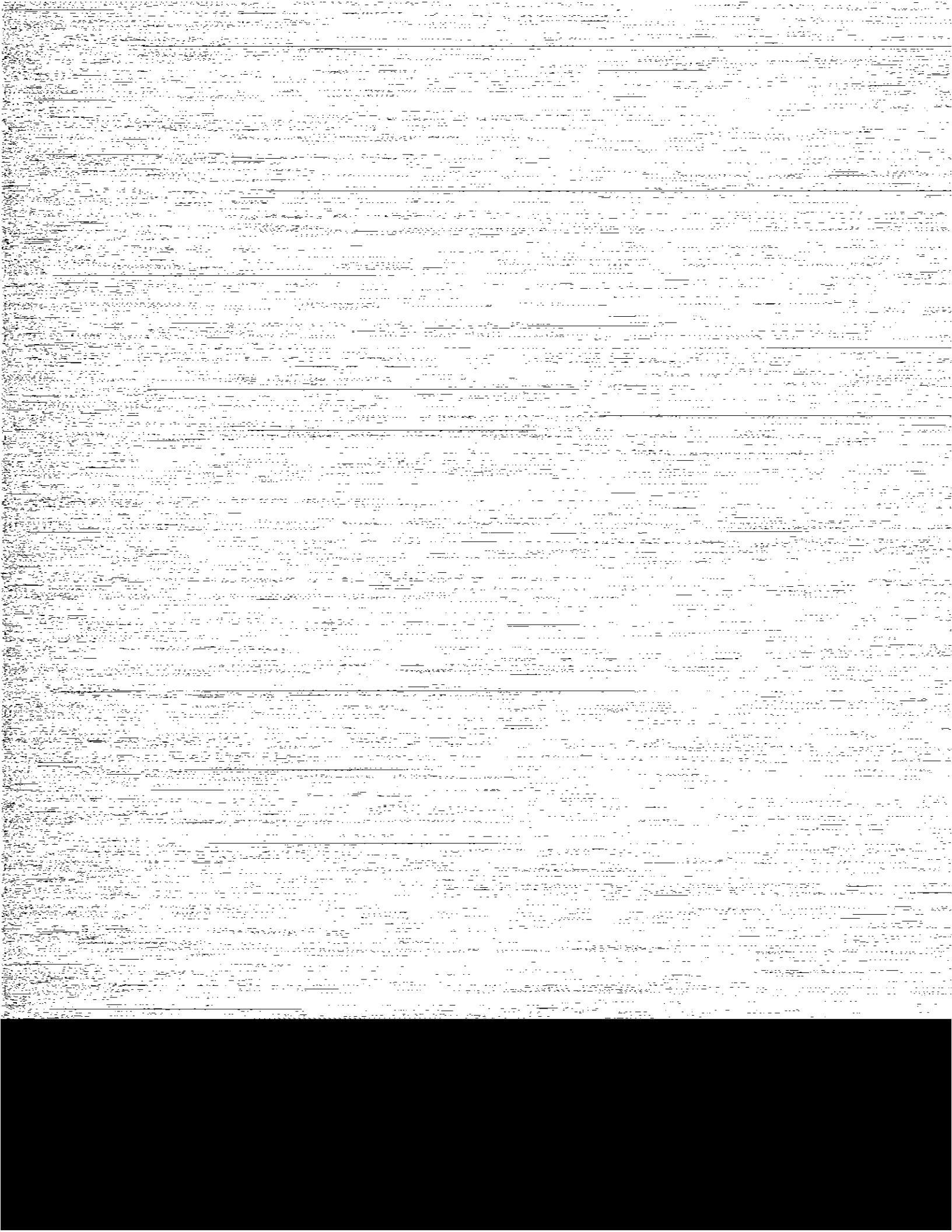
Methodology

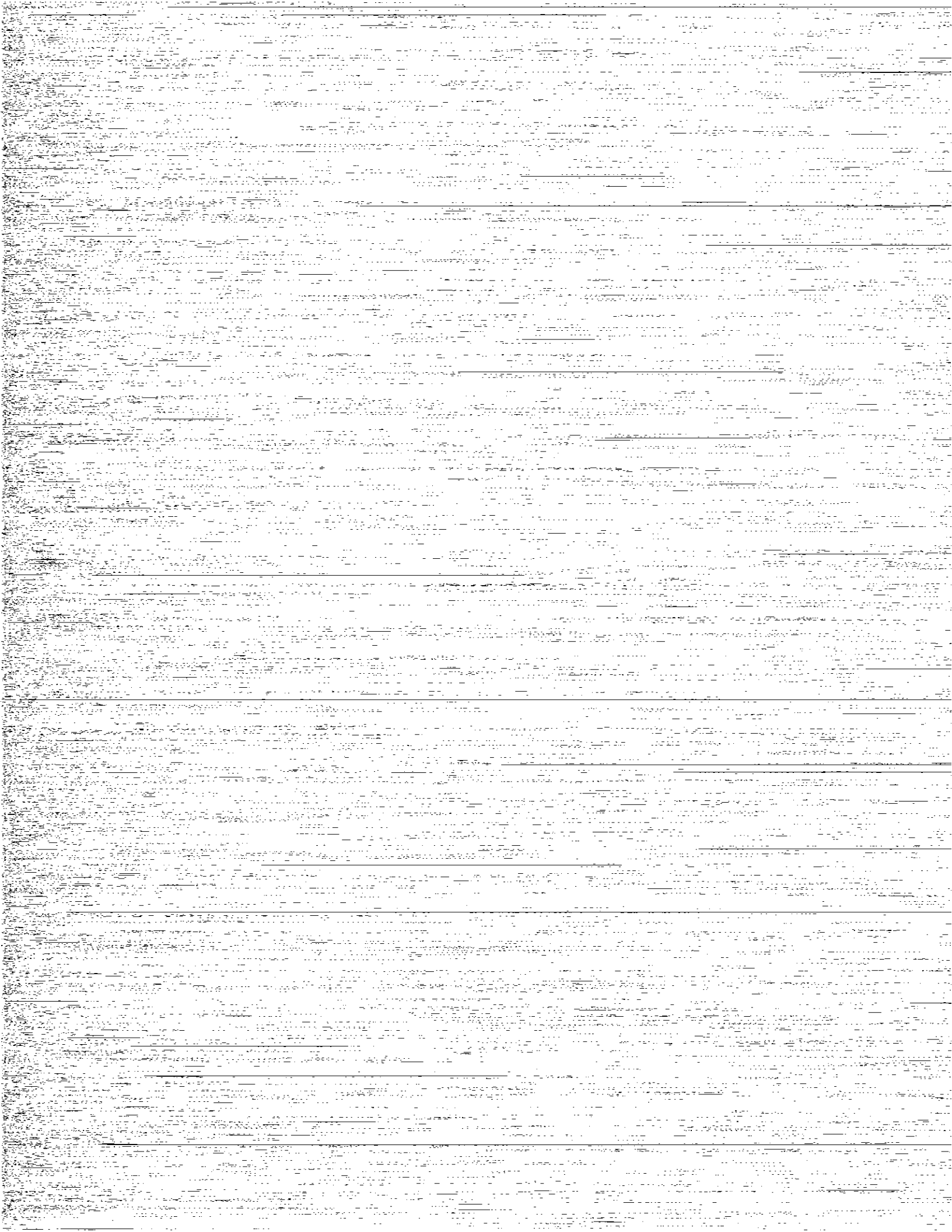
(1) Calculate HESI operating cost percentage of HHI Consolidated operating cost.
(2) Calculate HESI MSP revenue percentage of total HESI revenue.
(3) HESI MSP operating cost percentage of HHI Consolidated operating cost computed as (1) multiplied by (2).
(4) HESI MSP operating cost percentage of HHI Consolidated operating cost applied to total payroll of selected FTEs in CC205/302/310/311/315/543/601/620.
(5) HESI MSP operating cost percentage of HHI Consolidated operating cost applied to selected FTEs in CC205/302/310/311/315/543/601/620.
(6) Total percentage of payroll cost from (4) multiplied by payroll account values of CC205/302/310/311/315/543/601/620.
(7) Total percentage of FTEs from (5) multiplied by non-payroll, operating cost account values of CC205/302/310/311/315/543/601/620.

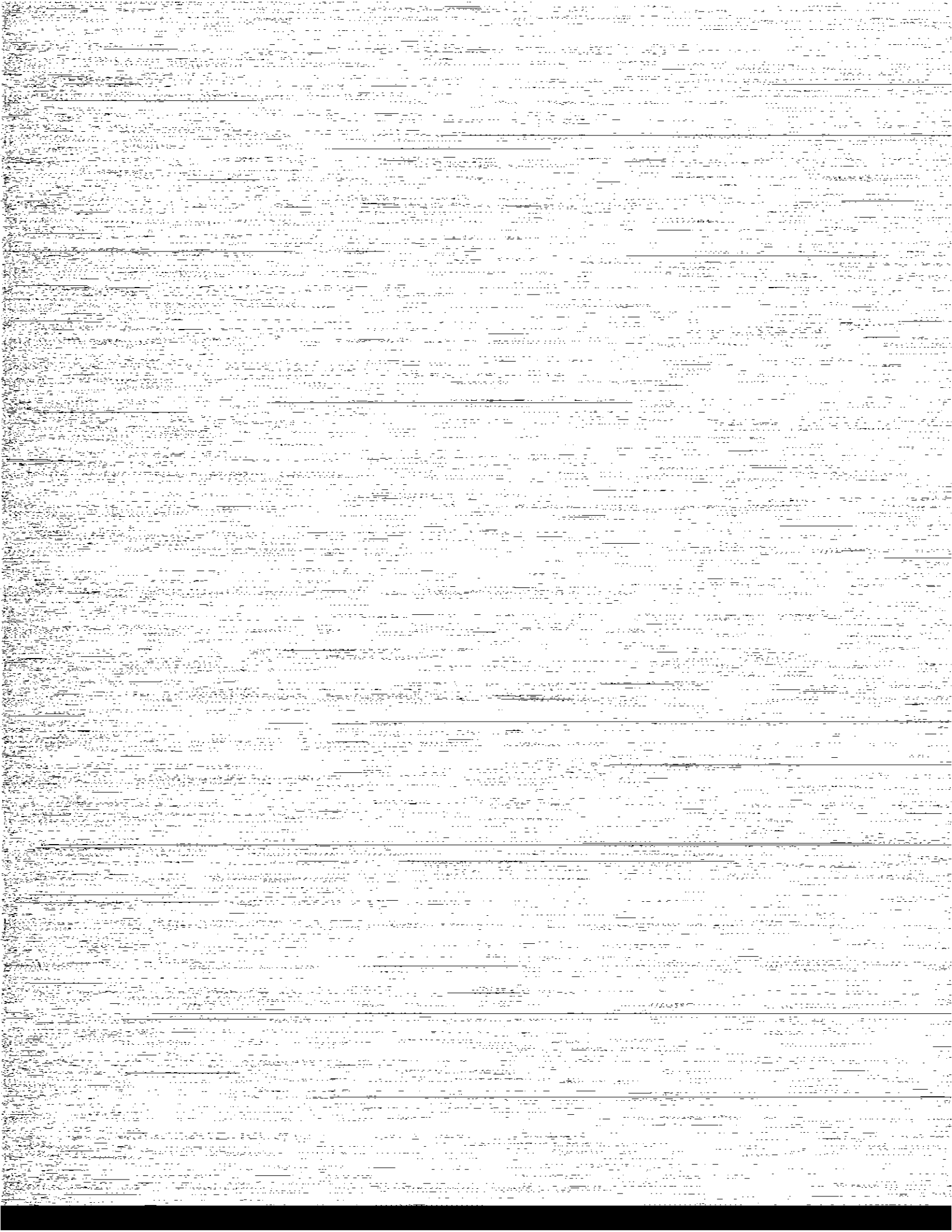
APPENDIX 4-6.2 - SERVICES AGREEMENT (2014)

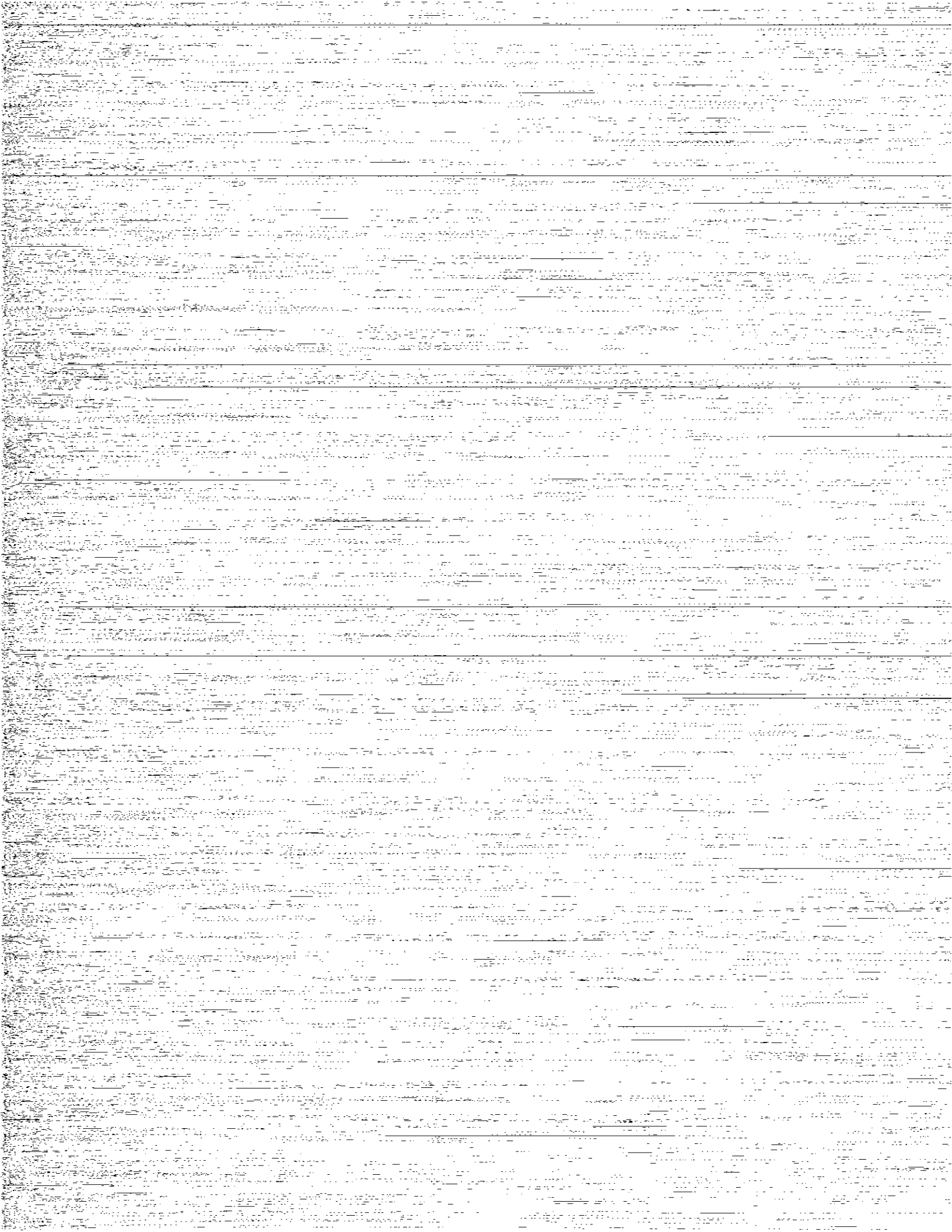


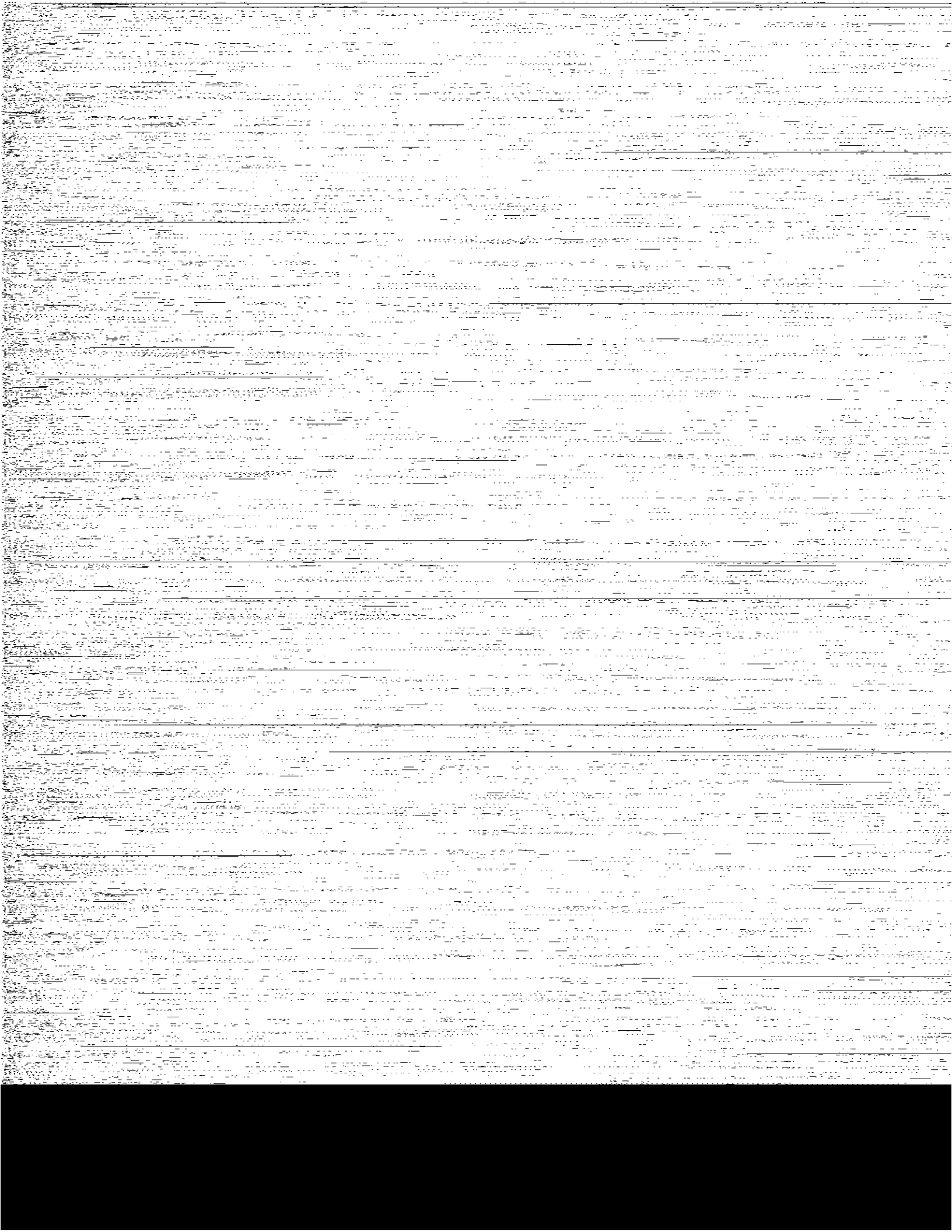


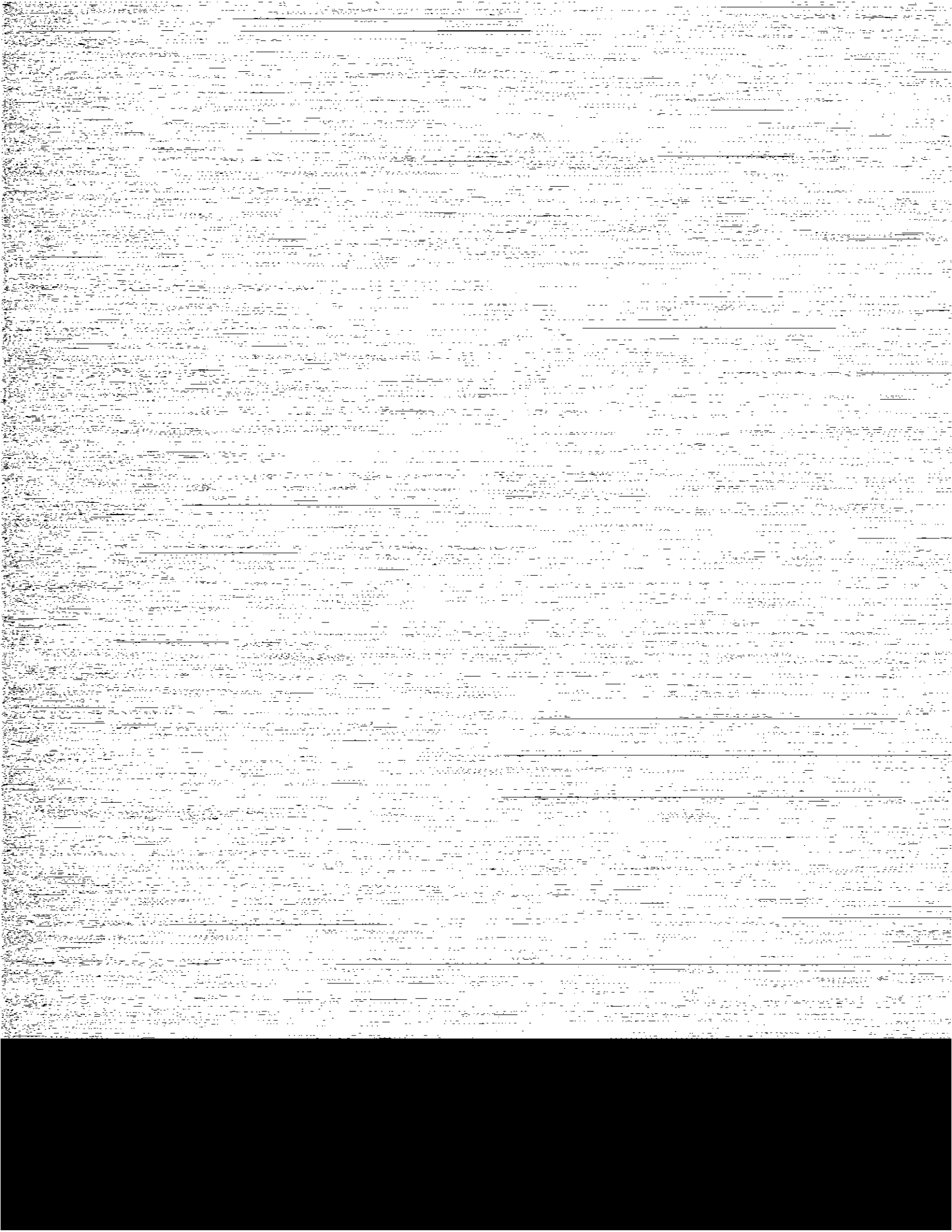


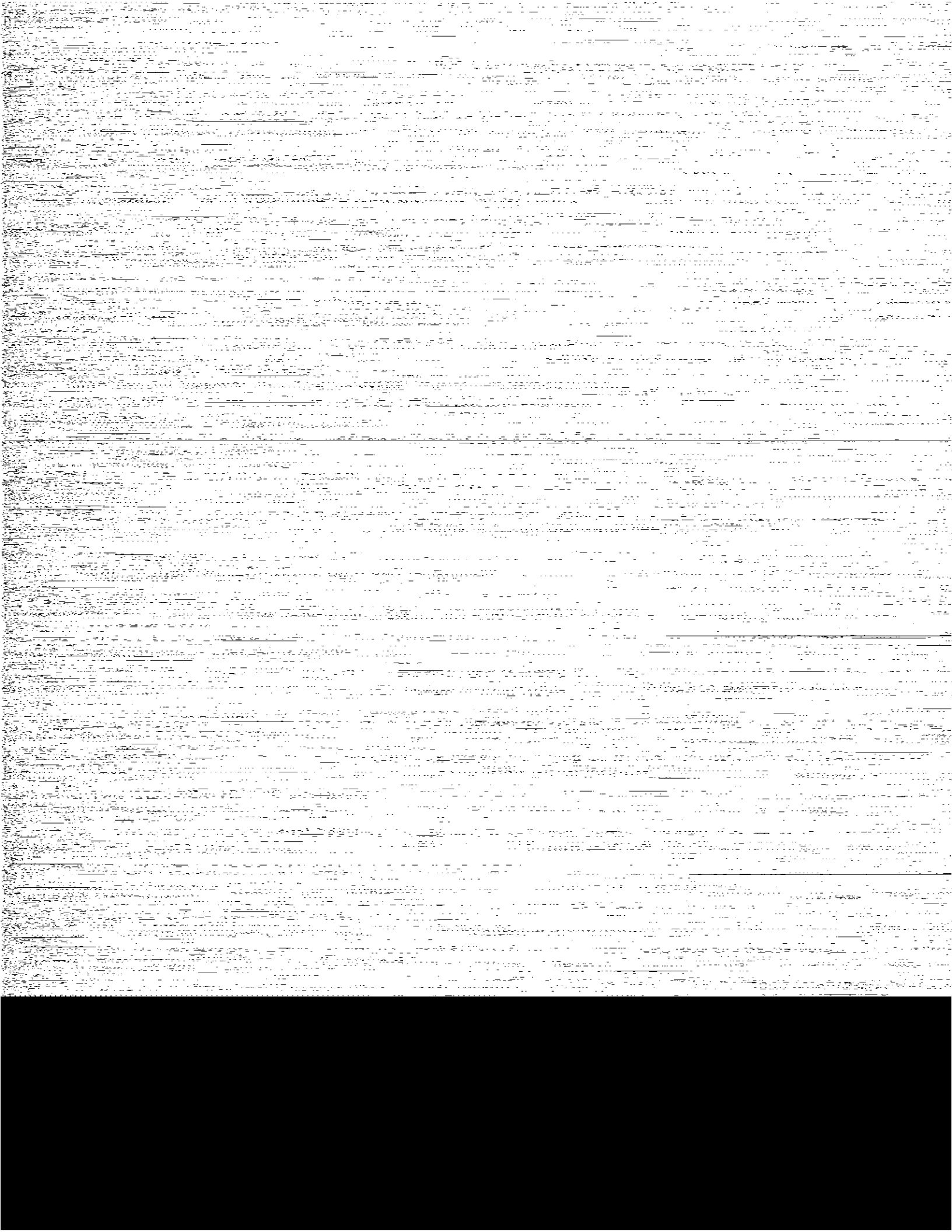


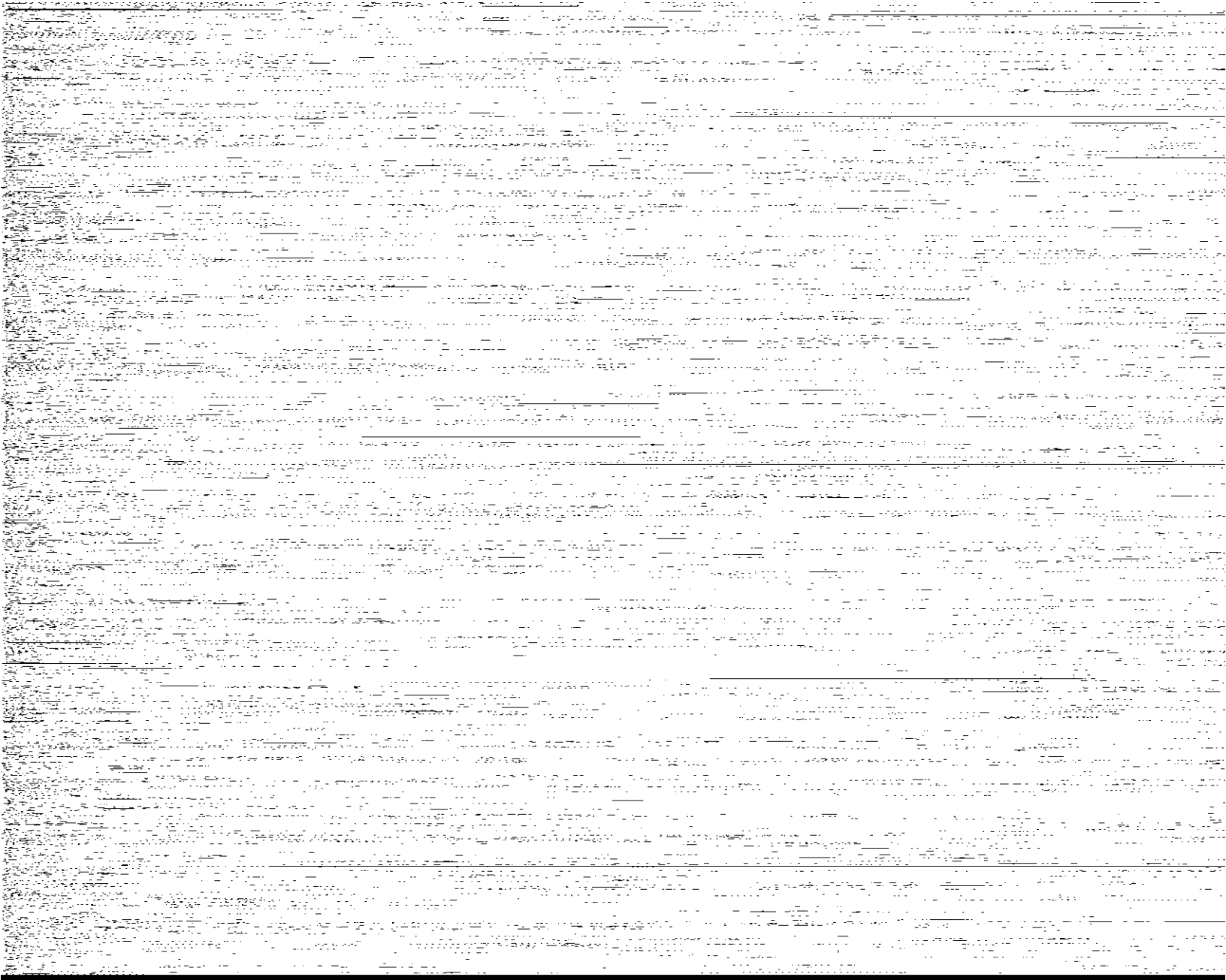




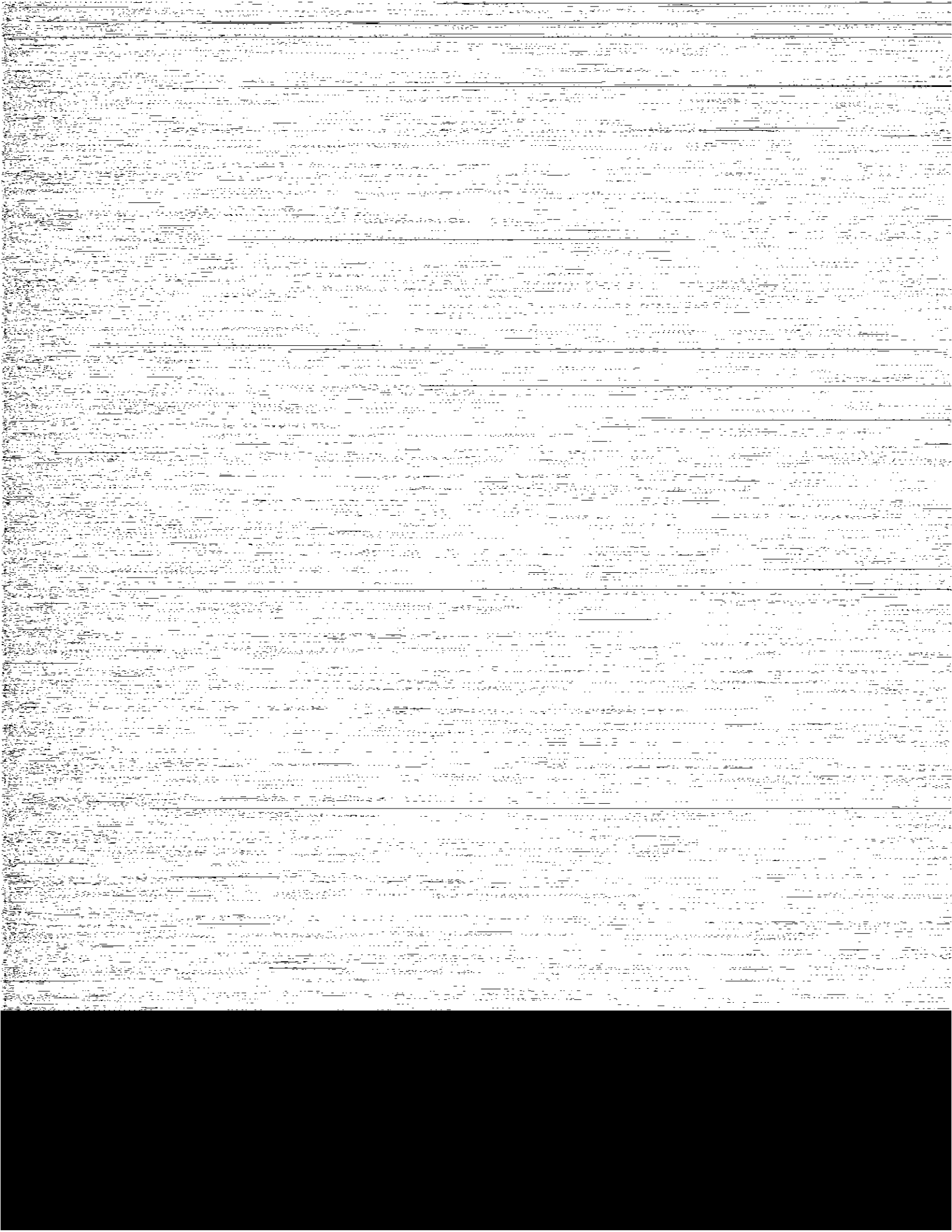












APPENDIX 4-6.3 – SERVICES AGREEMENT (2009)

APPENDIX 4-7 – CORPORATE PROCUREMENT POLICY

1.0 APPLICATION

1.1 This policy applies to all Horizon Utilities Corporation's ("Horizon Utilities") employees and contractors working on behalf of Horizon Utilities involved in the procurement of materials or services.

2.0 PURPOSE

2.1 This policy is intended to provide Horizon Utilities' employees and contractors with a centralized, high level overview of the practices, policies and procedures to which all procurement of materials and services must adhere. An important goal of this policy is to ensure that employees and contractors are aware of, and compliant with all Horizon Utilities' procurement practices.

3.0 POLICY STATEMENT

3.1 It is the responsibility of all Horizon Utilities' employees, when engaged in the procurement of materials and services, to maximize competitive buying opportunities and to consult with the Horizon Utilities' Procurement group to ensure compliance with Horizon Utilities' policies and procedures.

3.2 Horizon Utilities' Procurement group is responsible for all purchasing transactions, sourcing activities, development of strategic partnerships, and management of the Supplier Master Database and the Material Master Database. The Supplier Master Database contains an approved list of suppliers with whom Horizon Utilities does business. The Material Master Database is an approved list of materials used or owned by Horizon Utilities, respectively.

3.3 By centralizing purchasing procedures through the Procurement group and Supply Chain Management, Horizon Utilities will continue to improve the consistency and fairness of its procurement practices in line with industry-recognized leading practices.

4.0 RELATED PROCEDURES AND INSTRUCTIONS

- Corporate Expenditures Approval Policy (Horizon Policy 1.29) - Link
- Procurement Operational Procedure (PROC-PRCD-0008) - Link
- Procurement - Bid Solicitation Guidelines Procedure (SCM-PRCD-0009) - Link
- Procurement Card Policy (Horizon Policy 1.37) - Link
- Contracted Work – General Commercial Conditions Policy (Horizon Policy 1.36) - Link

5.0 PROCEDURE

Horizon Utilities' operational procurement process (Procurement Operational Procedure (PROC-PRCD-0008)) has been designed so that responsibilities are well-defined and assigned to specific individuals based on their position within the Company. Employees involved in any way in the procurement process must review the relevant portion of the Procurement Operational Procedure so that they understand what they are responsible and accountable for.

5.1 Bid Solicitation and Requests for Proposals/Quotations/Information

5.1.1 It is the responsibility of all employees involved with the solicitation, evaluation or selection of bids to be familiar with the requirements of the Bid Solicitation Guidelines Procedure (SCM-PRCD-0009).

5.1.2 Any order with an estimated value of between $1,000 and $5,000 requires that two bids be solicited, and any order with an estimated value of more than $5,000 requires that at least three bids be solicited and that the Procurement group be involved in the process.

5.1.3 Any order with an estimated value between $1 and $1,000 requires one quote from a Horizon Utilities' preferred supplier and whenever possible, the transaction should be processed using the Corporate P-Card.

5.1.4 Due to individual functional area needs, the specific requirements for the material or services ordered may be required to relax the minimum number of bids solicited. Any such deviations from Horizon Utilities' bid solicitation requirements must be authorized by the Director Supply Chain Management upon the recommendation of the Procurement Manager.

5.1.5 Until a winning bid is chosen, no information except an acknowledgement of receipt may be communicated to bidders. Only the following positions are authorized to communicate the results of the bid: Director Supply Chain Management, Manager Procurement, Purchasing Specialist or Commodity Management Specialist. All communications by the Procurement group to the bidder must be conducted in writing.

5.1.6 All bids received must be opened by a minimum of two individuals from Procurement group on behalf of the area that requested the bids be solicited and treated as confidential documents (i.e., so that no unintentional disclosure of pricing is possible). Depending on the purchase volume of the bid, Procurement may invite a member of the area requiring the goods and services and a member of the Finance group.

5.2 Procurement Approvals and Authorization

5.2.1 All Horizon Utilities' employees involved in the procurement process must be familiar with and follow the Corporate Expenditures Approval Policy (Horizon Policy 1.29) including the expenditure and approval limits by managerial rank detailed therein.

5.2.2 The Procurement Operational Procedure (PROC-PRCD-0008) lists the minimum level of approvals required for Purchase Requisitions, Purchase Orders and Purchased Agreements/Master Contracts. It is the responsibility of the individual involved in the procurement of goods and services to be aware of and compliant with, the approvals levels for a given type of purchase.

5.2.3 As set out in the Corporate Expenditures Approval and the Procurement Operational Procedure, a separation must exist at all times between ordering, approvals and payment. A purchase may only be approved by someone other than the ordering party, and payments may not, in any circumstances, be processed by the ordering or approving party.

5.2.4 Procurement of services and materials must be supported by an approved Purchase Order prior to any commitments, with the exception of services provided for Legal Consulting, Recruiting, Utilities (water, gas, hydro, and telephone), Regulatory, Financial, and Employee transactions. Commitments for these services must be supported by an agreement between both parties and approval as per Corporate Expenditures Approval Policy.

5.3 Maintenance of the Material Master and Supplier Master Databases

5.3.1 Horizon Utilities' Supply Chain Management group is accountable for developing and maintaining a centralized Material Master database, to track inventory and materials procured by Horizon Utilities, and a centralized Supplier Master database, to track the suppliers of all materials procured by Horizon Utilities. All employees administering or making use of these databases must ensure that they are familiar with roles and responsibilities laid out in the Material Master Operational Procedure (SCM-PRCD-0015) and the Supplier Master Operational Procedure (SCM-PRCD-0013).

5.3.2 The Supplier Master and Material Master Operational Procedures also provide details on the required process for adding a supplier or material to the relevant database, the forms required for such additions, and the changes in supplier details requiring a Risk Management Report. The Risk Management Report will be generated by the Procurement Process Owner, whom is also responsible for approving all new Supplier setup requests and changes to payment terms within the Supplier Master Database and ensuring that supplier qualifications are followed as per the Strategic Procurement Process. The Procurement Process Owner is the Manager Procurement, as designated by the Director Supply Chain Management.

5.3.3 Data quality and approvals of material specifications, and changes or deletions to the Material Master Database is the responsibility of the Operational Process Owner, the Reliability and Standards Engineer who will ensure that any changes, additions or deletions of material in the database are in line with the requirements of the Equipment Approval Process (HZN-ENG-008). Direction is provided by the functional area Process Owner, the functional area Manager or Supervisor responsible for the authorization of a creation/deletion request for entries in the Material Master Database.

5.4 Performance Contractor Security

5.4.1 Where the value of a single contract exceeds $100,000.00 and 30 business days in duration, the Contractor and/or Subcontractor must provide either a Performance Bond or an irrevocable letter of credit payable to Horizon Utilities Corporation in the amount of 40% of the contract's value as a guarantee of performance with a limitation period of 2 years from the earlier of the date of substantial performance or the date of default.

5.5 Contractor Payment

5.5.1 Where the single value of the contract exceeds $10,000.00, payment will be as follows:

- In monthly installments of 90% of all labour and materials incorporated into the work, 30 days after receipt of invoice therefore, less the sum of all previous payments; and
- Any unpaid balance, 45 days after receipt of invoice, submitted after the day on which all work covered by the contract has been completed and accepted by Horizon Utilities Corporation.

APPENDIX 4-8 – CORPORATE EXPENDITURE APPROVAL POLICY

HORIZON UTILITIES CORPORATION
POLICY & PROCEDURE MANUAL

Section:	**Corporate**	**Number:**	**1.29**
Issued:	**March 1, 2006**		
Subject:	**Corporate Expenditures Approval Policy**		

APPLICATION:

This program applies to Horizon Utilities Corporation and all of its employees.

PURPOSE:

The Board of Directors (Board) of Horizon Utilities Corporation (Horizon) has ultimate authority over all corporate expenditures. The Board has delegated some of its authority in this regard to the President and Chief Executive Officer (CEO) of Horizon. The authority limits of the CEO have been further delegated, as authorized by the CEO.

The purpose of this policy is to set out the authority limits over corporate expenditures that have been delegated to certain management. In addition, the policy sets out other requirements with respect to adequate segregation of duties with respect to ordering, authorization and payment functions, the authorization of interest and taxes, as well as the authorization of contractual commitments.

POLICY:

MANAGEMENT AUTHORITY LIMITS

Excluding "Special Items" noted in 2.3. below and subject to the overall CEO Authority Limits, the following represents authority limits over corporate expenditures delegated to certain management:

2.3.2.1 ***Expenditures within amount budgeted*** *where the authorizing party has accountability for such expenditures*

a) Departmental Managers up to and including $5,000;
b) Directors up to and including $50,000;
c) EMT members other than the CEO up to and including $250,000;
d) CEO up to and including limits set by the Board.

2.3.2.2 ***Expenditures in excess of the amount budgeted*** *where the authorizing party has accountability for such expenditures*

a) Vice Presidents - up to 25% of the amount budgeted, not to exceed $25,000;
b) CFO may co-authorize expenses outside of a) up to $100,000
c) CEO up to and including limits set by the Board

2.3.2.3 ***Expenditures not included in annual approved budget*** *where the authorizing party has accountability for such expenditures*

a) Vice Presidents up to $25,000
b) CFO may co-authorize expenses outside of a) up to $200,000 or authorize individual expenses up to $100,000
c) CEO up to and including limits set by the Board

2.3.2.4 ***Where the CEO is Not Available and "Time is of the Essence"***

Where time is of the essence and, after having made reasonable attempts to contact the CEO, the CEO is determined to be unavailable, the CFO along with another officer of the Corporation may exercise authority for corporate expenditures up to and including those delegated to the CEO by the Board of Directors.

OTHER REQUIREMENTS

2.3.3.1 ***Segregation of Ordering, Authorization and Payment Functions***

The following segregation of incompatible functions must exist for any purchase transaction to be valid:

a) The party ordering an item may not approve the related purchase for payment;

b) The party responsible for processing payments may not, in any circumstances, order or approve purchases.

No EMT member may approve his or her own orders. The CEO will approve all orders by individual EMT members. Where the CEO is not reasonably available, the CFO will approve orders of other EMT members.

2.3.3.2 ***Special Items – Interest and Taxes***

Interest expense and related amounts and taxes in respect of income and capital may be authorized only by the CFO or CEO acting, where applicable, in accordance with Board approved policies and budgets.

2.3.3.2 ***Contractual Commitments***

Irrespective of cost considerations, the following contractual commitments must receive the prior approval of the Board when:

a) such contracts do not have provisions limiting the total liability of Horizon;
b) such contracts have no provision excluding liabilities for consequential damages or economic losses;
c) such contracts are for products or services new to the market served or for products or services to be sold into markets not previously served by Horizon;
d) contracts containing penalty clauses or liquidated damages clauses.

In any event, **all contracts** must be signed by an officer of the Corporation.

Material contracts must undergo the review and bear the signature of one of the CEO or CFO and all such contracts should receive appropriate prior review by a competent legal resource.

2.3.3.3 ***Small Differences from Authorized Purchase Order***

Invoices that are within $50.00 over or under the amount of an approved Purchase Order may be approved by the Director, Supply Chain, Corporate Controller, Procurement Manager, or Manager, Accounting.

2.3.3.4 ***Conflict of Policy with CEO Authority Limits***

The authority limits delegated to the CEO by the Board will dictate the appropriate level of required approval where a conflict in policy exists otherwise.

Approved By: **[signed]** _____ **Max A. Cananzi** **President and CEO** **Horizon Utilities Corporation**	
New Issue:	**Date: March 1, 2007**

DEPRECIATION, AMORTIZATION, AND DEPLETION

OVERVIEW OF DEPRECIATION, AMORTIZATION, AND DEPLETION

The following evidence summarizes the amounts and method of calculation of Horizon Utilities' depreciation and amortization expense for 2011 to 2019.

Horizon Utilities has filed this Application in accordance with the Board's requirements for regulatory accounting, reporting, and filing. Horizon Utilities recorded PP&E as pooled assets based on major accounting classes in the year of capitalization, which generally consisted of high level asset groupings such as overhead and underground conductors and devices, as well as distinct components such as buildings and automotive equipment, consistent with reporting under CGAAP. Assets were depreciated on a systematic basis, with the majority of distribution plant assets depreciated over 25 years. This method was permitted under CGAAP, as the prescribed useful lives of the APH represented the "estimated service lives" of assets under the regulatory framework. The depreciable amount of an asset is determined after deducting its residual value. In practice, the residual value of an asset is often insignificant and therefore immaterial in the calculation of the depreciable amount. Horizon Utilities has not identified any assets with residual values.

Horizon Utilities adopted IFRS effective January 1, 2012. A distributor adopting IFRS is required to present one year of comparative information in its first IFRS financial statements, for financial reporting purposes. The comparative year is referred to as the "transition year" and the first day of the comparative year is referred to as the "transition date" (January 1, 2011 for Horizon Utilities). The first day of the year in which Horizon Utilities chose to adopt IFRS for financial reporting purposes is referred to as the "change-over date" (January 1, 2012).

The following section provides a summary of Horizon Utilities' accounting changes, due to the adoption of IFRS, which affected depreciation. The transition to IFRS is discussed in more detail in Exhibit 6, Tab 2, Schedule 1.

SUMMARY OF CHANGES TO DEPRECIATION DUE TO THE ADOPTION OF IFRS

IFRS 1 Exemptions

The IFRS 1 standard sets out the procedures that must be followed with respect to the initial adoption of IFRS as the basis for preparing its financial statements. IFRS 1 requires distributors to present one year of comparative information in its first IFRS financial statements, as identified above. For Horizon Utilities, the first day of the comparative year is January 1, 2011 and the first day of the year in which Horizon Utilities has chosen to adopt IFRS for reporting purposes is January 1, 2012. This standard provided a number of mandatory and optional exemptions to this general principle, two of which affected depreciation.

Deemed Cost Exemption

The first exemption which affected depreciation was the deemed cost exemption. IFRS 1 provided an optional exemption for a first-time adopter with rate-regulated activities to use the carrying amount (i.e. amortized original cost) of PP&E and intangible assets as the deemed opening cost on the transition date in circumstances where the carrying amount includes costs that do not otherwise qualify for capitalization in accordance with IFRS. Horizon Utilities elected to take this exemption and used the carrying amount of the PP&E and intangible assets under CGAAP as the deemed cost on transition date. This election resulted in a reduction of $327,086,844 in accumulated depreciation and a corresponding reduction in PP&E. Accumulated depreciation was set to $0 as identified in Table 4-74 below. The election did not result in a financial difference with CGAAP as of the transition date and had no impact on depreciation expense or revenue requirement.

Table 4-74 – Determination of Deemed Cost under IFRS

Description	Gross Fixed Assets Incr/(Decr)	Accumulated Depreciation Incr/(Decr)	Net Fixed Assets
Closing CGAAP, December 31st, 2010	**$631,965,112**	**$327,086,844**	**$304,878,268**
Deemed Cost Exemption	(327,086,844)	(327,086,844)	0
Opening MIFRS, January 1st, 2011	**$304,878,268**	**$0**	**$304,878,268**

Capital Contributions

The second exemption which affected depreciation was with respect to contributed capital. Under CGAAP, Horizon Utilities recorded capital contributions as an offset to the cost of the capital asset and amortized them on the same basis as the corresponding capital asset. Under IFRS, capital contributions are recorded as deferred revenue and amortized as revenue over the lives of the related assets. Under MIFRS for regulatory and rate-making purposes, the amortization of capital contributions is reclassified from revenue to an offset to depreciation expense.

IFRS 1 provided the option to adopt the accounting treatment for capital contributions prospectively. Horizon Utilities elected to take the exemption and recorded capital contributions received prior to January 1, 2011 as a contra asset, consistent with the accounting treatment under CGAAP. Capital contributions received after this date have been recorded as deferred revenue. This election results in similar treatment for both financial reporting and regulatory reporting purposes. However, depreciable asset lives are generally longer under IFRS than CGAAP. Consequently, the amount of annual amortization of capital contributions received prior to January 1, 2011 and computed subsequent to that date is lower than amounts otherwise computed under CGAAP.

Componentization/Change to Useful Lives

In accordance with IFRS, Horizon Utilities revised its accounting policy to address the component accounting requirements for PP&E. IFRS requires more rigorous accounting for significant components of PP&E than is required under CGAAP.

IFRS requires each significant component of an item of PP&E and intangible asset to be depreciated separately. A significant component of an item of PP&E is characterized by a cost that is significant in relation to the total cost of the item and for which different depreciation methods or rates are appropriate relative to the useful lives of respective individual components. IFRS requires that the amount initially recognized in respect of an item of PP&E be allocated to its significant components, and that each component is depreciated separately. The PP&E item may be acquired as a whole or constructed.

As part of the project to transition to IFRS, Horizon Utilities, in conjunction with its IFRS advisor, performed a thorough analysis of PP&E componentization requirements. Horizon Utilities established a new level of componentization under IFRS consistent with the requirements of IAS 16.

Prior to the adoption of IFRS, Horizon Utilities engaged Kinectrics Inc., an engineering consulting firm, to undertake an asset depreciation study and report. The report, *Horizon Utilities Corporation Useful Life of Assets*, dated May 3, 2010 ("Horizon Utilities' Asset Depreciation Study"), is appended at Appendix 4-9. The Horizon Utilities' Asset Depreciation Study was prepared along the same timeline, and was informed by, the *Asset Depreciation Study for the Ontario Energy Board*, dated July 8, 2010, ("OEB Asset Depreciation Study"); also prepared by Kinectrics Inc. for the OEB. Furthermore, Horizon Utilities was one of the six Ontario distributors selected to participate in the OEB Asset Depreciation Study.

As part of the componentization exercise, the depreciable lives of the various components were determined and the amortization was recorded for the comparative prior year to adoption from January 1, 2011 using the new depreciable lives. The impact of restating 2011 financial results to IFRS on depreciation and PP&E was as follows:

- Depreciation expense reported under IFRS for the year ended December 31, 2011 was $11,463,261 lower than the amount reported under CGAAP; and
- The net carrying value of PP&E reported under IFRS as at December 31, 2011 was $11,463,261 higher than the amount reported under CGAAP.

A list detailing Horizon Utilities' asset depreciable lives with a reference to the Uniform System of Accounts ("USoA") is provided in Table 4-75 below.

Table 4-75 – Asset Depreciable Lives by Component and USoA

USoA	Component (Asset Category)	CGAAP Depreciable Life (years)	IFRS Depreciable Life (years)
1830	Poles, towers and fixtures - wood	25	40
1830	Poles, towers and fixtures - concrete	25	50
1835	Overhead conductors and devices - primary	25	50
1835	Overhead conductors and devices - secondary service	25	50
1835	Overhead conductors and devices - switches	25	40
1835	Overhead conductors and devices - capacitor banks	N/A	30
1840	Underground conductors and devices primary XLPE	25	40
1840	Underground conductors and devises primary PILC	25	70
1845	Underground conductors and devices secondary and service direct buried	25	25
1845	Underground conductors and devices secondary and service in duct	25	40
1845	Underground conduit chambers and other elements	25	40
1845	Underground switches and switchgear	25	25
1850	Line transformers - Overhead	25	40
1850	Line transformers - Underground	25	30
1855	Services	25	50
1808	Substation buildings	30	40
1820	Substation switchgear and other elements	25	40
1820	Substation breakers and reclosures	25	40
1820	Substation transformers	25	40
1860	Other meters, PTs and CTs	25	25
1860	Smart Meters - Residential	15	15
1860	Smart Meters - Commercial	15	15
1980	System Supervisory Protection and Control	25	15
1805	Land - Substations	N/A	N/A
1905	Land - All Other	N/A	N/A
1612	Land Rights	50	50
1908	Buildings and fixtures	30	30
1910	Leasehold improvements	5	5
1675	Standby generators	25	25
1915	Office furniture and equipment	10	10
1920	Computer - Hardware	5	5
1611	Computer - Software	3 - 8	3 - 8
1935	Stores equipment	10	10
1930	Transportation equipment	5 - 8	5 - 19
1940	Tools, shop and garage equipment	10	10
1945	Measurement and testing equipment	10	10
1950	Power operated equipment	10	10
1955	Communications equipment	10	10
1970	Load management controls	8	8
2005	Property under finance leases	Shorter of lease term and useful life	Shorter of lease term and useful life

The useful life ranges recommended in the Horizon Utilities Asset Depreciation Study and the OEB Asset Depreciation Study are generally consistent. However, the OEB Asset Depreciation Study provides a suggested component structure. Horizon Utilities and other distributors have different component structures. A "perfect" alignment of components and typical useful lives ("TULs") is not practical. Horizon Utilities confirms that its new useful lives are within the range

recommended by Kinectrics in Horizon Utilities' Useful Life of Assets report, included in Appendix 4-9 of this Exhibit. Horizon Utilities has also, to the best of its ability, matched its components to the components used in the OEB Asset Depreciation Study. The useful lives chosen are also within the range recommended by Kinectrics in the OEB Asset Depreciation Study. Service life comparisons of the two studies have been set out below in Tables 4-76 and 4-77, Appendix 2-BB Service Life Comparison.

Table 4-76 – Appendix 2-BB – Service Life Comparison

Table F-1 from Kinetrics Report

		Asset Details			Useful Life			USoA Account Number	USoA Account Description	CGAAP		MIFRS	
Parent*	#	Category| Component | Type			MIN UL	TUL	MAX UL			Years	Rate	Years	Rate
OH	1	Fully Dressed Wood Poles	Overall		35	45	75	1832	Poles, towers and fixtures - wood	25		40	
			Cross Arm	Wood	20	40	55						
				Steel	30	70	95						
	2	Fully Dressed Concrete Poles	Overall		50	60	80	1831	Poles, towers and fixtures - concrete	25		50	
			Cross Arm	Wood	20	40	55						
				Steel	30	70	95						
	3	Fully Dressed Steel Poles	Overall		60	60	80						
			Cross Arm	Wood	20	40	55						
				Steel	30	70	95						
	4	OH Line Switch			30	45	55	1837	Overhead conductors and devices - switches	25		40	
	5	OH Line Switch Motor			15	25	25						
	6	OH Line Switch RTU			15	20	20						
	7	OH Integral Switches			35	45	60						
	8	OH Conductors			50	60	75	1836,1839,1856	Overhead conductors and devices	25		50	
	9	OH Transformers & Voltage Regulators			30	40	60	1851	Line transformers - Overhead	25		40	
	10	OH Shunt Capacitor Banks			25	30	40	1838	Overhead conductors and devices - capacitor banks	25		30	
	11	Reclosers			25	40	55						
TS & MS	12	Power Transformers	Overall		30	45	60						
			Bushing		10	20	30						
			Tap Changer		20	30	60						
	13	Station Service Transformer			30	45	55	1821	Substation transformers	25		40	
	14	Station Grounding Transformer			30	40	40						
	15	Station DC System	Overall		10	20	30						
			Battery Bank		10	15	15						
			Charger		20	20	30						
	16	Station Metal Clad Switchgear	Overall		30	40	60	1822	Substation switchgear and other elements	25		40	
			Removable Breaker		25	40	60						
	17	Station Independent Breakers			35	45	65	1823	Substation breakers and reclosures	25		40	
	18	Station Switch			30	50	60						
	19	Electromechanical Relays			25	35	50						
	20	Solid State Relays			10	30	45						
	21	Digital & Numeric Relays			15	20	20						
	22	Rigid Busbars			30	55	60						
	23	Steel Structure			35	50	90						
UG	24	Primary Paper Insulated Lead Covered (PILC) Cables			60	65	75	1844	Underground conductors and devises primary PILC	25		70	
	25	Primary Ethylene-Propylene Rubber (EPR) Cables			20	25	25						
	26	Primary Non-Tree Retardant (TR) Cross Linked Polyethylene (XLPE) Cables Direct Buried			20	25	30						
	27	Primary Non-TR XLPE Cables in Duct			20	25	30						
	28	Primary TR XLPE Cables Direct Buried			25	30	35						
	29	Primary TR XLPE Cables in Duct			35	40	55	1846	Underground conductors and devices primary XLPE	25		40	
	30	Secondary PILC Cables			70	75	80						
	31	Secondary Cables Direct Buried			25	35	40	1848	Underground conductors and devices secondary and service direct buri	25		25	
	32	Secondary Cables in Duct			35	40	60	1847	Underground conductors and devices secondary and service in duct	25		40	
	33	Network Tranformers	Overall		20	35	50	1852	Line transformers - Underground	25		30	
			Protector		20	35	40						
	34	Pad-Mounted Transformers			25	40	45						
	35	Submers ble/Vault Transformers			25	35	45						
	36	UG Foundation			35	55	70						
	37	UG Vaults	Overall		40	60	80						
			Roof		20	30	45						
	38	UG Vault Switches			20	35	50	1849	Underground Switches	25		25	
	39	Pad-Mounted Switchgear			20	30	45						
	40	Ducts			30	50	85	1843	Underground conduit chambers and other elements	25		40	
	41	Concrete Encased Duct Banks			35	55	80						
	42	Cable Chambers			50	60	80						
S	43	Remote SCADA			15	20	30	1981,1982	System Supervisory Protection and Control	25		15	

Table 4-77 – Appendix 2-BB – Service Life Comparison

Table F-2 from Kinetrics Report

	Asset Details		Useful Life Range	USoA Account Number	USoA Account Description	CGAAP		MIFRS	
#	Category| Component | Type					Years	Rate	Years	Rate
1	Office Equipment		5-15	1915	Office Furniture & Equipment	10		10	
2	Vehicles	Trucks & Buckets	5-15	1930	Transportation Equipment	5-8		5-19	
		Trailers	5-20						
		Vans	5-10						
3	Administrative Buildings		50-75	1908	Buildings & Fixtures	30		30	
4	Leasehold Improvements		Lease dependent	1810,1910	Leasehold Improvements	5		5	
5	Station Buildings	Station Buildings	50-75	1808	Buildings - Substations	30		40	
		Parking	25-30						
		Fence	25-60						
		Roof	20-30						
6	Computer Equipment	Hardware	3-5	1920, 2005	Computer - Hardware	5		5	
		Software	2-5	1925, 1611	Computer - Software	3-8		3-8	
7	Equipment	Power Operated	5-10	1950	Power operated Equipment	10		10	
		Stores	5-10	1935	Stores Equipment	10		10	
		Tools, Shop, Garage Equipment	5-10	1940	Tools, Shop & Garage Equipment	10		10	
		Measurement & Testing Equipment	5-10	1945,1970	Measurement & Testing Equipment	8-10		8-10	
8	Communication	Towers	60-70						
		Wireless	2-10	1955	Communications Equipment	10		10	
9	Residential Energy Meters		25-35	1860	Meters	25		25	
10	Industrial/Commercial Energy Meters		25-35						
11	Wholesale Energy Meters		15-30						
12	Current & Potential Transformer (CT & PT)		35-50						
13	Smart Meters		5-15	1862,1863	Smart Meters	15		15	
14	Repeaters - Smart Metering		10-15						
15	Data Collectors - Smart Metering		15-20						

Changes to Capitalization Policy

Depreciation is also impacted by the changes to Horizon Utilities' capitalization policy as a result of the transition to IFRS, specifically the capitalization of overhead costs and interest.

Capitalization of Overhead Costs

Overhead costs refer to all ongoing business costs not including or related to direct labour, direct materials, and direct contract costs.

Overhead costs can be direct or indirect costs. Under IFRS, direct overhead costs are overhead costs that are directly attributable to bringing an asset to the location and condition necessary for it to be capable of operating in the manner intended by management. Direct overhead costs can include specific capital engineering costs, fuel for vehicles used in the construction of an item of PP&E, and employee benefit costs for staff working on specific capital projects. Such direct overhead costs can be capitalized under IFRS.

Indirect overhead costs are overhead costs that are not directly attributable to bringing an asset to the location and condition necessary for it to be capable of operating in the manner intended by management. Indirect costs include costs of staff training, administration, repairs and maintenance and other general overhead costs. Indirect overhead costs must be expensed under IFRS.

2011 CGAAP PP&E included $9,339,658 in overhead costs that were determined to be non-directly attributable costs under IFRS. OM&A costs accounted for $8,008,453 of this capitalized overhead amount, and stores equipment and fleet depreciation accounted for $1,331,205. The impact of removing non-directly attributable costs from capital in 2011, as a result of the transition to MIFRS, was as follows:

- The net carrying value of PP&E reported under MIFRS at December 31, 2011 was $9,339,658 lower than the amount reported under CGAAP.
- OM&A expense reported under MIFRS for the year ended December 31, 2011 was $8,008,453 higher than the amount reported under CGAAP;

- Depreciation expense reported under MIFRS for the year ended December 31, 2011 was $1,203,308 higher than the amount reported under CGAAP due to:
    - An increase of $1,331,205 in fleet and stores equipment depreciation previously capitalized under CGAAP offset by,
    - A decrease of $127,897 in depreciation expense due to the reduction in the capitalized overhead cost amount.

Capitalization of overhead costs is discussed in more detail in Exhibit 6, Tab 2, Schedule 1 and Exhibit 2, Tab 6, Schedule 5.

Capitalization of Interest

IFRS requires that borrowing costs be expensed as they are incurred unless they relate to "qualifying" assets, in which case they must be capitalized if certain conditions are met. Under IFRS, a qualifying asset is an asset that takes a "substantial period of time" to bring it to its intended use or sale. Horizon Utilities did not capitalize borrowing costs under CGAAP on the basis that they were not significant and that the construction period was generally within a fiscal year. The impact of capitalizing interest for qualifying projects as a result of the transition to IFRS is an increase in PP&E. However, in 2011, no projects met the criteria for a qualifying asset and therefore, no interest was capitalized under IFRS in 2011. Horizon Utilities has capitalized, and expects to capitalize, interest on qualifying projects in 2013 through 2019. The capitalization of interest is discussed in more detail in Exhibit 6, Tab 2, Schedule 1.

In general, the impact of these changes to the capitalization policy is a net reduction in PP&E compared to CGAAP (the impact of the capitalization of overhead costs is greater than the impact of interest capitalization). Consequently, in addition to the change to useful lives, the amount of annual amortization calculated under IFRS is lower than amounts otherwise computed under CGAAP.

Derecognition of Assets

For financial reporting purposes under IFRS, Horizon Utilities has accounted for the gain or loss on the derecognition of PP&E as a charge or credit to income. Under MIFRS for regulatory reporting and rate-making purposes, the derecognition of PP&E is reclassified to depreciation expense in the year of the loss on disposal. Table 4-78 below identifies these amounts separately. Derecognition of assets is discussed in more detail on Exhibit 6, Tab 2, Schedule 1.

Table 4-78 – Reconciliation of Depreciation Expense

Description	2011 Actual CGAAP	2012 Actual MIFRS	2013 Actual MIFRS	2014 Bridge Year MIFRS	2015 Test Year MIFRS	2016 Test Year MIFRS	2017 Test Year MIFRS	2018 Test Year MIFRS	2019 Test Year MIFRS
Total Depreciation on Continuties	**$ 27,720,934**	**$18,191,399**	**$19,299,511**	**$21,023,720**	**$23,383,544**	**$24,201,320**	**$24,161,257**	**$23,437,190**	**$23,877,061**
Deduct:									
Fleet/Stores Depreciation Allocated to Capital	$ (1,331,522)								
Add: (Gain)/Loss on Derecognition:									
Cost	$0	$2,027,707	$1,793,609	$1,773,488	$2,089,496	$3,825,068	$3,017,473	$3,318,009	$4,597,818
Accumulated Depreciation	$0	($150,765)	($156,463)	($133,043)	($187,423)	($1,085,758)	($344,159)	($430,511)	($1,426,748)
Proceeds	$0	($443,492)	($518,695)	($267,360)	($315,000)	($453,006)	($454,896)	($500,203)	($557,460)
(Gain)/Loss on Derecognition of PP&E	**$0**	**$1,433,449**	**$1,118,452**	**$1,373,086**	**$1,587,074**	**$2,286,304**	**$2,218,419**	**$2,387,296**	**$2,613,609**
Total Depreciation Expense	**$ 26,389,412**	**$ 19,624,849**	**$ 20,417,963**	**$ 22,396,806**	**$ 24,970,618**	**$ 26,487,624**	**$ 26,379,676**	**$ 25,824,486**	**$ 26,490,670**

ASSET RETIREMENT OBLIGATIONS

Horizon Utilities does not have any Asset Retirement Obligations ("AROs"), or associated depreciation or accretion expenses in relation to the AROs, to report as part of this Application.

HALF-YEAR RULE

The Board's general policy for electricity distribution rate setting is that capital additions would normally attract six (6) months of depreciation expense when they enter service in the Test Year. Horizon Utilities calculates depreciation from the month an asset is available for use and enters service. Horizon Utilities' approach to calculating depreciation remains unchanged, and was accepted by the Board in Horizon Utilities' 2008 and 2011 CoS applications (EB-2007-0697 and EB-2010-0131).

DEPRECIATION/AMORTIZATION POLICY

Horizon Utilities adheres to IFRS capitalization accounting treatments for rate making and regulatory reporting purposes.

IFRS establishes that an item of PP&E will be recognized as an asset if it is probable that future economic benefits will flow to the Company, and the cost of the item can be measured reliably. Horizon Utilities capitalizes items of PP&E greater than $200 that meet these criteria.

Under IFRS, depreciation of an asset begins when it is available for use (i.e. when it is in the location and condition necessary for it to be capable of operating in the manner intended by management). Construction in progress assets are capitalized and amortized when the project is complete and in-service.

Depreciation is computed on a systematic basis over the estimated useful life of the item of PP&E. The depreciable amount of an asset is determined after deducting its residual value. Capital contributions, received prior to January 1, 2011 are accounted for as a reduction to the cost of the related capital assets and are depreciated at rates corresponding with the useful lives of the related capital assets. Capital contributions received on/after January 1, 2011 are treated as deferred revenue to be included as an offset to rate base and amortized to income over the life of the assets to which they relate.

Horizon Utilities depreciates each significant component of an item of PP&E and intangible asset separately. A significant component of an item of PP&E is characterized by a cost that is significant in relation to the total cost of the item and for which different depreciation methods or rates are appropriate relative to the useful lives of respective individual components.

Horizon Utilities has made changes to its depreciation/amortization policy since its last CoS filing as identified in Tab 5, Schedule 2 of this Exhibit. Further details are also provided in Exhibit 6, Tab 2, Schedule 1.

DEPRECIATION OF PP&E BY COMPONENT

Horizon Utilities confirms that all significant components of each item of PP&E are being depreciated separately.

DETAILS FOR DEPRECIATION, AMORTIZATION AND DEPLETION BY ASSET GROUP

Horizon Utilities has provided details for Depreciation, Amortization and Depletion by asset group for the Historical, Bridge and Test Years, including asset amount and depreciation rate in Appendices 2-CA to 2-CE below (Tables 4-79 to 4-88). These amounts agree to the balances in Appendix 2-BA - Fixed Asset Continuity Schedules provided in Appendix 2-1 of Exhibit 2. Appendices 2-CA to 2-CE have been provided in CGAAP and MIFRS for 2011 and in MIFRS for 2012 to 2019.

Horizon Utilities has recalculated the average remaining useful life of the opening balance of assets as at January 1st, 2011, the date of Horizon Utilities' change to depreciation rates. The average remaining useful life is provided in Table 4-80, Board Appendix 2-CB.

Table 4-79 – Appendix 2-CA - 2011 CGAAP: Depreciation and Amortization Expense

Account USoA	Description	Opening Regulatory Gross PP&E as at Jan 1, 2011 (a)	Less Fully Depreciated (b)	Net for Depreciation (c)	Additions (d)	Total for Depreciation (e) (c) + ½ x (d)	Years (f)	Depreciation Rate (g) 1 / (f)	Depreciation Expense (h) (e) / (f)	2011 Depreciation Expense per Appendix 2 BA Fixed Assets, Column J (l)	Variance [2] (m) (h) (l)
1925	Computer Software	$ 11 874 074	$ 4 358 909	$ 7 515 165	$ 859 782	$ 7 945 056	4	24.4%	$ 1 937 819	$ 1 879 268	$ 58 551
1906	Land Rights	$ 162,636	$ 3,681	$ 158,955	$ -	$ 158,955	50	2.0%	$ 3,179	$ 3,338	$ (159)
1805	Land	$ 414,741	$ -	$ 414,741	$ -	$ 414,741	0	0.0%	$ -	$ -	$ -
1808	Bu ldings & Fixtures	$ 2 153 482	$ 1 189 203	$ 964 279	$ 127 157	$ 1 027 858	30	3.3%	$ 34 262	$ 79 165	$ (44 903)
1810	Leasehold Improvements	$ 20,886	$ 20,886	$ -	$ -	$ -	5	20.0%	$ -	$ -	$ -
1815	Transformer Station Equipment >50 kV	$ -	$ -	$ -	$ -	$ -		0.0%	$ -	$ -	$ -
1820	Distribution Station Equipment <50 kV	$ 12,743,580	$ 6,983,411	$ 5,760,169	$ 119,324	$ 5,819,831	25	4.0%	$ 232,793	$ 317,128	$ (84,335)
1825	Storage Battery Equipment	$ -	$ -	$ -	$ -	$ -		0.0%	$ -	$ -	$ -
1830	Poles Towers & Fixtures	$ 75 428 553	$ -	$ 75 428 553	$ 11 048 413	$ 80 952 759	25	4.0%	$ 3 238 110	$ 3 125 398	$ 112 712
1835	Overhead Conductors & Devices	$ 74,386,897	$ 295,103	$ 74,091,794	$ 4,832,502	$ 76,508,045	25	4.0%	$ 3,060,322	$ 2,964,648	$ 95,674
1840	Underground Conduit	$ 117 389 284	$ 12 307	$ 117 376 977	$ 5 017 549	$ 119 885 752	25	4.0%	$ 4 795 430	$ 4 621 313	$ 174 117
1845	Underground Conductors & Devices	$ 122,806,078	$ -	$ 122,806,078	$ 7,151,416	$ 126,381,786	25	4.0%	$ 5,055,271	$ 4,945,035	$ 110,236
1850	Line Transformers	$ 99 670 106	$ -	$ 99 670 106	$ 6 071 958	$ 102 706 085	25	4.0%	$ 4 108 243	$ 3 985 852	$ 122 391
1855	Services	$ 25 989 562	$ -	$ 25 989 562	$ 1 304 732	$ 26 641 928	25	4.0%	$ 1 065 677	$ 1 128 715	$ (63 038)
1860	Meters	$ 39,317,446	$ 749,319	$ 38,568,127	$ 3,467,413	$ 40,301,834	25	4.0%	$ 1,612,073	$ 1,550,833	$ 61,240
1861	Smart Meters										
1905	Land	$ 1,067,629	$ -	$ 1,067,629	$ -	$ 1,067,629	0	0.0%	$ -	$ -	$ -
1908	Bu ldings & Fixtures	$ 28 577 205	$ 10 748 142	$ 17 829 063	$ 753 646	$ 18 205 886	14	7.3%	$ 1 334 742	$ 1 280 965	$ 53 777
1910	Leasehold Improvements	$ -	$ -	$ -	$ -	$ -	5	20.0%	$ -	$ -	$ -
1915	Office Furn ture & Equipment (10 yrs)	$ 5,299,584	$ 3,085,151	$ 2,214,433	$ 24,344	$ 2,226,605	10	10.0%	$ 222,660	$ 220,495	$ 2,166
1915	Office Furn ture & Equipment (5 yrs)										
1920	Computer Equipment - Hardware	$ 10,058,430	$ 5,893,727	$ 4,164,703	$ 615,786	$ 4,472,596	5	20.0%	$ 894,519	$ 858,723	$ 35,797
1930	Transportation Equipment	$ 18 062 964	$ 7 855 248	$ 10 207 716	$ 1 033 975	$ 10 724 704	8	12.5%	$ 1 340 588	$ 1 277 937	$ 62 651
1935	Stores Equipment	$ 968,061	$ 426,774	$ 541,287	$ -	$ 541,287	10	10.0%	$ 54,129	$ 53,586	$ 543
1940	Tools Shop & Garage Equipment	$ 7 847 983	$ 4 616 402	$ 3 231 581	$ 493 820	$ 3 478 491	10	10.0%	$ 347 849	$ 330 730	$ 17 120
1945	Measurement & Testing Equipment	$ 1,512,751	$ 566,875	$ 945,876	$ 180,845	$ 1,036,299	10	10.0%	$ 103,630	$ 98,496	$ 5,134
1950	Power Operated Equipment	$ 144,035	$ 29,671	$ 114,364	$ -	$ 114,364	10	10.0%	$ 11,436	$ 11,436	$ 0
1955	Communications Equipment	$ 1 445 074	$ 1 790	$ 1 443 284	$ 903 229	$ 1 894 898	10	10.0%	$ 189 490	$ 143 865	$ 45 625
1955	Communications Equipment (SM)										
1960	Misce laneous Equipment	$ -	$ -	$ -	$ -	$ -	10	10.0%	$ -	$ -	$ -
1970	Load Management Controls	$ 515 330	$ -	$ 515 330	$ -	$ 515 330	8	12.5%	$ 64 416	$ 51 533	$ 12 883
1975	Load Management Controls Utility Premises										
1980	System Supervisor Equipment	$ 3 777 542	$ 2 997 920	$ 779 622	$ -	$ 779 622	25	4.0%	$ 31 185	$ 68 753	$ (37 568)
1985	Misce laneous Fixed Assets	$ -	$ -	$ -	$ -	$ -	8	12.5%	$ -	$ -	$ -
1990	Other Tangible Property										
1995	Contributions & Grants	$ (39 998 953)	$ -	$ (39 998 953)	$ (4 165 260)	$ (42 081 583)	25	4.0%	$ (1 683 263)	$ (1 689 483)	$ 6 220
1996	Hydro One S/S Contribution	$ 10 330 150	$ -	$ 10 330 150	$ -	$ 10 330 150	25	4.0%	$ 413 206	$ 413 206	$ 0
	Total	**$ 631,965,112**	**$ 49,834,519**	**$ 582,130,594**	**$ 39,840,632**	**$ 602,050,909**			**$ 28,467,768**	**$ 27,720,934**	**$ 746,834**

Variances No material variances

Notes:

1 Board policy of the "half-year" rule - the applicant must ensure that additions in the year attract a half-year depreciation expense in the first year. Deviations from this standard practice must be supported in the application.
2 The applicant must provide an explanation of material variances in evidence
3 The applicant should ensure that the years for new additions of assets are the asset useful lives determined by management in accordance with IFRS.
4 A recalculation should be performed to determine the average remaining life of opening balance of assets (i.e. excluding 2011 additions) under IFRS. For example, Asset A had a useful life of 20 years under CGAAP. On January 1, 2011, the date of transition, Asset A
5 NBV must exclude assets still on the books but which have been fully amortized or depreciated.
6 This column refers to the calculated full year depreciation but excludes the depreciation expense on assets fully depreciated during the year. This column is used for the purpose of calculating depreciation expense in the following year on the next worksheet.

General: **Applicants must provide a breakdown of depreciation and amortization expense in the above format for all relevant accounts. Asset Retirement Obligations (AROs), depreciation and accretion expense should be disclosed separately consistent with the Notes of historical Audited Financial Statements.**

Table 4-80 – Appendix 2-CB - 2011 MIFRS Depreciation and Amortization Expense

Account USoA	Account Horizon Components	Description	Opening NBV as at Jan 1, 2011 [5] (a)	Additions (d)	Average Remaining Life of Opening NBV [4] (i)	Years (new additions only) [3] (f)	Depreciation Rate on New Additions (g) 1 / (f)	Depreciation Expense on Opening NBV (j) (a) / (i)	Depreciation Expense on Additions [1] (h) ((d) 0.5)/(f)	2011 Depreciation Expense (k) (j) + (h)	2011 Depreciation Expense per Appendix 2 BA Fixed Assets (l)	Variance [2] (m) (k) (l)	Depreciation Expense on 2011 Full Year Additions (n) (d)/(f)	Less Depreciation Expense on Assets Fully Depreciated during the year (o)	2011 Full Year Depreciation [6] (p) (j) + (n) (o)
1925	1925	Computer Software	$ 4,265,117	$ 859,782	3	3	33.3%	$ 1,486,103	$ 143,297	$ 1,629,400	$ 1,654,300	$ (24,900)	$ 286,594	$ 28,922	$ 1,743,775
1906	1906	Land Rights	$ 90,487	$ -	27	50	2.0%	$ 3,339	$ -	$ 3,339	$ 3,337	$ 2	$ -	$ -	$ 3,339
1805	1805	Land	$ 414 741	$ -		-	0.0%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
1808	1808	Buildings & Fixtures	$ 542 583	$ 127 157	7	40	2.5%	$ 75 254	$ 1 589	$ 76 844	$ 76 563	$ 281	$ 3 179	$ 107	$ 78 327
1810	1810	Leasehold Improvements	$ -	$ -		5	20.0%	$ -	$ -	$ -		$ -	$ -	$ -	$ -
1815	1815	Transformer Station Equipment >50 kV	$ -	$ -		-	0.0%	$ -	$ -	$ -		$ -	$ -	$ -	$ -
1820		Distribution Station Equipment <50 kV	$ -	$ -		-	0.0%	$ -	$ -	$ -		$ -	$ -	$ -	$ -
1820	1821	Distribution Station Equipment	$ 856,900	$ 78,081	34	40	2.5%	$ 25,196	$ 976	$ 26,172	$ 26,005	$ 167	$ 1,952	$ -	$ 27,148
1820	1822	Distribution Station Equipment	$ 1,307,246	$ 41,245	38	40	2.5%	$ 34,510	$ 516	$ 35,026	$ 34,601	$ 425	$ 1,031	$ -	$ 35,541
1820	1823	Distribution Station Equipment	$ 975 912	$ -	34	40	2.5%	$ 28 695	$ -	$ 28 695	$ 28 690	$ 4	$ -	$ -	$ 28 695
1825	1825	Storage Battery Equipment	$ -	$ -		-	0.0%	$ -	$ -	$ -		$ -	$ -	$ -	$ -
1830		Poles Towers & Fixtures	$ -	$ -		-	0.0%	$ -	$ -	$ -		$ -	$ -	$ -	$ -
1830	1831	Poles Towers & Fixtures- concrete	$ 11,006,815	$ 2,988,102	42	50	2.0%	$ 262,630	$ 29,881	$ 292,511	$ 281,474	$ 11,037	$ 59,762	$ -	$ 322,392
1830	1832	Poles Towers & Fixtures-wood	$ 37,022,585	$ 8,060,311	33	40	2.5%	$ 1,116,483	$ 100,754	$ 1,217,237	$ 1,141,245	$ 75,993	$ 201,508	$ -	$ 1,317,991
1835		Overhead Conductors & Devices	$ -	$ -		-	0.0%	$ -	$ -	$ -		$ -	$ -	$ -	$ -
1835	1836	Overhead Conductors & Devices-secondary service	$ 14 978 572	$ 2 430 897	43	50	2.0%	$ 349 885	$ 24 309	$ 374 194	$ 356 316	$ 17 878	$ 48 618	$ -	$ 398 503
1835	1837	Overhead Conductors & Devices- switches	$ 14 995 271	$ 1 359 655	32	40	2.5%	$ 470 957	$ 16 996	$ 487 953	$ 479 641	$ 8 312	$ 33 991	$ -	$ 504 948
1835	1838	Overhead Conductors & Devices-capicitor banks	$ -	$ 106,774	38	30	3.3%	$ -	$ 1,780	$ 1,780	$ 1,148	$ 631	$ 3,559	$ -	$ 3,559
1835	1839	Overhead Conductors & Devices- primary	$ 11,308,499	$ 935,177	42	50	2.0%	$ 267,151	$ 9,352	$ 276,503	$ 267,804	$ 8,699	$ 18,704	$ -	$ 285,854
1840	1843	Underground Conduit	$ 52,566,190	$ 5,017,549	29	40	2.5%	$ 1,843,781	$ 62,719	$ 1,906,500	$ 1,871,680	$ 34,820	$ 125,439	$ -	$ 1,969,219
1845		Underground Conductors & Devices			-	-	0.0%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
1845	1844	Underground Conduit primary PILC	$ 29 615 352	$ 1 261 926	61	70	1.4%	$ 481 785	$ 9 014	$ 490 799	$ 520 661	$ (29 862)	$ 18 028	$ -	$ 499 813
1845	1846	Underground conductors and devices primary XLPE	$ 18,452,175	$ 721,353	31	40	2.5%	$ 604,395	$ 9,017	$ 613,412	$ 642,190	$ (28,778)	$ 18,034	$ -	$ 622,429
1845	1847	Underground conductors and devices secondary and service in duct	$ 4,649,446	$ 4,196,290	26	40	2.5%	$ 177,257	$ 52,454	$ 229,710	$ 194,784	$ 34,926	$ 104,907	$ -	$ 282,164
1845	1848	Underground conductors and devices secondary and service direct buried	$ 3 544 995	$ 272 474	7	25	4.0%	$ 541 221	$ 5 449	$ 546 670	$ 542 737	$ 3 933	$ 10 899	$ 273 287	$ 278 832
1845	1849	Underground conductors and devices secondary and service in duct	$ 7,398,469	$ 699,372	8	25	4.0%	$ 927,126	$ 13,987	$ 941,114	$ 927,248	$ 13,866	$ 27,975	$ 439,389	$ 515,712
1850		Line Transformers				-	0.0%								
1850	1851	Line transformers - Overhead	$ 29,757,310	$ 2,593,351	31	40	2.5%	$ 968,347	$ 32,417	$ 1,000,764	$ 983,374	$ 17,390	$ 64,834	$ -	$ 1,033,181
1850	1852	Line transformers - Underground	$ 22,676,718	$ 3,478,607	21	30	3.3%	$ 1,089,703	$ 57,977	$ 1,147,680	$ 1,119,444	$ 28,236	$ 115,954	$ 72	$ 1,205,584
1855	1856	Services	$ 16 434 302	$ 1 304 732	44	50	2.0%	$ 373 507	$ 13 047	$ 386 554	$ 385 274	$ 1 280	$ 26 095	$ -	$ 399 601
1860	1860	Meters	$ 21 442 295	$ 3 467 413	14	25	4.0%	$ 1 492 157	$ 69 348	$ 1 561 505	$ 1 509 892	$ 51 613	$ 138 697	$ 23 598	$ 1 607 256
1860	1862	Smart Meters - Residential	$ -	$ -	13	15	6.7%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
1860	1863	Smart Meters - Commercial	$ -	$ -	13	15	6.7%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
1905	1905	Land	$ 1 067 629	$ -		-	0.0%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
1908	1908	Buildings & Fixtures	$ 10 287 342	$ 753 646	7	30	3.3%	$ 1 373 477	$ 12 561	$ 1 386 038	$ 1 276 104	$ 109 934	$ 25 122	$ 281 092	$ 1 117 506
1910	1910	Leasehold Improvements	$ -	$ -		5	20.0%	$ -	$ -	$ -		$ -	$ -	$ -	$ -
1915	1915	Office Furniture & Equipment (10 yrs)	$ 1 539 298	$ 24 344	7	10	10.0%	$ 215 588	$ 1 217	$ 216 805	$ 217 369	$ (564)	$ 2 434	$ 12 209	$ 205 813
1915		Office Furniture & Equipment (5 yrs)													
1920	1920	Computer Equipment - Hardware	$ 2,564,204	$ 615,786	3	5	20.0%	$ 774,684	$ 61,579	$ 836,263	$ 831,679	$ 4,583	$ 123,157	$ 91,215	$ 806,626
1930	1930	Transportation Equipment	$ 6,289,635	$ 1,033,975	5	8	12.5%	$ 1,286,224	$ 64,623	$ 1,350,847	$ 1,288,410	$ 62,437	$ 129,247	$ 39,427	$ 1,376,044
1935	1935	Stores Equipment	$ 417,864	$ -	8	10	10.0%	$ 54,982	$ -	$ 54,982	$ 54,989	$ (7)	$ -	$ 640	$ 54,342
1940	1940	Tools Shop & Garage Equipment	$ 1 806 103	$ 493 820	6	10	10.0%	$ 319 664	$ 24 691	$ 344 355	$ 339 618	$ 4 738	$ 49 382	$ 12 649	$ 356 397
1945	1945	Measurement & Testing Equipment	$ 474 347	$ 180 845	5	10	10.0%	$ 94 117	$ 9 042	$ 103 159	$ 99 237	$ 3 921	$ 18 085	$ 5 914	$ 106 287
1950	1950	Power Operated Equipment	$ 35 360	$ -	3	10	10.0%	$ 11 443	$ -	$ 11 443	$ 11 365	$ 78	$ -	$ -	$ 11 443
1955	1955	Communications Equipment	$ 810 238	$ 903 229	6	10	10.0%	$ 132 392	$ 45 161	$ 177 553	$ 141 295	$ 36 258	$ 90 323	$ 233	$ 222 482
1955		Communications Equipment (SM)	$ -	$ -		-	0.0%	$ -	$ -	$ -		$ -	$ -	$ -	$ -
1960	1960	Miscellaneous Equipment	$ -	$ -		-	0.0%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
1970	1970	Load Management Controls	$ 312,338	$ -	6	8	12.5%	$ 51,541	$ -	$ 51,541	$ 51,603	$ (62)	$ -	$ -	$ 51,541
1975		Load Management Controls Utility Premises													
1980	1981	System Supervisor Equipment	$ 191 559	$ -	7	15	6.7%	$ 25 886	$ -	$ 25 886	$ 25 900	$ (14)	$ -	$ -	$ 25 886
1980	1982	System Supervisor Equipment	$ 670 912	$ -	8	15	6.7%	$ 81 918	$ -	$ 81 918	$ 81 917	$ 2	$ -	$ 49	$ 81 869
1985	1985	Miscellaneous Fixed Assets	$ -	$ -		-	0.0%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
1990		Other Tangible Property													
1995	1995	Contributions & Grants	$ (35 099 577)	$ -	22	25	4.0%	$ (1 581 775)	$ -	$ (1 581 775)	$ (1 689 483)	$ 107 709	$ -	$ -	$ (1 581 775)
1996	1996	Hydro One S/S Contribution	$ 9 209 036	$ -	23	25	4.0%	$ 408 383	$ -	$ 408 383	$ 407 843	$ 540	$ -	$ -	$ 408 383
1609	1609	Hydro One Contribution		$ -											
2005	2005	Property under Finance Leases		$ -				$ -	$ -	$ -		$ -	$ -	$ -	$ -
2440	2440	Less Cap tal Contributions 2011 & future yrs		$ 4 165 260	25	25	4.0%	$ -	$ 83 305	$ 83 305	$ 56 478	$ 26 827	$ 166 610		$ 166 610
		Total	**$ 304,878,268**	**$ 39,840,633**				**$ 15,868,007**	**$ 790,448**	**$ 16,658,455**	**$ 16,129,776**	**$ 528,680**	**$ 1,580,897**	**$ 1,208,803**	**$ 16,240,101**

Variances No material variances

Notes:

1 Board policy of the "half-year" rule - the applicant must ensure that additions in the year attract a half-year depreciation expense in the first year. Deviations from this standard practice must be supported in the application.

2 The applicant must provide an explanation of material variances in evidence

3 The applicant should ensure that the years for new additions of assets are the asset useful lives determined by management in accordance with IFRS.

4 A recalculation should be performed to determine the average remaining life of opening balance of assets (i.e. excluding 2011 additions) under IFRS. For example, Asset A had a useful life of 20 years under CGAAP. On January 1, 2011, the date of transition, Asset A was 3 years depreciated. As a result, Asset A would have a remaining service life of 17 years (20 years less 3 years) under CGAAP as of January 1, 2011. Due to the transition to IFRS, management re-assessed the asset useful lives under IFRS principles and concluded that the revised useful life of Asset A is now 30 years. Therefore, the average remaining useful life of opening balance of Asset A is determined to be 27 years (30 years less 3 years) under IFRS as

5 NBV must exclude assets still on the books but which have been fully amortized or depreciated.

6 This column refers to the calculated full year depreciation but excludes the depreciation expense on assets fully depreciated during the year. This column is used for the purpose of calculating depreciation expense in the following year on the next

General: **Applicants must provide a breakdown of depreciation and amortization expense in the above format for all relevant accounts. Asset Retirement Obligations (AROs), depreciation and accretion expense should be disclosed separately consistent with the Notes of historical Audited Financial Statements.**

Table 4-81 – Appendix 2-CC - 2012 MIFRS Depreciation and Amortization Expense

Account		Description	Additions	Add Back Smart Meters from 1555	Years (new additions only)	Depreciation Rate on New Additions	2012 Depreciation Expense [1]	2012 Depreciation Expense per Appendix 2 BA Fixed Assets	2012 Depreciation Expense per Appendix 2 BA Add Back from 1555	Variance [2]	Depreciation Expense on 2012 Full Year Additions	Less Depreciation Expense on Assets Fully Depreciated during the year	2012 Full Year Depreciation [3]	
USoA	Horizon Components		(d)	(d1)	(f)	(g) 1 / (f)	(h) 2011 Full Year Deprecation + ((d) 0.5)/(f)	(l)	(l1)	(m) (h) (l)	(n) ((d))/(f)	(o)	(p) 2011 Full Year Depreciation + (n) (o) +(d1)/(f)	
1611	1611	Computer Software	$ 528,140	$ 325,589	3	33.3%	$ 1,831,799	$ 1,840,326	$ 19,167	$ (8,527)	$ 176,047	$ 222,114	$ 1,806,237	
1612	1612	Land Rights	$ -		50	2.0%	$ 3 339	$ 3 337		$ 2	$ -	$ -	$ 3 339	
1805	1805	Land	$ -		-	0.0%	$ -	$ -		$ -	$ -		$ -	
1808	1808	Buildings & Fixtures	$ 57,965		40	2.5%	$ 79,051	$ 76,599		$ 2,452	$ 1,449	$ 2,956	$ 76,820	
1810	1810	Leasehold Improvements	$ -		5	20.0%	$ -	$ -		$ -	$ -	$ -	$ -	
1815	1815	Transformer Station Equipment >50 kV				0.0%	$ -			$ -	$ -	$ -	$ -	
1820		Distribution Station Equipment <50 kV				0.0%	$ -			$ -	$ -	$ -	$ -	
1820	1821	Distribution Station Equipment	$ 326 648		40	2.5%	$ 31 231	$ 33 949		$ (2 718)	$ 8 166	$ -	$ 35 314	
1820	1822	Distribution Station Equipment	$ 4,742,102		40	2.5%	$ 94,818	$ 73,491		$ 21,327	$ 118,553	$ -	$ 154,094	
1820	1823	Distribution Station Equipment	$ 455,894		40	2.5%	$ 34,394	$ 34,389		$ 4	$ 11,397	$ -	$ 40,092	
1825	1825	Storage Battery Equipment				0.0%	$ -			$ -	$ -	$ -	$ -	
1830		Poles Towers & Fixtures				0.0%	$ -			$ -	$ -	$ -	$ -	
1830	1831	Poles Towers & Fixtures- concrete	$ 3,230,516		50	2.0%	$ 354,697	$ 344,272		$ 10,425	$ 64,610	$ -	$ 387,002	
1830	1832	Poles Towers & Fixtures-wood	$ 4,741,415		40	2.5%	$ 1,377,259	$ 1,269,316		$ 107,943	$ 118,535	$ -	$ 1,436,526	
1835		Overhead Conductors & Devices				0.0%	$ -			$ -	$ -		$ -	
1835	1836	Overhead Conductors & Devices-secondary service	$ 2 405 678		50	2.0%	$ 422 560	$ 395 486		$ 27 073	$ 48 114	$ -	$ 446 616	
1835	1837	Overhead Conductors & Devices- sw tches	$ 1,666,327		40	2.5%	$ 525,777	$ 513,027		$ 12,750	$ 41,658	$ -	$ 546,607	
1835	1838	Overhead Conductors & Devices-capicitor banks	$ 10,479		30	3.3%	$ 3,734	$ 3,038		$ 696	$ 349	$ -	$ 3,908	
1835	1839	Overhead Conductors & Devices- primary	$ 1,207,875		50	2.0%	$ 297,933	$ 288,117		$ 9,817	$ 24,157	$ -	$ 310,012	
1840	1843	Underground Conduit	$ 5 768 050		40	2.5%	$ 2 041 320	$ 1 974 758		$ 66 562	$ 144 201	$ -	$ 2 113 421	
1845		Underground Conductors & Devices				0.0%	$ -			$ -	$ -	$ -	$ -	
1845	1844	Underground Conduit primary P LC	$ 845,692		70	1.4%	$ 505,854	$ 536,270		$ (30,416)	$ 12,081	$ -	$ 511,894	
1845	1846	Underground conductors and devices primary XLPE	$ 1 040 188		40	2.5%	$ 635 431	$ 658 319		$ (22 888)	$ 26 005	$ -	$ 648 433	
1845	1847	Underground conductors and devices secondary and service in duct	$ 5 268 265		40	2.5%	$ 348 017	$ 293 129		$ 54 889	$ 131 707	$ -	$ 413 871	
1845	1848	Underground conductors and devices secondary and service direct buried	$ 3 480		25	4.0%	$ 278 902	$ 276 596		$ 2 306	$ 139	$ 22 687	$ 256 284	
1845	1849	Underground conductors and devices secondary and service in duct	$ 597 004		25	4.0%	$ 527 652	$ 511 575		$ 16 077	$ 23 880	$ 32 474	$ 507 118	
1850		Line Transformers				0.0%	$ -			$ -	$ -		$ -	
1850	1851	Line transformers - Overhead	$ 2,981,292		40	2.5%	$ 1,070,447	$ 1,015,211		$ 55,236	$ 74,532	$ -	$ 1,107,713	
1850	1852	Line transformers - Underground	$ 2 555 040		30	3.3%	$ 1 248 168	$ 1 193 089		$ 55 079	$ 85 168	$ 2 137	$ 1 288 615	
1855	1856	Services	$ 813,293		50	2.0%	$ 407,734	$ 406,920		$ 815	$ 16,266		$ 415,867	
1860	1860	Meters	$ 575,523	$ 246,424	25	4.0%	$ 1,618,766	$ 1,597,389	$ 38,507	$ 21,378	$ 23,021	$ 24,899	$ 1,615,235	
1860	1862	Smart Meters - Residential	$ 105 195	$ 19 887 803	15	6.7%	$ 3 506	$ 1 577 836	$ 1 540 106	$ (1 574 330)	$ 7 013		$ 1 332 867	a
1860	1863	Smart Meters - Commercial	$ 1,209,737	$ 2,140,828	15	6.7%	$ 40,325	$ 184,510	$ 146,461	$ (144,185)	$ 80,649		$ 223,371	
1905	1905	Land				0.0%	$ -	$ -		$ -	$ -		$ -	
1908	1908	Buildings & Fixtures	$ 2 746 734	$ -	30	3.3%	$ 1 163 285	$ 1 021 603		$ 141 682	$ 91 558	$ 11 215	$ 1 197 849	
1910	1910	Leasehold Improvements	$ -	$ -	5	20.0%	$ -	$ -		$ -	$ -		$ -	
1915	1915	Office Furniture & Equipment (10 yrs)	$ 336,611	$ 295,717	10	10.0%	$ 222,644	$ 247,450	$ 5,258	$ (24,806)	$ 33,661	$ 3,016	$ 266,030	
1915		Office Furniture & Equipment (5 yrs)												
1920	1920	Computer Equipment - Hardware	$ 1,486,093	$ 313,837	5	20.0%	$ 955,235	$ 1,047,852	$ 71,021	$ (92,616)	$ 297,219	$ 193,145	$ 973,467	
1930	1930	Transportation Equipment	$ 1,057,410	$ -	8	12.5%	$ 1,442,132	$ 1,243,876	$ 2,045	$ 198,256	$ 132,176	$ 39,247	$ 1,468,973	
1935	1935	Stores Equipment		$ -	10	10.0%	$ 54 342	$ 54 349	$ -	$ (7)	$ -	$ -	$ 54 342	
1940	1940	Tools Shop & Garage Equipment	$ 279 587	$ 43 453	10	10.0%	$ 370 377	$ 352 561	$ 3 624	$ 17 816	$ 27 959	$ 12 833	$ 375 868	
1945	1945	Measurement & Testing Equipment	$ 143,900	$ 1,080	10	10.0%	$ 113,482	$ 106,666	$ -	$ 6,817	$ 14,390	$ 4,769	$ 116,016	
1950	1950	Power Operated Equipment		$ -	10	10.0%	$ 11 443	$ 11 041	$ -	$ 402	$ -	$ 3 684	$ 7 759	
1955	1955	Communications Equipment	$ 17 661	$ 13 753	10	10.0%	$ 223 365	$ 222 948	$ -	$ 417	$ 1 766	$ 626	$ 224 997	
1955		Communications Equipment (SM)				0.0%	$ -			$ -	$ -		$ -	
1960	1960	Miscellaneous Equipment				0.0%	$ -			$ -	$ -		$ -	
1970	1970	Load Management Controls	$ -		8	12.5%	$ 51 541	$ 51 603		$ (62)	$ -	$ -	$ 51 541	
1975		Load Management Controls Utility Premises												
1980	1981	System Supervisor Equipment	$ 9,931		15	6.7%	$ 26,217	$ 25,623		$ 595	$ 662	$ 1,982	$ 24,566	
1980	1982	System Supervisor Equipment	$ 18 481		15	6.7%	$ 82 485	$ 82 381		$ 104	$ 1 232	$ 16 336	$ 66 765	
1985	1985	Miscellaneous Fixed Assets			25	4.0%	$ (1,581,775)	$ (1,607,580)		$ 25,805	$ -		$ (1,581,775)	
1990		Other Tangible Property												
1996	1996	Hydro One S/S Contribution	$ (1 261 409)	$ 9 103	25	4.0%	$ 383 155	$ 407 843	$ -	$ (24 688)	$ (50 456)	$ -	$ 358 291	
1609	1609	Hydro One Contribution	$ 10,000,000		16	6.3%	$ 312,500	$ -		$ 312,500	$ 625,000		$ 625,000	b
2005	2005	Property Under Finance Leases	$ 820,130		3	33.3%	$ 136,688	$ -		$ 136,688	$ 273,377	$ -	$ 273,377	
2440	2440	Less Capital Contributions 2011 & future yrs	$ 9 810 885	$ -	25	4.0%	$ 362 828	$ 177 764		$ 185 064	$ 392 435		$ 559 046	
		Total	**$ 46,980,043**	**$ 23,277,588**			**$ 17,387,004**	**$ 18,191,399**	**$ 1,826,189**	**$ (804,396)**	**$ 2,293,806**	**$ 594,120**	**$ 19,625,281**	

Variances
a This model doesn't calculate depreciation on transfers in the year of the transfer. Smart meters - amortized in 1555 outside of the general pool of assets
b Actual depreciation is calculated using a range of useful ives
b Actual depreciation is not subject to the ha f year rule

Notes:
1 Board policy of the "ha f-year" rule - the applicant must ensure that additions in the year attract a half-year depreciation expense in the first year. Deviations from this standard practice must be supported in the application.
2 The applicant must provide an explanation of material variances in evidence
3 The applicant should ensure that the years for new additions of assets are the asset useful ives determined by management in accordance with IFRS.
4 A recalculation should be performed to determine the average remaining life of opening balance of assets (i.e. excluding 2011 additions) under IFRS. For example, Asset A had a useful life of 20 years under CGAAP. On January 1, 2011, the date of trans tion, Asset A was 3 years depreciated. As a result, Asset A would have a remaining service ife of 17 years (20 years less 3 years) under CGAAP as of January 1, 2011. Due to the transition to IFRS, management re-assessed the asset useful lives under IFRS principles and concluded that the revised useful ife of Asset A is now 30 years. Therefore, the average remaining useful l fe of opening balance of Asset A is determined to be 27 years (30
5 NBV must exclude assets sti l on the books but which have been fully amortized or depreciated.
6 This column refers to the calculated full year depreciation but excludes the depreciation expense on assets fully depreciated during the year. This column is used for the purpose of calculating depreciation expense in the following year

General: **Applicants must provide a breakdown of depreciation and amortization expense in the above format for all relevant accounts. Asset Retirement Obligations (AROs), depreciation and accretion expense should be disclosed separately consistent with the Notes of historical Audited Financial Statements.**

Table 4-82 – Appendix 2-CD – 2013 MIFRS Depreciation and Amortization Expense

Account		Description	Additions	Years (new additions only)	Depreciation Rate on New Additions	2013 Depreciation Expense [1]	2013 Depreciation Expense per Appendix 2-BA Fixed Assets	Variance [2]	Depreciation Expense on 2013 Full Year Additions	Less Depreciation Expense on Assets Fully Depreciated during the year	2013 Full Year Depreciation [3]	
USoA	Horizon Comp-onents		(d)	(f)	(g) = 1 / (f)	(h)=2012 Full Year Depreciation + ((d)*0.5)/(f)	(l)	(m) = (h) - (l)	(n)=((d))/(f)	(o)	(p) = 2012 Full Year Depreciation + (n) - (o)	
1611	1611	Computer Software	$ 2,317,602	3	33.3%	$ 2,192,504	$ 1,573,377	$ 619,128	$ 772,534	$ 767,445	$ 1,811,327	a
1612	1612	Land Rights	$ -	50	2.0%	$ 3,339	$ 3,337	$ 2	$ -		$ 3,339	
1805	1805	Land	$ -	-	0.0%	$ -	$ -	$ -	$ -		$ -	
1808	1808	Buildings & Fixtures	$ 1,300	40	2.5%	$ 76,836	$ 71,752	$ 5,084	$ 33	$ 3,559	$ 73,294	
1810	1810	Leasehold Improvements		5	20.0%	$ -		$ -	$ -		$ -	
1815	1815	Transformer Station Equipment >50 kV			0.0%	$ -		$ -	$ -		$ -	
1820		Distribution Station Equipment <50 kV			0.0%	$ -		$ -	$ -		$ -	
1820	1821	Distribution Station Equipment	$ -	40	2.5%	$ 35,314	$ 35,310	$ 4	$ -		$ 35,314	
1820	1822	Distribution Station Equipment	$ 7,878	40	2.5%	$ 154,192	$ 123,304	$ 30,888	$ 197		$ 154,291	
1820	1823	Distribution Station Equipment	$ 3,133,408	40	2.5%	$ 79,260	$ 64,017	$ 15,243	$ 78,335		$ 118,427	
1825	1825	Storage Battery Equipment			0.0%	$ -		$ -	$ -		$ -	
1830		Poles, Towers & Fixtures			0.0%	$ -		$ -	$ -		$ -	
1830	1831	Poles, Towers & Fixtures- concrete	$ 2,207,563	50	2.0%	$ 409,078	$ 377,876	$ 31,201	$ 44,151		$ 431,153	
1830	1832	Poles, Towers & Fixtures-wood	$ 3,548,325	40	2.5%	$ 1,480,880	$ 1,377,078	$ 103,802	$ 88,708		$ 1,525,235	
1835		Overhead Conductors & Devices			0.0%	$ -		$ -	$ -		$ -	
1835	1836	Overhead Conductors & Devices-secondary service	$ 1,738,692	50	2.0%	$ 464,003	$ 427,396	$ 36,608	$ 34,774		$ 481,390	
1835	1837	Overhead Conductors & Devices- switches	$ 1,786,801	40	2.5%	$ 568,942	$ 544,055	$ 24,887	$ 44,670		$ 591,277	
1835	1838	Overhead Conductors & Devices-capicitor banks	$ 3,844	30	3.3%	$ 3,973	$ 3,051	$ 922	$ 128		$ 4,037	
1835	1839	Overhead Conductors & Devices- primary	$ 761,707	50	2.0%	$ 317,629	$ 293,978	$ 23,651	$ 15,234		$ 325,246	
1840	1843	Underground Conduit	$ 3,276,432	40	2.5%	$ 2,154,376	$ 2,065,600	$ 88,777	$ 81,911		$ 2,195,332	
1845		Underground Conductors & Devices			0.0%	$ -		$ -	$ -		$ -	
1845	1844	Underground Conduit primary PILC	$ 886,687	70	1.4%	$ 518,228	$ 541,216	$ (22,989)	$ 12,667		$ 524,561	
1845	1846	Underground conductors and devices primary XLPE	$ 1,353,742	40	2.5%	$ 665,355	$ 674,909	$ (9,553)	$ 33,844		$ 682,277	
1845	1847	Underground conductors and devices secondary and service in duct	$ 3,560,858	40	2.5%	$ 458,381	$ 390,333	$ 68,048	$ 89,021		$ 502,892	
1845	1848	Underground conductors and devices secondary and service direct buried	$ 22,847	25	4.0%	$ 256,741	$ 247,158	$ 9,583	$ 914	$ 8,941	$ 248,258	
1845	1849	Underground conductors and devices secondary and service in duct	$ 311,018	25	4.0%	$ 513,339	$ 492,416	$ 20,923	$ 12,441	$ 13,168	$ 506,391	
1850		Line Transformers			0.0%	$ -		$ -	$ -		$ -	
1850	1851	Line transformers - Overhead	$ 2,182,583	40	2.5%	$ 1,134,996	$ 1,078,223	$ 56,772	$ 54,565		$ 1,162,278	
1850	1852	Line transformers - Underground	$ 3,156,976	30	3.3%	$ 1,341,232	$ 1,269,491	$ 71,741	$ 105,233	$ 5,630	$ 1,388,218	
1855	1856	Services	$ 770,424	50	2.0%	$ 423,572	$ 417,506	$ 6,066	$ 15,408		$ 431,276	
1860	1860	Meters	$ 1,080,877	25	4.0%	$ 1,636,853	$ 1,570,327	$ 66,525	$ 43,235	$ 37,557	$ 1,620,913	
1860	1862	Smart Meters - Residential	$ 125,873	15	6.7%	$ 1,337,062	$ 1,573,321	$ (236,258)	$ 8,392		$ 1,341,258	
1860	1863	Smart Meters - Commercial	$ 451,956	15	6.7%	$ 238,436	$ 204,698	$ 33,738	$ 30,130		$ 253,501	
1905	1905	Land	$ -		0.0%	$ -	$ -	$ -	$ -		$ -	
1908	1908	Buildings & Fixtures	$ 6,398,686	30	3.3%	$ 1,304,494	$ 1,177,158	$ 127,336	$ 213,290	$ 264,208	$ 1,146,931	
1910	1910	Leasehold Improvements	$ -	5	20.0%	$ -	$ -	$ -	$ -		$ -	
1915	1915	Office Furniture & Equipment (10 yrs)	$ 873,925	10	10.0%	$ 309,727	$ 281,851	$ 27,876	$ 87,393	$ 1,162	$ 352,261	
1915		Office Furniture & Equipment (5 yrs)										
1920	1920	Computer Equipment - Hardware	$ 1,390,098	5	20.0%	$ 1,112,477	$ 976,013	$ 136,464	$ 278,020	$ 98,985	$ 1,152,501	
1930	1930	Transportation Equipment	$ 36,365	8	12.5%	$ 1,471,246	$ 1,250,110	$ 221,136	$ 4,546	$ 32,797	$ 1,440,722	
1935	1935	Stores Equipment	$ -	10	10.0%	$ 54,342	$ 53,519	$ 823	$ -	$ 4,086	$ 50,256	
1940	1940	Tools, Shop & Garage Equipment	$ 417,572	10	10.0%	$ 396,747	$ 352,668	$ 44,078	$ 41,757	$ 17,592	$ 400,033	
1945	1945	Measurement & Testing Equipment	$ 197,176	10	10.0%	$ 125,875	$ 113,745	$ 12,130	$ 19,718	$ 3,978	$ 131,756	
1950	1950	Power Operated Equipment	$ -	10	10.0%	$ 7,759	$ 6,770	$ 990	$ -	$ 47	$ 7,712	
1955	1955	Communications Equipment	$ 975	10	10.0%	$ 225,046	$ 220,700	$ 4,346	$ 97	$ 719	$ 224,376	
1955		Communications Equipment (SM)			0.0%	$ -		$ -	$ -		$ -	
1960	1960	Miscellaneous Equipment			0.0%	$ -		$ -	$ -		$ -	
1970	1970	Load Management Controls	$ -	8	12.5%	$ 51,541	$ 51,603	$ (62)	$ -	$ -	$ 51,541	
1975		Load Management Controls Utility Premises										
1980	1981	System Supervisor Equipment	$ 91,934	15	6.7%	$ 27,631	$ 25,939	$ 1,692	$ 6,129	$ 1,530	$ 29,165	
1980	1982	System Supervisor Equipment	$ -	15	6.7%	$ 66,765	$ 66,764	$ 2	$ -	$ 12,849	$ 53,916	
1985	1985	Miscellaneous Fixed Assets	$ -	25	4.0%	$ (1,581,775)	$ (1,607,580)	$ 25,805	$ -		$ (1,581,775)	
1990		Other Tangible Property										
1996	1996	Hydro One S/S Contribution	$ -	25	4.0%	$ 358,291	$ 332,159	$ 26,132	$ -		$ 358,291	
1609	1609	Hydro One Contribution	$ 2,419,847	16	6.3%	$ 700,620	$ 733,127	$ (32,507)	$ 151,240		$ 776,240	
2005	2005	Property Under Finance Leases	$ -	3	33.3%	$ 273,377	$ 273,377	$ (0)	$ -		$ 273,377	
2440	2440	Less Capital Contributions 2011 & future yrs	$ 6,605,934	25	4.0%	$ 691,164	$ 428,137	$ 263,027	$ 264,237		$ 823,283	
		Total	**$ 37,908,037**			**$ 20,677,519**	**$ 19,299,511**	**$ 1,378,008**	**$ 2,104,476**	**$ 1,274,253**	**$ 20,455,503**	

Variances
a Actual depreciation is calculated using a range of useful lives
a Actual depreciation is not subject to the half year rule

Notes:

1 Board policy of the "half-year" rule - the applicant must ensure that additions in the year attract a half-year depreciation expense in the first year. Deviations from this standard practice

2 The applicant must provide an explanation of material variances in evidence

3 The applicant should ensure that the years for new additions of assets are the asset useful lives determined by management in accordance with IFRS.

4 A recalculation should be performed to determine the average remaining life of opening balance of assets (i.e. excluding 2011 additions) under IFRS. For example, Asset A had a useful life of 20 years under CGAAP. On January 1, 2011, the date of transition, Asset A was 3 years depreciated. As a result, Asset A would have a remaining service life of 17 years (20 years less 3 years) under CGAAP as of January 1, 2011. Due to the transition to IFRS, management re-assessed the asset useful lives under IFRS principles and concluded that the revised useful

5 NBV must exclude assets still on the books but which have been fully amortized or depreciated.

6 This column refers to the calculated full year depreciation but excludes the depreciation expense on assets fully depreciated during the year. This column is used for the purpose of

General: **Applicants must provide a breakdown of depreciation and amortization expense in the above format for all relevant accounts. Asset Retirement Obligations (AROs), depreciation and accretion expense should be disclosed separately consistent with the Notes of historical Audited Financial Statements.**

Table 4-83 – Appendix 2-CE - 2014 MIFRS Bridge Year Depreciation and Amortization Expense

Account		Description	Additions	Years (new additions only)	Depreciation Rate on New Additions	2014 Depreciation Expense [1]	2014 Depreciation Expense per Appendix 2 BA Fixed Assets	Variance [2]	Depreciation Expense on 2014 Full Year Additions	Less Depreciation Expense on Assets Fully Depreciated during the year	2014 Full Year Depreciation [3]	
USoA	Horizon Components		(d)	(f)	(g) 1 / (f)	(h) 2013 Full Year Depreciation + ((d) 0.5)/(f)	(l)	(m) (h) (l)	(n) ((d))/(f)	(o)	(p) 2013 Full Year Depreciation + (n) (o)	
1611	1611	Computer Software	$ 5 321 945	3	33.3%	$ 2 698 317	$ 1 653 638	$ 1 044 680	$ 1 773 982	$ 296 409	$ 3 288 899	a
1612	1612	Land Rights	$ -	50	2.0%	$ 3 339	$ 3 337	$ 2	$ -		$ 3 339	
1805	1805	Land	$ -	-	0.0%	$ -	$ -	$ -	$ -		$ -	
1808	1808	Buildings & Fixtures	$ 150 000	40	2.5%	$ 75 169	$ 76 859	$ (1 691)	$ 3 750	$ 2 550	$ 74 494	
1810	1810	Leasehold Improvements		5	20.0%	$ -		$ -	$ -		$ -	
1815	1815	Transformer Station Equipment >50 kV			0.0%	$ -		$ -	$ -		$ -	
1820		Distribution Station Equipment <50 kV			0.0%	$ -		$ -	$ -		$ -	
1820	1821	Distribution Station Equipment	$ -	40	2.5%	$ 35 314	$ 35 310	$ 4	$ -		$ 35 314	
1820	1822	Distribution Station Equipment	$ 846 790	40	2.5%	$ 164 876	$ 153 639	$ 11 237	$ 21 170		$ 175 461	
1820	1823	Distribution Station Equipment	$ -	40	2.5%	$ 118 427	$ 115 651	$ 2 776	$ -		$ 118 427	
1825	1825	Storage Battery Equipment			0.0%	$ -		$ -	$ -		$ -	
1830		Poles Towers & Fixtures			0.0%	$ -		$ -	$ -		$ -	
1830	1831	Poles Towers & Fixtures- concrete	$ 6 599 420	50	2.0%	$ 497 148	$ 525 354	$ (28 207)	$ 131 988		$ 563 142	
1830	1832	Poles Towers & Fixtures-wood	$ -	40	2.5%	$ 1 525 235	$ 1 436 681	$ 88 553	$ -		$ 1 525 235	
1835		Overhead Conductors & Devices			0.0%	$ -		$ -	$ -		$ -	
1835	1836	Overhead Conductors & Devices-secondary service	$ 1 585 569	50	2.0%	$ 497 246	$ 481 264	$ 15 982	$ 31 711		$ 513 102	
1835	1837	Overhead Conductors & Devices- switches	$ 2,072,958	40	2.5%	$ 617,189	$ 599,465	$ 17,723	$ 51,824		$ 643,101	
1835	1838	Overhead Conductors & Devices-capicitor banks	$ -	30	3.3%	$ 4 037	$ 3 023	$ 1 014	$ -		$ 4 037	
1835	1839	Overhead Conductors & Devices- primary	$ 1 315 611	50	2.0%	$ 338 402	$ 331 354	$ 7 049	$ 26 312		$ 351 558	
1840	1843	Underground Conduit	$ 3 959 555	40	2.5%	$ 2 244 826	$ 2 182 396	$ 62 430	$ 98 989		$ 2 294 320	
1845		Underground Conductors & Devices			0.0%	$ -		$ -	$ -		$ -	
1845	1844	Underground Conduit primary PILC	$ 95 297	70	1.4%	$ 525 242	$ 543 627	$ (18 386)	$ 1 361		$ 525 923	
1845	1846	Underground conductors and devices primary XLPE	$ 1 214 181	40	2.5%	$ 697 454	$ 727 754	$ (30 300)	$ 30 355		$ 712 631	
1845	1847	Underground conductors and devices secondary and service in duct	$ 10 195	40	2.5%	$ 503 020	$ 436 694	$ 66 326	$ 255		$ 503 147	
1845	1848	Underground conductors and devices secondary and service direct buried	$ -	25	4.0%	$ 248 258	$ 237 033	$ 11 225	$ -	$ 10 830	$ 237 428	
1845	1849	Underground conductors and devices secondary and service in duct	$ 820,925	25	4.0%	$ 522,810	$ 513,566	$ 9,244	$ 32,837	$ 15,484	$ 523,744	
1850		Line Transformers			0.0%	$ -		$ -	$ -		$ -	
1850	1851	Line transformers - Overhead	$ 3 749 987	40	2.5%	$ 1 209 153	$ 1 187 592	$ 21 560	$ 93 750		$ 1 256 028	
1850	1852	Line transformers - Underground	$ 3 279 262	30	3.3%	$ 1 442 872	$ 1 393 340	$ 49 533	$ 109 309	$ 8 212	$ 1 489 314	
1855	1856	Services	$ 3 436 995	50	2.0%	$ 465 646	$ 474 131	$ (8 486)	$ 68 740		$ 500 016	
1860	1860	Meters	$ 1 513 674	25	4.0%	$ 1 651 187	$ 1 693 885	$ (42 698)	$ 60 547	$ 26 875	$ 1 654 585	
1860	1862	Smart Meters - Residential	$ -	15	6.7%	$ 1 341 258	$ 1 577 764	$ (236 506)	$ -		$ 1 341 258	
1860	1863	Smart Meters - Commercial	$ 985 430	15	6.7%	$ 286 349	$ 260 883	$ 25 466	$ 65 695		$ 319 197	
1905	1905	Land	$ -		0.0%	$ -	$ -	$ -	$ -		$ -	
1908	1908	Buildings & Fixtures	$ 3,700,000	30	3.3%	$ 1,208,597	$ 1,166,631	$ 41,967	$ 123,333	$ 1,237	$ 1,269,027	
1910	1910	Leasehold Improvements	$ -	5	20.0%	$ -	$ -	$ -	$ -		$ -	
1915	1915	Office Furniture & Equipment (10 yrs)	$ 618 000	10	10.0%	$ 383 161	$ 404 152	$ (20 991)	$ 61 800	$ 4 025	$ 410 036	
1915		Office Furniture & Equipment (5 yrs)										
1920	1920	Computer Equipment - Hardware	$ 1 132 756	5	20.0%	$ 1 265 777	$ 1 298 024	$ (32 247)	$ 226 551	$ 91 369	$ 1 287 684	
1930	1930	Transportation Equipment	$ 785 000	8	12.5%	$ 1 489 784	$ 1 330 571	$ 159 213	$ 98 125	$ 57 068	$ 1 481 779	
1935	1935	Stores Equipment	$ -	10	10.0%	$ 50 256	$ 49 367	$ 889	$ -	$ 1 106	$ 49 150	
1940	1940	Tools Shop & Garage Equipment	$ 511 300	10	10.0%	$ 425 598	$ 391 239	$ 34 359	$ 51 130	$ 11 604	$ 439 559	
1945	1945	Measurement & Testing Equipment	$ 154,000	10	10.0%	$ 139,456	$ 144,768	$ (5,313)	$ 15,400	$ 1,932	$ 145,224	
1950	1950	Power Operated Equipment	$ -	10	10.0%	$ 7,712	$ 6,178	$ 1,534	$ -	$ 6,133	$ 1,579	
1955	1955	Communications Equipment	$ 6,200	10	10.0%	$ 224,686	$ 220,673	$ 4,013	$ 620	$ 222	$ 224,774	
1955		Communications Equipment (SM)			0.0%	$ -		$ -	$ -		$ -	
1960	1960	Miscellaneous Equipment			0.0%	$ -		$ -	$ -		$ -	
1970	1970	Load Management Controls	$ -	8	12.5%	$ 51 541	$ 51 615	$ (74)	$ -	$ -	$ 51 541	
1975		Load Management Controls Utility Premises										
1980	1981	System Supervisor Equipment	$ 400,000	15	6.7%	$ 42,498	$ 43,571	$ (1,072)	$ 26,667	$ 1,198	$ 54,633	
1980	1982	System Supervisor Equipment	$ -	15	6.7%	$ 53 916	$ 53 922	$ (6)	$ -	$ 126	$ 53 790	
1985	1985	Miscellaneous Fixed Assets	$ -	25	4.0%	$ (1 581 775)	$ (1 607 580)	$ 25 805	$ -		$ (1 581 775)	
1990		Other Tangible Property										
1996	1996	Hydro One S/S Contribution	$ -	25	4.0%	$ 358 291	$ 357 384	$ 907	$ -		$ 358 291	
1609	1609	Hydro One Contribution	$ -	16	6.3%	$ 776 240	$ 818 588	$ (42 347)	$ -		$ 776 240	
2005	2005	Property Under Finance Leases	$ -	3	33.3%	$ 273 377	$ 273 377	$ (0)	$ -		$ 273 377	
2440	2440	Less Capital Contributions 2011 & future yrs	$ 4,473,000	25	4.0%	$ 912,743	$ 623,000	$ 289,743	$ 178,920		$ 1,002,203	
		Total	**$ 39,792,050**			**$ 21,969,144**	**$ 21,023,720**	**$ 945,424**	**$ 3,027,281**	**$ 536,380**	**$ 22,946,404**	

Variances
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a Actual depreciation is not subject to the half year rule

Notes:
1 Board policy of the "half-year" rule - the applicant must ensure that additions in the year attract a half-year depreciation expense in the first year. Deviations from this standard practice must be
2 The applicant must provide an explanation of material variances in evidence
3 The applicant should ensure that the years for new additions of assets are the asset useful ives determined by management in accordance with IFRS.
4 A recalculation should be performed to determine the average remaining life of opening balance of assets (i.e. excluding 2011 additions) under IFRS. For example, Asset A had a useful life of 20 years under CGAAP. On January 1, 2011, the date of transition, Asset A was 3 years depreciated. As a result, Asset A would have a remaining service life of 17 years (20 years less 3 years) under CGAAP as of January 1, 2011. Due to the transition to IFRS, management re-assessed the asset useful lives under IFRS principles and concluded that the revised useful life of
5 NBV must exclude assets still on the books but which have been fully amortized or depreciated.
6 This column refers to the calculated full year depreciation but excludes the depreciation expense on assets fully depreciated during the year. This column is used for the purpose of calculating

General: **Applicants must provide a breakdown of depreciation and amortization expense in the above format for all relevant accounts. Asset Retirement Obligations (AROs), depreciation and accretion expense should be disclosed separately consistent with the Notes of historical Audited Financial Statements.**

Table 4-84 – Appendix 2-CE - 2015 MIFRS Test Year Depreciation and Amortization Expense

Account		Description	Additions	Add Back Smart Meters from 1555	Years (new additions only)	Depreciation Rate on New Additions	2015 Depreciation Expense [1]	2015 Depreciation Expense per Appendix 2-BA Fixed Assets	Variance [2]	Depreciation Expense on 2015 Full Year Additions	Less Depreciation Expense on Assets Fully Depreciated during the year	2015 Full Year Depreciation [3]	
USoA	Horizon Comp-onents		(d)	(d1)	(f)	(g) = 1 / (f)	(h)=2014 Full Year Depreciation + ((d)*0.5)/(f)	(l)	(m) = (h) - (l)	(n)=((d))/(f)	(o)	(p) = 2014 Full Year Depreciation + (n) - (o) + (d1)/(f)	
1611	1611	Computer Software	$ 2,390,404		3	33.3%	$ 3,687,300	$ 3,056,428	$ 630,872	$ 796,801	$ 181,289	$ 3,904,412	a
1612	1612	Land Rights	$ -		50	2.0%	$ 3,339	$ 3,337	$ 2	$ -		$ 3,339	
1805	1805	Land	$ -		-	0.0%	$ -	$ -	$ -	$ -		$ -	
1808	1808	Buildings & Fixtures	$ -		40	2.5%	$ 74,494	$ 70,955	$ 3,539	$ -	$ 5,457	$ 69,037	
1810	1810	Leasehold Improvements			5	20.0%	$ -		$ -	$ -		$ -	
1815	1815	Transformer Station Equipment >50 kV				0.0%	$ -		$ -	$ -		$ -	
1820		Distribution Station Equipment <50 kV				0.0%	$ -		$ -	$ -		$ -	
1820	1821	Distribution Station Equipment	$ -		40	2.5%	$ 35,314	$ 35,310	$ 4	$ -		$ 35,314	
1820	1822	Distribution Station Equipment	$ 754,301		40	2.5%	$ 184,889	$ 172,947	$ 11,942	$ 18,858		$ 194,318	
1820	1823	Distribution Station Equipment	$ -		40	2.5%	$ 118,427	$ 115,651	$ 2,776	$ -		$ 118,427	
1825	1825	Storage Battery Equipment				0.0%	$ -		$ -	$ -		$ -	
1830		Poles, Towers & Fixtures				0.0%	$ -		$ -	$ -		$ -	
1830	1831	Poles, Towers & Fixtures- concrete	$ 2,057,921		50	2.0%	$ 583,721	$ 603,144	$ (19,423)	$ 41,158		$ 604,300	
1830	1832	Poles, Towers & Fixtures-wood	$ 7,048,401		40	2.5%	$ 1,613,340	$ 1,525,853	$ 87,487	$ 176,210		$ 1,701,445	
1835		Overhead Conductors & Devices				0.0%	$ -		$ -	$ -		$ -	
1835	1836	Overhead Conductors & Devices-secondary service	$ 1,470,970		50	2.0%	$ 527,811	$ 505,277	$ 22,534	$ 29,419		$ 542,521	
1835	1837	Overhead Conductors & Devices- switches	$ 2,456,888		40	2.5%	$ 673,812	$ 654,980	$ 18,831	$ 61,422		$ 704,523	
1835	1838	Overhead Conductors & Devices-capicitor banks	$ -		30	3.3%	$ 4,037	$ 3,023	$ 1,014	$ -		$ 4,037	
1835	1839	Overhead Conductors & Devices- primary	$ 1,827,542		50	2.0%	$ 369,834	$ 357,969	$ 11,865	$ 36,551		$ 388,109	
1840	1843	Underground Conduit	$ 6,132,251		40	2.5%	$ 2,370,974	$ 2,318,353	$ 52,621	$ 153,306		$ 2,447,627	
1845		Underground Conductors & Devices				0.0%	$ -		$ -	$ -		$ -	
1845	1844	Underground Conduit primary PILC	$ 52,598		70	1.4%	$ 526,298	$ 544,417	$ (18,119)	$ 751		$ 526,674	
1845	1846	Underground conductors and devices primary XLPE	$ 1,092,864		40	2.5%	$ 726,292	$ 747,317	$ (21,024)	$ 27,322		$ 739,953	
1845	1847	Underground conductors and devices secondary and service in duct	$ 135,321		40	2.5%	$ 504,839	$ 438,576	$ 66,262	$ 3,383		$ 506,530	
1845	1848	Underground conductors and devices secondary and service direct buried	$ -		25	4.0%	$ 237,428	$ 224,403	$ 13,024	$ -	$ 11,654	$ 225,774	
1845	1849	Underground conductors and devices secondary and service in duct	$ 983,426		25	4.0%	$ 543,413	$ 532,516	$ 10,896	$ 39,337	$ 16,572	$ 546,509	
1850		Line Transformers				0.0%	$ -		$ -	$ -		$ -	
1850	1851	Line transformers - Overhead	$ 3,981,752		40	2.5%	$ 1,305,799	$ 1,274,712	$ 31,088	$ 99,544		$ 1,355,571	
1850	1852	Line transformers - Underground	$ 3,370,636		30	3.3%	$ 1,545,492	$ 1,487,357	$ 58,134	$ 112,355	$ 11,862	$ 1,589,807	
1855	1856	Services	$ 1,250,214		50	2.0%	$ 512,518	$ 520,373	$ (7,855)	$ 25,004		$ 525,020	
1860	1860	Meters	$ 1,463,674		25	4.0%	$ 1,683,859	$ 1,703,586	$ (19,728)	$ 58,547	$ 49,346	$ 1,663,786	
1860	1862	Smart Meters - Residential	$ -	$ 103,330	15	6.7%	$ 1,341,258	$ 1,573,060	$ (231,802)	$ -		$ 1,348,147	b
1860	1863	Smart Meters - Commercial	$ 1,007,000	$ 2,128,134	15	6.7%	$ 352,763	$ 461,627	$ (108,863)	$ 67,133		$ 528,206	b
1905	1905	Land	$ -			0.0%	$ -	$ -	$ -	$ -		$ -	
1908	1908	Buildings & Fixtures	$ 3,700,000		30	3.3%	$ 1,330,694	$ 1,244,241	$ 86,452	$ 123,333	$ 114,565	$ 1,277,795	
1910	1910	Leasehold Improvements	$ -		5	20.0%	$ -	$ -	$ -	$ -		$ -	
1915	1915	Office Furniture & Equipment (10 yrs)	$ 69,000		10	10.0%	$ 413,486	$ 447,293	$ (33,807)	$ 6,900	$ 2,120	$ 414,816	
1915		Office Furniture & Equipment (5 yrs)											
1920	1920	Computer Equipment - Hardware	$ 1,491,500		5	20.0%	$ 1,436,834	$ 1,380,938	$ 55,896	$ 298,300	$ 211,818	$ 1,374,166	
1930	1930	Transportation Equipment	$ 778,000		8	12.5%	$ 1,530,404	$ 1,273,018	$ 257,385	$ 97,250	$ 77,561	$ 1,501,468	
1935	1935	Stores Equipment	$ -		10	10.0%	$ 49,150	$ 48,108	$ 1,042	$ -	$ 602	$ 48,548	
1940	1940	Tools, Shop & Garage Equipment	$ 555,560		10	10.0%	$ 467,337	$ 419,351	$ 47,987	$ 55,556	$ 8,221	$ 486,894	
1945	1945	Measurement & Testing Equipment	$ 132,300		10	10.0%	$ 151,839	$ 149,991	$ 1,847	$ 13,230	$ 7,824	$ 150,630	
1950	1950	Power Operated Equipment	$ -		10	10.0%	$ 1,579	$ -	$ 1,579	$ -	$ -	$ 1,579	
1955	1955	Communications Equipment	$ 245,000		10	10.0%	$ 237,024	$ 233,880	$ 3,143	$ 24,500	$ 3,784	$ 245,490	
1955		Communications Equipment (SM)				0.0%	$ -		$ -	$ -		$ -	
1960	1960	Miscellaneous Equipment				0.0%	$ -		$ -	$ -		$ -	
1970	1970	Load Management Controls	$ -		8	12.5%	$ 51,541	$ 51,615	$ (74)	$ -	$ -	$ 51,541	
1975		Load Management Controls Utility Premises											
1980	1981	System Supervisor Equipment	$ 300,000		15	6.7%	$ 64,633	$ 61,966	$ 2,668	$ 20,000	$ 2,692	$ 71,941	
1980	1982	System Supervisor Equipment	$ -		15	6.7%	$ 53,790	$ 52,202	$ 1,588	$ -	$ 1	$ 53,789	
1985	1985	Miscellaneous Fixed Assets	$ -		25	4.0%	$ (1,581,775)	$ (1,607,580)	$ 25,805	$ -		$ (1,581,775)	
1990		Other Tangible Property											
1996	1996	Hydro One S/S Contribution	$ -		25	4.0%	$ 358,291	$ 357,384	$ 907	$ -		$ 358,291	
1609	1609	Hydro One Contribution	$ -		16	6.3%	$ 776,240	$ 818,588	$ (42,347)	$ -		$ 776,240	
2005	2005	Property Under Finance Leases	$ -		3	33.3%	$ 273,377	$ 273,377	$ -	$ -	$ 273,377	$ -	
2440	2440	Less Capital Contributions 2011 & future yrs	$ 4,633,000		25	4.0%	$ 1,094,863	$ 752,000	$ 342,863	$ 185,320		$ 1,187,523	c
		Total	**$ 40,114,524**	**$ 2,231,464**			**$ 24,046,830**	**$ 23,383,544**	**$ 663,285**	**$ 2,200,851**	**$ 978,745**	**$ 24,317,275**	

Variances
a Actual depreciation is calculated using a range of useful lives
a/c Actual depreciation is not subject to the half year rule
b This model doesn't calculate depreciation on transfers in the year of the transfer. Smart meters - amoritized in 1555 outside of the general pool of assets

Notes:
1 Board policy of the "half-year" rule - the applicant must ensure that additions in the year attract a half-year depreciation expense in the first year. Deviations from this standard practice must be supported in the
2 The applicant must provide an explanation of material variances in evidence
3 The applicant should ensure that the years for new additions of assets are the asset useful lives determined by management in accordance with IFRS.
4 A recalculation should be performed to determine the average remaining life of opening balance of assets (i.e. excluding 2011 additions) under IFRS. For example, Asset A had a useful life of 20 years under CGAAP. On January 1, 2011, the date of transition, Asset A was 3 years depreciated. As a result, Asset A would have a remaining service life of 17 years (20 years less 3 years) under CGAAP as of January 1, 2011. Due to the transition to IFRS, management re-assessed the asset useful lives under IFRS principles and concluded that the revised useful life of Asset A is now 30 years. Therefore, the average
5 NBV must exclude assets still on the books but which have been fully amortized or depreciated.
6 This column refers to the calculated full year depreciation but excludes the depreciation expense on assets fully depreciated during the year. This column is used for the purpose of calculating depreciation

General: **Applicants must provide a breakdown of depreciation and amortization expense in the above format for all relevant accounts. Asset Retirement Obligations (AROs), depreciation and accretion expense should be disclosed separately consistent with the Notes of historical Audited Financial Statements.**

Table 4-85 – Appendix 2-CE - 2016 MIFRS Test Year Depreciation and Amortization Expense

Account		Description	Additions	Years (new additions only)	Depreciation Rate on New Additions	2016 Depreciation Expense [1]	2016 Depreciation Expense per Appendix 2-BA Fixed Assets	Variance [2]	Depreciation Expense on 2016 Full Year Additions	Less Depreciation Expense on Assets Fully Depreciated during the year	2016 Full Year Depreciation [3]	
USoA	Horizon Comp-onents		(d)	(f)	(g) = 1 / (f)	(h)=2015 Full Year Depreciation + ((d)*0.5)/(f)	(l)	(m) = (h) - (l)	(n)=((d))/(f)	(o)	(p) = 2015 Full Year Depreciation + (n) - (o)	
1611	1611	Computer Software	$ 455,500	3	33.3%	$ 3,980,329	$ 3,157,219	$ 823,110	$ 151,833	$ 772,534	$ 3,283,711	a
1612	1612	Land Rights	$ -	50	2.0%	$ 3,339	$ 3,337	$ 2	$ -		$ 3,339	
1805	1805	Land	$ -	-	0.0%	$ -	$ -	$ -	$ -		$ -	
1808	1808	Buildings & Fixtures	$ -	40	2.5%	$ 69,037	$ 55,897	$ 13,140	$ -	$ 4,572	$ 64,465	
1810	1810	Leasehold Improvements		5	20.0%	$ -		$ -	$ -		$ -	
1815	1815	Transformer Station Equipment >50 kV			0.0%	$ -		$ -	$ -		$ -	
1820		Distribution Station Equipment <50 kV			0.0%	$ -		$ -	$ -		$ -	
1820	1821	Distribution Station Equipment	$ -	40	2.5%	$ 35,314	$ 35,310	$ 4	$ -		$ 35,314	
1820	1822	Distribution Station Equipment	$ 902,070	40	2.5%	$ 205,594	$ 193,806	$ 11,788	$ 22,552		$ 216,870	
1820	1823	Distribution Station Equipment	$ -	40	2.5%	$ 118,427	$ 115,651	$ 2,776	$ -		$ 118,427	
1825	1825	Storage Battery Equipment			0.0%	$ -		$ -	$ -		$ -	
1830		Poles, Towers & Fixtures			0.0%	$ -		$ -	$ -		$ -	
1830	1831	Poles, Towers & Fixtures- concrete	$ 7,137,942	50	2.0%	$ 675,680	$ 698,038	$ (22,358)	$ 142,759		$ 747,059	
1830	1832	Poles, Towers & Fixtures-wood	$ 2,985,747	40	2.5%	$ 1,738,766	$ 1,638,704	$ 100,062	$ 74,644		$ 1,776,088	
1835		Overhead Conductors & Devices			0.0%	$ -		$ -	$ -		$ -	
1835	1836	Overhead Conductors & Devices-secondary service	$ 2,339,419	50	2.0%	$ 565,915	$ 536,782	$ 29,133	$ 46,788		$ 589,309	
1835	1837	Overhead Conductors & Devices- switches	$ 2,413,420	40	2.5%	$ 734,690	$ 711,964	$ 22,727	$ 60,335		$ 764,858	
1835	1838	Overhead Conductors & Devices-capicitor banks	$ (10,129)	30	3.3%	$ 3,868	$ 2,840	$ 1,028	$ (338)		$ 3,699	
1835	1839	Overhead Conductors & Devices- primary	$ 1,135,545	50	2.0%	$ 399,465	$ 381,665	$ 17,799	$ 22,711		$ 410,820	
1840	1843	Underground Conduit	$ 5,146,835	40	2.5%	$ 2,511,962	$ 2,456,831	$ 55,131	$ 128,671		$ 2,576,298	
1845		Underground Conductors & Devices			0.0%	$ -		$ -	$ -		$ -	
1845	1844	Underground Conduit primary PILC	$ 357,168	70	1.4%	$ 529,225	$ 547,422	$ (18,197)	$ 5,102		$ 531,776	
1845	1846	Underground conductors and devices primary XLPE	$ 2,998,749	40	2.5%	$ 777,437	$ 785,607	$ (8,170)	$ 74,969		$ 814,922	
1845	1847	Underground conductors and devices secondary and service in duct	$ (222,985)	40	2.5%	$ 503,743	$ 437,010	$ 66,732	$ (5,575)		$ 500,955	
1845	1848	Underground conductors and devices secondary and service direct buried	$ -	25	4.0%	$ 225,774	$ 210,042	$ 15,732	$ -	$ 10,321	$ 215,453	
1845	1849	Underground conductors and devices secondary and service in duct	$ 1,988,116	25	4.0%	$ 586,271	$ 576,933	$ 9,339	$ 79,525	$ 14,773	$ 611,261	
1850		Line Transformers			0.0%	$ -		$ -	$ -		$ -	
1850	1851	Line transformers - Overhead	$ 4,408,160	40	2.5%	$ 1,410,673	$ 1,369,097	$ 41,577	$ 110,204		$ 1,465,775	
1850	1852	Line transformers - Underground	$ 4,129,151	30	3.3%	$ 1,658,626	$ 1,596,922	$ 61,704	$ 137,638	$ 792	$ 1,726,653	
1855	1856	Services	$ 3,904,951	50	2.0%	$ 564,070	$ 574,137	$ (10,068)	$ 78,099		$ 603,119	
1860	1860	Meters	$ 1,386,174	25	4.0%	$ 1,691,509	$ 1,706,149	$ (14,639)	$ 55,447	$ 39,828	$ 1,679,405	
1860	1862	Smart Meters - Residential	$ -	15	6.7%	$ 1,348,147	$ 1,566,807	$ (218,660)	$ -		$ 1,348,147	
1860	1863	Smart Meters - Commercial	$ 715,000	15	6.7%	$ 552,039	$ 517,882	$ 34,157	$ 47,667		$ 575,872	
1905	1905	Land	$ -		0.0%	$ -	$ -	$ -	$ -		$ -	
1908	1908	Buildings & Fixtures	$ 1,995,000	30	3.3%	$ 1,311,045	$ 1,154,568	$ 156,477	$ 66,500	$ 38,446	$ 1,305,850	
1910	1910	Leasehold Improvements	$ -	5	20.0%	$ -	$ -	$ -	$ -		$ -	
1915	1915	Office Furniture & Equipment (10 yrs)	$ 69,000	10	10.0%	$ 418,266	$ 442,132	$ (23,866)	$ 6,900	$ 26,800	$ 394,916	
1915		Office Furniture & Equipment (5 yrs)										
1920	1920	Computer Equipment - Hardware	$ 825,500	5	20.0%	$ 1,456,716	$ 1,595,149	$ (138,433)	$ 165,100	$ 141,698	$ 1,397,568	
1930	1930	Transportation Equipment	$ 780,000	8	12.5%	$ 1,550,218	$ 1,106,815	$ 443,403	$ 97,500	$ 68,316	$ 1,530,652	b
1935	1935	Stores Equipment	$ -	10	10.0%	$ 48,548	$ 47,431	$ 1,117	$ -	$ 80	$ 48,468	
1940	1940	Tools, Shop & Garage Equipment	$ 567,600	10	10.0%	$ 515,274	$ 447,470	$ 67,805	$ 56,760	$ 23,053	$ 520,601	
1945	1945	Measurement & Testing Equipment	$ 89,600	10	10.0%	$ 155,110	$ 141,131	$ 13,979	$ 8,960	$ 12,354	$ 147,236	
1950	1950	Power Operated Equipment	$ -	10	10.0%	$ 1,579	$ -	$ 1,579	$ -	$ -	$ 1,579	
1955	1955	Communications Equipment	$ 5,000	10	10.0%	$ 245,740	$ 230,472	$ 15,268	$ 500	$ 54,333	$ 191,657	
1955		Communications Equipment (SM)			0.0%	$ -		$ -	$ -		$ -	
1960	1960	Miscellaneous Equipment			0.0%	$ -		$ -	$ -		$ -	
1970	1970	Load Management Controls	$ -	8	12.5%	$ 51,541	$ 48,856	$ 2,685	$ -	$ 16,395	$ 35,146	
1975		Load Management Controls Utility Premises										
1980	1981	System Supervisor Equipment	$ 200,000	15	6.7%	$ 78,608	$ 74,951	$ 3,657	$ 13,333	$ 958	$ 84,316	
1980	1982	System Supervisor Equipment	$ -	15	6.7%	$ 53,789	$ 51,902	$ 1,887	$ -	$ 445	$ 53,344	
1985	1985	Miscellaneous Fixed Assets	$ -	25	4.0%	$ (1,581,775)	$ (1,607,580)	$ 25,805	$ -		$ (1,581,775)	
1990		Other Tangible Property										
1996	1996	Hydro One S/S Contribution	$ -	25	4.0%	$ 358,291	$ 357,384	$ 907	$ -		$ 358,291	
1609	1609	Hydro One Contribution	$ -	16	6.3%	$ 776,240	$ 818,588	$ (42,347)	$ -		$ 776,240	
2005	2005	Property Under Finance Leases	$ 900,000	3	33.3%	$ 150,000	$ 300,000	$ (150,000)	$ 300,000		$ 300,000	
2440	2440	Less Capital Contributions 2011 & future yrs	$ 4,655,000	25	4.0%	$ 1,280,623	$ 884,000	$ 396,623	$ 186,200		$ 1,373,723	c
		Total	**$ 42,947,533**			**$ 25,198,468**	**$ 24,201,320**	**$ 997,148**	**$ 1,762,385**	**$ 1,225,698**	**$ 24,853,962**	

Variances **a/b** Actual depreciation is calculated using a range of useful lives
a/b/c Actual depreciation is not subject to the half year rule

Notes:
1 Board policy of the "half-year" rule - the applicant must ensure that additions in the year attract a half-year depreciation expense in the first year. Deviations from this standard practice must
2 The applicant must provide an explanation of material variances in evidence
3 The applicant should ensure that the years for new additions of assets are the asset useful lives determined by management in accordance with IFRS.
4 A recalculation should be performed to determine the average remaining life of opening balance of assets (i.e. excluding 2011 additions) under IFRS. For example, Asset A had a useful ife of 20 years under CGAAP. On January 1, 2011, the date of transition, Asset A was 3 years depreciated. As a result, Asset A would have a remaining service life of 17 years (20 years less 3 years) under CGAAP as of January 1, 2011. Due to the transition to IFRS, management re-assessed the asset useful lives under IFRS principles and concluded that the revised useful life of
5 NBV must exclude assets stil on the books but which have been fully amortized or depreciated.
6 This column refers to the calculated full year depreciation but excludes the depreciation expense on assets fully depreciated during the year. This column is used for the purpose of calculating

General: **Applicants must provide a breakdown of depreciation and amortization expense in the above format for all relevant accounts. Asset Retirement Obligations (AROs), depreciation and accretion expense should be disclosed separately consistent with the Notes of historical Audited Financial Statements.**

Table 4-86 – Appendix 2-CE - 2017 MIFRS Test Year Depreciation and Amortization Expense

Account		Description	Additions	Years (new additions only)	Depreciation Rate on New Additions	2017 Depreciation Expense [1]	2017 Depreciation Expense per Appendix 2-BA Fixed Assets	Variance [2]	Depreciation Expense on 2017 Full Year Additions	Less Depreciation Expense on Assets Fully Depreciated during the year	2017 Full Year Depreciation [3]	
USoA	Horizon Comp-onents		(d)	(f)	(g) = 1 / (f)	(h)=2016 Full Year Depreciation + ((d)*0.5)/(f)	(l)	(m) = (h) - (l)	(n)=((d))/(f)	(o)	(p) = 2016 Full Year Depreciation + (n) - (o)	
1611	1611	Computer Software	$ 439,500	3	33.3%	$ 3,356,961	$ 2,354,594	$ 1,002,367	$ 146,500	$ 1,774,396	$ 1,655,816	a
1612	1612	Land Rights	$ -	50	2.0%	$ 3,339	$ 3,337	$ 2	$ -		$ 3,339	
1805	1805	Land	$ -	-	0.0%	$ -	$ -	$ -	$ -		$ -	
1808	1808	Buildings & Fixtures	$ -	40	2.5%	$ 64,465	$ 51,715	$ 12,750	$ -	$ 9,854	$ 54,611	
1810	1810	Leasehold Improvements		5	20.0%	$ -		$ -	$ -		$ -	
1815	1815	Transformer Station Equipment >50 kV			0.0%	$ -		$ -	$ -		$ -	
1820		Distribution Station Equipment <50 kV			0.0%	$ -		$ -	$ -		$ -	
1820	1821	Distribution Station Equipment	$ -	40	2.5%	$ 35,314	$ 35,310	$ 4	$ -		$ 35,314	
1820	1822	Distribution Station Equipment	$ 911,190	40	2.5%	$ 228,260	$ 216,481	$ 11,779	$ 22,780		$ 239,650	
1820	1823	Distribution Station Equipment	$ -	40	2.5%	$ 118,427	$ 115,651	$ 2,776	$ -		$ 118,427	
1825	1825	Storage Battery Equipment			0.0%	$ -		$ -	$ -		$ -	
1830		Poles, Towers & Fixtures			0.0%	$ -		$ -	$ -		$ -	
1830	1831	Poles, Towers & Fixtures- concrete	$ 7,064,246	50	2.0%	$ 817,702	$ 838,487	$ (20,785)	$ 141,285		$ 888,344	
1830	1832	Poles, Towers & Fixtures-wood	$ 3,112,261	40	2.5%	$ 1,814,991	$ 1,705,342	$ 109,650	$ 77,807		$ 1,853,895	
1835		Overhead Conductors & Devices			0.0%	$ -		$ -	$ -		$ -	
1835	1836	Overhead Conductors & Devices-secondary service	$ 2,429,642	50	2.0%	$ 613,606	$ 576,018	$ 37,588	$ 48,593		$ 637,902	
1835	1837	Overhead Conductors & Devices- switches	$ 2,394,351	40	2.5%	$ 794,788	$ 767,556	$ 27,232	$ 59,859		$ 824,717	
1835	1838	Overhead Conductors & Devices-capicitor banks	$ (10,129)	30	3.3%	$ 3,530	$ 2,502	$ 1,028	$ (338)		$ 3,361	
1835	1839	Overhead Conductors & Devices- primary	$ 1,127,281	50	2.0%	$ 422,093	$ 398,045	$ 24,048	$ 22,546		$ 433,366	
1840	1843	Underground Conduit	$ 5,034,920	40	2.5%	$ 2,639,234	$ 2,582,258	$ 56,976	$ 125,873		$ 2,702,171	
1845		Underground Conductors & Devices			0.0%	$ -		$ -	$ -		$ -	
1845	1844	Underground Conduit primary PILC	$ 340,430	70	1.4%	$ 534,208	$ 552,274	$ (18,066)	$ 4,863		$ 536,640	
1845	1846	Underground conductors and devices primary XLPE	$ 5,839,854	40	2.5%	$ 887,920	$ 881,761	$ 6,159	$ 145,996		$ 960,918	
1845	1847	Underground conductors and devices secondary and service in duct	$ (51,493)	40	2.5%	$ 500,312	$ 433,645	$ 66,667	$ (1,287)		$ 499,668	
1845	1848	Underground conductors and devices secondary and service direct buried	$ -	25	4.0%	$ 215,453	$ 196,562	$ 18,891	$ -	$ 9,144	$ 206,309	
1845	1849	Underground conductors and devices secondary and service in duct	$ 3,648,844	25	4.0%	$ 684,238	$ 677,531	$ 6,707	$ 145,954	$ 13,177	$ 744,038	
1850		Line Transformers			0.0%	$ -		$ -	$ -		$ -	
1850	1851	Line transformers - Overhead	$ 4,398,877	40	2.5%	$ 1,520,761	$ 1,466,439	$ 54,323	$ 109,972		$ 1,575,747	
1850	1852	Line transformers - Underground	$ 4,079,718	30	3.3%	$ 1,794,648	$ 1,723,264	$ 71,384	$ 135,991	$ 10,117	$ 1,852,526	
1855	1856	Services	$ 3,910,048	50	2.0%	$ 642,220	$ 652,291	$ (10,072)	$ 78,201		$ 681,320	
1860	1860	Meters	$ 1,356,174	25	4.0%	$ 1,706,528	$ 1,720,532	$ (14,003)	$ 54,247	$ 51,729	$ 1,681,923	
1860	1862	Smart Meters - Residential	$ -	15	6.7%	$ 1,348,147	$ 1,559,523	$ (211,376)	$ -		$ 1,348,147	
1860	1863	Smart Meters - Commercial	$ 690,000	15	6.7%	$ 598,872	$ 564,258	$ 34,614	$ 46,000		$ 621,872	
1905	1905	Land	$ -		0.0%	$ -	$ -	$ -	$ -		$ -	
1908	1908	Buildings & Fixtures	$ 2,495,000	30	3.3%	$ 1,347,433	$ 1,189,448	$ 157,985	$ 83,167	$ 185,553	$ 1,203,463	
1910	1910	Leasehold Improvements	$ -	5	20.0%	$ -	$ -	$ -	$ -		$ -	
1915	1915	Office Furniture & Equipment (10 yrs)	$ 69,000	10	10.0%	$ 398,366	$ 416,999	$ (18,633)	$ 6,900	$ 26,220	$ 375,596	
1915		Office Furniture & Equipment (5 yrs)										
1920	1920	Computer Equipment - Hardware	$ 1,447,200	5	20.0%	$ 1,542,288	$ 1,605,174	$ (62,886)	$ 289,440	$ 397,219	$ 1,289,789	
1930	1930	Transportation Equipment	$ 775,000	8	12.5%	$ 1,579,089	$ 1,095,601	$ 483,488	$ 96,875	$ 105,601	$ 1,521,926	b
1935	1935	Stores Equipment	$ -	10	10.0%	$ 48,468	$ 47,085	$ 1,383	$ -	$ 277	$ 48,191	
1940	1940	Tools, Shop & Garage Equipment	$ 508,600	10	10.0%	$ 546,031	$ 459,895	$ 86,136	$ 50,860	$ 20,757	$ 550,704	
1945	1945	Measurement & Testing Equipment	$ 87,600	10	10.0%	$ 151,616	$ 135,069	$ 16,547	$ 8,760	$ 5,348	$ 150,648	
1950	1950	Power Operated Equipment	$ -	10	10.0%	$ 1,579	$ -	$ 1,579	$ -	$ -	$ 1,579	
1955	1955	Communications Equipment	$ 5,000	10	10.0%	$ 191,907	$ 148,682	$ 43,225	$ 500	$ 8,648	$ 183,509	
1955		Communications Equipment (SM)			0.0%			$ -	$ -		$ -	
1960	1960	Miscellaneous Equipment			0.0%	$ -		$ -	$ -		$ -	
1970	1970	Load Management Controls	$ -	8	12.5%	$ 35,146	$ 5,431	$ 29,715	$ -	$ 5,926	$ 29,220	
1975		Load Management Controls Utility Premises										
1980	1981	System Supervisor Equipment	$ -	15	6.7%	$ 84,316	$ 79,820	$ 4,496	$ -	$ 1,865	$ 82,451	
1980	1982	System Supervisor Equipment	$ -	15	6.7%	$ 53,344	$ 50,286	$ 3,058	$ -	$ 6,248	$ 47,096	
1985	1985	Miscellaneous Fixed Assets	$ -	25	4.0%	$ (1,581,775)	$ (1,607,580)	$ 25,805	$ -		$ (1,581,775)	
1990		Other Tangible Property										
1996	1996	Hydro One S/S Contribution	$ -	25	4.0%	$ 358,291	$ 357,384	$ 907	$ -		$ 358,291	
1609	1609	Hydro One Contribution	$ -	16	6.3%	$ 776,240	$ 818,588	$ (42,347)	$ -		$ 776,240	
2005	2005	Property Under Finance Leases	$ -	3	33.3%	$ 300,000	$ 300,000	$ -	$ -		$ 300,000	
2440	2440	Less Capital Contributions 2011 & future yrs	$ 4,677,000	25	4.0%	$ 1,467,263	$ 1,016,000	$ 451,263	$ 187,080		$ 1,560,803	c
		Total	**$ 47,426,114**			**$ 25,711,093**	**$ 24,161,257**	**$ 1,549,836**	**$ 1,714,262**	**$ 2,632,078**	**$ 23,936,145**	

Variances **a/b** Actual depreciation is calculated using a range of useful ives
a/b/c Actual depreciation is not subject to the half year rule

Notes:

1 Board po icy of the "half-year" rule - the applicant must ensure that additions in the year attract a half-year depreciation expense in the first year. Deviations from this standard practice must

2 The applicant must provide an explanation of material variances in evidence

3 The applicant should ensure that the years for new additions of assets are the asset useful lives determined by management in accordance with IFRS.

4 A recalculation should be performed to determine the average remaining ife of opening balance of assets (i.e. excluding 2011 additions) under IFRS. For example, Asset A had a useful ife of 20 years under CGAAP. On January 1, 2011, the date of transition, Asset A was 3 years depreciated. As a result, Asset A would have a remaining service life of 17 years (20 years less 3 years) under CGAAP as of January 1, 2011. Due to the transition to IFRS, management re-assessed the asset useful lives under IFRS principles and concluded that the revised useful ife of

5 NBV must exclude assets still on the books but which have been fully amortized or depreciated.

6 This column refers to the calculated full year depreciation but excludes the depreciation expense on assets fully depreciated during the year. This column is used for the purpose of

General: **Applicants must provide a breakdown of depreciation and amortization expense in the above format for all relevant accounts. Asset Retirement Obligations (AROs), depreciation and accretion expense should be disclosed separately consistent with the Notes of historical Audited Financial Statements.**

Table 4-87 – Appendix 2-CE– 2018 MIFRS Test Year Depreciation and Amortization Expense

Account		Description	Additions	Years (new additions only)	Depreciation Rate on New Additions	2018 Depreciation Expense [1]	2018 Depreciation Expense per Appendix 2-BA Fixed Assets	Variance [2]	Depreciation Expense on 2018 Full Year Additions	Less Depreciation Expense on Assets Fully Depreciated during the year (o)	2018 Full Year Depreciation [3]	
USoA	Horizon Comp-onents		(d)	(f)	(g) = 1 / (f)	(h)=2017 Full Year Depreciation + ((d)*0.5)/(f)	(l)	(m) = (h) - (l)	(n)=((d))/(f)		(p) = 2017 Full Year Depreciation + (n) - (o)	
1611	1611	Computer Software	$ 1,664,500	3	33.3%	$ 1,933,232	$ 1,044,342	$ 888,891	$ 554,833	$ 799,519	$ 1,411,130	a
1612	1612	Land Rights	$ -	50	2.0%	$ 3,339	$ 3,337	$ 2	$ -		$ 3,339	
1805	1805	Land	$ -	-	0.0%	$ -	$ -	$ -	$ -		$ -	
1808	1808	Buildings & Fixtures	$ -	40	2.5%	$ 54,611	$ 41,888	$ 12,723	$ -	$ 1,481	$ 53,130	
1810	1810	Leasehold Improvements		5	20.0%	$ -		$ -	$ -		$ -	
1815	1815	Transformer Station Equipment >50 kV			0.0%	$ -		$ -	$ -		$ -	
1820		Distribution Station Equipment <50 kV			0.0%	$ -		$ -	$ -		$ -	
1820	1821	Distribution Station Equipment	$ -	40	2.5%	$ 35,314	$ 35,310	$ 4	$ -		$ 35,314	
1820	1822	Distribution Station Equipment	$ 929,783	40	2.5%	$ 251,272	$ 239,513	$ 11,759	$ 23,245		$ 262,894	
1820	1823	Distribution Station Equipment	$ -	40	2.5%	$ 118,427	$ 115,651	$ 2,776	$ -		$ 118,427	
1825	1825	Storage Battery Equipment			0.0%	$ -		$ -	$ -		$ -	
1830		Poles, Towers & Fixtures			0.0%	$ -		$ -	$ -		$ -	
1830	1831	Poles, Towers & Fixtures- concrete	$ 7,253,975	50	2.0%	$ 960,884	$ 980,230	$ (19,347)	$ 145,079		$ 1,033,424	
1830	1832	Poles, Towers & Fixtures-wood	$ 4,651,395	40	2.5%	$ 1,912,037	$ 1,793,727	$ 118,310	$ 116,285		$ 1,970,180	
1835		Overhead Conductors & Devices			0.0%	$ -		$ -	$ -		$ -	
1835	1836	Overhead Conductors & Devices-secondary service	$ 3,245,919	50	2.0%	$ 670,361	$ 624,446	$ 45,916	$ 64,918		$ 702,821	
1835	1837	Overhead Conductors & Devices- switches	$ 2,511,468	40	2.5%	$ 856,110	$ 824,264	$ 31,846	$ 62,787		$ 887,504	
1835	1838	Overhead Conductors & Devices-capicitor banks	$ (10,129)	30	3.3%	$ 3,192	$ 2,165	$ 1,028	$ (338)		$ 3,024	
1835	1839	Overhead Conductors & Devices- primary	$ 1,230,269	50	2.0%	$ 445,668	$ 415,115	$ 30,553	$ 24,605		$ 457,971	
1840	1843	Underground Conduit	$ 5,333,288	40	2.5%	$ 2,768,837	$ 2,710,346	$ 58,490	$ 133,332		$ 2,835,503	
1845		Underground Conductors & Devices			0.0%	$ -		$ -	$ -		$ -	
1845	1844	Underground Conduit primary PILC	$ 432,840	70	1.4%	$ 539,731	$ 557,725	$ (17,994)	$ 6,183		$ 542,823	
1845	1846	Underground conductors and devices primary XLPE	$ 4,389,826	40	2.5%	$ 1,015,791	$ 989,867	$ 25,924	$ 109,746		$ 1,070,664	
1845	1847	Underground conductors and devices secondary and service in duct	$ 131,588	40	2.5%	$ 501,313	$ 434,717	$ 66,596	$ 3,290		$ 502,958	
1845	1848	Underground conductors and devices secondary and service direct buried	$ -	25	4.0%	$ 206,309	$ 184,111	$ 22,199	$ -	$ 10,303	$ 196,006	
1845	1849	Underground conductors and devices secondary and service in duct	$ 2,829,869	25	4.0%	$ 800,635	$ 792,417	$ 8,218	$ 113,195	$ 14,878	$ 842,354	
1850		Line Transformers			0.0%	$ -		$ -	$ -		$ -	
1850	1851	Line transformers - Overhead	$ 4,686,050	40	2.5%	$ 1,634,323	$ 1,566,851	$ 67,472	$ 117,151		$ 1,692,899	
1850	1852	Line transformers - Underground	$ 4,321,054	30	3.3%	$ 1,924,544	$ 1,840,536	$ 84,008	$ 144,035	$ 8,596	$ 1,987,966	
1855	1856	Services	$ 4,032,234	50	2.0%	$ 721,642	$ 731,816	$ (10,174)	$ 80,645		$ 761,965	
1860	1860	Meters	$ 1,356,174	25	4.0%	$ 1,709,046	$ 1,698,312	$ 10,734	$ 54,247	$ 31,861	$ 1,704,309	
1860	1862	Smart Meters - Residential	$ -	15	6.7%	$ 1,348,147	$ 1,551,831	$ (203,684)	$ -		$ 1,348,147	
1860	1863	Smart Meters - Commercial	$ 707,000	15	6.7%	$ 645,439	$ 610,462	$ 34,977	$ 47,133		$ 669,006	
1905	1905	Land	$ -		0.0%	$ -	$ -	$ -	$ -		$ -	
1908	1908	Buildings & Fixtures	$ 1,595,000	30	3.3%	$ 1,230,047	$ 1,070,801	$ 159,245	$ 53,167	$ 1	$ 1,256,629	
1910	1910	Leasehold Improvements	$ -	5	20.0%	$ -	$ -	$ -	$ -		$ -	
1915	1915	Office Furniture & Equipment (10 yrs)	$ 73,000	10	10.0%	$ 379,246	$ 377,449	$ 1,797	$ 7,300	$ 7,101	$ 375,795	
1915		Office Furniture & Equipment (5 yrs)										
1920	1920	Computer Equipment - Hardware	$ 868,200	5	20.0%	$ 1,376,609	$ 1,514,620	$ (138,011)	$ 173,640	$ 278,020	$ 1,185,410	
1930	1930	Transportation Equipment	$ 785,000	8	12.5%	$ 1,570,988	$ 1,046,634	$ 524,354	$ 98,125	$ 172,446	$ 1,447,605	b
1935	1935	Stores Equipment	$ -	10	10.0%	$ 48,191	$ 45,278	$ 2,913	$ -	$ 19,993	$ 28,198	
1940	1940	Tools, Shop & Garage Equipment	$ 530,600	10	10.0%	$ 577,234	$ 478,845	$ 98,390	$ 53,060	$ 12,311	$ 591,453	
1945	1945	Measurement & Testing Equipment	$ 89,600	10	10.0%	$ 155,128	$ 136,919	$ 18,209	$ 8,960	$ 1,966	$ 157,642	
1950	1950	Power Operated Equipment	$ -	10	10.0%	$ 1,579	$ -	$ 1,579	$ -	$ -	$ 1,579	
1955	1955	Communications Equipment	$ 5,000	10	10.0%	$ 183,759	$ 136,552	$ 47,206	$ 500	$ 1,114	$ 182,895	
1955		Communications Equipment (SM)			0.0%	$ -		$ -	$ -		$ -	
1960	1960	Miscellaneous Equipment			0.0%	$ -		$ -	$ -		$ -	
1970	1970	Load Management Controls	$ -	8	12.5%	$ 29,220	$ -	$ 29,220	$ -	$ -	$ 29,220	
1975		Load Management Controls Utility Premises										
1980	1981	System Supervisor Equipment	$ -	15	6.7%	$ 82,451	$ 77,437	$ 5,014	$ -	$ 126	$ 82,325	
1980	1982	System Supervisor Equipment	$ -	15	6.7%	$ 47,096	$ 43,285	$ 3,811	$ -	$ 7,767	$ 39,329	
1985	1985	Miscellaneous Fixed Assets	$ -	25	4.0%	$ (1,581,775)	$ (1,607,580)	$ 25,805	$ -		$ (1,581,775)	
1990		Other Tangible Property										
1996	1996	Hydro One S/S Contribution	$ -	25	4.0%	$ 358,291	$ 357,384	$ 907	$ -		$ 358,291	
1609	1609	Hydro One Contribution	$ -	16	6.3%	$ 776,240	$ 818,588	$ (42,347)	$ -		$ 776,240	
2005	2005	Property Under Finance Leases	$ -	3	33.3%	$ 300,000	$ 300,000	$ -	$ -	$ 300,000	$ -	
2440	2440	Less Capital Contributions 2011 & future yrs	$ 4,701,000	25	4.0%	$ 1,654,823	$ 1,148,000	$ 506,823	$ 188,040		$ 1,748,843	c
		Total	**$ 48,942,504**			**$ 24,939,687**	**$ 23,437,190**	**$ 1,502,497**	**$ 2,007,084**	**$ 1,667,482**	**$ 24,275,747**	

Variances **a/b** Actual depreciation is calculated using a range of useful lives
a/b/c Actual depreciation is not subject to the half year rule

Notes:

1 Board policy of the "half-year" rule - the applicant must ensure that additions in the year attract a half-year depreciation expense in the first year. Deviations from this standard practice must be
2 The applicant must provide an explanation of material variances in evidence
3 The applicant should ensure that the years for new additions of assets are the asset useful lives determined by management in accordance with IFRS.
4 A recalculation should be performed to determine the average remaining ife of opening balance of assets (i.e. excluding 2011 additions) under IFRS. For example, Asset A had a useful life of 20 years under CGAAP. On January 1, 2011, the date of transition, Asset A was 3 years depreciated. As a result, Asset A would have a remaining service ife of 17 years (20 years less 3 years) under CGAAP as of January 1, 2011. Due to the transition to IFRS, management re-assessed the asset useful ives under IFRS principles and concluded that the revised useful life of
5 NBV must exclude assets still on the books but which have been fully amortized or depreciated.
6 This column refers to the calculated ful year depreciation but excludes the depreciation expense on assets fully depreciated during the year. This column is used for the purpose of calculating

General:

Applicants must provide a breakdown of depreciation and amortization expense in the above format for all relevant accounts. Asset Retirement Obligations (AROs), depreciation and accretion expense should be disclosed separately consistent with the Notes of

Table 4-88 – Appendix 2-CE – 2019 MIFRS Test Year Depreciation and Amortization Expense

Account		Description	Additions	Years (new additions only)	Depreciation Rate on New Additions	2019 Depreciation Expense [1]	2019 Depreciation Expense per Appendix 2-BA Fixed Assets	Variance [2]	
USoA	Horizon Comp-onents		(d)	(f)	(g) = 1 / (f)	(h)=2018 Full Year Depreciation + ((d)*0.5)/(f)	(l)	(m) = (h) - (l)	
1611	1611	Computer Software	$ 689,500	3	33.3%	$ 1,526,047	$ 972,973	$ 553,074	a
1612	1612	Land Rights	$ -	50	2.0%	$ 3,339	$ 3,337	$ 2	
1805	1805	Land	$ -	-	0.0%	$ -	$ -	$ -	
1808	1808	Buildings & Fixtures	$ -	40	2.5%	$ 53,130	$ 34,745	$ 18,385	
1810	1810	Leasehold Improvements		5	20.0%	$ -		$ -	
1815	1815	Transformer Station Equipment >50 kV			0.0%	$ -		$ -	
1820		Distribution Station Equipment <50 kV			0.0%	$ -		$ -	
1820	1821	Distribution Station Equipment	$ -	40	2.5%	$ 35,314	$ 35,310	$ 4	
1820	1822	Distribution Station Equipment	$ 950,986	40	2.5%	$ 274,782	$ 263,044	$ 11,737	
1820	1823	Distribution Station Equipment	$ -	40	2.5%	$ 118,427	$ 115,651	$ 2,776	
1825	1825	Storage Battery Equipment			0.0%	$ -		$ -	
1830		Poles, Towers & Fixtures			0.0%	$ -		$ -	
1830	1831	Poles, Towers & Fixtures- concrete	$ 7,444,145	50	2.0%	$ 1,107,865	$ 1,140,015	$ (32,150)	
1830	1832	Poles, Towers & Fixtures-wood	$ 5,137,152	40	2.5%	$ 2,034,394	$ 1,951,320	$ 83,074	
1835		Overhead Conductors & Devices			0.0%	$ -		$ -	
1835	1836	Overhead Conductors & Devices-secondary service	$ 2,996,776	50	2.0%	$ 732,788	$ 688,411	$ 44,378	
1835	1837	Overhead Conductors & Devices- switches	$ 2,634,559	40	2.5%	$ 920,436	$ 891,668	$ 28,767	
1835	1838	Overhead Conductors & Devices-capicitor banks	$ (4,198)	30	3.3%	$ 2,954	$ 2,793	$ 161	
1835	1839	Overhead Conductors & Devices- primary	$ 1,464,376	50	2.0%	$ 472,615	$ 439,465	$ 33,150	
1840	1843	Underground Conduit	$ 5,699,675	40	2.5%	$ 2,906,749	$ 2,624,544	$ 282,205	
1845		Underground Conductors & Devices			0.0%	$ -		$ -	
1845	1844	Underground Conduit primary PILC	$ 605,897	70	1.4%	$ 547,151	$ 569,455	$ (22,304)	
1845	1846	Underground conductors and devices primary XLPE	$ 3,448,749	40	2.5%	$ 1,113,773	$ 1,070,992	$ 42,782	
1845	1847	Underground conductors and devices secondary and service in duct	$ 1,214,222	40	2.5%	$ 518,136	$ 476,871	$ 41,265	
1845	1848	Underground conductors and devices secondary and service direct buried	$ -	25	4.0%	$ 196,006	$ 172,747	$ 23,259	
1845	1849	Underground conductors and devices secondary and service in duct	$ 2,300,964	25	4.0%	$ 888,374	$ 885,882	$ 2,492	
1850		Line Transformers			0.0%	$ -		$ -	
1850	1851	Line transformers - Overhead	$ 4,946,468	40	2.5%	$ 1,754,729	$ 1,688,264	$ 66,465	
1850	1852	Line transformers - Underground	$ 4,676,984	30	3.3%	$ 2,065,915	$ 1,991,855	$ 74,061	
1855	1856	Services	$ 4,186,649	50	2.0%	$ 803,831	$ 820,427	$ (16,596)	
1860	1860	Meters	$ 1,356,174	25	4.0%	$ 1,731,432	$ 1,727,369	$ 4,063	
1860	1862	Smart Meters - Residential	$ -	15	6.7%	$ 1,348,147	$ 1,549,159	$ (201,012)	
1860	1863	Smart Meters - Commercial	$ 707,000	15	6.7%	$ 692,572	$ 663,751	$ 28,821	
1905	1905	Land	$ -		0.0%	$ -	$ -	$ -	
1908	1908	Buildings & Fixtures	$ 1,595,000	30	3.3%	$ 1,283,212	$ 1,123,968	$ 159,244	
1910	1910	Leasehold Improvements	$ -	5	20.0%	$ -	$ -	$ -	
1915	1915	Office Furniture & Equipment (10 yrs)	$ 73,000	10	10.0%	$ 379,445	$ 365,378	$ 14,067	
1915		Office Furniture & Equipment (5 yrs)							
1920	1920	Computer Equipment - Hardware	$ 1,518,200	5	20.0%	$ 1,337,230	$ 1,177,170	$ 160,060	
1930	1930	Transportation Equipment	$ 785,000	8	12.5%	$ 1,496,667	$ 934,791	$ 561,877	b
1935	1935	Stores Equipment	$ -	10	10.0%	$ 28,198	$ 17,738	$ 10,460	
1940	1940	Tools, Shop & Garage Equipment	$ 580,600	10	10.0%	$ 620,483	$ 506,399	$ 114,085	
1945	1945	Measurement & Testing Equipment	$ 89,600	10	10.0%	$ 162,122	$ 137,911	$ 24,211	
1950	1950	Power Operated Equipment	$ -	10	10.0%	$ 1,579	$ -	$ 1,579	
1955	1955	Communications Equipment	$ 5,000	10	10.0%	$ 183,145	$ 135,046	$ 48,098	
1955		Communications Equipment (SM)			0.0%	$ -		$ -	
1960	1960	Miscellaneous Equipment			0.0%	$ -		$ -	
1970	1970	Load Management Controls	$ -	8	12.5%	$ 29,220	$ -	$ 29,220	
1975		Load Management Controls Utility Premises							
1980	1981	System Supervisor Equipment	$ -	15	6.7%	$ 82,325	$ 75,864	$ 6,461	
1980	1982	System Supervisor Equipment	$ -	15	6.7%	$ 39,329	$ 35,358	$ 3,971	
1985	1985	Miscellaneous Fixed Assets	$ -	25	4.0%	$ (1,581,775)	$ (1,607,580)	$ 25,805	
1990		Other Tangible Property							
1996	1996	Hydro One S/S Contribution	$ -	25	4.0%	$ 358,291	$ 357,384	$ 907	
1609	1609	Hydro One Contribution	$ -	16	6.3%	$ 776,240	$ 818,588	$ (42,347)	
2005	2005	Property Under Finance Leases	$ 900,000	3	33.3%	$ 150,000	$ 300,000	$ (150,000)	
2440	2440	Less Capital Contributions 2011 & future yrs	$ 4,730,000	25	4.0%	$ 1,843,443	$ 1,281,000	$ 562,443	c
		Total	**$ 51,272,477**		**315.0%**	**$ 25,351,174**	**$ 23,877,061**	**$ 1,474,112**	

Variances **a/b** Actual depreciation is calculated using a range of useful ives
a/b/c Actual depreciation is not subject to the half year rule

Notes:

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3 The applicant should ensure that the years for new additions of assets are the asset useful lives determined by management in accordance with IFRS.

4 A recalculation should be performed to determine the average remaining life of opening balance of assets (i.e. excluding 2011 additions) under IFRS. For example, Asset A had a useful ife of 20 years under CGAAP. On January 1, 2011, the date of transition, Asset A was 3 years depreciated. As a result, Asset A would have a remaining service life of 17 years (20 years less 3 years) under CGAAP as of January 1, 2011. Due to the transition to IFRS, management re-assessed the asset useful lives under IFRS principles and concluded that the revised useful life of Asset A is now 30 years. Therefore, the average

5 NBV must exclude assets still on the books but which have been fully amortized or depreciated.

6 This column refers to the calculated fu l year depreciation but excludes the depreciation expense on assets fully depreciated during the year. This column is used for the purpose of calculating depreciation

APPENDIX 4-9 – USEFUL LIFE OF ASSETS

Horizon Utilities Corporation
Useful Life of Assets

Kinectrics Inc. Report No: K-418025-RA-0001-R002

May 3, 2010

Confidential & Proprietary Information
Contents of this report shall not be disclosed
without authority of client.
Kinectrics Inc.
800 Kipling Avenue
Toronto, ON
M8Z 6C4 Canada
www.kinectrics.com

DISCLAIMER

Kinectrics Inc. has prepared this report in accordance with, and subject to, the terms and conditions of the agreement between Kinectrics Inc. and Horizon Utilities Corporation.

@Kinectrics Inc., 2010.

Horizon Utilities Corporation
Useful Life of Assets

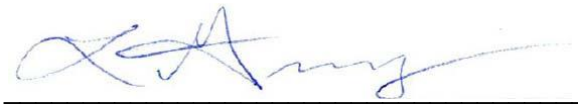
Kinectrics Inc. Report No: K-418025-RA-0001-R002

May 3, 2010

Prepared by:



Fan Wang
Engineer
Distribution and Asset Management Department



Leslie Greey
Engineer
Distribution and Asset Management Department

Reviewed by:



Katrina Lotho
Engineer
Distribution and Asset Management Department

Approved by:



Yury Tsimberg
Director – Asset Management
Transmission and Distribution Technologies

Dated: May 3, 2010

To: Horizon Utilities Corporation
55 John Street North
Hamilton, ON L8R 3M8

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1 Executive Summary

1.1 Introduction

Ontario's Local Distribution Companies (LDCs) are switching to the International Financial Reporting Standards (IFRS) methodology. One aspect of this methodology is that they try to align the time that their assets are amortized over with the assets actual useful life. It is therefore important for LDCs to properly account for the useful lives of assets and their components in order to facilitate conversion to IFRS.

This is not a trivial task since LDCs typically own and operate a large number of assets in different asset categories, with different degradation mechanisms and useful life range. Furthermore, some of the assets are comprised of several components with useful lives different from that of the "parent" asset

This report reviews the useful lives of the Horizon Utilities Corporation's assets, and respectful components. The useful life values are compiled from several different sources, namely, industrial statistics, research studies and reports (either by individuals or working groups such as CIGRE), and Kinectrics experience. Useful lives of assets are dependent on a number of utilization factors, namely:

- Mechanical stress
- Electrical loading
- Environmental conditions
- Operating practices

It is worth noting that the useful lives of the assets do not typically follow standard distribution curves as they are derived from empirical statistics. Additionally, in Horizon's case, proximity of its facilities to a number of heavy industry plants and exposure to the Lake Ontario environmental conditions is expected to be a significant contributor to shortening the useful life of some of the assets.

1.2 Project Scope

This report provides an in-depth evaluation of the useful lives of the assets that are owned and operated by the Horizon. The typical parent system(s) to which the asset belongs is provided and these "parent" systems are: *Overhead Lines* (OH), *Municipal Stations* (MS), *Underground Systems* (UG) and *Monitoring and Control System* (S). The long term degradation mechanism is described for each asset category and when applicable assets are sub-categorized into components. Components are included when their cost is material enough and, at the same time, could be replaced without a need to replace the whole asset. For each asset or component, the following information is presented:

- End of life criteria
- Useful Life Range
- Typical Life
- Typical time-based maintenance intervals, if applicable
- Potential for environmental conditions impact

Section 1.4 provides definitions for the above terms, as well as descriptions of typical distribution system assets and asset components.

1.3 Project Execution Process

The project execution process entailed a number of steps to ensure that the industry-based information compiled by Kinectrics not only includes all the relevant assets and components used by Horizon, but also that it addresses the specific needs related to the IFRS review. The procedure is as follows:

- The initial list of assets and components was produced by the Horizon to Kinectrics for review.
- Upon review of the initial list, Kinectrics generated an intermediate asset list that had a somewhat different background, granularity, and componentization, based on industry practices and Kinectrics experience.
- The intermediate list was reviewed jointly by Horizon and Kinectrics to derive a "final" list.
- For each asset and component in the "final" list, Kinectrics then gathered the information described in Section 1.2 of this report. A Draft Report that summarized the findings and provided detail descriptions, including degradation mechanisms and applicable assumptions for each asset, was then produced.
- This Draft Report was reviewed by Horizon and their feedback was incorporated in the Final Report.

1.4 Definition of Terms

1.4.1 *Typical Distribution System Asset*

Typical distribution system assets include transformers, breakers, switches, underground cables, poles, vaults, cable chambers, etc. Some of the assets, such as power transformers, are rather complex systems and include a number of components.

1.4.2 *Component*

For the purposes of this study, component refers to the sub-category of an asset that meets both of the following criteria:

- Its replacement value is significant enough, relative to the asset value.
- A need to replace the component does not necessarily warrant replacing the entire asset.

An *asset* may be comprised of more than one component, each with an independent failure mode and degradation mechanism that may result in a substantially different

useful life than the overall asset. A component may also have an independent maintenance and replacement schedule.

1.4.3 *Useful Life*

Useful Life refers to an estimated range of years during which an electric utility asset or its component is expected to operate as designed, without experiencing major functional degradation that requires major refurbishment or replacement.

In this report, the useful life range, in years, is presented in terms of a minimum, maximum, and typical value. An overwhelming number of units within a population will perform their intended design functions for a period of time greater than or equal to the *minimum* life. Conversely, an overwhelming number of units will cease to perform as designed at or beyond the *maximum* life. A majority of the population will have useful lives of around the *typical* life. For example, consider an asset class with a useful life range of 20 to 40 years, and a typical life of 30 years. An overwhelming majority of the units within this class will perform as required for at least 20 years. Very little number units will operate beyond 40 years. Finally, a majority of the units within the population will operate for approximately 30 years. Note that an asset category can have a typical life that is equal to either the maximum or minimum life. This is simply an indication that the majority of the units within a population will be operational for either the minimum or maximum years; i.e. the statistical data is skewed towards either the maximum or minimum values. The range in useful lives reflects differences in various utilization factors including mechanical stress, electrical loading, environmental conditions and operating practices.

1.4.4 *Typical Life*

Refers to the typical age at which the asset or component fails. This may vary depending on a utility's maintenance practices, environmental conditions, and operational stresses.

1.4.5 *Typical Time-based Maintenance Intervals*

For the purposes of this report, time-based maintenance refers to either *Routine Inspections* (RI) or *Routine Testing/Maintenance* (RTM). Other maintenance techniques such as Condition Based Maintenance, Reliability Centered Maintenance, and more intrusive periodic overhauls are very much dependent on individual utility's maintenance strategy and practices and, as such, could not be included in compiling industry-wide typical values.

Typical time-based maintenance intervals will be given only for assets that are proactively maintained, i.e. assets for which useful life is affected by regular planned maintenance. This excludes assets that are not routinely maintained.

1.4.6 *Impact of Environmental Conditions*

Environmental conditions include pollution, salt, acid rain, humidity, extreme temperature, and animals that are prevalent and cause long-term degradation over a period of time.

1.5 Summary of Findings

Table 1-1 summarizes useful and typical lives, time based maintenance schedules, and impact of stress for Horizon's assets.

Table 1-1 Summary of Componentized Assets

Report Section #	Parent*	Asset Category	Componentization *(sub category)*		Useful Life *(years)*			Maint. Type**	Time Based Maint. Schedule (*years*)
					Minimum	Typical	Maximum		
2	OH	Fully Dressed Poles ρ	Wood		40	44	50	RI	15
			Concrete		50	60	60		
			Steel		60	60	80		
3	OH	Conductors ρ	Primary	ACSR	50	60	77	N/A	N/A
				AAC	50	60	77		
				Copper	50	60	77		
				AASC	50	60	77		
			Secondary & service lines	ACSR	50	60	77		
				Copper	50	60	77		
				Copper insulated	50	60	77		
4	OH	Distribution Transformers ρ	Overhead		30	40	40	N/A	N/A
5	OH	Switches ρ	Switches	Manually/Remotely Operated	30	50	60	RTM	2
			Motor	Remotely Operated	15	20	20		
			RTU	Remotely Operated	15	20	30		

* OH=Overhead Lines MS=Municipal Stations UG=Underground Systems S=Monitoring and Control Systems
** RI=Routine Inspection RTM=Routine Testing/Maintenance
ρ aspects whose useful life is affected by environment

Report Section #	Parent*	Asset Category	Componentization *(sub category)*		Useful Life *(years)*			Maint. Type**	Time Based Maint. Schedule (*years*)
					Minimum	Typical	Maximum		
6	OH	Fuse Cutouts			30	40	60	N/A	N/A
7	OH	Capacitor Bank ρ	Shunt Type		25	30	40	N/A	N/A
8	MS	Power Transformers ρ	Winding	Outdoor transformers	32	45	55	RTM	2
				Indoor transformers	32	45	55		
9	MS	Outdoor Station bus and structure ρ			35	50	100	RTM	3
10	MS	Switchgear	Air-insulated metalclad type		30	40	50	RTM	6
11	MS	Breakers	Indoor	Oil	30	42	60	RTM	3
				Air magnetic	25	40	60		
				Air blast	30	40	50		
			Outdoor ρ	Oil	30	42	60		
				Air magnetic	25	40	60		
				Air blast	30	40	50		
12	MS	Reclosers ρ	Outdoor	Oil	30	42	60	RTM	10
13	MS	Civil ρ	Building	Brick structure	30	50	80	RI	1
			Roof		15	20	20		
14	MS	Protection and Control Relays	Electromechanical		20	30	50	N/A	N/A
			Digital		10	15	15		

* OH=Overhead Lines MS=Municipal Stations UG=Underground Systems S=Monitoring and Control Systems
** RI=Routine Inspection RTM=Routine Testing/Maintenance
ρ aspects whose useful life is affected by environment

Report Section #	Parent*	Asset Category	Componentization *(sub category)*		Useful Life *(years)* Minimum	Typical	Maximum	Maint. Type**	Time Based Maint. Schedule
15	UG	Cables	Primary	Non-TR XLPE in duct	20	20	25	N/A	N/A
				Non-TR XLPE DB	10	15	20		
				TR-XLPE in duct	40	40	60		
				TR-XLPE DB	20	25	25		
				PILC	70	75	80		
			Secondary & service lines	Copper directly buried	20	25	25		
				Aluminum directly buried	20	25	25		
				Copper in duct	40	40	60		
				Aluminum in duct	40	40	60		
16	UG	Distribution Transformers	Pad mounted & Vault		30	40	40	N/A	N/A
17	UG	Underground Switches	SF6 type		20	20	40	N/A	N/A
18	UG	Pad mounted switchgear	Air insulated		20	20	40	RI	3
			SF6 insulated. vacuum interrupter		30	30	50		
			SF6 insulated SF6 interrupter		30	30	50		
19	UG	Utility chamber/pad			50	60	80	RTM	3
20	UG	Ducts	Duct bank		30	50	80	N/A	N/A
			Duct - PVC		30	50	75		
			Duct - Clay		60	80	100		
			Duct - FRE		30	50	100		

* OH=Overhead Lines MS=Municipal Stations UG=Underground Systems S=Monitoring and Control Systems
** RI=Routine Inspection RTM=Routine Testing/Maintenance
ρ aspects whose useful life is affected by environment

Report Section #	Parent*	Asset Category	Componentization *(sub category)*		Useful Life *(years)*			Maint. Type**	Time Based Maint. Schedule (*years*)
					Minimum	Typical	Maximum		
21	UG	Junction/switching boxes			25	40	50	N/A	N/A
22	S	Metering	Meters	Smart	15	15	20	N/A	N/A
				Residential	20	30	45		
				Interval/Commercial	20	30	60		
				Wholesale/Industrial	20	30	60		
			PTs ρ		30	45	50		
			CTs ρ		30	45	50		
23	S	Remote SCADA			15	20	30	N/A	N/A

* OH=Overhead Lines MS=Municipal Stations UG=Underground Systems S=Monitoring and Control Systems
** RI=Routine Inspection RTM=Routine Testing/Maintenance
ρ aspects whose useful life is affected by environment

2 Fully Dressed Poles

The asset referred to in this category is the fully dressed pole. This includes three types of poles: wood, concrete and steel as well as their components: the pole, cross arm, bracket, insulator, and anchor.

2.1 Degradation Mechanism

The most significant component in this asset class is the pole itself. Each of the three types of poles has a different degradation mechanism.

The end of life criteria for wood poles includes loss of strength, functionality, or safety (typically due to rot, decay, or physical damage). As wood is a natural material the degradation processes are somewhat different from those which affect other physical assets on the electricity distribution systems. The critical processes are biological, involving naturally occurring fungi that attack and degrade wood, resulting in decay. The nature and severity of the degradation depends both on the type of wood and the environment. Some fungi attack the external surfaces of the pole and some the internal heartwood. Therefore, the mode of degradation can be split into either external rot or internal rot. As a structural item the sole concern when assessing the condition for a wood pole is the reduction in mechanical strength due to degradation or damage.

Concrete poles age in the same manner as any other concrete structure. Any moisture ingress inside the concrete pores would result in freezing during the winter and damage to concrete surface. Road salt spray can further accelerate the degradation process and lead to concrete spalling. Typical concrete mixes employ a washed-gravel aggregate and have extremely high resistance to downward compressive stresses (about 3,000 lb/sq in), however, any appreciable stretching or bending (tension) will break the microscopic rigid lattice, resulting in cracking and separation of the concrete. The spun concrete process used in manufacturing poles prevents moisture entrapment inside the pores. Spun, pre-stressed concrete is particularly resistant to corrosion problems common in a water-and-soil environment.

Degradation or reduction in strength of steel structures can result from corrosion, structural fatigue, or gradual deterioration of foundation components. Also, steel poles are subject to environmental damage. Wind causes fatigue to all parts of the structure, including the anchor bolts and base-plate weld and vertical welds along the height of the structure. Rain, snow, and moisture from condensation result in corrosion, particularly to slip joints and in the vicinity of welded connections.

2.2 System Hierarchy

Fully dressed poles are considered a part of the Overhead Lines asset grouping.

2.3 Useful Life and Typical Life

The overall useful life of wood poles is in the range of 40 to 50 years; the typical life is 44 years.

The useful life range of concrete poles component is 50 to 60 years; the typical life is 60 years.

The useful life of steel poles is in the range of 60 to 80 years; the typical life is 60 years.

2.4 Time Based Maintenance Intervals

A typical routine inspection interval for this asset is every 15 years.

3 Conductors

Overhead conductors along with structures that support them constitute overhead lines or feeders that distribute electrical energy to Municipal Stations or from Municipal Stations via distribution transformers to the end users. These conductors are sized to carry a specified maximum current and to meet other design criteria, i.e. mechanical loading. This report focuses on two categories of conductors (Primary and Secondary/Service Lines).

The overhead conductors typically used by Horizon are Aluminum Conductor Steel Reinforced ACSR), All Aluminum Conductor AAC, All Aluminum Stranded Conductor ASC, Copper, and Copper with insulation.

3.1 Degradation Mechanism

To function properly, conductors must retain both their conductive properties and mechanical (i.e. tensile) strength. Aluminum conductors have three primary modes of degradation: corrosion, fatigue and creep. The rate of each degradation mode depends on several factors, including the size and construction of the conductor, as well as environmental and operating conditions. Most utilities find that corrosion and fatigue present the most critical forms of degradation.

Generally, corrosion represents the most critical life-limiting factor for aluminum-based conductors. Visual inspection cannot detect corrosion readily in conductors. Environmental conditions affect degradation rates from corrosion. Both aluminum and zinc-coated steel core conductors are particularly susceptible to corrosion from chlorine-based pollutants, even in low concentrations.

Fatigue degradation presents greater detection and assessment challenges than corrosion degradation. In extreme circumstances, under high tensions or inappropriate vibration or galloping control, fatigue can occur in very short timeframes. However, under normal operating conditions, with proper design and application of vibration control, fatigue degradation rates are relatively slow. Under normal circumstances, widespread fatigue degradation is not commonly seen in conductors less than 70 years of age. Also, in many cases detectable indications of fatigue may only exist during the last 10% of a conductor's life.

In designing transmission lines, engineers ensure that conductors receive no more than 60% of their rated tensile strength (RTS) during heaviest anticipated weather loads. The tensile strength of conductors gradually decreases over time. When conductors experience unexpectedly large mechanical loads and tensions beyond 50% of their RTS, they begin to undergo permanent stretching with noticeable increases in sagging.

Overloading lines beyond their thermal capacity causes elevated operating temperatures. When operating at elevated temperatures, aluminum conductors begin to anneal and lose tensile strength. Each elevated temperature event adds further damage to the conductor. After a loss of 10% of a conductor's RTS, significant sag occurs, requiring either resagging or replacement of the conductor.

Phase to phase power arcs can result from conductor galloping during severe storm events. This can cause localized burning and melting of a conductor's aluminum

strands, reducing strength at those sites and potentially leading to conductor failures. Visual inspection readily detects arcing damage.

Other forms of conductor damage include:

- Broken strands (i.e., outer and inners)
- Strand abrasion
- Elongation (i.e., change in sags and tensions)
- Burn damage (i.e., power arc/clashing)
- Birdcaging

3.2 System Hierarchy

The Conductors asset category belongs to the Overhead Lines assets grouping.

3.3 Useful Life and Typical Life

The useful life of conductors is in the range of 50 to 77 years; the typical life is 60 years for all the conductor types.

3.4 Time Based Maintenance Intervals

Overhead conductors are not subject to planned maintenance.

4 Distribution Transformers

Distribution transformers change sub-transmission or primary distribution voltages to 120/240 V or other common voltages for use in residential and commercial applications.

4.1 Degradation Mechanism

It has been demonstrated that the life of the transformer's internal insulation is related to temperature-rise and duration. Therefore, transformer life is affected by electrical loading profiles and length of time in service. Other factors such as mechanical damage, exposure to corrosive salts, and voltage and current surges also have a strong effect. Therefore, a combination of condition, age and load based criteria is commonly used to determine the useful remaining life of distribution transformers.

The impacts of loading profiles, load growth, and ambient temperature on asset condition, loss-of-life, and life expectancy can be assessed using methods outlined in ANSI/IEEE Loading Guides. This also provides an initial baseline for the size of transformer that should be selected for a given number and type of customers to obtain optimal life.

4.2 System Hierarchy

The Distribution Transformer asset category belongs to the Overhead Lines assets grouping.

4.3 Useful Life and Typical Life

The useful life of the pole mounted transformer is in the range of 30 to 40 years, with an average value close to 40 years.

4.4 Time Based Maintenance Intervals

Distribution transformers are not subject to planned maintenance

5 Switches

This asset class consists of overhead line three-phase, gang operated switches. The primary function of switches is to allow for isolation of line sections or equipment for maintenance, safety or other operating requirements.

Line switches consist of mechanically movable copper blades supported on insulators and mounted on metal bases. Since they do not typically need to interrupt short circuit currents, disconnect switches are simple in design relative to circuit breakers. While some categories of the switches are rated for load interruption, others are designed to operate under no load conditions and operate only when the current through the switch is zero. Most distribution line switches are rated 600 A continuous rating. Switches when used in conjunction with cutout fuses provide short circuit interruption rating. Disconnect switches are sometimes provided with padlocks to allow staff to obtain work permit clearance with the switch handle locked in open position.

5.1 Degradation Mechanism

The main degradation processes associated with both manually and remotely operated line switches include the following, with rate and severity depending on operating duties and environment:

- Corrosion of steel hardware or operating rod
- Mechanical deterioration of linkages
- Switch blades falling out of alignment
- Loose connections
- Non functioning padlocks
- Insulators damage
- Missing ground connections
- Missing nameplates for proper identification

The rate and severity of these degradation processes depends on a number of inter-related factors including the operating duties and environment in which the equipment is installed. In most cases, corrosion or rust represents a critical degradation process. The rate of deterioration depends heavily on environmental conditions in which the equipment operates. Corrosion typically occurs around the mechanical linkages of these switches. Corrosion can cause seizing. When lubrication dries out, the switch operating mechanism may seize making the disconnect switch inoperable. In addition, when blades fall out of alignment, excessive arcing may result. While a lesser mode of degradation, air pollution also can affect support insulators. Typically, this occurs in heavy industrial areas or where road salt is used.

5.2 System Hierarchy

The Switches asset category belongs to the Overhead Lines assets grouping.

5.3 Useful Life and Typical Life

The useful life of manually operated switches is in the range of 30 to 60 years; the typical life is 50 years.

The remote operated switch can be componentized into three components:

- Switch
- Motor
- RTU

5.3.1 *Remotely Operated Switch*

The useful life of remote automated switches is in the range of 30 to 60 years; the typical life is 50 years (the same as for Manually Operated Overhead Switch in section 8.3 of this report).

5.3.2 *Motor*

The useful life of a motor is in the range of 15 to 20 years; the typical life is 20 years (the same as for Local Motorized Overhead Switch in section 9.3.2 of this report).

5.3.3 *RTU*

The useful life of an RTU is in the range of 15 to 30 years; the typical life is 20 years.

5.4 Time Based Maintenance Intervals

The typical routine testing/maintenance schedule for switches is two years.

6 Fuse Cutouts

This asset is applied on overhead transformers, capacitors, cables or lines. Fuse Cutouts will interrupt all faults including low current that will melt the fuse link and high rated interrupting current so long as the system is under realistic transient-recovery-voltage conditions.

6.1 Degradation Mechanism

The major degradation of fuse cutouts is on fuse body. There are several degradation modes in practice including the production of carbon from organic materials in the fuse, generation of water vapor to assist current interruption and electrical breakdown in high stress areas of the core.

The production of carbon from organic materials in the fuse body is one degradation mode in practice. This carbon is not produced until a particular body temperature is reached, and the time for this to occur depends on the fuse design. The most critical factors would appear to include the heat generated in the fulgurite, the distance between the fulgurite and the fuse body, the thermal conductivity of the filler material, and the breakdown temperature of the organic material.

For some fuses that generate water vapor to assist current interruption, the water is deposited on the inside surface of the body. Treeing is observed on the surface, ultimately leading to a steady increase in leakage current until failure.

For the fuse cores that contain organic material, hollow core is developed at high temperature due to release of water molecules, resulting in electrical breakdown in high stress areas of the core in certain designs.

6.2 System Hierarchy

Fuse Cutouts asset category belongs to the Overhead Lines assets grouping.

6.3 Useful Life and Typical Life

The useful life of fuse cutouts is in the range of 30 to 60 years; the typical life is 40 years.

6.4 Time Based Maintenance Intervals

Fuse Cutouts are not subject to planned maintenance

7 Capacitor Bank

This asset consists of a large bank of capacitors arranged in rows, base support and inter-rack insulators, interconnecting bus work, and racks and support steel installed on concrete foundations. The capacitor itself consists of inrush current limiting reactors, capacitor unit fuses, surge arresters, disconnect and ground switches, instrumental transformers, and protection and control devices. They regulate voltage in Distribution Systems, increase the stability of the system, optimize power sharing and provide reactive compensation and voltage support.

7.1 Degradation Mechanism

The major degradation of capacitor banks is related to the capacitors themselves. They are exposed to detrimental environmental factors including: extreme temperatures, birds, rodents and other small animals. They also experience steady state, transient and dynamic over voltage conditions. The switching devices add an additional stress to the capacitors. These environmental conditions, electrical loading and operating practices cause non-reversible degradation of the insulation in capacitor units and external insulation.

Fuse and bushing degradation result primarily from the failure of seals (hence moisture seeps in). Based on the surrounding environmental conditions this may cause corrosion of the capacitor units and support steelwork. Internal degradation can also occur in insulators.

The degradation of the structures and foundations that support the connections and bus work impose stress on capacitor components. Thermal and mechanical failures may result from misaligned and inadequately supported bus conductors. Misaligned and loose connectors can cause thermal and mechanical failures of bushings and insulators.

7.2 System Hierarchy

Capacitor Bank asset category belongs to the Overhead Lines assets grouping.

7.3 Useful Life and Typical Life

The useful life of capacitor bank is in the range of 25 to 40 years; the typical life is 30 years.

7.4 Time Based Maintenance Intervals

Capacitor Banks are not subject to planned maintenance.

8 Power Transformers

Power transformers at distribution stations typically step down voltage to distribution levels. Ratings typically range from 5 MVA to 30 MVA. This report focuses on the windings in both indoor and outdoor power transformers.

8.1 Degradation Mechanism

These transformers are subject to electrical, thermal, and mechanical aging. Degradation of the insulating oil, and more significantly, paper insulation, typically results in end of life. Insulation degradation is a result of oxidation, a process that occurs in the presence of oxygen, high temperature, and moisture. For oil cooled transformers, particles, acids, and static electricity will also deteriorate the insulation.

8.2 System Hierarchy

These power transformers belong to the Municipal Stations assets grouping.

8.3 Useful Life and Typical Life

The useful life of windings is 32 to 55 years; the typical life is 45 years.

8.4 Time Based Maintenance Intervals

The typical routine testing/maintenance interval for these transformers is two years.

9 Outdoor Station Bus and Structure

There are a number of different types of structures at distribution stations for supporting buses and equipment. The predominant types are galvanized steel, either lattice or hollow sections.

9.1 Degradation Mechanism

Degradation or reduction in strength of steel structures can result from corrosion, structural fatigue, or gradual deterioration of foundation components.

Corrosion of lattice steel members and hardware reduces their cross-sectional area causing a reduction in strength. Similarly, corrosion of tubular steel poles reduces the effectiveness of the tubular walls. Rates of corrosion may vary, depending upon environmental and climatic conditions (e.g., the presence of salt spray in coastal areas or heavy industrial pollution).

Structural fatigue results from repeated structural loading and unloading of support members. Temperature variations, plus wind and ice loadings lead to changes in conductor tension. Tension changes result in structural load variations on angle and dead end towers. Other changes such as foundation displacements and breaks in wires, guys and anchors may result in abnormal tower loading.

Typically, steel pole foundations are cylindrical steel reinforced concrete structures with anchor bolts connecting the pole to its base. Common degradation processes include corrosion of foundation rebar, concrete spalling and storm damage.

Busbar degradation is mainly caused by thermal and mechanical stresses.

9.2 System Hierarchy

Outdoor station bus and structure belongs to the Municipal Stations assets grouping.

9.3 Useful Life and Typical Life

The useful life of outdoor station bus and structure is in the range of 35 to 100 years; the typical life is 50 years.

9.4 Time Based Maintenance Intervals

The typical routine testing/maintenance interval for these transformers is three years.

10 Switchgear

Switchgear consists of an assembly of retractable/racked switchgear devices that are totally enclosed in a metal envelope (metal-enclosed). These devices operate in the medium voltage range, from 4.16 to 36 kV. The switchgear includes breakers; disconnect switches, or fusegear, current transformers (CTs), voltage transformers (VTs) and occasionally some or all of the following: metering, protective relays, internal DC and AC power, battery charger(s), and AC station service transformation. The gear is modular in that each breaker is enclosed in its own metal envelope (cell). The gear also is compartmentalized with separate compartments for breakers, control, incoming/outgoing cables or bus duct, and bus-bars associated with each cell.

10.1 Degradation Mechanism

Switchgear is an integral part of all distribution and transmission systems. Switchgear degradation is a function of a number of different factors: mechanism operation and performance, degradation of solid insulation, general degradation/corrosion, environmental factors, or post fault maintenance (condition of contacts and arc control devices). Degradation of the breaker used is also a factor.

Correct operation of the mechanism is critical in devices that make or break fault currents, i.e. the contact opening and closing characteristics must be within specified limits. The greatest cause of mal-operation of switchgear is related to mechanism malfunction. Deterioration due to corrosion or wear due to lubrication failure may compromise mechanism performance by either preventing or slowing down the operation of the breaker. This is a serious issue for all types of switchgear.

In older air filled equipment, degradation of active solid insulation (for example drive links) has been a significant problem for some types of switchgear. Some of the materials used in this equipment, particularly those manufactured using cellulose-based materials (pressboard, SRBP, laminated wood) are susceptible to moisture absorption. This results in a degradation of their dielectric properties that can result in thermal runaway or dielectric breakdown. An increasingly significant area of solid insulation degradation relates to the use of more modern polymeric insulation. Polymeric materials, which are now widely used in switchgear, are very susceptible to discharge damage. These electrical stresses must be controlled to prevent any discharge activity in the vicinity of polymeric material. Failures of relatively new switchgear due to discharge damage and breakdown of polymeric insulation have been relatively common over the past 15 years.

Temperature, humidity and air pollution are also significant degradation factors, so indoor units tend to have better long-term performance. The safe and efficient operation of switchgear and its longevity may all be significantly compromised if the substation environment is not adequately controlled. In addition, the air switchgear can tolerate less number of full fault operations before maintenance is required.

10.2 System Hierarchy

Switchgear belongs to the Municipal Stations assets grouping.

10.3 Useful Life and Typical Life

The useful life range of the switchgear is 30 to 50 years; typical life is 40 years.

10.4 Time Based Maintenance Intervals

The typical routine testing/maintenance interval for this asset is six years.

11 Breaker

Breakers are automated switching devices that can make, carry and interrupt electrical currents under normal and abnormal conditions. Breakers are required to operate infrequently, however, when an electrical fault occurs, breakers must operate reliably and with adequate speed to minimize damage. This report focuses on both indoor and outdoor breakers as well three types for each: oil, air magnetic and air blast.

The oil circuit breakers (OCB) which represent the oldest type of breaker design, have been in use for over 70 years. Two types of designs exist among OCBs: bulk oil breakers (in which oil serves as the insulating and arc quenching medium) and minimum oil breakers (in which oil provides the arc quenching function only).

In air magnetic circuit breakers, magnetic blowout coils are used to create a strong magnetic field that draws the arc into specially designed arc chutes. The breaker current flows through the blowout coils and produces a magnetic flux. This magnetic field drives the arc against barriers built perpendicular to the length of the arc. The cross sectional area of the arc is thereby reduced, and its resistance is considerably increased. The surface of the barriers cool and de-ionize the arc, thus collaborating to extinguish the arc.

Air-blast breakers use compressed air as the quenching, insulating and actuating medium. In normal operation, a blast of compressed air carries the arc into an arc chute where it is quickly extinguished. A combination cooler-muffler is often provided to cool ionized exhaust gases before they pass out into the atmosphere and to reduce noise during operation.

11.1 Degradation Mechanism

The degradation mechanism differs for each type of breaker.

The key degradation processes associated with OCBs are as follows:

- Corrosion
- Effects of moisture
- Mechanical
- Bushing deterioration

The rate and severity of these degradation processes is dependent on a number of inter-related factors, in particular the operating duties and environment in which the equipment is installed. Often the critical degradation process is either corrosion or moisture ingress or a combination of the two, resulting in degradation to internal insulation, deterioration of the mechanism affecting the critical performance of the breaker, damage to major components such as bushings or widespread degradation to oil seals and structurally components.

Recent international experience indicates that a significant area of concern is barrier-bushing deterioration resulting from moisture ingress. The Synthetic Resin Bonded Paper (SRBP) insulation absorbs the moisture, which can result in discharge tracking across its surface leading to eventual failure of the bushing. Oil impregnated paper

bushings are particularly sensitive to moisture. Once moisture finds its way into the oil and then into the paper insulation, it is very difficult to remove and can eventually lead to failure. Significant levels of moisture in the main tank can lead to general degradation of internal components and in acute cases free water can collect at the bottom of the tank. This creates a condition where a catastrophic failure could occur during operation.

Corrosion of the main tank and other structural components is also a concern. One area that is particularly susceptible to corrosion is underneath the main tank on the “bell end”, this problem is common to both single and three tank circuit breakers.

Corrosion of the mechanical linkages associated with the OCB operating mechanism is also a widespread problem that can lead to the eventual seizure of the links.

A lesser mode of degradation, although still serious in certain circumstances, is pollution of bushings, particularly where the equipment is located by the sea or in a heavy industrial area.

Other areas of degradation include:

- Deterioration of contacts
- Wear of mechanical components such as bearings
- Loose primary connections
- Deterioration of concrete plinth affecting stability of the circuit breaker

The air magnetic and air blast circuit breaker has a similar degradation to other types of circuit breakers. The key degradation processes associated with air blast circuit breakers are:

- Corrosion
- Effects of moisture
- Bushing/insulator deterioration
- Mechanical

Severity and rate are dependent on factors such as operating duty and environment. Corrosion is a problem for most types of breakers. It can degrade internal insulators, performance mechanisms, major components (e.g. bushings), structural components, and oil seals. Moisture causes degradation of the insulating system. Mechanical degradation presents greater end-of-life concerns than electrical degradation. Generally, operating mechanisms, bearings, linkages, and drive rods represent components that experience most mechanical degradation problems. Contacts, nozzles, and highly stressed components can also experience electrical-related degradation and deterioration. Other defects that arise with aging include:

- Loose primary and grounding connections
- Oil contamination and/or leakage
- Deterioration of concrete foundation affecting stability of breakers

11.2 System Hierarchy

Breakers belong to the Municipal Stations assets grouping.

11.3 Useful Life and Typical Life

This asset also has three types, each of which has a different useful life:

- Oil
- Air Magnetic
- Air Blast

11.3.1 *Oil*

The useful life of the oil breaker can be in the range of 30 to 60 years, with a typical life of 42 years.

11.3.2 *Air Magnetic*

The useful life range of the air magnetic breaker is 25 to 60 years, with a typical life of 40 years.

11.3.3 *Air Blast*

The useful life range of the air blast breaker is 30 to 50 years, with a typical life of 40 years.

11.4 Time Based Maintenance Intervals

The typical routine testing/maintenance interval for breakers is three years.

12 Reclosers

This asset class consists of light duty circuit breakers equipped with interrupters that use controllers. This is where the breaking and making of fault current takes place. The interrupters use oil of vacuum as the insulting agent. The controllers are either hydraulic or electric. It is designed for single phase or three phase use, depending on the model.

12.1 Degradation Mechanism

The degradation processes associated with reclosers involves the effects of making and breaking fault current, the mechanism itself and deterioration of components. The effects of making and breaking fault current affect suppression devices as well as the contacts, the oil, and the arc control. The degradation of these devices depends on the prevailing fault, if it is well below the rated capability of the recloser, the deteriorating effects will be small. For the mechanism itself, deterioration or mal-operation of the mechanism causes deterioration during operation. Typically lack of use, corrosion and poor lubrication are the main causes of mechanism mal-operation. For deterioration, exposure to weather is a potentially significant degradation process – primarily corrosion of the tank and other metallic components and deterioration of brushings.

12.2 System Hierarchy

The Reclosers asset belongs to the Municipal Stations assets grouping.

12.3 Useful Life and Typical Life

The useful life of reclosers is in the range of 30 to 60 years; the typical life is 42 years.

12.4 Time Based Maintenance Intervals

The typical routine testing/maintenance schedule for the breaker component of reclosers is every ten years.

13 Civil

The civil asset refers to the actually buildings surrounding the station. Buildings at major terminal stations house the switchgear, relays and controls and serve as a base for administrative and service work. This asset includes the building itself (foundations, walls), and roof.

13.1 Degradation Mechanism

The following contribute to the degradation of this asset:

- Building age
- Structural condition of loading members
- Condition of floors, walls and ceilings
- Protection against weather elements
- Environmental concerns
- Functional requirements

Buildings are a very maintainable asset. The capital cost of replacement is high enough that the lowest long term cost is achieved even with quite high levels of annual maintenance. Age alone is a very poor indicator of end of life. Rather impacts such as environmental rain, wind and snow storms contribute highly to the degradation of buildings. It is the potential water ingress with poses the most danger to the asset due to the presence of electrical equipment. In order to prevent this, the buildings must be weatherproof.

Also, since the foundation materials typically consist of reinforced concrete designed to consider environmental elements including soil conditions and climate. Landscaping is used to control soil erosion, maintain site cleanliness and facilitate an efficient and safe work environment.

Preventative maintenance helps ensure long-term integrity of buildings. This type of maintenance should be done on a regular basis. As well the occasional refurbishment of doors, windows and roofs helps with the viability of the building.

The building roof is the extremely susceptible to degradation due to environmental factors. The roof is typically level and composed of tar and an aggregate that is designed to keep the wind from wearing at the tar. Nevertheless, the roof is still susceptible to environmental degradation and if not sealed properly can become a source of flooding. The maintenance of the roof is generally the largest undertaking for buildings.

13.2 System Hierarchy

Building asset category belongs to the Municipal Stations assets grouping.

13.3 Useful Life and Typical Life

This asset has two major components, each of which has a different useful life. From a maintenance practice perspective, the civil can be componentized into the following:

- Building
- Roof

13.3.1 *Building*

The overall useful life range of the building itself is 30 to 80 years; the typical life is 50 years.

13.3.2 *Roof*

The useful life of the roof can be in the range of 15 to 20 years, with a typical life of 20 years.

13.4 Time Based Maintenance Intervals

The typical routine inspection interval for this asset is every year.

14 Protection and Control Relays

This asset of protection and control relays consists of two types of switches, electromechanical and digital. The function of these relays is to increase long term reliability. The protection relays work to detect and isolate faults on the system by opening and closing the circuit breakers.

14.1 Degradation Mechanism

The major degradation of relays is dependent on the relay type. This report focuses on two types:

- Electromagnetic Relays
- Digital Relays

14.1.1 *Electromechanical Relays*

In general, a standard electromechanical relay consists of 3 sub-components:

- Relay coils
- Relay contacts
- Relay moving parts

Degradation on relay coils is mainly a thermal aging issue due to continuous energization or elevated cabinet temperatures. Excessive heat generated by coil or associated components may cause the coil to burn out or adversely affect other nearby components or components within the relay or nearby (e.g. chemical breakdown of varnishes causing contact contamination, or change in component dimensions).

Degradation of relay contacts is due to the following factors:

- Contact oxidation
- Contact welding or pitting due to excessive current
- Chemical corrosion

In the case of degradation of relay moving parts, such as wear of moving parts like spring/armature, the major contributing factor is the wear after numerous switching cycles.

As a consequence, the failure mode of an electromechanical relay can be:

- Failure to actuate when commanded
- Actuates without command
- Does not make or break current
- Failure to carry current
- High contact resistance
- Set-point shift
- Time delay shift

To assess the health status of an electromechanical relay, the following condition parameters are studied:

- Operating mechanism, including contact, coil, spring, insulation, connection and component replacement
- Recalibration, including recalibration record and relay functionality (e.g., overcurrent, distance etc.)
- Reliability, including mal-operation count, loading and age

14.1.2 *Digital Relays*

In general, a standard digital relay consists of 3 major sub-components:

- Input sampling/filtering circuit
- Data processing module
- Software

Physical degradation of digital relays happen on hardware part of digital relays. Compared to solid state relays, digital relays are not sensitive to ambient environment. The major contributing factor of degradation is the electrical environment, i.e. inrush transient. Since digital relays have built-in self-supervision system, the settings with perfect long time stability is guaranteed.

The failure mode of a digital relay can be:

- Fail to trip because communication port is held by defective external equipment
- Mal-function due to hardware/firmware/software version mismatch
- Mal-function due to software design flaw causing software latched by external EMI interference
- On strike due to power supply failure

To assess the health status of a digital relay, the following condition parameters are studied:

- Operating mechanism, including power supply, insulation, connection
- Recalibration, including recalibration record and relay functionality (e.g., overcurrent, distance etc.)
- Reliability, including mal-operation count, loading and age

14.2 System Hierarchy

Protection and Control Relay asset category belongs to the Municipal Stations assets grouping.

14.3 Useful Life and Typical Life

This asset is classified into two major components, each of which has a different useful life:

- Electromechanical
- Digital

14.3.1 *Electromechanical*

The useful life range of the electromechanical component is 20 to 50 years; the typical life is 30 years.

14.3.2 *Digital*

The useful life range of the electromechanical component is 10 to 15 years; the typical life is 15 years.

14.4 Time Based Maintenance Intervals

Protection and control relays are not subject to planned maintenance

15 Cables

This report focuses on two types of cables: underground primary and underground secondary/service lines. Distribution underground cables are mainly used in urban areas where it is either impossible or extremely difficult to build overhead lines due to aesthetic, legal, environmental and safety reasons. Secondary underground cables are used as feeders to residential premises. This report focuses on four types of primary underground cables: Non-Tree Retardant Cross Linked Polyethylene (non-TR XLPE) in duct, non-TR XLPE direct buried, Tree Retardant (TR XLPE), Paper Insulated Lead Covered (PILC); and on four types of secondary underground cables: copper directly buried, aluminum directly buried, copper in duct and aluminum in duct.

15.1 Degradation Mechanism

Over the past 30 years XLPE insulated cables have all but replaced paper-insulated cables. These cables can be manufactured by a simple extrusion of the insulation over the conductor and therefore are much more economic to produce. In normal cable lifetime terms XLPE cables are still relatively young. Therefore, failures that have occurred can be classified as early life failures. Certainly in the early days of polymeric insulated cables their reliability was questionable. Many of the problems were associated with joints and accessories or defects introduced in the manufacturing process. Over the past 30 years many of these problems have been addressed and modern XLPE cables and accessories are generally very reliable.

Polymeric insulation is very sensitive to discharge activity. It is therefore very important that the cable, joints and accessories are discharge free when installed. Discharge testing is, therefore, an important factor for these cables. This type of testing is conducted during commissioning and is not typically used for detection of deterioration of the insulation. These commissioning tests are an area of some concern for polymeric cables because the tests themselves are suspected of causing permanent damage and reducing the life of polymeric cables.

Water treeing is the most significant degradation process for polymeric cables. The original design of cables with polymeric sheaths allowed water to penetrate and come into contact with the insulation. In the presence of electric fields water migration can result in treeing and ultimately breakdown. The rate of growth of water trees is dependent on the quality of the polymeric insulation and the manufacturing process. Any contamination voids or discontinuities will accelerate degradation. This is assumed to be the reason for poor reliability and relatively short lifetimes of early polymeric cables. As manufacturing processes have improved the performance and ultimate life of this type of cable has also improved.

For PILC cables, the two significant long-term degradation processes are corrosion of the lead sheath and dielectric degradation of the oil impregnated paper insulation. Isolated sites of corrosion resulting in moisture penetration or isolated sites of dielectric deterioration resulting in insulation breakdown can result in localized failures. However, if either of these conditions becomes widespread there will be frequent cable failures and the cable can be deemed to be at effective end-of-life.

The major degradation problems with the cable terminations concern mostly flashover and tracking associated with the outside and interior surfaces of the accessory. However, there are also problems of overheating at connections and voltage control at the end of the cable shield.

15.2 System Hierarchy

Cables asset category belongs to the Underground Systems assets grouping.

15.3 Useful Life and Typical Life

The overall useful life range of the cable itself is dependent on the cable type. Primary underground cables have three types:

- Non-TR XLPE In Duct
- Non-TR XLPE Direct Buried
- TR XLPE In Duct
- TR XLPE Direct Buried
- PILC

Secondary underground cables have four types:

- Copper Directly Buried
- Aluminum Directly Buried
- Copper in Duct
- Aluminum in Duct

15.3.1 *Non-TR XLPE in Duct*

The useful life range of non-TR XLPE in duct cable is 20 to 25 years; the typical life is 20 years.

15.3.2 *Non-TR XLPE Direct Buried*

The useful life range of non-TR XLPE direct buried cable is 10 to 20 years; the typical life is 15 years.

15.3.3 *TR XLPE In Duct*

The useful life range of TR XLPE cable is 40 to 60 years; the typical life is 40 years.

15.3.4 *TR XLPE Direct Buried*

The useful life range of TR XLPE cable is 20 to 25 years; the typical life is 25 years.

15.3.5 *PILC*

The useful life range of PILC cable is 70 to 80 years; the typical life is 75 years.

15.3.6 *Copper Directly Buried*

The useful life range of copper direct buried cable is 20 to 25 years; the typical life is 25 years.

15.3.7 *Aluminum Directly Buried*

The useful life range of aluminum direct buried cable is 20 to 25 years; the typical life is 25 years.

15.3.8 *Copper in Duct*

The useful life range of in copper in duct cable is 40 to 60 years; the typical life is 40 years.

15.3.9 *Aluminum in Duct*

The useful life range of aluminum in duct cable is 40 to 60 years; the typical life is 40 years.

15.4 Time Based Maintenance Intervals

Underground Cables are not subject to planned maintenance.

16 Distribution Transformer

This asset class consists of the transformer and elbows and inserts associated with the system. There are two types of transformers that Horizon uses: Pad Mounted and Vault.

Pad mounted transformers typically employ sealed tank construction and are liquid filled, with mineral insulating oil being the predominant liquid. Vault transformers typically employ sealed tank construction and are liquid filled, with mineral insulating oil being the predominant liquid. Submersible transformers typically employ sealed tank construction and are liquid filled, with mineral insulating oil being the predominant liquid.

16.1 Degradation Mechanism

The pad-mounted transformer has a similar degradation mechanism to other distribution transformers. It has been demonstrated that the life of the transformer's internal insulation is related to temperature rise and duration. Therefore, the transformer life is affected by electrical loading profiles and length of service life. Other factors such as mechanical damage, exposure to corrosive salts, and voltage current surges also have strong effects. Therefore, a combination of condition, age, and load based criteria is commonly used to determine the useful remaining life.

In general, the following are considered when determining the health of the pad-mounted transformer:

- Tank corrosion, condition of paint
- Extent of oil leaks
- Condition of bushings
- Condition of padlocks, warning signs, etc.
- Transfer operating age and winding temperature profile

The vault transformer and submersible transformer have a similar degradation mechanism to other distribution transformers. The life of the transformer's internal insulation is related to temperature rise and duration, so transformer life is affected by electrical loading profiles and length of service life. Mechanical damage, exposure to corrosive salts, and voltage current surges has strong effects. In general, a combination of condition, age, and load based criteria is commonly used to determine the useful remaining life.

16.2 System Hierarchy

Distribution Transformers asset category belongs to the Underground Systems asset grouping.

16.3 Useful Life and Typical Life

The useful life range of pad mounted and vault distribution transformers are 30 to 40 years; the typical life is 40 years.

16.4 Time Based maintenance Intervals

Distribution Transformers are not subject to planned maintenance

17 Underground Switches

The underground SF6 switches used by are essentially pad mounted switchgear, enclosed in stainless steel containers, with the ability to be wall or ceiling mounted.

17.1 Degradation Mechanism

The degradation mechanism of this asset is established by mechanical failures, such as corrosion of operating mechanism from rusting of enclosure or moisture and dirt ingress. Switchgear failure is associated more with outside influences rather than age. For example, switchgear failure is more likely to be caused by rodents, dirt or contamination, vehicle accidents, rusting of the case, and broken insulators caused by misalignment during switching.

17.2 System Hierarchy

Underground switch asset category belongs to the Underground Systems asset grouping.

17.3 Useful Life and Typical Life

The useful life range of underground switches is 20 to 40 years; the typical life is 20 years.

17.4 Time Based maintenance Intervals

Underground Switches are not subject to planned maintenance.

18 Pad Mounted Switchgear

Pad-mounted switchgear is used for protection and switching in the underground distribution system. The switching assemblies can be classified into air insulated, SF6 insulated with vacuum interrupter and SF6 insulated with SF6 interrupter. A majority of the pad mounted switchgear currently employs air-insulated gang operated load-break switches.

18.1 Degradation Mechanism

The pad-mounted switchgear is very infrequently used for switching and often used to drop loads way below its rating. Therefore, switchgear aging and eventual end of life is often established by mechanical failures, e.g. rusting of the enclosures or ingress of moisture and dirt into the switchgear causing corrosion of operating mechanism and degradation of insulated barriers.

The first generation of pad mounted switchgear was first introduced in early 1970's and many of these units are still in good operating condition. The life expectancy of pad-mounted switchgear is impacted by a number of factors that include frequency of switching operations, load dropped, presence or absence of corrosive environmental and absence of existence of dampness at the installation site.

In the absence of specifically identified problems, the common industry practice for distribution switchgear is running it to end of life, just short of failure. To extend the life of these assets and to minimize in-service failures, a number of intervention strategies are employed on a regular basis: e.g. inspection with thermographic analysis and cleaning with CO2 for air insulated pad-mounted switchgear. If problems or defects are identified during inspection, often the affected component can be replaced or repaired without a total replacement of the switchgear.

Failures of switchgear are most often not directly related to the age of the equipment, but are associated instead with outside influences. For example, pad-mounted switchgear is most likely to fail due to rodents, dirt/contamination, vehicle accidents, rusting of the case, and broken insulators caused by misalignment during switching. All of these causes are largely preventable with good design and maintenance practices. Failures caused by fuse malfunctions can result in a catastrophic switchgear failure.

The degradation of the air insulated pad mounted switchgear is similar to that of the SF6 switchgear. Aging and end of life is established by mechanical failures, such as corrosion of operating mechanism from rusting of enclosure or moisture and dirt ingress. Switchgear failure is associated more with outside influences rather than age. For example, switchgear failure is more likely to be caused by rodents, dirt or contamination, vehicle accidents, rusting of the case, and broken insulators caused by misalignment during switching.

18.2 System Hierarchy

Pad-Mounted Switchgear belongs to the Underground Systems assets grouping.

18.3 Useful Life and Typical Life

The overall useful life range of the switchgear itself is dependent on the pad mount switchgear type:

- Air Insulated
- SF6 Insulated Vacuum Interrupter
- SF6 Insulated SF6 Interrupter

18.3.1 *Air Insulated*

The useful life range of this air insulated pad mount switchgear is 20 to 40 years; the typical life is 20 years.

18.3.2 *SF6 Insulated Vacuum Interrupter*

The useful life range of this SF6 Insulated Vacuum Interrupter pad mount switchgear is 30 to 50 years; the typical life is 30 years.

18.3.3 *SF6 Insulated SF6 Interrupter*

The useful life range of this SF6 Insulated SF6 Interrupter pad mount switchgear is 30 to 50 years; the typical life is 30 years.

18.4 Time Based Maintenance Intervals

The typical routine inspection interval for this asset is three years.

19 Utility Chamber

Utility Chambers facilitate cable pulling into underground ducts and provide access to splices and facilities that require periodic inspections or maintenance. They come in different styles, shapes and sizes according to the location and application. Pre-cast cable chambers are normally installed only outside the traveled portion of the road although some end up under the road surface after road widening. Cast-in-place cable chambers are used under the traveled portion of the road because of their strength and also because they are less expensive to rebuild if they should fail. Customer cable chambers are on customer property and are usually in a more benign environment. Although they supply a specific customer, system cables loop through these chambers so other customers could also be affected by any problems.

19.1 Degradation Mechanism

These assets must withstand the heaviest structural loadings that they might be subjected to. For example, when located in streets, utility chambers must withstand heavy loads associated with traffic in the street. When located in driving lanes, utility chamber chimney and collar rings must match street grading. Since utility chambers and vaults often experience flooding, they sometimes include drainage sumps and sump pumps. Nevertheless, environmental regulations in some jurisdictions may prohibit the pumping of utility chambers into sewer systems, without testing of the water for environmentally hazardous contaminants.

Although age is loosely related to the condition of underground civil structures, it is not a linear relationship. Other factors such as mechanical loading, exposure to corrosive salts, etc. have stronger effects. Utility chamber degradation commonly includes corrosion of reinforcing steel, spalling of concrete, and rusting of covers or rings. Acidic salts (i.e. sulfates or chlorides) affect corrosion rates. Utility chamber systems also may experience a number of deficiencies or defects. In roadways, defects exist when covers are not level with street surfaces. Conditions that lead to flooding, clogged sumps, and non-functioning sump-pumps also represent major deficiencies in a utility chamber system. Similarly, utility chamber systems with lights that do not function properly constitute defective systems. Deteriorating ductwork associated with utility chambers also requires evaluation in assessing the overall condition of a utility chamber system.

19.2 System Hierarchy

Utility Chambers asset category belongs to the Underground Systems assets grouping.

19.3 Useful Life and Typical Life

Utility chambers have a useful life range of 50 to 80 years; the typical life range is 60 years.

19.4 Time Based Maintenance Intervals

The typical routine testing/maintenance interval for this asset class is three years.

20 Ducts

In areas such as road crossings, ducts provide a conduit for underground cables to travel. They are comprised of a number of ducts, in trench, and typically encased in concrete. Ducts are sized as required and are usually four, five or six inches in diameter.

20.1 Degradation Mechanism

The ducts connecting one utility chamber to another cannot easily be assessed for condition without excavating areas suspected of suffering failures. However, water ingress to a utility chamber that is otherwise in sound condition is a good indicator of a failure of a portion of the ductwork. Since there are no specific tests that can be conducted to determine duct integrity at reasonable cost, the duct system is typically treated on an ad hoc basis and repaired or replaced as is determined at the time of cable replacement or failure.

20.2 System Hierarchy

Ducts asset category belongs to the Underground Systems assets grouping.

20.3 Useful Life and Typical Life

The overall useful life range of the duct is dependent on the duct type:

- Duct Bank
- Direct Buried Pipe (PVC)
- Clay
- Fiberglass Reinforced (FRE)

20.3.1 *Duct Bank*

The useful life range of the duct bank type is 30 to 80 years; the typical life is 50 years.

20.3.2 *Direct Buried Pipe (PVC)*

The useful life range of the direct buried pipe type is 30 to 75 years; the typical life is 50 years.

20.3.3 *Clay*

The useful life range of the clay type is 60 to 100 years; the typical life is 80 years.

20.3.4 *Fiberglass Reinforced (FRE)*

The useful life range of the clay type is 30 to 100 years; the typical life is 50 years.

20.4 Time Based Maintenance Intervals

Ducts are not subject to planned maintenance

21 Junction/Switching Boxes

This asset class consists of a wiring box similar to pad mount switchgear. However there is no switching rather it simply acts as a junction.

21.1 Degradation Mechanism

The main degradation processes associated with the junction cubicle is corrosion of the cables.

21.2 System Hierarchy

Junction/Switching Boxes is used in the Underground Systems assets grouping.

21.3 Useful Life and Typical Life

The overall useful life range of junction cubical is 25 to 50 years; the typical life is 40 years.

21.4 Time Based Maintenance Intervals

Junction Cubicles are not subject to planned maintenance

22 Metering

The metering is how electricity providers measure billable services by measuring kilowatt hours. When used in electricity retailing, the utilities record the values measured by these meters to generate an invoice for the electricity. This report focuses on those meters used for residential meters, industrial/commercial meters and wholesale meters. This asset consists of three components: the meter itself, the current transformer (CT) and the potential transformer (PT).

22.1 Degradation Mechanism

The major degradation mechanism of traditional meters is listed as follows:

- Electronic component aging due to long-term power quality impact, for solid-state meters
- Meter creep due to high temperature for induction type meters. This occurs when the meter disc rotates continuously with potential applied and the load terminals open circuited
- Magnetization alteration due to overload or short-circuited conditions
- Mechanical damage due to vibration of meter mounting
- Other adverse operating environment that might expedite the aging of components, such as humidity, dirt

22.2 System Hierarchy

Metering asset category belongs to the Monitoring and Control Systems assets grouping.

22.3 Useful Life and Typical Life

The overall useful life range of the meter itself is dependent on the meter type:

- Residential
- Industrial/Commercial
- Wholesale

There is also another component of the meter which has its own useful and typical life:

- Transformer (Current or Potential)

22.3.1 *Smart*

The useful life of smart meters is 15 to 20 years; typical life is 15 years.

22.3.2 *Residential*

The useful life range of residential type meter is 20 to 45 years; typical life is 30 years.

22.3.3 *Industrial/Commercial*

The useful life range of industrial/commercial type meter is 20 to 60 years; typical life is 30 years.

22.3.4 *Wholesale*

The useful life range of industrial/commercial type meter is 20 to 60 years; typical life is 30 years.

22.3.5 *Transformer (CT or PT)*

The useful life range of the CT and PT components is 30 to 50 years; typical life is 45 years.

22.4 Time Based Maintenance Intervals

Meters are not subject to planned maintenance.

23 Remote Supervisory Control and Data Acquisition

Supervisory Control and Data Acquisition (SCADA) refers to the centralized monitoring and control system of a facility. SCADA remote terminal units (RTUs) allow the master SCADA system to communication, often wirelessly, with field equipment. In general, RTUs collect digital and analog data from equipment, exchange information to the master system, and perform control functions on field devices. They are typically comprised of the following: power supply, CPU, I/O Modules, housing and chassis, communications interface, and software.

23.1 Degradation Mechanism

There are many factors that contribute to the end-of-life of RTUs. Utilities may choose to upgrade or replace older units that are no longer supported by vendors or where spare parts are no longer available. Because RTUs are essentially computer devices, they are prone to obsolescence. For example, older units may lack the ability to interface with Intelligent Electronic Devices (IEDs), be unable to support newer or modern communications media and/or protocols, or not allow for the quantity, resolution, and accuracy of modern data acquisition. Legacy units may have limited ability of multiple master communication ports and protocols, or have an inability to segregate data into multiple RTU addresses based on priority.

23.2 System Hierarchy

Remote Supervisory Control and Data Acquisition are considered to be a part of the Monitoring and Control Systems asset grouping.

23.3 Useful Life and Typical Life

The useful life of remote SCADA is 15 to 30 years; typical life is 20 years.

23.4 Time Based Maintenance Intervals

Remote SCADA are not subject to planned maintenance.

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