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May 27, 2016

via RESS – signed original to follow by courier

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
PO Box 2319
2300 Yonge Street, 27th floor
Toronto, ON M4P 1E4

Dear Ms. Walli:

Re: Toronto Hydro-Electric System Limited ("Toronto Hydro")
Incremental Capital Module ("ICM") True-up Application – Responses to Interrogatories
OEB File No. EB-2015-0173

Toronto Hydro writes to the Ontario Energy Board ("OEB") in respect of the above-noted matter.

Toronto Hydro received interrogatories from OEB Staff, Association of Major Power Consumers in Ontario ("AMPCO"), Consumers Council of Canada ("CCC"), School Energy Coalition ("SEC"), Sustainable Infrastructure Alliance of Ontario ("SIA"), and Vulnerable Energy Consumers Coalition ("VECC"). In accordance with the OEB's Procedural Order No. 1, dated April 25, 2016, Toronto Hydro encloses written responses to these interrogatories.

Please do not hesitate to contact me if you have any questions.

Yours truly,

Andrew J. Sasso
Director, Regulatory Affairs
Toronto Hydro-Electric System Limited
regulatoryaffairs@torontohydro.com

:encl.

:AD\MH\acc

cc: Charles Keizer, Torys LLP
Anila Dumont, Toronto Hydro
Intervenors on Record for EB-2015-0173

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

INTERROGATORY 1:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 1, page 1

At the above reference, it is stated that Toronto Hydro is seeking approval "of an associated Rate Order to be made effective November 1, 2016 to December 31, 2017…"

OEB staff notes that Toronto Hydro is also expected to file later this year an application for final rates effective January 1, 2017 arising out of proceeding EB-2014-0116.

Please discuss any issues or concerns that Toronto Hydro would anticipate if the rates arising from both of the above referenced applications were made effective on the same date, e.g., January 1, 2017.

RESPONSE:

Toronto Hydro's ICM True-up Application requested a November 1, 2016 implementation date to clear amounts, which go back as far as 2012, as expeditiously as possible. The November 1, 2016 implementation date will allow the proposed ICM True-up Rate Rider to come into effect at the same time as the RPP rate changes are implemented to minimize the number of rate changes for customers. Furthermore, given implementation of the 2017 distribution rates, delaying implementation of the proposed rider to January 1, 2017 will cause customers to see larger bill impacts at that time.

For these reasons Toronto Hydro believes a November 1, 2016 implementation date is appropriate.

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

INTERROGATORY 2:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 7 and
EB-2012-0064 Draft Rate Order April 12, 2013, page 5

At the first reference from the current application, Toronto Hydro stated as follows:

> The OEB approved interim funding through the Initial ICM Rate Rider which was calculated using the OEB Workforms and inputting ISA expenditures as forecast for 2012 and 2013. While the calculation of forecast revenue requirement for 2012 determined that none of the ISAs in the approved ICM Segments would be above the materiality threshold, actual 2012 ISAs in the approved ICM Segments were above the materiality threshold. The revenue requirement associated with the 2012 actual ISAs above the materiality threshold forms part of the amounts to be recovered through the ICM True-up Rate Rider.

At the second reference which is Toronto Hydro's 2013 Draft Rate Order filing in the EB-2012-0064 proceeding, Toronto Hydro stated as follows:

> For 2012, as the sum of THESL approved in-service capital expenditures plus the approved pre-2012 CWIP amount are less than the 2012 threshold amount (detailed in Schedule 1 of Appendix C), no ICM expenditures are eligible for recovery through an ICM rate rider.

a) Please reconcile the above two statements and provide a complete explanation as to why Toronto Hydro now believes it is eligible for 2012 ICM recoveries with references to any OEB policies that it believes would support its claim.

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

b) Please provide a breakdown of the $11.1 million sought for recovery between 2012, 2013 and 2014 ICM eligible ISAs.

RESPONSE:

a) The two statements cited above are consistent. They illustrate the OEB's purpose in ordering a revenue reconciliation process: to compare actual and forecast ICM expenditures.

The first reference cited by Staff, from Toronto Hydro's current ICM True-up Application, refers to 2012 *actual* ICM in-service expenditures. The second reference cited, from Toronto Hydro's 2013 Draft Rate Order, refers to 2012 *forecast* ICM in-service expenditures.

In the 2013 Draft Rate Order, Toronto Hydro stated:

> THESL anticipates that at the time of rebasing, THESL will calculate the historical revenue requirement based on actual in-service additions of the ICM projects, and compare with revenues collected through the approved ICM rate riders.[1]

In its recently filed ICM True-up Application, after performing the calculation of the actual revenue requirement cited above, Toronto Hydro determined that the 2012 In-service Additions ("ISAs") in the approved ICM segments would be above the materiality threshold.

[1] EB-2012-0064, Toronto Hydro-Electric System Limited Draft Rate Order (April 12, 2013) at p. 10.

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

The recognition that there will be some differences between forecast and actual expenditures is at the core of the rationale for ordering a revenue reconciliation of the revenue requirement used to derive the ICM rate rider revenues for ICM funding. For instance, in the OEB's Report on 3rd Generation Incentive Regulation for Ontario's Electricity Distributors, the OEB contemplates a process for determining the treatment for differences between forecast and actual spending during the Incentive Regulation plan term.[2] Similarly, in the Accounting Order for EB-2012-0064, issued on April 2, 2013, the OEB contemplated that differences, both positive and negative, would arise between forecast and actual expenditures.[3]

The Accounting Order expressly stated that both under-spend and prudent over-spend variances would be determined and that the associated revenue requirement amounts would be refunded to or collected from customers. i.e., that the variance determination and revenue requirement reconciliation processes are symmetrical. The OEB did not order an asymmetrical process whereby only negative variances would be reconciled.

Furthermore, for these purposes, there is no difference between a *forecast* of zero eligible ISAs (as was the case for 2012) and a forecast of any other positive amount. The forecast serves simply as a reference point for the calculation of the variance to actual. The Partial Decision and Accounting Order for EB-2012-0064 do not preclude the OEB-approved 2012 forecast of zero from being included in the revenue requirement reconciliation process.

[2] Report of the Board on 3rd Generation Incentive Regulation for Ontario's Electricity Distributors (July 14, 2008) at p. 33.
[3] EB-2012-0064, Toronto Hydro-Electric System Limited Decision and Rate Order (May 9, 2013), Accounting Order at pp. 2-3.

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b) Table 3 of Exhibit 3, Tab 1, Schedule 1 in Toronto Hydro's ICM True-up Application provides the annual true-up amounts associated with the 2012-2014 ISAs on a total cumulative basis.[4] For further clarity, the table below shows the amounts associated with each year's ISAs individually, as well as cumulatively.

		2012 ($mil)	2013 ($mil)	2014 ($mil)	Total ($mil)
2012 In-Service Additions	True-Up Amount	1.51	1.51	1.51	4.54
	Carrying Charges	0.01	0.01	0.01	0.03
2013 In-Service Additions	True-Up Amount		-1.80	-1.80	-3.60
	Carrying Charges		0.02	0.02	0.05
2014 In-Service Additions	True-Up Amount			10.18	10.18
	Carrying Charges			-0.03	-0.03
Total		1.52	-0.25	9.90	11.17

[4] EB-2015-0173, Toronto Hydro-Electric System Limited Incremental Capital Module True-up Application (March 8, 2016), Exhibit 3, Tab 1, Schedule 1 at p.5.

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

INTERROGATORY 3:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 11

At the above reference, Toronto Hydro stated as follows:

> As indicated in Table 1, below, variances between the forecast ISAs and actual ISAs occurred in all ICM Segments. As detailed in Section 4 below, variances occurred for two primary reasons: (1) differences between forecast and actual ISA costs; and (2) differences between the number of jobs forecast and the number completed. Given the nature and complexity of the capital program, variances are to be expected and were contemplated by the OEB in the ICM Decisions.

a) Please state the basis for Toronto Hydro's belief that the OEB contemplated differences in the number of jobs forecast versus completed as a variance which was to be expected, as compared to allowing spending to be moved between jobs or to replace one job with another similar job. Please include specific references from the EB-2012-0064 Partial Decision and Order supporting this belief.
b) Please state how much of Toronto Hydro's proposed revenue requirement recovery in the present application is attributable to additional jobs that were not incorporated into the EB-2012-0064 application.

RESPONSE:

a) In its EB-2012-0064 Partial Decision and Order (the "Decision"), the OEB defined a "project" as a segment (i.e., collection of jobs) for the purposes of the application and stated that monies allocated to these projects must be tracked and reported

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

separately.[1] Within the Decision the OEB acknowledged some of the operational realities described by Toronto Hydro and held that the utility was allowed to carry variances in approved jobs within the ICM segments without disqualifying for ICM funding:

> The Board will permit spending to be moved between the various jobs contained within a project. For instance, Project B1 Underground Infrastructure is shown as containing numerous jobs, among them being "Underground Rehabilitation of Feeder NY80M29" and "Underground Rehabilitation of Feeder SCNAR26M34." The Board will allow spending to be moved between two jobs of this kind that fall under the same project, but not between two projects, such as B1 and B4 for instance.[2]

As can be seen from the above cited section, the OEB did not require Toronto Hydro to report on the status of each job individually (completed versus not completed) and instead ordered a segment-level reconciliation which takes into account the operational realities underlying the execution of a complex capital program. In its update to the original filing, Toronto Hydro explained how these operational realities would drive job substitutions, deletions and additions in the true-up process during its 2014 evidence update.[3] The utility reported that job additions, deletions, and substitutions represented "central operational realities" experienced in the ordinary course of its work program execution:

[1] EB-2012-0064, Toronto Hydro-Electric System Limited Partial Decision and Order (April 2, 2013) at p. 75.
[2] EB-2012-0064, Toronto Hydro-Electric System Limited Partial Decision and Order (April 2, 2013) at p. 75.
[3] EB-2012-0064, Toronto Hydro-Electric System Limited Evidence Update for 2014 (August 19, 2013) at p.10.

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During the course of execution of a planned work program, external factors (such as work permit timing, weather, re-prioritization of jobs due to system needs, etc.) may mean good utility practice and prudent work planning is best served by: (a) specific jobs within a segment being substituted, on a like-for-like basis, with other jobs; and (b) specific jobs being added to, or deleted from a given segment. This may occur during an ICM term just as in any other rate case setting, and as in fact already undertaken by THESL during the course of this proceeding when updating its Phase 1, and now Phase 2, evidence.

By way of a real-world example, while THESL has provided a list of specific Fibretop network unit replacements that it has proposed to complete in 2014, operational realities may require it to reprioritize this list of replacements, such that Fibretop units not currently scheduled to be replaced in 2014 may be advanced to be replaced during the ICM cycle, displacing previously scheduled jobs- in other words, circumstances may require that certain fibretop replacement jobs be moved-up in the queue. Accordingly, it may be the case that THESL is driven to substitute some of the approved Fibretop replacement jobs with other Fibretop jobs that were not contemplated for replacement in 2014 at the time application. These jobs would be materially indistinguishable in scope from those already approved. THESL understands that the principles underlying the ICM framework, and in particular the Phase 1 Decisions, contemplate such additions and substitutions (as long as the new jobs fit the ICM criteria and are essentially the same as approved jobs).[4]

[4] EB-2012-0064, Toronto Hydro-Electric System Limited Evidence Update for 2014 (August 19, 2013) at p.10.

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The concept of adjusting the work to be performed to reflect operational realities such as those requiring the addition of jobs to a segment was also documented in Phase 1 of this proceeding:

> Through the course of executing jobs in 2012 and through ongoing evaluation, THESL has identified 10 jobs in 3 project segments (Underground Infrastructure, Feeder Automation, and HONI Contributions) which it proposes to add to those segments. The total cost of the additional jobs is $5.5 million in 2012 and $2.8 million in 2013. Explanations for the added jobs are provided in the corresponding business cases.[5]

Ultimately, the Board directed Toronto Hydro, in its EB-2012-0064 Accounting Order, to recalculate the revenue requirement impacts based on the actual in-service assets in Board-approved ICM segments.[6] The Board's direction applied explicitly to segments (projects) and not to individual jobs. In other words, the Board did not state that the revenue reconciliation exercise was to exclude jobs that were added to segments, despite the fact that the Board was clearly aware, as shown above, that projects were composed of numerous jobs that were essentially interchangeable to allow Toronto Hydro to manage its ICM capital program in the face of operational realities.

[5] EB-2012-0064, Toronto Hydro-Electric System Limited Application, Addendum to the Manager's Summary (October 31, 2012) at p. 11.
[6] EB-2012-0064, Toronto Hydro-Electric System Limited Decision and Rate Order (May 9, 2013), Accounting Order at p. 2.

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Taken together the facts set out above form the basis of Toronto Hydro's view "that the OEB contemplated differences in the number of jobs forecast versus completed as a variance which was to be expected."

b) The revenue requirement associated with the analogous jobs for the full ICM period is $7.3 million.

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

INTERROGATORY 4:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 12, footnote 33

At the above reference, Toronto Hydro stated as follows:

> As part of Toronto Hydro's Phase 1 evidentiary update in October 2012, a number of jobs were deferred from the 2012-2013 period to 2014, resulting in a lower overall amount of forecast work for the 2012-2013 period. Toronto Hydro did not update the allocation of Capitalized Labour (i.e., Engineering Capital) across the re-forecasted list of jobs at that time, but instead showed the surplus Engineering Capital costs as a separate line item called "ICM Understatement of Capitalized Labour." The OEB authorized $8.3 million in ISA funding for the ICM Understatement of Capitalized Labour and this amount has been fully-allocated across the final list of completed jobs in each year on an actuals basis.

a) Please state why Toronto Hydro did not update the allocation of Capitalized Labour (i.e. Engineering Capital) across the re-forecasted list of jobs in 2012, but instead showed the surplus Engineering Capital costs as a separate line item called "ICM Understatement of Capitalized Labour."
b) Please provide the breakdown of the allocation of the $8.3 million referenced above across the final list of completed jobs in each year on an actuals basis.
c) Please state whether there was any difference between the forecast and actual amounts of this item and, if so, what the difference was and provide an explanation for it.

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

RESPONSE:

a) As noted in Toronto Hydro's response to Undertaking JT2.10 in the Phase 1 ICM Application proceeding, the ICM Understatement of Capitalized Labour was caused by a calculation error which utilized a lower rate for Engineering Capital to the ICM projects.[1] This undertaking updated the evidence originally provided in Tab 4, Schedule A, Appendix 1, page 1 to increase the 2012 capital expenditures as a result of the correction for the understatement of ICM Engineering Capital. For the sake of transparency, Toronto Hydro disclosed the amount on a separate line item called "ICM Understatement of Capitalized Labour."

b) The breakdown of the allocation of the $8.3 million in capital expenditures referenced above cannot be provided on an actuals basis because it was a subset of the total engineering capital estimated in the approved ICM Phase 1 Application. The total forecasted engineering capital in-service by year ($6.31 million in 2012, $18.77 million in 2013 and $39.10 million in 2014), which includes the $8.3 million in capital expenditures referenced above for 2012 ($3.6 million in-service additions in 2012 and $4.6 million in-service additions in 2013), is compared to the actual in-service engineering capital by segment and is shown in Appendix A to this response.

c) Please see the variance in the engineering capital in-service additions in part (b) above. Engineering capital expenditures are allocated to jobs as a proportion of capital spending. Therefore, the variance above is a factor of the estimate to actual differences in the following: engineering capital expenditures, total capital spending and the in-service additions on the overall segment.

[1] EB-2012-0064, Toronto Hydro-Electric System Limited Technical Conference Outstanding Responses to Undertakings (November 28, 2012), No. JT2.10, Tab 7, Schedule 2-10 at pp.1-2.

Appendix A: ICM EAR In-service Additions

	EAR ISA $				EAR ISA $				EAR ISA $			
	Decision				Actual				Variance			
ICM FILING SEGMENT	FY12 ISA	FY13 ISA	FY14 ISA	Subtotal	FY12 ISA	FY13 ISA	FY14 ISA	Subtotal	FY12 ISA	FY13 ISA	FY14 ISA	Subtotal
B1 Underground Infrastructure Total	2.02	4.90	4.70	11.61	0.97	4.66	6.53	12.16	- (1.05)	- (0.24)	1.84	0.54
B2 Paper Insulated Lead Covered Cable - Piece Outs and Leakers Total	0.01	0.22	0.28	0.51	-	0.01	0.18	0.19	- (0.01)	- (0.22)	- (0.10)	- (0.32)
B3 Handwell Replacement Total	0.96	1.87	1.13	3.96	0.54	1.16	0.91	2.61	- (0.42)	- (0.71)	- (0.22)	- (1.35)
B4 Overhead Infrastructure Total	0.64	3.04	2.58	6.26	0.05	2.25	3.18	5.47	- (0.59)	- (0.79)	0.60	- (0.78)
B5 Box Construction Total	0.04	0.98	1.15	2.17	0.00	0.35	1.16	1.51	- (0.04)	- (0.63)	0.01	- (0.65)
B6 Rear Lot Construction Total	1.15	2.62	1.25	5.02	0.30	1.94	1.84	4.09	- (0.84)	- (0.68)	0.60	- (0.93)
B9 Network Vault & Roofs Total	0.20	1.00	0.57	1.77	0.01	0.98	0.15	1.14	- (0.19)	- (0.02)	- (0.42)	- (0.63)
B10 Fibertop Network Units Total	0.10	0.44	0.20	0.74	0.24	0.40	0.28	0.92	0.14	- (0.04)	0.09	0.18
B11 Automatic Transfer Switches (ATS) & Reverse Power Breakers (RPB) Total	-	0.13	0.09	0.22	0.01	0.08	0.02	0.11	0.01	- (0.05)	- (0.07)	- (0.12)
B12 Stations Power Transformers Total	0.03	0.18	0.09	0.30	0.23	0.07	0.12	0.42	0.20	- (0.12)	0.03	0.11
B13.1 & 13.2 Stations Switchgear - Muncipal and Transformer Stations Total	0.13	0.74	0.52	1.39	0.07	0.00	0.31	0.38	- (0.05)	- (0.74)	- (0.21)	- (1.01)
B20 Metering Total	0.33	0.75	0.63	1.71	0.43	0.67	0.25	1.35	0.10	- (0.09)	- (0.38)	- (0.37)
B21 Externally-Initiated Plant Relocations and Expansions Total	0.71	1.89	0.82	3.43	0.26	0.69	1.70	2.65	- (0.45)	- (1.21)	0.88	- (0.77)
BXX ICM Understatement of Capitalized Labour Total	-	-	-	-	-	-	-	-	-	-	-	-
Grand Total	6.31	18.77	14.01	39.10	3.12	13.24	16.64	32.99	- (3.20)	- (5.53)	2.63	- (6.10)

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

INTERROGATORY 5:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 15, Figure 1 and Exhibit 3, Tab 2, Schedule 1 to Schedule 3

At the first reference above, Toronto Hydro provided actual ICM eligible ISAs by ICM year. This showed annual ICM materiality thresholds for 2012, 2013 and 2014 respectively of $173.0 million, $163.8 million and $211.1 million.

Schedules 1 to 3 of the second reference are the ICM workforms for 2012, 2013 and 2014 respectively. These showed annual ICM materiality thresholds for 2012, 2013 and 2014 respectively of $173.0 million for each year.

Please provide an explanation for the above noted differences and the calculations on which the 2013 and 2014 thresholds are based.

RESPONSE:

Exhibit 3, Tab 2, Schedules 1-3 (second reference above) provides the OEB's workforms, where the values for the Price Escalator and the Productivity Factor are password protected. Therefore, Toronto Hydro was unable to reflect the final values for each of 2013 and 2014 in these schedules. The threshold values for each year are determined based on the OEB-approved Price Escalator and Productivity Factors for each year, and the Toronto Hydro values for Stretch Factor and Growth. The calculations for 2013 and 2014 are attached to this Schedule as Appendix A (2013) and Appendix B (2014). These threshold values are the same values used for the calculation of the Initial ICM rate riders.

Incremental Capital Workform

Threshold Parameters

Price Cap Index

Price Escalator (GDP-IPI)	**1.60%**	
Less Productivity Factor	**-0.72%**	
Less Stretch Factor	-0.60%	
Price Cap Index		**0.28%**

Growth

ICM Billing Determinants for Growth - Numerator : 2011 Re-Based Forecast	$	528,018,642	A
ICM Billing Determinants for Growth - Denominator : 2010 Audited RRR	$	530,130,457	B
Growth		**-0.40%**	C = A / B

Incremental Capital Workform

Threshold Test

Year		**2013**	
Price Cap Index		**0.28%**	**A**
Growth		**-0.40%**	**B**
Dead Band		**20%**	**C**
Average Net Fixed Assets			
Gross Fixed Assets Opening	$	4,183,572,075	
Add: CWIP Opening	$	204,719,106	
Capital Additions	$	376,263,596	
Capital Disposals	$	-	
Capital Retirements	$	-	
Deduct: CWIP Closing	-$	232,060,508	
Gross Fixed Assets - Closing	$	4,532,494,269	
Average Gross Fixed Assets	$	4,358,033,172	
Accumulated Depreciation - Opening	$	2,285,733,698	
Depreciation Expense	$	138,815,781	**D**
Disposals	$	2,807,234	
Retirements			
Accumulated Depreciation - Closing	$	2,427,356,713	
Average Accumulated Depreciation	$	2,356,545,206	
Average Net Fixed Assets	$	2,001,487,967	**E**
Working Capital Allowance			
Working Capital Allowance Base	$	2,479,952,766	
Working Capital Allowance Rate		12%	
Working Capital Allowance	$	296,739,314	**F**
Rate Base	**$**	**2,298,227,281**	**G = E + F**
Depreciation	**D $**	**138,815,781**	**H**
Threshold Test		**118.02%**	**I = 1 + (G / H) * (B + A * (1 + B)) + C**
Threshold CAPEX	**$**	**163,833,177**	**J = H *I**

Incremental Capital Workform

Threshold Parameters

Price Cap Index

Price Escalator (GDP-IPI)	**1.70%**	
Less Productivity Factor	**0.00%**	
Less Stretch Factor	-0.60%	
Price Cap Index		**1.10%**

Growth

ICM Billing Determinants for Growth - Numerator : 2012 Actual	$ 532,388,975	A
ICM Billing Determinants for Growth - Denominator : 2010 Audited RRR	$ 528,018,642	B
Growth	**0.83%**	C = A / B

Incremental Capital Workform

Threshold Test

Year		**2014**		
Price Cap Index		**1.10%**	**A**	
Growth		**0.83%**	**B**	
Dead Band		**20%**	**C**	
Average Net Fixed Assets				
Gross Fixed Assets Opening	$	4,183,572,075		
Add: CWIP Opening	$	204,719,106		
Capital Additions	$	376,263,596		
Capital Disposals	$	-		
Capital Retirements	$	-		
Deduct: CWIP Closing	-$	232,060,508		
Gross Fixed Assets - Closing	$	4,532,494,269		
Average Gross Fixed Assets	$	4,358,033,172		
Accumulated Depreciation - Opening	$	2,285,733,698		
Depreciation Expense	$	138,815,781	**D**	
Disposals	$	2,807,234		
Retirements				
Accumulated Depreciation - Closing	$	2,427,356,713		
Average Accumulated Depreciation	$	2,356,545,206		
Average Net Fixed Assets	$	2,001,487,967	**E**	
Working Capital Allowance				
Working Capital Allowance Base	$	2,479,952,766		
Working Capital Allowance Rate		12%		
Working Capital Allowance	$	296,739,314	**F**	
Rate Base	**$**	**2,298,227,281**	**G = E + F**	
Depreciation	**D**	**$ 138,815,781**	**H**	
Threshold Test		**152.07%**	**I = 1 + (G / H) * (B + A * (1 + B)) + C**	
Threshold CAPEX		**$ 211,090,771**	**J = H *I**	

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INTERROGATORY 6:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 21

At the above reference, Toronto Hydro provided "Table 2: Common Drivers of Variance – Table of Variance Codes." This table breaks down the five primary reasons why actual ISAs varied from forecast ISAs.

Please provide an order-of-magnitude percentage indicator of the total amount of the ISA variance which could be attributed to each of these five factors.

RESPONSE:

As noted in Toronto Hydro's response to interrogatory 1-SEC-5, Toronto Hydro assigned primary and, in some cases, secondary variance codes to all filed (i.e., forecasted) and completed jobs that had cost variances exceeding a defined threshold. The following table uses these variance code assignments to roughly approximate the total net variance on an ISA basis attributable to the variance codes for the *subset* of jobs that were both originally filed and completed.

Variance Type	Estimated Percentage of Total ISAs Variance in ICM Segments for Filed and Completed Jobs
High-level to Detailed Design Variance	87%
Field Conditions & Execution Requirements	6%
Third-party Requirements & Constraints	1%
Variance in Allocated Costs	6%
Error	0%

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It is important to note that these are not percentages of the total ISAs in the ICM segments. These percentages relate only to the total ISAs for jobs from the original filing that were completed by the end of 2014, i.e., a subset of the final ISAs. For example, it cannot be concluded that 87% of all segment-level variance is due to High-Level to Detailed Design variances. At most, it can be concluded that roughly 87% of the total net ISAs variance on filed and completed jobs is associated with this variance code on a dollars basis.

Variances in the *total* ICM Segment ISAs were attributable not just to variances on filed and completed jobs, but also to differences between the number of jobs filed and the number of jobs completed (i.e., deferred and canceled jobs versus analogous jobs), as well as the timing of the jobs (i.e., the number of filed jobs that were only partially completed or in progress).[1] Please see Toronto Hydro's response to interrogatory 1-SEC-4, part (a) for an explanation of why a more discrete breakdown of the total variances in the ICM segment ISAs cannot be provided.

Finally, it should be noted that the percentages in the table above assumes that the entire variance for a job is attributable to the primary variance code. This was a necessary assumption as Toronto Hydro does not have a precise breakdown between the primary and secondary variance codes on a dollars basis.

For the reasons noted above, the figures in the table should be treated as illustrative and should not be interpreted as a precise or complete breakdown of all variances in the ICM segments.

[1] EB-2015-0173, Toronto Hydro-Electric System Limited Incremental Capital Module True-up Application (March 8, 2016), Exhibit 1, Tab 2, Schedule 2, p. 11 at lines 17-22.

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INTERROGATORY 7:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 23

At the above reference, Toronto Hydro stated that "The majority of job scopes included in the preliminary EWP are created using high-level estimates."

a) Please state the percentage of job scopes that are created using high level estimates.
b) Please state how Toronto Hydro would determine which job scopes would be created using more detailed estimates.

RESPONSE:

a) All planned capital jobs of the type underpinning the ICM segments are created using high level estimates. This approach was documented in the Phase 1 proceeding, where Toronto Hydro stated:

> For purposes of planning and budgeting, THESL follows a two-stage process for cost estimation. The first stage is the production of a high level estimate that is usually prepared using a cost per unit of work approach. For example, when producing the initial estimate for an underground direct buried job, THESL uses a cost per unit length parameter that reflects the cost of installing civil and electrical infrastructure based on a selected standard of construction. This approach is used for initial screening of jobs and avoids the significant

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

cost involved to produce a detailed estimate for a job that may not go forward.[1]

b) See response to part (a) above. For a summary of Toronto Hydro's job scoping process, including the use of high level and detailed estimates during the development of an Execution Work Program, please refer to Exhibit 1, Tab 2, Schedule 2, pages 22-23.

[1] EB-2012-0064, Toronto Hydro-Electric System Limited Addendum to the Manager's Summary (October 31, 2012) at p. 10.

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

INTERROGATORY 8:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 25

At the above reference, Toronto Hydro stated that its "approach to accounting for allocated costs in the ICM Application was to apply a consistent percentage-based adder to a job's forecast costs."

Please state the amount of this adder and an explanation as to how this amount was determined.

RESPONSE:

The allocated costs adder applied in the ICM Phase 1 (2012-2013) application was 19.9%. For ICM Phase 2 (2014), an allocated costs adder of 22.9% was applied. The allocated cost adder is comprised of assumptions for design, engineering capital, and apprentice costs. The ICM Phase 1 allocated cost also includes an estimate for road cut repair and major tools costs.

In the ICM Phase 1 application, the percentage adder to be applied to ICM work was estimated by taking the average ratio between (1) the total expenditures for each element of the adder and (2) the related Execution Work Program capital spending for a one to five year historical period. In ICM Phase 2, the processes for estimate road cuts and major tools were enhanced. Road cut repair costs were estimated on a job-by job basis based on what the high-level design included with respect to anticipated road cut repairs, as further explained in the response to Interrogatory 2-Staff-12(a). Major tools were not

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

allocated to each job but were instead presented as part of the C1 Operations Capital segment to align with the way in which major tools are tracked in actuals.

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

INTERROGATORY 1:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 2

Preamble:

THESL indicates the Revenue Requirement associated with Actual ISAs is $52.3 million.

a) Please provide the Revenue Requirement associated with ISAs excluding analogous jobs.

RESPONSE:

Please see Toronto Hydro's response to interrogatory 1-Staff-3, part (b).

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

INTERROGATORY 2:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 13, Table 1

a) For each segment, for completed jobs only, please provide the forecast and actual ISA $ split between work undertaken by contractors versus internal resources.

RESPONSE:

As explained in Toronto Hydro's response to interrogatory 2-Staff-14, Toronto Hydro did not assume the use of external contractors in preparing its cost estimates filed for the ICM segments. Therefore, Toronto Hydro does not have a forecast ISAs split between work undertaken by contractors versus internal resources.

The table below shows actual ISAs by segment, split between work undertaken by contractors versus internal resources. Toronto Hydro classified each completed job into one of three categories:

1) Internally executed project
2) Externally executed project
3) Mixed execution project

Toronto Hydro included the total ISA dollars for a given job in one of the three categories. For example, if the job was internally executed but contained materials purchased externally, or other non-construction contractor invoices (e.g., paid duty), then the entire ISA for the job was grouped as internally executed. If the job was executed externally by a major contractor, but contained some internal labour relating to design and inspection costs, then the entire ISA for the job was grouped as externally executed.

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

If the job contained both internal labour as well as major construction contractor costs, then the entire ISA for the job was grouped as a mixed execution project.

Please see the table below for actual ISA by segment for completed (including analogous) jobs:

ICM Segment	External ISA ($ millions)	Internal ISA ($ millions)	Mixed ISA ($ millions)	Total ISA ($ millions)
Underground Infrastructure	113.0	0.6	50.0	163.6
PILC Piece Outs and Leakers	0.3	0.6	-	0.9
Handwell Replacement	35.6	-	0.8	36.4
Overhead Infrastructure	60.8	0.2	13.9	74.9
Box Construction	5.6	0.2	8.9	14.7
Rear Lot Construction	17.8	0.3	36.2	54.3
Network Vault & Roofs	1.0	0.3	15.6	16.9
Fibertop Network Units	0.2	6.4	4.3	10.9
Automatic Transfer Switches & Remote Power Breakers	-	1.5	0.4	1.9
Stations Power Transformers	-	4.7	0.4	5.1
Stations Switchgear	0.8	3.8	0.4	5.0
Metering	-	5.4	12.5	17.9
Externally-Initiated Plant Relocations and Expansions	8.0	4.3	5.7	18.0

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

INTERROGATORY 3:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 23

Preamble:

THESL indicates that high level estimates are based on standardized costs for installing various types of assets.

a) Please provide the standardized costs for each type of asset.

b) Please list the job segments with high level estimates determined using standardized asset costs.

RESPONSE:

a) For the reasons set out below, Toronto Hydro believes that providing the detailed list of standardized units referenced in the preamble would not be relevant or useful in assessing variances for the purposes of this Application.

Standardized labour and material units are elements of (1) high-level estimates created for electrical jobs and (2) detailed estimates created for electrical jobs executed by internal resources. These units are not equivalent to average unit costs for major asset classes and are not relevant if assessing performance on a cost per installed asset basis. This is because many variations of material and labour units exist for the same major asset class. This level of granularity is necessary to accommodate the many different applications of major assets in the system. Therefore, no particular standardized unit represents the average installation cost for a major asset class.

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

Similarly, Toronto Hydro creates all civil construction estimates, which are executed by external resources, and any detailed estimates for electrical jobs that are to be executed by external resources, using thousands of detailed contractor unit prices. Again, no particular unit price represents the average installed cost for a major asset class.

Toronto Hydro has provided, on a best efforts basis, the forecast versus actual units by major asset class at the ICM Segment level in response to Interrogatory 2-AMPCO-3.

b) Please see Toronto Hydro's response to interrogatory 1-AMPCO-4.

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

INTERROGATORY 4:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 24

Preamble:

THESL indicates that high level estimates can and do vary from the actual cost of the completed jobs even when the scope of the jobs remains unchanged between the initial planning and executions. This type of variance is an accepted part of project cost estimation generally and has specifically been recognized for cost estimation in the utility industry.

a) For each segment, please provide the number of completed jobs where the scope of the job was unchanged.

b) Please provide the number of jobs in part (a) where the variance in costs was within 10% of their forecasted cost.

RESPONSE:

a) Toronto Hydro assumes that AMPCO considers a change in scope to be any change in the number of units forecast versus the number of units actually replaced or installed. For the reasons set-out below, Toronto Hydro cannot provide forecast versus actual unit count comparisons below the segment level, i.e., at the job level, for the ICM period.

To create the high-level estimates for jobs executed during the ICM period, Toronto Hydro's engineers typically relied on historical average total costs for executing similar jobs. For example, the high-level estimate for a Rear Lot Construction job would typically have been derived based on the scale of the conversion area relative

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

to previously designed or completed jobs. A proxy unit of measure, such as the number of customers or lots to be converted, the estimated circuit length of the new underground plant, or a combination of the two factors and any other high-level assumptions about the job area, would have been used to arrive at a high-level forecast cost for this type of job.

As explained in Toronto Hydro's response to interrogatory 1-AMPCO-3, standardized material and labour units are one of the elements used to build the actual cost estimate in Toronto Hydro's estimate database. The extent to which a planning-level engineer used standardized units when creating the high level estimates in the ICM Application depended on the methodology applied in arriving at the high-level cost for the job. For the Rear Lot Construction example above, the high level estimate would often have been based on a combination of standardized units, scaling factors and lump-sum expenditure amounts.[1] In other words, the estimate would have been built to reflect the expected cost for the job and not an expected cost per asset, as the cost for the job was likely not derived based on a detailed forecast of units to be installed. It was not until the detailed design stage that an estimate was built strictly on the basis of standardized material and labour units and/or contractor unit prices. For these reasons, the high level estimates are not a consistent source of forecast units at the job level.

In response to interrogatory 2-AMPCO-3, Toronto Hydro has provided, on a best efforts basis, the forecast and actual unit counts by major asset class for each of the

[1] Fibertop Network Units is an example of a segment where the high-level estimates would be based more directly on standardized asset costs. This is possible because of the targeted nature of the work, where the assumption of a like-for-like replacement generally holds true and the cost drivers are less volatile.

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

ICM segments. As explained in the response, the forecast asset counts in the original segment narratives were calculated specifically for the filing, i.e., through a manual exercise separate from the creation of the underlying cost estimates. Toronto Hydro refers to these underlying cost estimates as "jobs" for the purposes of the ICM True-up Application.[2] In segments that dealt with area rebuilds (i.e., Underground Infrastructure), forecast asset counts in the original ICM Application were typically presented for groups of estimates within a larger work area.[3] Toronto Hydro cannot disaggregate these grouped asset forecasts into estimate-specific (i.e., job-specific) forecasts. While Toronto Hydro could undertake to remap the individual estimates back to their original estimate groupings in each segment, to do so at this stage would be onerous, impossible to complete within the time allowed, and would provide questionable probative value for the OEB, not least because the number of jobs where the quantity of units was unchanged would likely be very small.

In addition to being unable to provide forecast units at the job level, Toronto Hydro believes that such information is neither useful nor relevant in assessing variances at the segment level for the purposes of this Application.

b) See response to part (a) above.

[2] The internal financial tracking systems required that the unit of analysis for this application be based on the individual estimates, any one of which might be complete, partially complete, in progress, deferred, or cancelled. This was necessary to ensure data integrity and to maintain a strict and precise relationship between the numbers of jobs discussed in this application and the ISAs associated with those jobs.

[3] For an example, refer to EB-2012-0064, Toronto Hydro-Electric System Limited Application (May 10, 2012), Tab 4, Schedule B1, Tables 3 and 4.

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

INTERROGATORY 5:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 27

Preamble:

THESL indicates that analogous jobs were required during the ICM period to address urgent issues because it was most efficient to complete it in conjunction with other ICM jobs.

a) Please provide the basis of THESL's understanding that money can be used for a different project.

RESPONSE:

Toronto Hydro does not believe that money can be used for a different project or segment. Please see Toronto Hydro's response to interrogatory 1-Staff-3, part (a), which explains the basis for Toronto Hydro's belief that job substitutions, additions and deletions within project segments were contemplated by the OEB.

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

INTERROGATORY 6:

REFERENCE(S): EB-2012-0064, Phase 2, Settlement Agreement, Filed 2013-12-18, page 8 of 11

Preamble:

The Settlement Agreement states, "Further, parties agree that THESL shall use its best efforts to track any assets taken out of service before the end of their useful lives associated with the completion of ICM work segments approved in Phase 2 of this proceeding."

a) Please provide a summary of the number of assets by asset type taken out of service before the end of their useful lives.

RESPONSE:

a) Toronto Hydro tracked, on a best efforts basis, the assets taken out of service in 2014 related to the completion of ICM segments. The following table summarizes the number of assets by asset type taken out of service before the end of their useful lives in 2014.

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

Asset Type	Qty Removed Before End of Useful Life	Unit of Measure
Duct	313	M
Pole	2,444	EA
Primary Conductor	147,117	M
Secondary Conductor	78,951	M
Structure	28	M
Switch	618	EA
Transformer	827	EA
Station Battery	4	EA
Station Breakers (Outdoor)	1	EA
Station Battery Charger	4	EA

RESPONSES TO CONSUMERS COUNCIL OF CANADA INTERROGATORIES

INTERROGATORY 1:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 1, page 3

Please provide the terms of reference for the Power System Engineering report. Did PSE look at the individual jobs in each segment and determine whether they were undertaken in a cost-effective manner? Did PSE look at the individual job forecasts to assess whether they were reasonable?

RESPONSE:

Please see attached the Retainer Letter Agreement between Torys LLP and PSE.

PSE referenced Toronto Hydro's forecasted ISAs against actual ISAs at a segment level to establish the reasonableness of variances. In certain cases where the variance between forecasted costs and actual costs at the segment level warranted further review, PSE looked at variance drivers of individual jobs; however, in doing so, PSE did not look at individual job-level forecasts to determine whether they were undertaken in a cost-effective manner, nor did PSE look at the individual job-level forecasts to assess whether they were reasonable.

TORYS LLP

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BY EMAIL

CONFIDENTIAL — PRIVILEGED

August 25, 2015

Erik S. Sonju
Power System Engineering Inc.
1532 West Broadway
Madison, Wisconsin 53713
U.S.A.

Re: Retainer Letter Agreement – Toronto Hydro-Electric System Limited

Dear Mr. Sonju:

We represent Toronto Hydro-Electric System Limited ("**THESL**") in connection with its 2012-2014 ICM True-up Application (the "Application") before the Ontario Energy Board (the "**Board**").

We confirm that Torys LLP ("**Torys**") has agreed to retain Power System Engineering Inc. (the "**Consultant**") on behalf of THESL for purposes of Torys providing advice to THESL and opinion evidence in the Application effective as of the date hereof (the "**Effective Date**"). By signing back a copy of this letter, the Consultant agrees that this letter contains the agreed-upon terms and conditions of its retainer with Torys effective on the Effective Date, subject to amendment by written agreement between the parties (the "**Retainer Agreement**").

1. **No Conflict**

The Consultant does not have any conflict of interest or other constraints on its ability to provide expert advice to THESL. You confirm that you are free to provide your services to Torys in connection with Torys' representation of THESL in the Application. You agree that during this engagement you will not provide, directly or indirectly, any services to any other party in connection with the matters at issue in the Application.

2. **Consultant Expertise**

The Consultant has been selected to provide consulting services to Torys on behalf of THESL in connection with THESL's Application. The sponsor of the work of the Consultant and the persons who have the relevant expertise will be Erik Sonju (the "**Sponsor**").

3. **Scope of Services and Work Product**

(a) Review and evaluate Toronto Hydro's ICM true-up results as detailed in the utility's true-up application.

(b) Assess Toronto Hydro's ICM segment level variance explanations against industry trends and practices relating to variances between planning estimates/budgets and actuals.

(c) Upon Torys request a written report of the work noted above and opine on the reasonableness of variances between the OEB approved and actual ISA's and capital expenditures at a segment level. The report may be filed in the proceeding and you may (in the event of an oral hearing) be required to give testimony. If the report is filed, your assistance in responding to interrogatories applicable to the report will be required and an appearance at a technical conference may be required.(the "**Services**").

4. **Fees**

By entering into this Retainer Agreement, the Consultant acknowledges that the agreed-upon price for the Services is CAD$51,000, plus additional attendance fees for testimony at the Board and responses to interrogatories (if requested), which will be charged at the following hourly rates:

Erik Sonju	CAD$300
Administrative Support	CAD$130

Any disbursements for additional incidentals incurred by the Consultant in relation to this Retainer Agreement must be pre-approved by THESL in writing. THESL reserves the right to deduct any applicable non-resident withholding taxes from any amounts owing to the Consultant under this Retainer Agreement and remit such amounts to the applicable taxation authority.

The Consultant will invoice THESL for professional fees and expenses in connection with the Consultant's work, on a monthly basis, or as otherwise agreed by the parties.

5. **Confidentiality**

All work performed by the Consultant in connection with this Retainer Agreement, including all findings, opinions and conclusions the Consultant reaches in relation to this Retainer Agreement, and any communications relating thereto, is strictly privileged and confidential and shall not be disclosed to any other person or party without the prior written consent of our firm or THESL. You agree to designate all written communications and material accordingly. You further agree to notify our firm in the event that you receive a request to disclose information relating to this matter, and agree to cooperate with us, to the fullest extent permitted by law, to prevent or limit

the disclosure of such material or otherwise preserve the privileged and confidential status of such material.

The Consultant agrees to hold in confidence: (a) all information provided to the Consultant, and (b) the Consultant's opinions to us and to THESL as they relate to the information, whether the information or opinions are documentary or oral. The Consultant will not disclose the information or opinions to any person unless Torys or THESL authorizes you in writing to do so. All documents given to the Consultant in connection with this Retainer Agreement remain the property of Torys or of THESL, and are held in trust by you as agent. The Consultant agrees to return these documents on request.

The Consultant will not refer to Torys or to THESL, directly or indirectly, in connection with the promotion of its services, without obtaining the prior written consent of THESL.

6. Intellectual Property

Nothing in this Retainer Agreement shall be deemed to transfer, license, assign, permit the use of, or otherwise convey an interest in whole or in part to the Consultant of any intellectual property belonging to THESL or any of its representatives or any third party whose intellectual property is in THESL's custody or control, and the use by the Consultant of any such intellectual property shall be subject to the prior written approval of THESL.

THESL shall at all times have full rights and title to all works prepared, generated or created by the Consultant pursuant to this Retainer Agreement, including without limitation any reports or other documents created by the Consultant, and any related works, modifications or additions thereto (the "**Work Product**"), and may at all times take possession of or use any completed or partially completed Work Product, notwithstanding any provision, express or implied, to the contrary. Without limiting the generality of the foregoing, THESL shall own all intellectual property rights in all Work Product, and the Consultant hereby waives and assigns to THESL any such rights, and agrees to give THESL and its representatives all assistance as may be reasonably required to perfect such rights including, without limitation, obtaining waiver of moral rights from any of the Consultant's employees, partners or other representatives.

7. Termination

THESL may terminate this Retainer Agreement at any time on written notice to the Consultant. THESL agrees to pay for work performed up to the date of the notice of termination. Upon the termination or expiration of this Retainer Agreement, the Consultant shall return to THESL and delete any and all electronic copies the Consultant may have of all documents and materials in its possession relating to the Services or this Retainer Agreement, including all Confidential Information (defined below) and Work Product, whether completed or not.

8. Limitation of Liability

Except for breach of confidentiality obligations (for which Consultant's maximum liability shall not exceed CAD$2,000,000.00), the Consultant's total liability for any claim arising out of the performance of the Services, regardless of the form of claim, will in no event exceed total fees paid to Consultant hereunder and under no circumstances will either party be liable for any

damages in respect of any incidental, punitive, special, indirect or consequential loss, even if that party had been advised of the possibility of such damages including, but not limited to, loss of profits, loss of revenues, failure to realize expected savings, loss of data, loss of business opportunity, or similar losses of any kind.

9. **Independence**

By entering into this Retainer Agreement, the Consultant acknowledges and agrees that the Sponsor has received a copy of Rule 13A of the Board's *Rules of Practice and Procedure* concerning expert evidence, and agree to accept the responsibilities that are or may be imposed on them by that rule with respect to testimony before the Board.

10. **Entire Agreement**

This Retainer Agreement, together with all Schedules attached hereto and any agreements and other documents to be delivered pursuant to this Retainer Agreement, constitute the complete agreement between the THESL and Consultant or their respective agents with respect to the subject matter hereof and supersedes any and all prior agreements and understandings. This Retainer Agreement may be amended only in a writing that refers to this Retainer Agreement and is signed by both parties.

Sincerely,

TORYS LLP

Per: _____
Name:

Accepted and agreed to by Power System Engineering Inc.

Signed Erik S. Sonju

Name (please print) Erik S. Sonju

RESPONSES TO CONSUMERS COUNCIL OF CANADA INTERROGATORIES

INTERROGATORY 2:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 1, page 3

Please provide all Board of Directors or Board Committee documentation dealing with the projects that are part of the total ICM application, as well as any requests for increased or decreased dollars associated with each of the projects in this application.

RESPONSE:

No such documentation exists.

RESPONSES TO CONSUMERS COUNCIL OF CANADA INTERROGATORIES

INTERROGATORY 3:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, pages 4 and 6

In its original Incremental Capital Module (ICM) Application THESL requested funding for "critical" capital projects that it expected to carry out during the ICM Period. Furthermore, the OEB deemed, in its Partial Decision and Order dated April 2, 2013, that the work was non-discretionary and "must be performed in order to: comply with applicable laws or external requirements; keep the public and workers safe; address existing or imminent reliability degradations or capacity shortages; and avoid a material increase in costs that might arise is the project was delayed." Given this context, why were the ISA's in 7 out of the 13 segments less than forecast? If all of the work was deemed "critical" and "non-discretionary" why was some of that work not undertaken?

RESPONSE:

Apart from the specific variance explanations provided in Toronto Hydro's ICM True-up Application (see reference below) for project segments where actual ISAs were less than forecast ISAs, the fact that given jobs are critical and non-discretionary does not mean that those jobs can necessarily be executed within a given period. An individual job's characterization as being critical and non-discretionary speaks to the need for the job to be done at the reasonably earliest opportunity. In other words, a job may be critical and non-discretionary and therefore eligible for ICM funding, but the execution of the job will still be influenced by a number of other constraints.

Toronto Hydro's evidence, dating back to Phase 1 of the ICM application, has been clear that a number of factors can intervene to delay the completion of a job, and in order to

RESPONSES TO CONSUMERS COUNCIL OF CANADA INTERROGATORIES

maintain the efficiency of its overall program, it would be necessary to adjust job timing to accommodate unforeseen delays in some jobs and to advance others so as to maintain efficient resource utilization.[1] These factors can include emergence of more urgent jobs; redundancy of planned ICM work due to the completion of reactive work; unforeseeable site conditions that interfere with job execution; changes in the execution plans of external parties, and delays associated with the involvement of third parties; moratoria on road cuts; constraints on resource availability including specialized labour and materials; constraints on switching capacity due to load conditions; and coordination with other electrically interdependent jobs. For instance, Toronto Hydro's Stations Switchgear evidence indicates that several of the cited factors combined to cause the deferral of certain jobs in this project segment.[2] These factors included constraints on timely resource availability and on the ability to coordinate the work with Hydro One. In addition, while work has progressed none of it can be recognized as in-service until the entire job is complete, in contrast to other jobs where partial progress can be placed in service and recognized.

With respect to the particular conditions affecting each underspent project, please refer to the evidence filed in this Application, as identified below:

Tab 2 – PILC Piece Outs and Leakers
Tab 3 – Handwell Replacement
Tab 5 – Box Construction
Tab 7 – Network Vaults and Roofs

[1] EB-2012-0064, Toronto Hydro-Electric System Limited Application (October 31, 2012), Addendum, Tab 2, Addendum, at pp. 7- 11.
[2] EB-2015-0173, Toronto Hydro-Electric System Limited Incremental Capital Module True-up Application (March 8. 2016), Exhibit 2, Tab 11, Schedule 1 at p. 5.

RESPONSES TO CONSUMERS COUNCIL OF CANADA INTERROGATORIES

Tab 9 – Automatic Transfer Switches and Reverse Power Breakers

Tab 11 – Stations Switchgear

Tab 13 – Externally Initiated Plant Relocations

Overall more work was executed than was forecast, which indicates that Toronto Hydro was able to deploy resources effectively to address urgent needs, despite the obstacles noted above. In many instances, Toronto Hydro was able to substitute analogous jobs for those that would have been deferred. There was no overall deficiency relative to forecast in the amount of work done for the purpose of ensuring the reliability, adequacy, and safety of the distribution system.

RESPONSES TO CONSUMERS COUNCIL OF CANADA INTERROGATORIES

INTERROGATORY 4:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 6

The OEB approved 13 of the proposed project segments as prudent and non-discretionary, and therefore eligible for ICM funding. Does THESL agree that despite the approval of the segment categories in the previous proceedings, any cost overruns are the subject of a prudence review in this proceeding? If not, please explain.

RESPONSE:

Toronto Hydro agrees that despite the approval of the segment categories in the previous proceedings, cost overruns are subject to a prudence review for the purposes of determining the revenue requirement for the ICM period.[1]

[1] EB-2012-0064, Toronto Hydro-Electric System Limited Decision and Rate Order (May 9, 2013), Accounting Order at p. 3.

RESPONSES TO CONSUMERS COUNCIL OF CANADA INTERROGATORIES

INTERROGATORY 5:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, pages 7 and 15

On page 7 it states that none of the ISAs in the approved 2012 ICM segments were above the materiality threshold. On page 15, Figure 1 illustrates that THESL actually spent $15.4M above the threshold. Please explain how these 2012 expended dollars are eligible for ICM funding when they were never considered during the previous proceeding (EB-2012-0064)?

RESPONSE:

Please see Toronto Hydro's response to interrogatory 1-Staff-2, part (a), which contains an explanation of why it is eligible for 2012 ICM recoveries.

RESPONSES TO CONSUMERS COUNCIL OF CANADA INTERROGATORIES

INTERROGATORY 6:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 8

Preamble:

With respect to the true-up, the evidence states that the OEB's policy documents do not specifically discuss true-up, but contemplates a simple comparison between the estimated capital investment for ICM work (and the initial rate rider to fund it) and the actual investment required to complete that work (potentially resulting in a true-up rate rider).

The OEB's Partial Decision and Order states, "The Board shares the concerns of certain intervenors that the monies allocated for ICM projects must be tracked separately and reported separately. Unlike the "envelope" approach often adopted in cost-of service proceedings, the monies must be reported per project segment as outlined above. Should one project not proceed, for example, the money cannot be used for a different project or to cover overspending on another project." (Partial Decision and Order, dated April 2, 2013, p. 75)

a) To the extent project work was not undertaken in certain segments, was money allocated to pursue different projects in that segment? If so, please explain how this is consistent with the OEB's direction as set out in the Partial Decision and Order.
b) To the extent project work was not undertaken in certain segments, was money allocated to pursue projects in other segments? If so, please explain how this is consistent with the OEB's direction as set out in the Partial Decision and Order.

RESPONSES TO CONSUMERS COUNCIL OF CANADA INTERROGATORIES

RESPONSE:

a) Yes, assuming that the phrase "different projects" means "different jobs" (as "jobs" is used throughout Toronto Hydro's evidence) and does not mean "different segments". As the Partial Decision and Order makes clear, Toronto Hydro was permitted to shift funding among jobs within a project segment. This is outlined in the portion of the Partial Decision and Order referenced in the preamble to this question.[1]

b) No, Toronto Hydro did not shift funds between project segments. As explained in evidence, variances within the ICM segments occurred where the actual cost of individual jobs was more or less than the forecast cost.[2] Variances also occurred where jobs were added, deferred or cancelled. In some ICM segments, circumstances required that additional work be undertaken. In other ICM segments, circumstances occurred that hindered the ability to undertake certain jobs during the ICM period. The Accounting Order expressly stated that both under-spend and prudent over-spend variances would be determined and that the associated revenue requirement amounts would be refunded to or collected from customers.[3]

[1] EB-2012-0064, Toronto Hydro-Electric System Limited Partial Decision and Order (April 2, 2013) at p. 75.
[2] EB-2015-0173, Toronto Hydro-Electric System Limited Incremental Capital Module True-up Application (March 8, 2016), Exhibit 1, Tab 2, Schedule 2, Section D.
[3] EB-2012-0064, Toronto Hydro-Electric System Limited Decision and Rate Order (May 9, 2013), Accounting Order at pp. 2-3.

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INTERROGATORY 7:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 17

In THESL's CIR application (EB-2014-0116) THESL proposed and the OEB granted a variance account to capture any disallowance based on prudence that may result from the ICM true-up process. Please explain how THESL will, if required, make any adjustments to rate base to reflect any disallowances.

RESPONSE:

The Accounting Order issued in the OEB's EB-2014-0116 decision describes the operation of the approved variance account. The relevant portion of the Accounting Order is attached as Appendix A to this response. In summary, the account will record the revenue requirement consequences, beginning in 2015, of any in-service capital additions that are found to be imprudent. These amounts will be refunded to ratepayers through a rate rider approved by the OEB at a later date. Upon next rebasing, any amounts disallowed by the OEB based on prudence would be removed from rate base.

- DR 2294 Accrual for Taxes, "Payments in Lieu of Taxes", Etc.
- CR 6110 Income Taxes
- DR 4080 Distribution Services Revenue
- CR 1508 Other Regulatory Assets, Subaccount OCCP Gains Variance Account

E. Record the actual sale of the property, net of taxes (assuming a net gain).

- DR 1005 Cash
- DR XXXX Accumulated Depreciation of PP&E (various accounts – depends on type of asset)
- CR XXXX Property, plant and equipment (various accounts – depends on type of asset)
- CR 2294 Accrual for Taxes, "Payments in Lieu of Taxes", Etc.
- CR 4355 Gain on Disposition of Utility and Other Property

F. Record the reclassification of the actual net after-tax gain to Account 1508 Other Regulatory Assets, Subaccount OCCP Gains Variance Account

- DR 4355 Gain on Disposition of Utility and Other Property
- CR 1508 Other Regulatory Assets, Subaccount OCCP Gains Variance Account

G. Record the carrying charges based on the net of the balances in Account 1508 subaccount OCCP Gains Variance Account and Account 1508 subaccount Regulatory Deferred Gain on Disposal (Rate Rider Account). The carrying charges are determined using simple interest applied on the monthly net opening balances:

- DR 6035 Other Interest Expense / CR 4405 Interest and Dividend Income
- CR/DR 1508 Other Regulatory Assets, Subaccount OCCP Gains Variance Account Carrying Charges

5. VARIANCE ACCOUNT FOR 2015 OPENING RATE BASE TO CAPTURE PRUDENCE-BASED ICM DISALLOWANCES – ACCOUNTING ORDER

At this time, the ICM True-up process has not been completed. As such, differences in the amount of ICM-eligible work that should be included in the 2015 opening rate base could occur as a result of the OEB's findings during that process. This variance account will capture any differences between amounts included in 2015 rate base and any revenue requirements associated with disallowances based on prudence that may result from the ICM True-Up. Specifically, this variance account will track the revenue requirement impact of any capital in-service additions and the related depreciation expense included in the 2015 revenue requirement through the CIR Decision that are found to be imprudent in the ICM True-Up.

Carrying charges will apply to the opening revenue requirement balances in the account (exclusive of accumulated interest) at the OEB-approved rate for deferral and variance accounts.

At a later date, Toronto Hydro will apply to clear the balances in this account to ratepayers.

Toronto Hydro will establish the following variance accounts to record the amounts described above:

- Account 1508 Other Regulatory Assets, Subaccount THESL ICM True-Up Revenue Requirement Variance Account
- Account 1508, Other Regulatory Assets, Subaccount THESL ICM True-Up Revenue Requirement Variance Account Carrying Charges

The sample accounting entries for the variance accounts are provided below.

A. To record the revenue requirement associated with disallowed rate base:
    - DR 4080 Distribution Services Revenue
    - CR 1508 Other Regulatory Assets, Subaccount THESL ICM True-Up Revenue Requirement Variance Account

B. To record the carrying charges in subaccount THESL ICM True-Up Revenue Requirement Variance Account:
    - DR 6035 Other Interest Expense

- CR 1508 Other Regulatory Assets, Subaccount THESL ICM True-Up Revenue Requirement Variance Account Carrying Charges

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INTERROGATORY 8:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 18

PSE states that the justifications THESL provided for the observed differences in those segments having larger variation are reasonable based on industry experience in implementing large, complex, multi-year capital projects. Please provide the specific industry experience that this statement was based on. Please provide detailed evidence to support this claim.

RESPONSE:

PSE has over 40 years of experience in project development, planning, engineering and design, as well as significant experience in construction and commissioning of overhead and underground electric utility facilities. In the case of underground electric utility projects, based on PSE's experience there are limited opportunities, as compared to overhead electric utility projects, for visual inspections to verify actual below grade conditions. This limitation tends to decrease the accuracy of estimation as stated on page 11 of PSE's Report: "Estimates are dependent upon the available information, time demands, purpose of the estimate, and techniques used."

PSE researched documents from Southern California Edison: *2015 General Rate Case Transmission and Distribution (T&D) Volume 4 – Infrastructure Replacement Programs*; and Commonwealth Edison: *Infrastructure Investment Plan 2013 thru 2015 Annual Updates*. These two documents deal with asset renewal programs. Both companies found greater uncertainty in work scope and a wider range in costs for some underground projects.

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In general, the variances drivers could be condensed into the following areas: changes in scope/priority/schedule, additional detail information, changes in methodology, differences in types of sites, changes in selected sites, alignment of resources, and third party impacts.

Specifically, a sample of excerpts from Southern California Edison align with variance drivers listed by Toronto Hydro:

1. Changes in Scope/Schedule/Priority
    a. "Emergent conditions, which may alter the substance and or priority of the work, are reviewed monthly at the Regional Grid Team meetings."
    b. "Schedule adjustments may also be made to coordinate with other planned construction projects."
    c. "A second adjustment to the schedule is made to optimize the construction aspects of the replacements. Planning, work setup, and equipment tear down at a substation are expensive. Therefore, every effort is made to combine multiple projects (involving transformer replacement, circuit breaker replacement, or some other major work activity) at a substation into a larger single project in order to avoid return visits to the substation within a three year period."
    d. "The 4kV switchgear is nearly unique at SCE (but similar to Maywood Substation) in that each cubicle has transformer bank integrated with it, which complicates obtaining or designing replacements."

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2. Additional Detail Information
    a. "In addition to introducing new methods and tools into its CIC Replacement Program, SCE has begun to use cable testing as a means to ensure that, in light of the very high cost of replacing it, no CIC is replaced prematurely."
    b. "Unfortunately, inspections are not able to detect all imminent failures of switches. Deterioration of the electrical contacts and other components internal to the switch cannot be detected."

3. Changes in Methodology
    a. "Underground cable is unique in that it cannot be visually inspected. Without a deliberate redemptive replacement program, cable would be removed from the system only as a result of in-service failure."
    b. "We have found this method to be very costly. Therefore SCE explored alternative methods of replacing CIC."
    c. "SCE's Construction Standards have been revised to specify that removal of the CIC from its tubing using the newly available equipment is to be the preferred option for replacing CIC."
    d. "Because the PMH-4 and the PFC switches have no internal upstream switch and because safety procedures no longer permit operation of energized fuse position mechanisms, large sections of the circuit must now be de-energized before crews can operate these switches."

4. Differences in types of Sites
    a. "The second lesson, although not surprising, has been the wide range in costs of replacing CIC. While unit costs of replacements in highly rural

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areas are relatively low, the unit cost in urban areas was very high. This is exactly the reason for SCE's new strategy of reusing the existing CIC duct as discussed at length in the preceding sections."

b. "We have not been able to find replacements for this equipment and there is insufficient room in the substation to construct temporary accommodations."

5. Changes in Selected Sites

a. "Historically, about 5% of the initially listed circuits will be replaced with substituted circuits on the basis of non-quantifiable factors.

6. Alignment of Resources

a. "Performing repairs in PILC cable is very time consuming, can only be done by a small number of specially trained workmen, and often results in splices which are prone to subsequent failure."

b. "The rack in and rack out devices of these circuit breakers are very worn requiring two operant personnel to allow for racking in and out of these circuit br4eker in a safe manner."

7. Third Party Impacts

a. "The first has been the difficulty in obtaining easements."

In addition, a sample of excerpts from Commonwealth Edison which align with variance drivers listed by Toronto Hydro:

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8. Changes in Scope/Schedule/Priority
    a. "These insights have resulted in changes to certain program, including changes in scope, budget and schedules."
    b. "Because radiation scope is based on inspection results, the complex nature of the underground system, interrelationship of multiple circuits within a manhole, and certain potential moratoriums on work, this program also continues to contain the highest degree of scope uncertainty of all the Reliability Related Investments."
    c. "These revisions are based on insights gained from 2014 actual experience, outcomes of long-term contracts and better alignment of program scopes."
    d. "The purpose of this work in any given period may evolve from that now planned, schedules may be either accelerated or delayed, and implementation may require either fewer or more units of work at lower or higher cost, even if the scope and timing of the planned work does not change."
    e. "Estimates of cost, units of work, and schedules for that work, may evolve over time."

9. Additional Detail Information
    a. "Manhole structural work may range from minor refurbishment to replacement of an entire manhole. Concurrent with manhole assessments, cable joint issues discovered within the manholes (e.g. bulging or leaking joints) will be addressed primarily with cable replacement. As assessments are performed, work plans will be generated to address the findings."

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b. "This represents an estimated 135 miles of additional mainline cable to be replaced as compared with ComEd's Plan, resulting from actual cable defect find rates in 2012 that were greater than originally planned."
c. "This estimate is based on assumptions concerning inspection results, which will be adjusted over time as actual data become available. Because of their inherent reliance on assumptions, early estimates of cable replacement contain a high degree of uncertainty and are not intended to reflect firm scope."

10. Changes in Methodology

a. "Future year plans will continue to incorporate insights gained through implementation.
b. "This represents a change in approach from the Plan based on 2012 experience, by eliminating a pre-test prior to manhole refurbishment and mainline cable replacement."

11. Differences in types of Sites

a. "Mainline cable system refurbishment and replacement. As noted in ComEd's Plan, this is the most complex of all the Reliability Related Investments, and is primarily targeted at the testing and replacement of lead cable in urban areas."

12. Changes in Selected Sites

a. "The population was reduced due to additional cable failures that occurred on the injectable cable sections, which resulted in these sections no longer being viable for injection."

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b. "Additionally, because of the 2012 Deferral, ComEd anticipates a more gradual initial ramp up in investments for this program, with higher investment peaked in late years as compared with COMEd's Plan."
c. "An additional 196 miles of URD cables are planned to be replaced, as compared with ComEd's Plan, in order to offset the effect of compounding cable defects expected as a result of the 2012 Deferral."
d. "This is approximately 3,700 more manholes than the estimate presented in ComEd's plan, resulting from a manual review of ComEd's suburban underground system maps and records."
e. "This refinement of the cable testing strategy results in approximately 850 fewer tests performed. It is estimated that cable tests will result in replacement of cable sections, which are included in the estimate shown in the "Cable Replacement" section above."

13. Alignment of Resources

- "Estimates for Support FTEs in the 2013 Annual Update are based on the 2012 actual proportion of Assigned FTEs to Support FTEs."

14. Third Party Impacts

a. "The accomplishment of this scope is highly dependent on the ability to obtain necessary permits and to schedule equipment outages. Certain periods of time or certain work restrictions, such as summer moratoriums, may limit the types of work that can be performed due to the need to maintain system configuration."
b. "Separately, certain scopes of work have been deferred as a result of the uncertainty in the regulatory process encountered during 2012, which is

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still unresolved, and its continued impacts on the ability to recover the costs of investments under the plan."

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INTERROGATORY 14:

REFERENCE(S): THESL Argument-in-Chief, EB-2014-0116, Transcript Volume 10, dated March 19, 2015 and
Exhibit 1, Tab 2, Schedule 2, page 13

In THESL's CIR proceeding the evidence was that 90 % of the ICM filed jobs were completed or in progress. The remaining 10% were replaced by other work, and they were within 5% of the utility forecast. Please reconcile this evidence with the current application.

RESPONSE:

The expectation that the total ICM in-service capital would be within an estimated 5% of the total approved ICM capital was a high-level estimate developed on a best efforts basis during the oral hearing of the Custom IR application. The dataset from which the estimated 5% figure was calculated also provided the basis for the expectation that 90% of the ICM jobs were completed or in progress and the remaining 10% were replaced by other work.

Subsequent to the oral hearing, a more detailed review of each job was conducted and resulted in a variance to the in-service additions by segment. The actual in-service capital is 6.7% greater than the approved amount from the EB-2012-0064 proceeding. The final, detailed review showed that 85% of forecast ICM jobs were completed, partially completed or in progress by the end of 2014, and the remaining 15% of jobs were deferred or cancelled. The deferred and cancelled jobs were offset by the addition of analogous jobs to the ICM segments.

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It is important to note that Toronto Hydro's original ICM Application was filed on the basis of capital expenditure ("CAPEX") forecasts. The list of jobs in the Application represented all jobs on which Toronto Hydro anticipated spending some amount of CAPEX during the 2012-2014 period, regardless of whether those jobs were forecast to be completed before the end of the period.[1] Therefore, it is Toronto Hydro's view that the 85% figure provided above is an appropriate measure of overall ICM program completeness. After accounting for prudent overspending from analogous jobs in individual ICM segments, this figure increases to 104%, as noted in Power System Engineering's independent analysis of forecast vs. "committed" jobs at the segment level (Table 4-4 of Exhibit 2, Tab 14, Schedule 1).

[1] The ISA forecasts for each segment were calculated by applying an assumed ISAs-to-CAPEX ratio to the overall CAPEX forecasts.

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INTERROGATORY 17:

REFERENCE(S): none provided

Through this application is THESL seeking recovery of costs related to any jobs that are not in-service? If so, please identify those jobs and explain why they should be included.

RESPONSE:

No. However, some jobs were only partially complete (i.e., partially in service) at the end of the ICM period. For these jobs, Toronto Hydro is only seeking recovery for those particular assets that were put into service during the ICM period.

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INTERROGATORY 18:

REFERENCE(S): none provided

Please identify where, in previous OEB Decisions, the Board allowed for new "analogous jobs" to be included in the ICM.

RESPONSE:

Please see Toronto Hydro's response to interrogatory 1-Staff-3, part (a), which explains the basis for concluding that job substitutions, additions and deletions within project segments were contemplated by the Board as "operational realities" in its Partial Decision and Order.

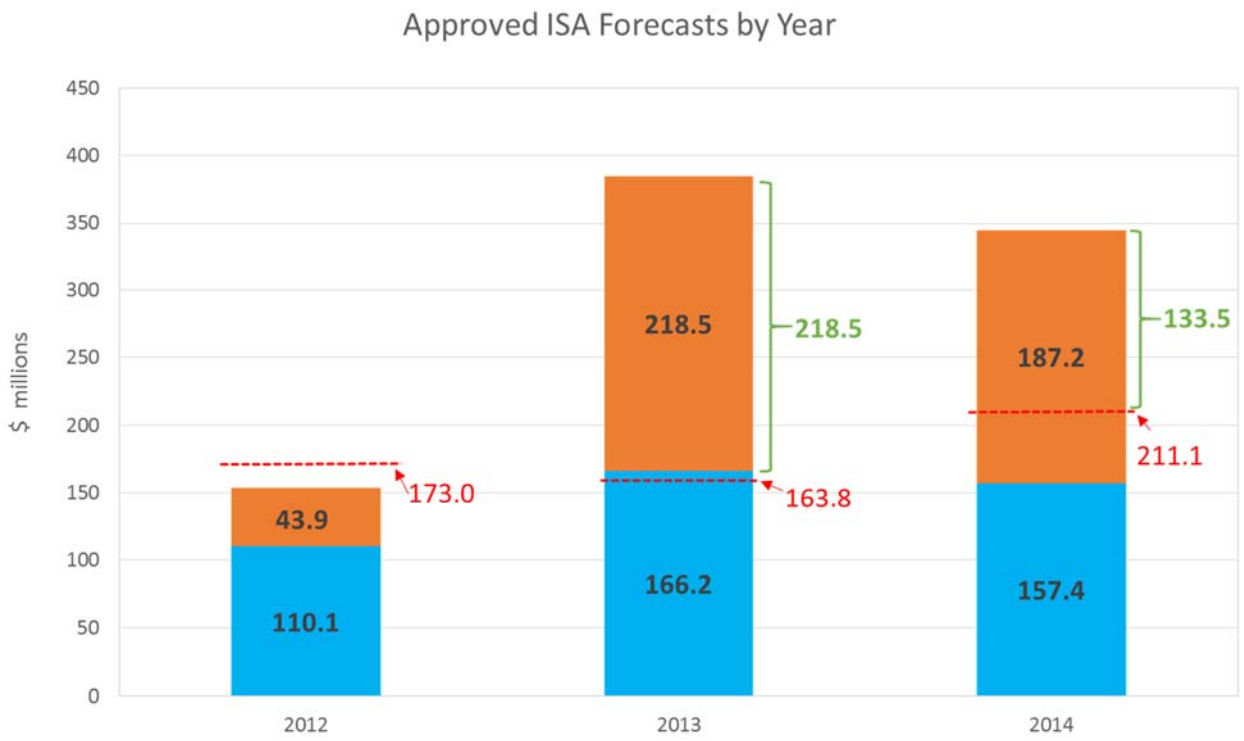
RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

INTERROGATORY 1:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 15

Please provide a similar figure showing the approved ICM ISA's by ICM year.

RESPONSE:



RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

INTERROGATORY 2:

REFERENCE(S): none provided

Please provide a table showing the actual annual revenue requirement (2012-2014), for each ICM segment. Please also provide total amounts per segment and year.

RESPONSE:

Please see attached (Appendix A to this response).

Actual ICM Revenue Requirement by Segment

	Annual Revenue Requirement			TOTAL
	2012 ISA ($ millions)	2013 ISA ($ millions)	2014 ISA ($ millions)	2012-14 ($ millions)
01 Underground Infrastructure	0.53	6.34	4.69	18.97
02 Paper Insulated Lead Covered Cable Piece Outs and Leakers	0.00	0.01	0.11	0.12
03 Handwell Replacement	0.33	1.85	0.76	5.44
04 Overhead Infrastructure	0.03	2.94	2.08	8.03
05 Box Construction	0.01	0.49	0.71	1.71
06 Rear Lot Construction	0.16	2.60	1.15	6.84
09 Network Vault & Roofs	0.01	1.37	0.11	2.88
10 Fibertop Network Units	0.15	0.74	0.25	2.19
11 Automatic Transfer Switches (ATS) & Reverse Power Breakers (RPB)	0.00	0.17	0.02	0.36
12 Stations Power Transformers	0.12	0.09	0.08	0.62
13.1 & 13.2 Stations Switchgear - Municipal and Transformer Stations	0.04	0.00	0.17	0.29
20 Metering	0.00	0.80	0.57	2.16
21 Externally-Initiated Plant Relocations and Expansions	0.13	0.64	0.99	2.66
Annual Total	1.51	18.03	11.68	52.28

Note: Total Revenue Requirement 2012-14 represents cumulative impact of ISA's in each year, and excludes

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

INTERROGATORY 3:

REFERENCE(S): EB-2014-0116, Transcript, Vol. 1, pp. 117-118; Vol. 4, pp. 83-84
OH-1-3, p. 1

During the oral hearing of the Applicant's 2015-2019 Custom IR proceeding, its witnesses testified that it expected the total ICM in-service capital to be within 5% of the total approved ICM capital.

a) Please confirm that the actual in-service capital is 8.7% greater than the approved amount from the EB-2012-0064 proceeding.
b) Please explain the variance from what was expected during the oral hearing of the Custom IR application.

RESPONSE:

a) No, the actual in-service capital is not 8.7% greater than the approved amount from the EB-2012-0064 proceeding. The actual in-service capital is 6.7% greater than the approved amount.

b) Please see Toronto Hydro's response to interrogatory 1-CCC-14 for a reconciliation of what was stated during the oral hearing for the Custom IR Application (EB-2014-0116) and the current Application.

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

INTERROGATORY 4:

REFERENCE(S): none provided

Please provide a breakdown of the $11.1M difference between the revenue requirement the Applicant is seeking approval to collect, and what the Applicant already collected, into the following categories:

a) Variance in forecast and actual in-service addition costs
b) Under-collection of revenue of approved ICM in-service additions
c) Variance in timing of approved ICM in-service additions

RESPONSE:

a) The entire $11.1 million difference between the revenue requirement being sought in this Application and what was already collected is due to variances between forecast and actual in-service addition costs. The forecast and actual in-service variance is a result of cost variances in filed and completed jobs, the number of jobs completed and the timing of the completion of those jobs. This variance cannot be categorized into a more discrete breakdown of the $11.1 million as these variances are not mutually exclusive. For example, if in-service additions approved for 2012 were delayed to 2014 for one segment, this in isolation would reduce the revenue requirement in 2012. However, if at the same time the in-service additions in another segment were accelerated due to scheduling or new jobs being added to the segment with an in-service date of 2012, this would offset the delay in the first segment. The revenue requirement is calculated based on the aggregate of the whole year to determine if the threshold level was met.

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b) Toronto Hydro was authorized recovery of $40,911,821 (as detailed in EB-2012-0064, April 12, 2013, Draft Rate Order), which was the basis for the development of the Initial ICM rate riders. The approved rate riders collected $41,163,832. The variance between the approved and the collected was $252,011. Toronto Hydro's ICM True-up Application seeks $11.1 million in revenue requirement for the difference between the amounts actually collected (the $41.2 million) and the amount that should have been collected based on the actual ICM work. The original ICM approved revenue requirement is not a factor in this calculation.

c) See part (a) above.

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INTERROGATORY 5:

REFERENCE(S): EB-2016-0116, Exhibit OH-1-3, Appendix B

For each segment, in the same format as the table provided in Appendix B, please include all ICM jobs with a variance of 5%.

RESPONSE:

Please see attachment (Appendix A to this response) for a table including all ICM jobs with a forecast to actual in-service additions variance greater than 5%. This table includes variance explanations for all forecasted and completed jobs that:

a) were forecasted to cost less than $1 million and had a variance of at least plus or minus $100,000, or
b) were forecasted to cost $1 million or more and had a variance of at least plus or minus 10%.

For each job that exceeded one of the above thresholds, Toronto Hydro assigned a primary variance code with an accompanying detailed variance explanation. Where applicable, Toronto Hydro also assigned one or more secondary variance codes.

Please note that the forecast costs in Appendix A account for any necessary revisions in light of the issue identified in Toronto Hydro's response to interrogatory 2-Staff-16.

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B1 Underground Infrastructure	EST22984_001	22984_001 W14134 85M7 UG DB PH#1 rebuild Hidden Tr	$ 3,951,572	$ 4,929,477	High Level to Detailed Design Variance	Field inspections performed during the detailed design phase revealed the need to reroute the proposed duct banks under the sidewalk, rather than the boulevard as originally planned, to account for tree roots and other underground assets. This increased the cost relative to the forecast by approximately $1.38M. This cost was partially offset by contributions from third-party utilites for sharing the newly constructed underground infrastructure.	
B1 Underground Infrastructure	EST19999_009	19999_009 E12195 Mammoth Hall 47M1 UG Rebuild DO NOT PACKAGE for budgeting only -CIVIL	$ 3,421,254	$ 3,104,084			
B1 Underground Infrastructure	EST24856_009	24856_009 ICM E12529 Braymore UG Rehab Ph2 Civil DO NOT PACKAGE	$ 2,690,846	$ 2,240,727	Field Conditions and Execution Requirements	The cost associated with the anticipated tree tunnel (used when excavating in a tree protection zone) was overestimated. Occasionally, contractors are able to perform more conventional excavation when they assess the site conditions themselves, in which case tree tunnel can be avoided or the total tree tunnel units can be reduced. This can vary for different locations, and may be difficult to estimate at the design stage.	
B1 Underground Infrastructure	EST19001_009	19001_009 ICM - E11483 - INGLETON REHAB PHASE 1 DPE PLANNED - 3110	$ 2,674,297	$ 2,946,436	High Level to Detailed Design Variance	The cost of this job increased during detailed design due to required changes in the planned civil construction route. This change was required to address tree protection zones.	
B1 Underground Infrastructure	EST20200_001 EST20209_001	20200_001 E12240 Durnford-Rylander-Tideswell-Shepp Civil	$ 2,411,139	$ 2,998,542	High Level to Detailed Design Variance	The duct route planned in the final detailed design ultimately needed to be significantly longer than contemplated in the high-level plan due to site-specific consierations. The duct length was increased by 685m.	
B1 Underground Infrastructure	EST25279_001	25279_001 E11139 Cassandra UG Cable Replace Civil for 2012 Budget	$ 2,398,000	$ 4,498,934	High Level to Detailed Design Variance	- The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. In accordance with the revised standard, Toronto Hydro rebuilt the secondary cables in concrete-encased ducts up to the lot-line, and replaced the end-of-life and direct-buried secondary services serving 595 customers. - The designer also discovered the need to relocate water services in order to execute the job, which would not have been known to the engineer at the time of high-level of planning.	Variance in Allocated Costs
B1 Underground Infrastructure	EST18675_002	18675_002 ICM X11444 Tichester civil & elec UG-DB 35M9 Created Oct 2010	$ 2,320,046	$ 2,709,516	Field Conditions and Execution Requirements	The discovery of abandoned utilities as well as a watermain in the area required additional depth for civil construction, as well as a change in the trench line. Additional paid duty police costs were also required.	
B1 Underground Infrastructure	EST18652_002 EST26536_001	18652_002 E11421 Dundalk NAE5-1M29 UG Reb (Civil) Deferred from 2011	$ 2,276,806	$ 4,592,618	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. Rebuilding these ducts cost an additional $591K. (The additional civil work increased associated costs that are generally proportional to the size of the job, including design cost ($331K) and various road and sidewalk restoration costs ($789K) . Restoration was required on a number of large commerical properties, which is typically more expensive than residential restoration.) - Cable chamber construction was also underestimated in the high-level plan and resulted in an increase of about $274K.	Variance in Allocated Costs; Field Conditions & Execution Requirements
B1 Underground Infrastructure	EST27941_001	27941_001 W14540 Robert Hicks_Torresdale Civil Ph1 80M8	$ 2,063,100	$ 1,260,812	High Level to Detailed Design Variance	The electrical portion of this job was deferred to the winter months in order to better utilize available resources, resulting in a reduced job scope. The electrical phase was in progress as of 2014 and continued in 2015.	
B1 Underground Infrastructure	EST18719_001	18719_001 E11438 Old Finch 47M3 UG Reb Ph 1-Civil Civil portion of Old Finch/Littles	$ 1,950,376	$ 3,028,049	High Level to Detailed Design Variance	The designer determined that an additional cable chamber was required, with associated incremental cable length. This addition was necessary to facilitate relocation of a pad-mounted switchgear in the new design. This work resulted directly in an increase of $205K compared to the high-level plan. Indirectly, this change in design was in part responsible for an increase in design and inspection costs ($234K) as well as an additoinal $538K for additional cut repairs and a paid duty police offer to manage traffic during a crane operation.	Variance in Allocated Costs; Field Conditions & Execution Requirements
B1 Underground Infrastructure	EST19622_001	19622_001 E12126 Morningview 47M3 UG Ph 1 - Civil Civil portion of Phase 1	$ 1,814,027	$ 2,597,924	High Level to Detailed Design Variance	The original high level estimate did not include design costs ($167K) and the cost of constructing a cable duct ($772K). The duct length was underestimated in the high level estimate.	

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B1 Underground Infrastructure	EST20979_009	20979_009 E12595 Revlis U/G Rebuild, Ph. 3 Cvl DO NOT PACKAGE for PCI	$ 1,771,654	$ 2,714,342	High Level to Detailed Design Variance	-The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. In accordance with the revised standard, Toronto Hydro rebuilt the secondary cables in concrete-encased ducts up to the lot-line, and replaced the end-of-life and direct-buried secondary services serving 514 customers. -In addition, tree protection zones did not permit the installation of new transformer vaults in certain areas. Consequently, the transformers had to be installed in different locations and the sites of the existing units converted to tap boxes.	
B1 Underground Infrastructure	EST18653_002	18653_002 E11421 Dundalk NAE5-1M29 UG Reb (Elec) Deferred from 2011	$ 1,694,056	$ 2,455,571	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. The addition of secondary services increased the complexity of design and other allocated overhead costs (approximately $440K). The remaining variance was related to the additional materials required to construct the electrical plant to the new standard, including underground cable/racking/terminations, underground transformers, underground secondary services, and underground switching and electrical support.	Variance in Allocated Costs
B1 Underground Infrastructure	EST21853_009	21853_009 ICM E11301 FESI-12 HUPFIELD UG REBD PH1 RC3110 2011 CapEx WBS Rev Nov 22_10	$ 1,670,932	$ 1,976,403	High Level to Detailed Design Variance	During the detailed design stage, system operators identified the need for extension of the main primary loop to accommodate loading in the area. Other minor costs were also added in design.	
B1 Underground Infrastructure	EST21731_001	21731_001 W13162 Starview - Rockbank UG Rehab 55M21	$ 1,616,536	$ 2,171,549	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. In accordance with the revised standard, Toronto Hydro rebuilt the secondary cables in concrete-encased ducts up to the lot-line, and replaced the end-of-life and direct-buried secondary services serving 102 customers.	
B1 Underground Infrastructure	EST19032_001	19032_001 W11456 NY80M30 trunk & Lateral Cable Enh S/O HWY 401	$ 1,597,122	$ 1,722,564			
B1 Underground Infrastructure	EST19626_001	19626_001 E12127 Morningview 47M3 UG Ph 2 - Civil Civil portion of Phase 2	$ 1,586,540	$ 2,411,969	High Level to Detailed Design Variance	The $744K variance was a result of duct construction, chamber and cut repair. At the time, the high level estimate had underestimated the amount of civil work required for this job. The high level estimate only had a lump sum for duct work. Field inspections later determined the need for a cable chamber.	Field Conditions & Execution Requirements; Variance in Allocated Costs
B1 Underground Infrastructure	EST20978_009	20978_009 ICM E12494 Revlis Ph2 Civil Updated: Feb 7, 2012	$ 1,582,680	$ 2,022,394	Variance in Allocated Costs	The variance was primarily due to road cut repair costs and design costs being higher than predicted by the historical averages used to predict these costs for filed estimates. These costs are not fully known until project close-out.	High Level to Detailed Design Variance
B1 Underground Infrastructure	EST22424_009	22424_009 ICM E11592 FESI Leslie & Nymark Ph2-51M6 UG Cable & Switchgear Replacement	$ 1,497,236	$ 1,290,742	High Level to Detailed Design Variance	Tunnelling costs were overestimated in the high-level estimate.	
B1 Underground Infrastructure	EST20637_001 EST24798_X03	20637_001 E13014 Holmcrest 47M13 UG Rebuild- Civil	$ 1,410,970	$ 2,234,039	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. In accordance with the revised standard, Toronto Hydro rebuilt the secondary cables in concrete-encased ducts up to the lot-line, and replaced the end-of-life and direct-buried secondary services serving 241 customers.	Variance in Allocated Costs; Field Conditions & Execution Requirements
B1 Underground Infrastructure	EST21551_008	21551_008 E11592 FESI Leslie Nymark Repl Sw Pt. 1 Switchgear and Cable Replacement (Ph 1)	$ 1,408,998	$ 786,148	High Level to Detailed Design Variance	The high-level plan assumed that two pad-mounted switchgears needed to be replaced in coordination with this job. However, upon detailed site inspection it was determined that the switchgear could remain in-service.	
B1 Underground Infrastructure	EST24578_009	24578_009 Bluffwood Saddletree UG Rebuild Civil for 2012 Budget	$ 1,391,294	$ 1,899,087	High Level to Detailed Design Variance	During field inspections, the designer determined that the presence of non-standard meterbase assemblies and transformer foundations in a townhouse complex would necessitate replacement, including associated ducts, in order to align the new plant with Toronto Hydro standard design practices. These requirements, which were relatively unique to the area, would not have been known to the engineer at the time of high-level planning.	Detailed design and execution requirements

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B1 Underground Infrastructure	EST24850_009	24850_009 ICM E1544 Blackwell Coxworth Rebuild-Civ DO NOT PACKAGE (from WT12121 Ver 009)	$ 1,384,261	$ 1,809,510	High Level to Detailed Design Variance	During the detailed design phase, Toronto Hydro identified the need for additional costs related to a tree protection zone in the area. The added costs were related to additional conduit, construction of a tree tunnel (required when working in tree protection zones), and extra depth of civil construction	Field Conditions & Execution Requirements
B1 Underground Infrastructure	EST21854_009	21854_009 ICM E11372 FESI-12 HUPFIELD UG RBLD P2 RC3110 2011 CapEx WBS Rev Nov 22_10	$ 1,331,575	$ 1,403,412			
B1 Underground Infrastructure	EST20058_009	20058_009 E12212 VENTURE Drive UG Rebuild Civil SC DO NOT PACKAGE for budget	$ 1,318,900	$ 1,791,613	High Level to Detailed Design Variance	The variance was due to site conditions discovered during detailed design inspections. An additional $230K was required for duct construction, as the necessary ruct route was generall y more complex and required tunnelling around protected trees, extra depth to avoid obstacles in certain areas and incremental costs related to removal and repair of a commercial/industrial driveway. Road cut repairs and design costs also came in higher than anticipated.	Variance in Allocated Costs
B1 Underground Infrastructure	EST21262_001	21262_001 W12464 Antibes/Torresdale UG Rebuild Creation Date: October 1, 2010	$ 1,316,847	$ 1,070,868	High Level to Detailed Design Variance	For efficiency of scheduling and execution, Toronto Hydro elected to split this job into separate civil and electrical phases during the design stage, effectively reducing the scope of work of this job to the civil portion only. The civil phase was completed in 2014 and the electrical portion is in the design phase and is expected to be completed in early 2016.	
B1 Underground Infrastructure	EST21287_009	21287_009 E12520 FESI Conlins Milner NT47M1 - Elec DO NOT PACKAGE for budget only	$ 1,300,849	$ 1,443,398	Variance in Allocated Costs	Inspection and cut repair costs were higher than foreacsted.	
B1 Underground Infrastructure	EST18320_001	18320_001 E11223 Clappison 47M17 UG Rebuild- Civil	$ 1,283,972	$ 2,047,530	High Level to Detailed Design Variance	Through detailed inspections, the designer determined that the existing transformer vaults needed to be replaced as they were not deep enough and lacked the safe clearance to the top of the transformer elbows ($157K). The detailed design also included additional duct construction costs related to the specific duct alignment along the sidewalk, additional depth of cover required and deep shafts for drain connection for vaults ($209K). This work was necessary as there was a lack of space in the boulevard so the duct needed to be constructed deeper than normal.	Variance in Allocated Costs
B1 Underground Infrastructure	EST20043_001	20043_001 E12206 Fenn/Foursome/Danvil le 80M29 UG Civil portion of project	$ 1,283,902	$ 1,621,157	High Level to Detailed Design Variance	The duct length to be constructed was underestimated during high level design. The specific duct route in the final detailed design required an additional 300 meters of duct.	Variance in Allocated Costs
B1 Underground Infrastructure	EST21298_001	21298_001 E13078 UG Rehab of NY51M8 - Civil E13078 btn Leslie and Bayview	$ 1,260,888	$ 684,958	High Level to Detailed Design Variance	The high level estimate anticipated significantly higher restoration costs due to trenching on public property. However, the designer later determined that a portion of the job was on private property and was therefore amenable to full restoration on site, in coordination with the ongoing activities. This significantly reduced the restoration costs.	
B1 Underground Infrastructure	EST24386_001	24386_001 W14350 P01 - Gordon Mackay UG Re. OH Reh HIGH LEVEL FROM Amar/ Christi	$ 1,253,762	$ 609,954	High Level to Detailed Design Variance	Detailed design inspections determined that a shorter duct route than anticipated in the high-level estimate was available. Inpsections also revealed that one fewer underground transformer required replacement than originally planned.	
B1 Underground Infrastructure	EST20233_001	20233_001 E12250 Scenic Millway UG Rebuild 51M21 53M24 - Civil	$ 1,250,244	$ 6,856,117	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. In accordance with the revised standard, Toronto Hydro rebuilt the secondary cables in concrete-encased ducts up to the lot-line, and replaced the end-of-life and direct-buried secondary services serving 350 customers. Furthermore, the length of primary concrete-encased duct required in the detailed design was approximately 5,830 metres compared to about 3,700 meters anticipated in the high-level estimate. The job costs were amplified substantially by unusually prevalent tree protection zones in the area that required vaccum tunnelling under the tree roots. Restoration costs related to secondary service trenching an primary duct construction were also high due to the maturity of the neighbourhood and the variety surfaces encountered. In light of the poor reliability performance in the area, owing in part to the presence of 40-year-old direct-buried cable, the job remained necessary and prudent.	Variance in Allocated Costs

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B1 Underground Infrastructure	EST18720_001	18720_001 E11439 Old Finch 47M3 UG Reb Ph 1 (Elec) Electrical portion of Old Finch/Littles	$ 1,246,960	$ 1,930,541	High Level to Detailed Design Variance	The following were not anticipated in the high-level estimate and were identified as necessary in the detailed design stage: - $635,000 for additional materials and labour resulting from the need to relocate a pad-mounted switchgear (due to space restrictions), as well as the need to replace a leaking transformer and associated switch discovered in a customer's vault during field inspections. - $21,000 in additional duct construction required. - $33,000 for additional pole installations and tree-trimming costs.	
B1 Underground Infrastructure	EST20335_001	20335_001 E12277 Nashdene Tiffield UG Rebuild Civil Portion of Project SCNAR26M2	$ 1,222,026	$ 3,125,928	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. In accordance with the revised standard, Toronto Hydro rebuilt the secondary cables in concrete-encased ducts up to the lot-line, and replaced the end-of-life and direct-buried secondary services. Costs related to cable chamber construction were also underestimated in the high-level plan. Overall, the variance on civil construction, including secondary related construction, was approximately $1.85 million.	Variance in Allocated Costs
B1 Underground Infrastructure	EST20066_001	20066_001 E12209 Dalmatian/Choiceland 47M13 UG Reb Civil portion of project	$ 1,198,168	$ 1,474,535	High Level to Detailed Design Variance	The designer determined that additional duct length would be required, increaseing the cost of the job by approximately $300K relative to the high-level plan.	Variance in Allocated Costs
B1 Underground Infrastructure	EST24658_009 EST19449_X03	24658_009 E12096 Ingleton Rebuild UG Ph3 (Elec) for 2012 Budget	$ 1,182,837	$ 916,434	High Level to Detailed Design Variance	Five of transformers that were identified for replacement in the high-level plan were found by the designer to be in good condition and of a newer switchable type, and were therefore left in service.	Field Conditions & Execution Requirements
B1 Underground Infrastructure	EST20207_001	20207_001 E12239 Royal Rouge Trail - Civil Civil	$ 1,156,167	$ 1,531,329	High Level to Detailed Design Variance	Due to the presence of congested utilities in the job area, the number of duct installations increased relative to the original forecast ($384K).	
B1 Underground Infrastructure	EST20430_001	20430_001 E12157 New Feeder H9M23 - Civil	$ 1,146,783	$ 1,270,600	Variance in Allocated Costs	The variance was primarily due to road cut repairs, inspection and design costs, engineering capital and AFUDC being higher for this job than predicted by historical averages.	
B1 Underground Infrastructure	EST21291_001	21291_001 E13075 UG Rehab of NY51M7 - Civil	$ 1,131,850	$ 1,246,651	High Level to Detailed Design Variance	Toronto Hydro designers determined that the cost of restoring interlocking brick on public property along the duct route would have been prohibitively expensive. As an alternative, Toronto Hydro chose the more cost-effective option of microtunnelling under the brick, which increased the cost of the job by a lesser amount.	
B1 Underground Infrastructure	EST23947_001	23947_001 W14284 Pellatt Ave UG BD Rebuild	$ 1,129,261	$ 832,872	High Level to Detailed Design Variance	Detailed site inspections by the designer determined that fewer asset installations were required than originally anticipated in the high-level estimate. The original estimate included the replacement of three poles, but only two were required. In addition, the original estimate included the replacement of three underground transformers, but only two were required. Other associated costs (cable, restoration, etc.) were all reduced as a result of the reduced scope.	
B1 Underground Infrastructure	EST21433_001	21433_001 E13104 NY51M24 DB Cable Replacement Don Mills & Sheppard (Part 1 Civil)	$ 1,124,246	$ 3,379,480	High Level to Detailed Design Variance	The confluence of several site-specific factors encountered during detailed design inspections caused the complexity and cost of this job to increase substantially compared to the high-level job plan: - Toronto Hydro determined that the existing design of secondary services was obsolete, with secondary services for a number of houses that extended from house to house across private properties. Toronto Hydro's current standard design practice is to service each house from an individual secondary tap at the lot line. This design is more reliable and cost-effective over the life of the assets. - The costs associated with the need to modify the design of the secondary services were compounded by severe congestion of existing underground utilities (including third-party utilities) and the narrowness of the existing sidewalk. - Together, these factors materially increased the civil costs associated with renewing the assets in this neighbourhood. Toronto Hydro reviewed the project in light of the material cost increases and determined that the project remained cost-effective and necessary due to poor feeder reliability contributed by unreliable assets from the proposed rebuild area. The supply feeder suffered a total of 30 outages from January 1, 2010 to December 31, 2014. Thus, it would have been deemed a high priority to rebuild/replace the aging and failing assets on this feeder.	
B1 Underground Infrastructure	EST20263_001	20263_001 E12259 Bridletowne Circle 502M22 Civil Civil Works for Cable Replacement	$ 1,090,096	$ 1,456,930	Variance in Allocated Costs	The variance was primarily due to road cut repairs and design costs being higher than predicted by historical averages. These costs came in higher in part due to the need to replace two existing obsolete, single-phase pad mounted switches with PMH-9 switches. The need for this work was now known until the design stage.	High Level to Detailed Design Variance

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B1 Underground Infrastructure	EST20136_001	20136_001 E12230 52M3 McCowan and Kingston Civil Works for Cable Replacement	$ 1,088,535	$ 1,309,665	High Level to Detailed Design Variance	The designer determined that a portion of the duct needed to be constructed on the roadway (rather than the boulevard as originally planned), increasing subsequent road cut repair costs by $118K. The job also required the construction of an additional cable chamber and additional submersible vaults as the existing infrastrucure was not appropriately sized for the new assets ($86K).	Variance in Allocated Costs
B1 Underground Infrastructure	EST22356_009	22356_009 ICM E11356 FESI 47M3 PENNYHILL UG RBLD RC3110 2011 CapEx WBS Rev Nov 22_10	$ 996,621	$ 1,332,986	High Level to Detailed Design Variance	Additional underground secondary work was identified during the detailed design phase. The designer also determined that two PMH switches that were not contemplated in the high-level plan would be needed to complete the new design.	Variance in Allocated Costs
B1 Underground Infrastructure	EST20447_002	20447_002 E12323 Dynamic Drive SCNAR25M32-Civil Markham,Dynamic,Passmore,McNicol	$ 989,102	$ 1,264,015	High Level to Detailed Design Variance	Field inspections during the detailed design phase determined that additional costs would be required to construct assets in a tree protection zone. Approximately $300K was required for a change in route and added depth related to duct construction.	Variance in Allocated Costs
B1 Underground Infrastructure	EST20989_001	20989_001 W12490 UG DB Cable Rehab - Bombardier 85M1	$ 974,919	$ 1,035,900			
B1 Underground Infrastructure	EST21585_001	21585_001 E13123 Rebuild Trunk 502M1M22 Birchmount Civil	$ 914,008	$ 1,663,958	Field Conditions and Execution Requirements	For improved execution efficiency, Toronto Hydro advanced part of the electric phase of this project into the civil project that was ongoing. The contractor on site had available resource capacity to pull cables during and following duct construction.	High Level to Detailed Design Variance
B1 Underground Infrastructure	EST24843_009	24843_009 PCI E12275 Muirbank UG Rebuild Ph 2 DO NOT PACKAGE Civil	$ 839,300	$ 1,696,431	High Level to Detailed Design Variance	The job scope was expanded to install civil infrastructure along Lavery Tr. and small sections on Bluenose Cr. and Muirbank Blvd. This included approx. 1600m of concrete encased ducts with the installation of tap boxes and splice vaults. These requirements were identified during detailed design. The re-routing of the duct route was required to avoid congestion due to other utilities occupying the proposed alignment in the high-level plan. The engineer would not have know the extent of utility congestion and its interaction with design standards and road allowances at the time of high-level planning.	
B1 Underground Infrastructure	EST20902_002	20902_002 W12449 UG Lat Cbl & Tx Rehab - Bathurst FESI 80M2	$ 796,854	$ 554,039	Field Conditions and Execution Requirements	A portion of the original scope of work was removed due to collapsed ducts discovered on a customer's property. The customer, who owned the duct structure, was unwilling to rectify the issue in time for project completion and was therefore removed from the project scope.	
B1 Underground Infrastructure	EST20169_001	20169_001 E12234 Rebuild 3-Phase Neilson Civil portion of project	$ 767,266	$ 855,384			
B1 Underground Infrastructure	EST20067_001 EST20067_010	20067_001 E12228 Dalmatian/Choiceland 47M13 UG Reb Electrical portion of project	$ 705,184	$ 926,673	High Level to Detailed Design Variance	The labour and material costs were underestimated in the high level estimate.	
B1 Underground Infrastructure	EST20380_001	20380_001 W11614 Ladyshot and Eldorado Crt Direct Buried Cable Replacement	$ 688,981	$ 1,941,961	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. This variance accounted for approximately $600K of the overall variance and included incremental civil and electrical costs.	.
B1 Underground Infrastructure	EST24859_009	24859_009 ICM E12530 BRAYMORE W PH2 - ELECT DO NOT PACKAGE	$ 675,550	$ 873,381	High Level to Detailed Design Variance	Several requirements were identified during the detailed design phase. - Congestion of underground utilities and tree roots discovered during detailed inspections required the relocation of cable ducts, increasing the cable length requirements. - The high-level estimate anticipated 20 transformer replacements based on high-level assumptions regarding loading in the area; the detailed design ultimately called for 22 transformers based on a more detailed loading analysis. - Field inspections during detailed design revealed the need to replace a poor condition PMH switch. - Costs related to secondary rebuilds were underestimated in the high-level plan.	Filed Conditions & Execution Requirements
B1 Underground Infrastructure	EST21188_001	21188_001 UG Rebuild of SCNAE5-1M25 for E13066 by Brimley Rd and Skagway Avenue	$ 652,822	$ 696,585			
B1 Underground Infrastructure	EST20973_009	20973_009 E12493 REVLIS PART 1 CIVIL do not package	$ 619,626	$ 693,550			

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B1 Underground Infrastructure	EST24664_009	24664_009 ICM - E11087 47M1 Grand Marshall UG Repl DO NOT PACKAGE	$ 570,429	$ 1,468,214	High Level to Detailed Design Variance	The cost variances for this project were due to several factors encountered during the detailed design phase of project development: - System operations personnel requested certain modifications to the construction design in order to improve system reliability. Additional assets included load interrupter switches, two additional risers on poles, and SCADA operable switches. Circuit transfers were also performed to improve operating efficiency. Toronto Hydro determined that it was prudent to execute the necessary enhancements in coordination with the ongoing job in order to minimize the overall cost of work. - Detailed field inspections found that five three-phase transformers and a non-standard padmounted switchgear were in poor condition and would require replacement. This information was unknown to the engineer at the time of high-level job planning. - The City of Toronto would not allow an above grade switchgear at a particular intersection and requested that Toronto Hydro leave a corridor for a possible future sidewalk. To compensate, the designer needed to include a cable chamber and associated ductwork.	Field Conditions & Execution Requirements
B1 Underground Infrastructure	EST20812_003	20812_003 W12435 Astral / Paul David UG DB Rebuild 85M9 - - copied from version 002	$ 563,530	$ 412,751	High Level to Detailed Design Variance	Toronto Hydro determined that it was necessary to replace a portion of the overhead assets associated with this job on a reactive basis in response to field information that demonstrated need for urgent repair. The job was then redesigned to exclude these assets.	
B1 Underground Infrastructure	EST24717_009	24717_009 E12317 Ingleton/Middleton Main (Elect.) for 2012 Budget	$ 562,433	$ 594,028			
B1 Underground Infrastructure	EST19464_001	19464_001 E12226 Yorkminster 80M27/M29 Tie (Elec) Electrical portion of the project	$ 535,547	$ 1,234,604	High Level to Detailed Design Variance	The following execution conditions were discovered during the detailed design and execution stage and led to the increase in cost: - An increase to the amount of cable duct construction was required due to relocation of existing cable routes and depths as a result of congested existing underground utilities and tree roots ($270k) - field inspections determined that the cable chamber and vault needed modifications, which were not part of the original estimate ($188k) - overhead and underground electrical costs were underestimated in the high level estimate ($69k) - road cut repair costs were underestimated in the high level estimate ($66k) - the original high level estimate did not include design and inspection costs ($147k)	Scope Change
B1 Underground Infrastructure	EST20313_001	20313_001 E12281 Meadowvale/Heatherbank 47M17 Cabl Electrical portion of project	$ 532,387	$ 1,268,144	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. The material costs associated with this work were approxiamtely $460K. Labour costs were also understated in the high-level plan by appriximately $276K.	
B1 Underground Infrastructure	EST20697_001	20697_001 E12408 Thimble Berryway Aspenwood UGRbld Civil NY51M3 NY51M27	$ 483,046	$ 848,605	High Level to Detailed Design Variance	After completing a thorough field inspection, the designer determined that construction of five additional submersible vaults was required, along with associated ducts. These additoinal rebuilds were needed due to the poor condition of the existing vaults. This added approximately $375K to the job.	Field Conditions & Execution Requirements; Variance in Allocated Costs
B1 Underground Infrastructure	EST24852_009	24852_009 ICM E12121 Blackwell Coxworth Rebuild-El DO NOT PACKAGE (from Ver001 from AM19590	$ 480,372	$ 563,994			
B1 Underground Infrastructure	EST20520_009	20520_009 ICM E12348 Muir Dr./Scar G.C. civil DO NOT PACKAGE	$ 478,980	$ 445,359			
B1 Underground Infrastructure	EST24500_009	24500_009 ICM-E12153 Melford Transfer 26M34 to M22	$ 465,846	$ 643,501	High Level to Detailed Design Variance	Modifications to the proposed design were required as a result of another job that was ongoing in an adjacent project area. The relocation of a pole in the adjacent job necessitated additional cable length. The designer also determined that a different concrete pad design was required to accomodate replacement of an existing switchgear in the job area. The pad design needed to be stronger and needed two openings for cables as opposed to one opening as was assumed in the high-level plan.	
B1 Underground Infrastructure	EST20345_001	20345_001 E11616 Meadowvale/Heatherbank 47M17 Civi	$ 435,838	$ 256,998	High Level to Detailed Design Variance	Detailed inspection of the existing plant during the design stage determined that some of the existing ducts remained useful and could be incorprated into the new plant design, resulting in a reduction of duct construction costs.	

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B1 Underground Infrastructure	EST22591_001	22591_001 E13267 UG Rebuild 63M8 Silver star Midla nd - Civil	$ 432,376	$ 293,391	High Level to Detailed Design Variance	The project's lower cost was largely owing to a reduced length of required concrete duct identified in the detailed design phase relative to the high-level design (a reduction of approximately 200 metres). Additional efficiencies were attained due to the re-positioning of the riser in a more optimal way than suggested by original plan.	
B1 Underground Infrastructure	EST20044_001	20044_001 E12227 Fenn/Foursome/Danvil le 80M29 UG Electrical portion of project	$ 432,265	$ 1,089,206	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This impacted approximately 160 customers. In addition, the original high level estimate called for replacement of 12 submersible transformers but field inspections revealed that 18 needed to be replaced to comply with the new design standard. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning.	Variance in Allocated Costs
B1 Underground Infrastructure	EST20298_001	20298_001 E12266 Country Lane NY51M21 Civil Portion of Project	$ 431,553	$ 260,019	Third-party Constraints and Requirements	The original scope called for underground rebuild work on Country Lane and Hyde Park Circle. When the project design was completed and the road cut permit was submitted to the City, Toronto Hydro was informed that Country Lane was under moratorium due to unscheduled road paving that was performed by the City. Approximately 35% of the civil work could not be performed due to the unscheduled moratorium.	
B1 Underground Infrastructure	EST20674_001 EST20674_002	20674_001 E12394 James Gray Dr UG Rebuild NY51M3 Civil	$ 425,678	$ 877,850	Variance in Allocated Costs	The design costs and cut repair costs were substantially higher than averages predicted for this job, due in part to the increase in design requirements as the job moved from high-level plan to detailed design. Design and inspection costs caused a variance of $273K, while road cuts were responsible for $52K.	High Level to Detailed Design Variance
B1 Underground Infrastructure	EST20432_001 EST25413_X01	20432_001 E12319 New Feeder H9M23 - Electrical	$ 424,291	$ 897,132	High Level to Detailed Design Variance	A detailed review of design requirements in the job area revealed that a significantly greater amount of copper cable (as opposed to cheaper aluminum) was required than originally anticipated in the high-level design in order to alleviate operational constraints. (Copper cable can accomodate greater loads.) The additional cost of the copper was $458K.	Variance in Allocated Costs
B1 Underground Infrastructure	EST18845_004	18845_004 W11455 Yonge Trunk Cable Rehab RC3620 2011 CapEx WBS Rev Nov 22_10	$ 392,428	$ 318,745			
B1 Underground Infrastructure	EST20424_001	20424_001 E12316 Mammoth Hall 47M1 UG Rebuild Ph1 Electrical	$ 391,336	$ 433,232			
B1 Underground Infrastructure	EST20001_001	20001_001 E12188 435 Markham Road H9M30 UG Rebuild Replacing cables and transformers	$ 362,081	$ 240,021	High Level to Detailed Design Variance	A vault rebuild, originally planned as part of this job, was determined to be unnecesary following detailed field inspections which revealed the vault to be in good condition.	
B1 Underground Infrastructure	EST27210_001	27210_001 E13605 P02 50 Aurora Crt Civ Rebld Canavagh TS	$ 356,030	$ 278,979			
B1 Underground Infrastructure	EST24846_009	24846_009 PCI E10112 Purple Sageway 51M3 UG DO NOT PACKAGE - Civil	$ 337,331	$ 491,285	Variance in Allocated Costs	Design and road cut/resurfacing costs were higher than forecasted.	
B1 Underground Infrastructure	EST20261_001	20261_001 E12256 Bridletowne Area 502M22Electrical Cable Replacement	$ 337,027	$ 1,306,150	High Level to Detailed Design Variance	The designer determined that to complete the underground rebuild, two existing, obsolete, single-phase pad-mount switches needed to be replaced with a PMH-9 switch. Detailed design inspections revealed poor condition of customer vaults. This work involved seven vault switchgear replacements, one vault transformer replacement, and one new padmounted switchgear, increasing material costs by $546k.	Variance in Allocated Costs
B1 Underground Infrastructure	EST20645_001	20645_001 E12377 Goldenwood Road UG Rehab NY51M3	$ 335,926	$ 480,695	Field Conditions and Execution Requirements	The cost increase was due to the job being transferred from internal resources to contractor resources for the purposes of execution. The increase is the difference between the internal Toronto Hydro estimate, which does not capitalize administrative costs and other overhead, and the contractor estimate, which is fully burdened with capitalized operating expenses.	
B1 Underground Infrastructure	EST28599_001	28599_001 W14667 - P01 Jane/Gosford UG Rebuild IFRS compliant	$ 283,456	$ 911,085	High Level to Detailed Design Variance	The high-level estimate did not fully account for the costs associated with rebuilding the secondary services in accordance with Toronto Hydro's standard design practices. Only primary civil was estimated in the high level estimate. An additional $359K was required to build the necessary civil intrastructure, including concrete encased ducts for secondary services to the lot line, direct buried ducts from the lot line to the meter base and associated restoration costs. The cost to replace the secondary cables themsleves was also underestimated in the high-level plan by approximately $137K. (The expansion of the design also caused associated design and inspection costs to increase.)	Variance in Allocated Costs

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B1 Underground Infrastructure	EST21500_001	21500_001 ICM NY51M24 UG Rebld on Don Mills E13099 btn Sheppard and Graydon-Electrical	$ 194,979	$ 329,654	High Level to Detailed Design Variance	During the detailed design phase, Toronto Hydro's system operators requested that a portion of cable be replaced with copper instead of aluminum in order to alleviate capacity constraints in the area that could restrict restoration capabilities and operational flexibility. This increased the cost of materials for this portion of cable. In addition, field inspections revealed the need to replace a greater distance of cable than originally estimated.	
B1 Underground Infrastructure	EST20388_001	20388_001 E12300 47M1 Hutcherson and Berner Trail Civil Works for Cable Replacem	$ 192,888	$ 753,066	High Level to Detailed Design Variance	After detailed inspections in the field, the designer determined that an inrease in duct volume would be required due to relocation of the cable duct routes and depths dictated by the congestion of existing underground utilities, tree roots and driveway locations. The added cost was approximately $320K.	Variance in Allocated Costs; Field Conditions & Execution Requirements
B1 Underground Infrastructure	EST20737_001	20737_001 E12425 Spire Hillway UG Rebuild NY51M27 Civil	$ 191,635	$ 347,378	High Level to Detailed Design Variance	During detailed design, Toronto Hydro determined that two elements of the high-level job plan were underestimated. An additional $51K was required for duct installation and $67K was required for vault drain connection installations. Drain connections are usually determined only during the field inspection or detailed design stage.	Variance in Allocated Costs
B1 Underground Infrastructure	EST24683_009	24683_009 ICM - E13037 Bridletowne UG Rebuild Electrical - Do Not Package	$ 164,307	$ 205,480			
B1 Underground Infrastructure	EST23556_001	23556_001 E12666 Phase 1 Reconfigure 80M29 -Harris on Garden	$ 161,865	$ 218,666			
B1 Underground Infrastructure	EST20948_009	20948_009 E11072 Bridletowne U/GRebuild Elect Created November 2009	$ 156,046	$ 236,948			
B1 Underground Infrastructure	EST20477_001	20477_001 E12335 Blue Anchor UG Rebuild Elec	$ 142,857	$ 150,476			
B1 Underground Infrastructure	EST20648_001	20648_001 E12379 Pineway Craigmont UG Rehab NY51M3 Electrical	$ 139,030	$ 264,134	Field Conditions and Execution Requirements	The cost increase was due to the job being transferred from internal resources to contractor resources for the purposes of execution. The increase is the difference between the internal Toronto Hydro estimate, which does not capitalize administrative costs and other overhead, and the contractor estimate, which is fully burdened with capitalized operating expenses.	
B1 Underground Infrastructure	EST20300_001	20300_001 E12268 Country Lane UG Rebuild NY51M21 - Electrical portion of project	$ 138,561	$ 186,307			
B1 Underground Infrastructure	EST20722_001	20722_001 E12418 Artisan Place UG Rebuild NY51M27 Civil	$ 100,206	$ 301,308	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. The increased duct construction cost approximately $170K and there was a requirement for an additional vault in the final job design, costing $33K.	Variance in Allocated Costs
B1 Underground Infrastructure	EST22137_001	22137_001 E14031 UG Rebuild Scenic Hill SD XJF1 - Electrical	$ 79,538	$ 89,841			
B1 Underground Infrastructure	EST22135_001	22135_001 E13203 UG Rebuild Scenic Hill SD XJF1 - Civil	$ 79,038	$ 210,687	High Level to Detailed Design Variance	Upon detailed inspection of the job site by the designer, Toronto Hydro determined that an additional 200m of ducts would be required, costing an additoinal $115K. (Design costs increased in proportion to the these additional job requirements.)	Variance in Allocated Costs
B1 Underground Infrastructure	EST20438_009	20438_009 PCI-EII472 INGLETON REHAB PHASE A CIVIL DPE Planned - 3110	$ 28,329	$ 591,320	Variance in Allocated Costs	The filed estimate of $28K was intended to capture the small amount of remaining expenditures in 2012 for a much larger job that was substantially complete in 2011. The significant variance in this instance was due to the allocation of road cut repairs, design costs, engineering capital and AFUDC, all of which are finalized at the job close-out and are generally proportional to the full cost of the job.	
B1 Underground Infrastructure	EST19005_009	19005_009 PCI-E11484 Rebuild Ingleton Ph 2 Civil Created October 2010	$ 17,850	$ 694,090	Variance in Allocated Costs	The filed estimate of $18K was intended to capture the small amount of remaining expenditures in 2012 for a much larger job that was substantially complete in 2011. The significant variance in this instance was due to the allocation of road cut repairs, design costs, engineering capital and AFUDC, all of which are finalized at the job close-out and are generally proportional to the full cost of the job.	
B1 Underground Infrastructure	EST22215_009	22215_009 PCI-E11618 Ingleton Feeder Main Phase B UPCMS #TP-2011-8054	$ 6,375	$ 319,469	Variance in Allocated Costs	The filed estimate of $6K was intended to capture the small amount of remaining expenditures in 2012 for a much larger job that was substantially complete in 2011. The significant variance in this instance was due to the allocation of road cut repairs, design costs, engineering capital and AFUDC, all of which are finalized at the job close-out and are generally proportional to the full cost of the job.	Scope Change

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B10 Fibretop Network Units	EST24527_001EST24528_001EST24529_001	24527_001 X12793 N1010_A41CE Fibertop Change Out 2012 Changeouts 24528_001 X12794 N1102_A71CE Fibertop Change Out 2012 Changeouts 24529_001 X12795 N1102_A72CE Fibertop Change Out 2012 Changeouts	$ 388,149	$ 324,373			
B10 Fibretop Network Units	EST24534_001	24534_001 X12789 4651_A53H fibertop replacement 2012 Fibretop changeout	$ 365,492	$ 975,991	High Level to Detailed Design Vari	Prior to the design stage, one of the two existing Fibertops in the vault location failed, resulting in a vault fire. This compromised the structural integrity of the existing vault, making it necessary to construct new civil infrastructure to house the replacement submersible network units. Toronto Hydro constructed two spearate vaults - one for each replacement unit - in order to mitigate the failure risk associated with catastrophic failure of either unit in the future.	
B10 Fibretop Network Units	EST24533_001	24533_001 X12782 4131_A68WR fibertop replacement 2012 Fibretop Changeout	$ 352,417	$ 318,846			
B10 Fibretop Network Units	EST23638_003	X11840 LOC4540 - N/W CHANGEOUTS 2011 Changeouts (EST24053_002)	$ 287,021	$ 330,224			
B10 Fibretop Network Units	EST24094_002 EST26527_001	20873_008 W12199 Riverside Dr Voltage Conv. Part 2	$ 243,962	$ 110,614	Error	Both estimates were created for the same job and the variance was due to an administrative error. EST26527_001 was not meant to be filed. EST24094_002's approved forecast was $120,000 and its actual expenditure was $111,000.	
B10 Fibretop Network Units	EST28239_001	28239_001 X14478 Fibertop Changeout - A49H LOC4753 (1 unit)	$ 215,547	$ 192,623			
B10 Fibretop Network Units	EST24525_001	24525_001 X12787 4553_A56H Fibertop Change Out 2012 Changeouts	$ 186,373	$ 210,936			
B10 Fibretop Network Units	EST24518_001	24518_001 X12786 4523_A20T- N/W CHANGEOUTS 2012 Changeouts	$ 183,448	$ 195,310			
B10 Fibretop Network Units	EST24530_001	24530_001 X12781 4131_A67WR fibertop replacement 2012 Fibretop Changeout	$ 182,747	$ 152,644			
B10 Fibretop Network Units	EST28232_001	28232_001 X14472 Fibertop Changeout A36MN LOCN1196 Not for projects	$ 163,373	$ 190,420			
B10 Fibretop Network Units	EST28233_001	28233_001 X14474 Fibertop Changeout A38MN LOCN1196 Not for projects	$ 163,373	$ 187,912			
B10 Fibretop Network Units	EST28200_001	28200_001 X14460 Fibertop Changeout Loc N1115 Not for projects	$ 163,373	$ 200,616			
B10 Fibretop Network Units	EST28280_001	28280_001 X14473 Fibertop Changeout A37X LOC N1090 2014	$ 163,372	$ 197,702			
B10 Fibretop Network Units	EST24093_003	24093_003 X12743 Loc.N1107 Jarvis & Calton FT REP IFRS compliant	$ 148,591	$ 123,981			
B10 Fibretop Network Units	EST24519_001	24519_001 X12791 4745_A55H - N/W CHANGEOUTS 2012 Changeouts	$ 143,590	$ 109,602			
B10 Fibretop Network Units	EST24523_001	24523_001 X12785 4336_A48GD Fibertop Change Out 2012 Changeouts	$ 141,373	$ 131,575			
B10 Fibretop Network Units	EST28419_001	28419_001 X14479 - Fibertop Changeout A4K LOC 4542	$ 140,531	$ 176,177			
B10 Fibretop Network Units	EST28399_001	28399_001 X14475 - Fibertop Changeout A3K LOC 4826	$ 140,531	$ 157,513			
B10 Fibretop Network Units	EST28207_001	28207_001 X14467 Fibertop Changeout A12E-LOC4885	$ 140,531	$ 160,212			
B10 Fibretop Network Units	EST28201_001	28201_001 X14465 Fibertop Changeout A10MN-LOC4760	$ 140,531	$ 188,535			

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B10 Fibretop Network Units	EST28205_001	28205_001 X14466 Fibertop Changeout A11E-LOC4885	$ 140,531	$ 154,131			
B10 Fibretop Network Units	EST28420_001	28420_001 X14464 Fibertop Change Out Loc 4035 1 unit	$ 137,147	$ 153,056			
B10 Fibretop Network Units	EST28219_001	28219_001 X14481 Fibertop Changeout Loc 4539 Not for projects	$ 137,147	$ 166,500			
B10 Fibretop Network Units	EST28501_001	28501_001 Fibertop Changeout - A5GL LOC4851 (1 unit)	$ 136,872	$ 157,033			
B10 Fibretop Network Units	EST28272_001	28272_001 X14468 Fibertop Changeout - A18T LOC4564	$ 136,872	$ 162,346			
B10 Fibretop Network Units	EST24526_001	24526_001 X12788 4625_A50DX Fibertop Change Out 2012 Changeouts	$ 129,383	$ 113,488			
B10 Fibretop Network Units	EST24096_002E ST26523_001	24096_002 X12688 LOC 4491 fibertop changeout 2012 Fibretop Changeout	$ 125,859	$ 119,542			
B10 Fibretop Network Units	EST24092_003	24092_003 X12741 - N1034 - A65H - NW CHANGEOUT	$ 124,985	$ 107,387			
B10 Fibretop Network Units	EST21583_003E ST26525_001	21583_003 X11743 - LOC 4561- A55H- NW CHANGEOUT	$ 124,406	$ 110,928			
B10 Fibretop Network Units	EST24098_004E ST26526_001	24098_004 X12690 LOC 4643 fibertop changeout 2012 Fibretop Changeout	$ 123,990	$ 117,511			
B10 Fibretop Network Units	EST24392_X03	X11799 LOCN1125 A64WR - N/W CHANGEOUT (EST24913_001)	$ 118,268	$ 140,972			
B10 Fibretop Network Units	EST24391_X03	X11798 LOCN1125 - N/W CHANGEOUT (EST22690_002)	$ 116,543	$ 139,357			
B10 Fibretop Network Units	EST24397_X03	X11797 LOC4768SV A13DX-N/W CHANGEOUT (EST24912_001)	$ 97,246	$ 114,228			
B11 ATS & RPBs	EST24634_001	24634_001 X12822 ATS	$ 865,182	$ 594,871	High Level to Detailed Design Vari	During the design phase of the planned project, it was discovered that recent reactive or emergency work had been performed on this vault location which resulted in a partial change-out of the equipment. This led to lower cost requirements for the job.	
B11 ATS & RPBs	EST24550_001	24550_001 X12802 Loc 4064 ATS Replacement 2012	$ 365,263	$ 293,573			
B11 ATS & RPBs	EST24546_001	24546_001 X12799 Loc 4023 ATS Replacement 2012	$ 356,080	$ 408,297			
B11 ATS & RPBs	EST23252_001	23252_003 X12658 - ATS Replacement Loc.#D3031	$ 214,610	$ 139,181			
B11 ATS & RPBs	EST24544_001	24544_001 X12798 Loc	$ 143,881	$ 298,936	High Level to Detailed Design Vari	Field inspection during detailed design determined that both network transformers were in poor condition an required replacement in coordination with the ATS replacement. Additional restoration costs were also required as the vault roof was paved with decorative stones.	Variance in Allocated Costs
B11 ATS & RPBs	EST24549_001	24549_001 X12801 Loc D3022 ATS Replacement 2012	$ 143,879	$ 91,781			
B12 Stations Power Transformers	EST21651_001	21651_001 S13144 Edenbridge MS Replace TR1 2012	$ 366,840	$ 413,060			
B12 Stations Power Transformers	EST20675_001	20675_001 S12389 Scarborough Golf Club Repl TR1 3/4 MVA 2012	$ 352,505	$ 386,839			
B13 Stations Switchgear	EST23116_001	23116_001 W12651 Por	$ 253,627	$ 757,326	High Level to Detailed Design Vari	During work execution, Toronto Hydro determined that it would be unable to complete the stations switchgear project in conjunction with this supporting distribution project. As a result, a new cable chamber was built and during construction a Bell duct bank appeared which necessitated relocation and realignment of Toronto Hydro poles. The following work was done in order to complete the job: additional overhead infrastructure including three poles, additional cable, inline disconnect switches, additional service riser and fuses, additional underground infrastructure including deadfront padmounted switchgear, additional 300kcmil cable and associated design costs.	Field Conditions and Execution Requirements

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B13 Stations Switchgear	EST21625_002	21625_002 W12537 YORK MS 4kV UG DB Replacement Creation Date: October 1, 2010	$ 133,243	$ 159,198			
B2 Paper Insulated Lead Covered Cables	EST21219_001	21219_001 X12515 Glengrove Piece Out and Leakers 2012 budget estimate	$ 296,145	$ 347,266			
B2 Paper Insulated Lead Covered Cables	EST21217_003	21217_003 X12513 Leaside Pieceout and Leakers Created Oct 2010	$ 181,204	$ 109,313			
B2 Paper Insulated Lead Covered Cables	EST21218_003	21218_003 X12514-esplande_piece out & leakers Created Oct 2010	$ 109,948	$ 147,274			
B21 Externally Initiated Plant Relocations	EST24729_001	24729_001 ICM 2013 IQQuay Plceholder - 2013 DO NOT PACKAGE	$ 9,726,920	$ 4,379,423	High Level to Detailed Design Variance	The civil infrastructure requirements were of a lesser scope than originally anticipated. This is because the job ended up only being from Parliament to Richardson instead of Parliament to Yonge as originally estimated. The remainder of work was captured in customer expansion jobs not filed under ICM. This information was not available during the high level design. For a customer job at 25 Queens Quay East civil infrastructure was built along Queens Quay from Richardson to the customer site (approx. Freeland St just before Yonge). This civil work was captured under the expansion charges as a part of the Offer To Connect signed by the customer.	
B21 Externally Initiated Plant Relocations	EST23759_004	23759_004 ICM X11602 Relocate feeders serving Created Oct 2010 (copy of 23759v3)	$ 1,667,562	$ 1,468,290	High Level to Detailed Design Variance	The high-level estimate included allocations for telecom asset relocation and the possibility of running into PILC leakers. These allocations were included to account for contingencies that might arise once the job began. These contingencies never materialized so neither of the two items mentioned above were required.	
B21 Externally Initiated Plant Relocations	EST24615_001	24615_001 ICM NW PATH Relocation Phase 1	$ 846,950	$ 3,750,475	High Level to Detailed Design Variance	Toronto Hydro had forecasted a cost of approximately $847,000 to do this work. This was the best estimate available at the time of filing. However, the City of Toronto, which was responsible for hiring the contractors who would execute the job, ultimately accepted a bid that, due to the complexities of work, specific field conditions, asbestos removal, and the City's specific scheduling considerations and other requirements, was significantly higher.	
B21 Externally Initiated Plant Relocations	EST23527_009	23527_009 W12663 - Beecroft Ext. - City Conflicts	$ 744,610	$ 697,278			
B21 Externally Initiated Plant Relocations	EST21862_002	21862_002 W12545-MTO KEELE HWY401 RELOC PH#2 RC3620 2012 CapEx WBS Rev Nov 22_10	$ 617,900	$ 1,142,953	Third-party Constraints and Requirements	Higher labour rates were incurred to accomodate the Ministry of Transportation's requirement to undertake this work during off-hours. In addition, the original estimate did not include costs related to design, third party inspection fees and Ministry of Transportation's required engineering reports.	
B21 Externally Initiated Plant Relocations	EST24037_002	24037_002 X11380 Front St. E,Heritage lighting_OH replaces est 24037 version 003	$ 543,449	$ 69,316	Third-party Constraints and Requirements	At the time of the filing, this project was considered to be a relocation project requested by a Road Authority, the City of Toronto. However, during detailed design stage, Toronto Hydro was notified that this was not a relocation request by the City but rather a beautification request. Legislation does not require Toronto Hydro to pay for beautification projects so the City of Toronto was asked to pay for the full amount of the project. The City requested and received a cost adjustment for the depreciated value of Toronto Hydro's assets that would be replaced as part of the project.	High Level to Detailed Design Variance
B21 Externally Initiated Plant Relocations	EST20129_004	20129_004 X11605 Relocate A25T/A27T/A29T/A31T 2011 budget estimate	$ 461,036	$ 640,389	Error	The estimate for this job was incorrectly filed as $460K. The correct estimate was $921,954. Therefore, the job actually came in 44% under forecast. The underspend was a result of an investigation that occurred during the detailed design stage that led to the number of feeders that needed to be relocated from four to two.	High Level to Detailed Design Variance
B21 Externally Initiated Plant Relocations	EST23606_X01	W10498 Weston Tunnel GO Xing Relocn ET88M12 (EST24895_001)	$ 277,851	$ 292,271			
B21 Externally Initiated Plant Relocations	EST23018_002	23018_002 Western Battery to Duoro Rail Crossing RC3620 2011 CapEx WBS Rev Nov 22_10	$ 254,602	$ 335,655			
B21 Externally Initiated Plant Relocations	EST23196_003	23196_003 W11826 OH Plant Reloaction Metrolink Construction 2012	$ 236,111	$ 438,153	High Level to Detailed Design Variance	In the detailed design stage, it was determined that additional underground infrastructure assets (both civil and electrical) needed to be relocated, which were not included in the original project scope. Additional civil work was required as Toronto Hydro was not provided an easement for overhead installation. This discovery resulted in a corresponding cost increase. In addition, several other cost elements (overhead conductor for neutral and secondary lines, contract design and inspection fees, etc) were slightly higher than originally estimated.	

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B21 Externally Initiated Plant Relocations	EST24079_002	24079_002 W12763 - GTS Hwy27 Bridge Expansion	$ 193,850	-$ 9,300	Third-party Constraints and Requirements	This project was to relocate Toronto Hydro's distribution system from the construction site for a bridge expansion to accomocate the GO Georgetown route. Since Toronto Hydro is on a rail authorities land, all relocation costs must be paid for by Toronto Hydro. However, following the 2012 decision, this project was placed on hold due to lack of funding. Metrolinx, in a one time exception, offered to pay for the project to ensure that the work continued.	
B21 Externally Initiated Plant Relocations	EST23329_002	23329_002 W10508 HWY427/Eglinton Road Mod RC3620 2011 CapEx WBS Rev Nov 22_10	$ 188,980	$ 200,994			
B21 Externally Initiated Plant Relocations	EST20132_X02	X11606 GO Strachan Crossing Feeder Relocate - Civil (EST24929_001)	$ 152,233	$ 394,248	Variance in Allocated Costs	The filed estimate was intended to capture the amount of remaining expenditures in 2012 for a much larger job that was substantially complete in 2011. The significant variance in this instance was due to the allocation of road cut repairs, design costs, engineering capital and AFUDC, all of which are finalized at the job close-out and are generally proportional to the full cost of the job.	
B21 Externally Initiated Plant Relocations	EST26821_X01	W12909 Road Widening - North Side of Lawrence (east of Allen) (EST24963_002)	$ 119,024	$ 360,690	High Level to Detailed Design Variance	During the detailed design stage, it was determined that that the labour and material costs for this job had been underestimated.	
B4 Overhead Infrastructure	EST20565_002	20565_002 ICM-W12351 Lawrence-Keele- CSP/Pri Rep Creation Date: October 1, 2010	$ 4,413,403	$ 7,026,237	High Level to Detailed Design Variance	This job as originally scoped included CSP and conductor replacements at 170 locations on a worst performing feeder, and was one of the largest single jobs in the forecast ICM work program. The confluence of a number of complex site-specific conditions encountered during the detailed design stage increased the cost of this job relative to the high-level estimate by about 69%, including: - an additional $584K (plus $149K for pole removals) was required to replace poles that were found to be in poor condition during detailed inspections or were determined to be an incorrect height for the new overhead plant design; - $361K for conductor stringing (plus $104K for conductor removal) was required as the existing primary conductor was determined to be undersized for the growing load in the area; - $112K was required to replace additional non-standard CSP transformers that were identified in field inspections; - the designer determined that, without the rearrangement of secondary services to suit the new design (i.e. "secondary transfers") then a large number of services would have become "mid-span", resulting in excess tension on the secondary bus; the addition of secondary transfers resulted in additional costs of $870K; - other miscellaneous expenditures	Variance in Allocated Costs
B4 Overhead Infrastructure	EST24668_009 EST24669_009 EST24851_009 EST24881_009	Rebuild Broadlands MS Area with VC	$ 3,462,380	$ 2,776,279	High Level to Detailed Design Variance	The variance was due to the confluence of several job changes at the design stage. - Overall labour costs were overstated in the original high-level estimate. - A separate customer connections job emerged, which ended up covering part of the anticipated scope of this job. This led to savings in line extension, transformer, and service wiring costs.	Third Party Constraints & Requirements
B4 Overhead Infrastructure	EST24951_001	24951_001 Danger and Caution Pole Replacement	$ 1,856,192	$ 1,963,593			
B4 Overhead Infrastructure	(EST24598_009) EST22850_009 EST26533_001 EST26534_001 EST26842_X01	22850_009 E12436_Repl Failing OH Assets_PH3 POLES FOR 2012 BUDGET 24598_009 E12436_Repl Fail OH Assets_Ph 3_ELECT (FOR 2012 BUDGET)	$ 1,766,945	$ 1,354,362	High Level to Detailed Design Variance	Project labour costs were lower than anticipated, as it was possible to station crews closer to the job site, resulting in significantly less travel time, thereby increasing the daily "wrench time". Moreover, a number of anticipated pole removals included in the initial cost estimate were determined to be unnecessary on the basis of field assessment.	
B4 Overhead Infrastructure	EST20875_001	20875_001 X12453-35M12-OH Rebuild-Geo Anderson IFRS compliant	$ 1,627,291	$ 1,799,324	High Level to Detailed Design Variance	Field inspections during detailed design determined that, due to condition and design requirements for the new plant, 15 additional poles and five additional transformers were required relative to the high-level estimate, increasing the cost of the job.	
B4 Overhead Infrastructure	EST20572_002	20572_002 W12291 FESI - Magellan OH Rebuild 55M25 To be reviewed prior to authorization	$ 1,624,396	$ 1,744,908			

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B4 Overhead Infrastructure	EST24161_001	24161_001 W13376 VOLTAGE CONVERSION (B-1RK) 2013	$ 1,589,640	$ 2,854,304	High Level to Detailed Design Variance	Review of the job area during detailed design revealed the need to significantly expand the scope of work to include additional poor condition poles and to accommodate standard design practices for the proposed new overhead plant. An additional 49 poles and nine transformers required replacement based on condition and design requirements, adding approximately $800K to the job cost. The designer also determined that non-standard open bus secondary lines needed to be replaced with standard multiplexed secondary lines for reasons of service quality, adding another $170K in cost. The remaining variance was due to contractor inspection and material handling costs, which are typicall not included in the high-level estimate, as well as a small amount of underground work that was required in the area in order to complete the job.	
B4 Overhead Infrastructure	EST20578_001	20578_001 E12358 51M21 Rebuild OH Sections Part 1	$ 1,578,974	$ 5,926,485	High Level to Detailed Design Variance	The initial project cost estimate was based on a preliminary feeder patrol intended to verify a list of components in the areas that were believed to be defective and in need of replacement. The project cost increased following a more detailed field inspection by the project designer and construction field crew members. In addition to identifying a greater number of units for replacement based on condition, thorough inspection of design conditions in the field determined that from construction and standards perspective, an additional number of poles and transformers needed to be replaced so that the project could be properly constructed with sustainable long-term improvement in the area. The major material unit increases were as follows: - The high-level design assumed that only 150 of 439 poles in the project area would need to be replaced. Due to pole condition as well as specific design requirements, 372 poles were ultimately deemed necessary for replacement. - As a result of the pole replacements, 79 additional transformers needed to be replaced. - Some areas required tree-proof conductor due to the density of tree canopy. The expansion of the scope of work in the final design caused allocated costs such as design and engineering capital costs to increase in proportion to the magnitude of the job. The extensiveness of the rebuild in this area reflected the poor reliability experienced by the customers. Feeder 51M21 had experienced more than 30 outages in the three years prior to job execution.	Variance in Allocated Costs
B4 Overhead Infrastructure	EST19871_001	19871_001 X12175 Replacement of CSP TX 2012 budget estimate	$ 1,417,803	$ 834,436	Error	A clerical error in the creation of the filed estimate resulted in the costs associated with overhead transformer replacement being overstated by a factor of four. The high-level estimate should have specified nine single phase transformers for three three-phase transformer bank replacements, but instead specificed 36 units. The actual detailed design for the new plant only required six transformers, further reducing the final costs.	
B4 Overhead Infrastructure	EST20939_001	20939_001 W12442 FESI CSP Replacement NY85M1	$ 1,391,625	$ 2,227,251	High Level to Detailed Design Variance	Review of the job area during detailed design revealed the need to significantly expand the scope of work in order to accommodate standard design practices for the proposed new overhead plant. Due to pole height requirements and the positioning of secondary services in the new design, an additional $680K in pole replacement and framing, $67K for secondary transfers, and other proportionate costs related to design, inspection and switching were required.	Variance in Allocated Costs
B4 Overhead Infrastructure	EST22184_001	22184_001 W13198 Refurbish Trunk Feeder 85M10 Regent - Wilson	$ 1,235,534	$ 1,027,578	High Level to Detailed Design Variance	It was determined during the detailed design phase that the costs associated with the minor underground portion of this job were oversestimated in the high-level plan.	
B4 Overhead Infrastructure	EST22208_001	22208_001 W13205 Refurbish 85M10 Laterals Ph1 of 2	$ 1,212,954	$ 1,666,575	High Level to Detailed Design Variance	Several cost elements were underestimated in the high-level estimate, in part due to the specific contractor unit costs that were ultimately used for this particular job. - Approximately $209K was required for primary/secondary framing and stringing. The difference in cost was due to labour. Contractor-specific unit prices were used in the detailed estimate as well as cost of removal. - Appriximately $117K more was required for poles and anchors. This consisted of $29K in materials. An additional 37 poles were required due to condition and design consideratoins, and the contractor-specific unit price for labour was higher than anticipated in the high-level estimate. - An additoinal $91K was required for secondary services. - An additoinal $65K was required for support services such as tree trimming and pay duty police, which were not anticipated in the high-level design.	

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B4 Overhead Infrastructure	EST22245_001	22245_001 W13211 Goulding MS F1&F2 VC PH#1	$ 1,204,620	$ 1,746,941	High Level to Detailed Design Variance	The high-level plans for this job and the associated job W13216 each included both overhead and underground aspects. For execution efficiency, the designer broke the jobs apart and reassembled them as one purely overhead job (W13211) and one purely underground job (W13216). The aggregate forecast cost for these jobs was $2.19M and the aggregate final cost was $2.92M. Variances occured in both the overhead and underground portions of the work. The high-level estimate assumed that 65 poles in the job area needed to be replaced. Following detailed field inspections, the designer determined that 94 poles in the job area needed to be replaced on the basis of condition and pole height requirements. On the underground portion of the job, a greater number of meterbases needed to be replaced than anticiapted in the detailed design.	Filed Conditions & Execution Requirements
B4 Overhead Infrastructure	EST19861_001	19861_001 X12172 Replacement of CSP TX 2012 budget estimate	$ 1,160,819	$ 935,144	High Level to Detailed Design Variance	The number of polemounted 100 kVA and 50kVA transformers in need of replacemeent was overestimated in the high-level estimate.	
B4 Overhead Infrastructure	EST20456_002	20456_002 W12309 Spenvalley 55M25 Overhead Rebuild Arleta/Spenvalley/Yatescastle/Sheppard	$ 1,118,174	$ 1,034,324			
B4 Overhead Infrastructure	EST26151_001	26151_001 W13482 Install/Redegn Guying Var Loc Ph3	$ 1,113,912	$ 189,558	High Level to Detailed Design Variance	Detailed design and inspection revealed significantly more complex work requirements than contemplated under the orignal scope, largely due to the location-based challenges of securing the poles with adequate guying infrastructure. Given these challenges, the project scope was changed by transferring the more complex work to a dedicated scope in order to properly consider the design alternatives.	
B4 Overhead Infrastructure	EST19862_001	19862_001 X12173 Replacement of CSP TX, 35M1 2012 budget estimate	$ 1,104,228	$ 906,240	High Level to Detailed Design Variance	The high-level estimate included a greater amount of materials than was determined necessary during the detailed design process.	
B4 Overhead Infrastructure	EST20773_002	20773_002 WBS/IFRS Compliant Creation Date: October 1, 2010	$ 1,018,516	$ 1,625,810	High Level to Detailed Design Variance	The original design for this job, which was completed in 2010, was driven by the need to address end-of-life 4 kV assets on feeder NYSS60F2, but did not contemplate converting the 4 kV to 27.6 kV at that time. However, the project was later shelved while a plan for conversion of the aging 4 kV in the area was assessed. When the project was revived during the ICM period, Toronto Hydro redesigned the job for conversion to 27.6 kV in order to improve service quality and to enable the eventual decommissioning of related 4 kV stations. The additoinal costs were related to the incremental design effort involved as well as the need for taller poles to accomodate implementation of the new feeder voltage.	
B4 Overhead Infrastructure	EST22248_001	22248_001 W13216 Goulding MS F1 and F4 VC Ph#2	$ 988,560	$ 1,174,772	High Level to Detailed Design Variance	The high-level plans for this job and the associated job W13211 each included both overhead and underground aspects. For execution efficiency, the designer broke the jobs apart and reassembled them as one purely overhead job (W13211) and one purely underground job (W13216). The aggregate forecast cost for these jobs was $2.19M and the aggregate final cost was $2.92M. Variances occured in both the overhead and underground portions of the work. The high-level estimate assumed that 65 poles in the job area needed to be replaced. Following detailed field inspections, the designer determined that 94 poles in the job area needed to be replaced on the basis of condition and pole height requirements. On the underground portion of the job, a greater number of meterbases needed to be replaced than anticiapted in the detailed design.	Filed Conditions & Execution Requirements
B4 Overhead Infrastructure	EST16616_005	16616_005 W10275 Manby TS-Horner TS Load Transfer FEB 08,2012 Electrical for approval	$ 953,276	$ 773,479	High Level to Detailed Design Variance	The variance is primarily due to the actual cable installation costs being materially lower than initially budgeted.	
B4 Overhead Infrastructure	EST20595_001	20595_001 E12361 51M21 Rebuild OH Sections Part 2	$ 827,321	$ 3,297,814	High Level to Detailed Design Variance	This job was the second part of a two phase job. As with the first phase (EST20578), the initial project cost estimate was based on a preliminary feeder patrol intended to verify a list of components in the areas that were believed to be defective and in need of replacement as part of a potential overhead infrastructure project. The project cost increased following a more detailed field inspection by the project designer and construction field crew members. In addition to identifying a greater number of poles and transformers for replacement based on condition, additional poles needed to be replaced in order accomodate height requirements for standard equipment configurations and design practices. The original projection identified 50 poles and 10 overhead transformers; subsequent field inspections determined that a total of 184 poles and 68 transformers needed replacement. The extensiveness of the rebuild in this area reflected the poor reliability experienced by the customers. Feeder 51M21 had experienced more than 30 outages in the three years prior to job execution.	

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B4 Overhead Infrastructure	EST24089_001	24089_001 W14315 Carmichael OH rebuild & Upgrade	$ 811,451	$ 893,860			
B4 Overhead Infrastructure	EST21531_001	21531_001 E13111 OH Rebuild R43M28 SCNAR43M28	$ 804,980	$ 1,323,795	High Level to Detailed Design Variance	The high-level estimate for this job was based on available feeder patrol information from 2010, prior to the identification of porcelain SMD-20 switches manufacture between 2004 and 2011 as a significant pontential safety hazard to crews and the public. During the detailed design phase in 2012, the designer determined that 200 porcelain switches on the feeder needed to be replaced, along witha portion of overhead line, at the combined cost of approximately $470K. The remaining variance is a function of project design and inspection cost variances that are proportional to the overall cost of the job.	Variance in Allocated Costs
B4 Overhead Infrastructure	EST18456_004 EST26546_001	18456_004 E11374 - OH SCADAMATE 51M7_30, 53M25_28 SCADAMATE INSTALLATION NY34M6	$ 788,917	$ 156,761	Error	Due to an administrative oversight, the entirety of the project's scope was included in the ICM application, whereas a major portion of work was in fact completed prior to the ICM filing and is inculded in the pre-2012 CWIP amounts that came into service during the ICM period (as a part of below threshold spending). The $157K of in-service additions for this job represents the remaining portion of work that was completed during the ICM period. The total actual cost of this job, including pre-2012 CWIP, was $672K.	
B4 Overhead Infrastructure	EST20892_001	20892_001 X12460 - 35M12-O/H Rebuild--Arrowsmith IFRS compliant	$ 761,553	$ 1,028,093	High Level to Detailed Design Variance	The designer determined that five additional switch installations were required to complete the new plant design. Furthermore, due to scheduling restrictions encountered during the construction phase, Toronto Hydro determined that it was necessary to execute 31 pole installations and 15 anchor installations on a weekend, which incurred approximately $135K in additional labour costs.	Filed Conditions & Execution Requirements
B4 Overhead Infrastructure	EST23093_001	23093_001 W14149 - OH Feeder Rehab 55M9 Finch / Weston / Toryork	$ 730,822	$ 791,854			
B4 Overhead Infrastructure	EST23323_001	23323_001 W14181 Kingsway MS VC	$ 730,773	$ 872,486	Variance in Allocated Costs	Both design and road cut repair costs were ultimately higher than forecasted in the filed estimate.	
B4 Overhead Infrastructure	EST21517_001	21517_001 W13113 FESI Feeder Rehab_CSP PH#1	$ 711,238	$ 782,788			
B4 Overhead Infrastructure	EST20296_001	20296_001 OH rebuild Spenvalley and Sorroundings	$ 689,662	$ 1,005,339	High Level to Detailed Design Variance	Field inspections during the detailed design phase determined that an additional 11 poles and 12 transformers needed to be replaced due to poor condition and non-standard equipment. Additional design, inspection and material handling costs were required on the basis of the detailed design relative to the high level estimate, in part due to the additional asset replacements.	Variance in Allocated Costs
B4 Overhead Infrastructure	EST19735_001	19735_001 X12148 Replacement of CSP,34M7 2012 Estimate	$ 647,903	$ 166,772	High Level to Detailed Design Variance	Toronto Hydro determined that 11 overhead transformers originally planned for replacement and included in the estimate for this job could be more efficiently executed as part of another job.	
B4 Overhead Infrastructure	EST21998_001	21998_001 W13187 80M1 Clarkhill_Glenborough Park 80M1 OH rebuid	$ 642,259	$ 1,043,488	High Level to Detailed Design Variance	The high-level scope for this job assumed that all existing 4 kV lines in the project area would be removed as a result of conversion. The designer later determined that existing 4 kV lines in one part of the project would have to be maintained or rebuilt to continue supplying some underground 4 kV load that could not be converted. Taller poles were required to accomodate both the 4 kV circuit and the higher voltage circuits, driving the variance. Other costs related to 4 kV removals were also understated in the high-level plan.	
B4 Overhead Infrastructure	EST22173_001	22173_001 W13197 80M1 Ellerslie Betty Ann Park Hom OH Rehab	$ 580,533	$ 535,837			
B4 Overhead Infrastructure	EST27810_001	27810_001 W13364 Kingsway voltage conversion rev 2 2013	$ 563,948	$ 1,378,726	High Level to Detailed Design Variance	Secondary service configurations that were relatively unique to the job area and not accounted for by the engineer during the high-level planning phase caused a material increase in cost for this job during the detailed design phase. Specifically, nine customers had previously been fed through delta configurations and needed to be converted to wye configurations in order to be supplied from the wye type transformers that were installed as part of this job in accordance with design standards. This required that Toronto Hydro replace the entire secondary along the pole line as well as the service drops to the customers. As part of the conversion of the secondary services to the customers, some underground work was added to the job. Hence new ducts had to be installed and new secondary service drops were to be installed to feed these customers. This involved revamping the entire three-wire three-phase services and installation of a fourth wire between Toronto Hydro's transformer and the customer's service entrance switch to meet Electrical Safety Authority requirements. All existing meters had to be upgraded to three-phase, four-wire metering systems. Finally, the contractor unit costs related to poles, pole anchoring, pole framing, etc., were higher than anticipated in the high-level estimate.	

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B4 Overhead Infrastructure	EST23089_001	23089_001 W14150 - OH Feeder Rehab 55M9 Milvan / Penn	$ 538,125	$ 1,463,143	Field Conditions and Execution Requirements	The reason for variance was related to the scheduling of the job. In the Phase 2 ICM Appliciation, Toronto Hydro showed the the full forecast cost of the job in the segment narrative as $1.13M. However, in the financial calculations used to determine ISAs, Toronto Hydro relied on the calendarized cost of the job for 2014 as reflected in the utility's execution work program. As this job was expected to continue into 2015, Toronto Hydro only included the $538K that it anticipated spending during the ICM period. However, this job was ultimately finished by the end of 2014, resulting in the full cost of the job being placed into service. The remainder of the variance was due to the fact that 13 additional overheard transformers and the primary conductor needed to be replaced based on condition.	High Level to Detailed Design Variance
B4 Overhead Infrastructure	EST19581_001	19581_001 X12124 Replacement of non standard CSP 2012 Estimate	$ 531,346	$ 411,139	High Level to Detailed Design Variance	Detailed field inspections determined that only 15 poles in the immediate project area needed to be replaced compared to the 33 poles anticipated by the high-level estimate. The reduction in pole replacements allowed for a similar reduction in the number of transformer replacements involved in the rebuild. The negative variance was partially offset by the cost of replacing other defective poles discovered adjacent to the project area, which posed safety hazards. Toronto Hydro determined that it would be prudent to replace these poles in coordination with the ongoing project in the area.	
B4 Overhead Infrastructure	EST19792_001	19792_001 X12158 Replacement of 3 ph switch IFRS compliant	$ 530,770	$ 370,397	High Level to Detailed Design Variance	System operations reviewed the detailed design prior to the construction stage and determined that two of the planned SCADA switches would not provide sufficient benefits. These switches were removed from the project.	
B4 Overhead Infrastructure	EST20684_004 EST26499_001	20684_004 W12397-SMD 20 Switch Replacement RC3620 2011 CapEx WBS Rev Nov 22_10	$ 526,062	$ 644,073	High Level to Detailed Design Variance	Field inspections during the detailed design phase identified a greater number of required SMD-20 switch replacements than estimated in the high-level estimate In addition, switch installation involved higher labour costs to conduct extensive feeder switching in order to avoid prolonged planned outages that were assumed in the initial scope, but were subsequently determined to be unacceptable from the customer impact standpoint.	
B4 Overhead Infrastructure	EST19837_003	19837_003 X12163 SCADA SWITCH REPLACEMENT WBS7/PW-DPC	$ 524,169	$ 567,168			
B4 Overhead Infrastructure	EST24320_001	24320_001 W14343 Voltage Conversion PH-2 2014	$ 486,148	$ 606,132	High Level to Detailed Design Variance	The original high-level estimate assumed that eight transformers and 24 poles required replacement. Following field inspections it was determined that, due to condition and design consideratoins (e.g. height requirements), 11 transformers and 31 poles needed replacement. These increases were partially offset by lower planning and design costs than originally estimated.	Variance in Allocated Costs
B4 Overhead Infrastructure	EST20881_001	20881_001 E12457 Pole and CSP Transformers NY80M5 OH Rebuild	$ 444,020	$ 768,828	High Level to Detailed Design Variance	During the detailed design phase, Toronto Hydro determined that several cost requirements had been underestimated in the high-level plan. The largest of these were additional pole and framing costs, which were understated by approximately $115K, and switching costs related to overhead transformer installation, which were underestimated by approximately $110K. Incremental costs associated with design efforts, secondary services, and inspection costs were also required. These costs were generally incurred due to specific pole height requirements related to the newoverhead plant design that were not fully captured at the high-level estimating phase.	Variance in Allocated Costs
B4 Overhead Infrastructure	EST23696_001	23696_001 ICM W12669 Martin Ross rebuild	$ 411,791	$ 745,575	High Level to Detailed Design Variance	Several factors contributed to the increased cost of ths job: - Detailed design work and inspections revealed the need to replace additional poles identified as being in poor condition at the time of site visit. - Additional secondary wires were also required because existing service wires were inadeqately configured to facilitate conductor transfer to new poles, increasing material and labour costs. - Additional duct work was also required to accomodate a three-phase underground section of the feeder. The underground work also revealed a vault in poor condition, which was rebuilt as a part of the job.	
B4 Overhead Infrastructure	EST28075_001	28075_001 W14125 38M27 North Queen conductor upgra	$ 396,792	$ 515,858	High Level to Detailed Design Variance	As the poles in this job area were in good condition, Toronto Hydro did not need to replace them as a part of the conductor upgrade job. However, maintaining the existing pole line was more complex than anticipated in the high-level estimate, as the existing lines needed to be dropped down in order to properly frame the new lines. This doubled the labour time for the conductor upgrade compared to if the same work was performed as part of a full rebuild. This remained the most prudent option as the cost of a full rebuild would have also included the material cost of new poles, the cost of installing the poles, the costs of removals, etc.	

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B4 Overhead Infrastructure	EST19892_001	19892_001 X12176 Replacement of 3 ph switch IFRS compliant	$ 375,933	$ 500,325	Field Conditions and Execution Requirements	To accommodate complex switching requirements for the work near O'Connor Drive and Northline Road and to mitigate interruptions to a seniors home, part of the work needed to be performed on weekends, resulting in increased cost of labour and costs related to the rental of a generator.	
B4 Overhead Infrastructure	EST22205_001	22205_001 E11765Pole Replacement Deanvar Ave CE-F1	$ 369,462	$ 554,168	High Level to Detailed Design Variance	During the detailed design stage, the designer determined that replacement of the existing open bus seoncdary lines with multiplex secondary lines was required in order to bring the new plant to current design standards.	
B4 Overhead Infrastructure	EST23928_001	23928_001 E13359 Remove YH feeder loads after VC Created in 27 Oct 2011	$ 345,116	$ 447,749			
B4 Overhead Infrastructure	EST24052_001	24052_001 W14306 - 85M5 Mcallister Rd. OH rebuild W14306 - 85M5-Mcallister Rd. O	$ 330,024	$ 204,760	High Level to Detailed Design Variance	Upon review at the detailed design phase, it was determined that a portion of this job would be more efficiently executed in coordination with another Overhead Infrastructure job, W13351 (which was yet to be placed into service as of the end of 2014). W14306 was reduced in scope to address only the proposed rebuilds on McAllister Road.	
B4 Overhead Infrastructure	EST19965_009 EST20391_009	19965_009 ICM - E11088 NY Panacomm Repl "D" Replacing North York Panacomm RTUs 20391_009 ICM - E11088 NY OH SCADA INSTALL "A"	$ 309,641	$ 801,892	High Level to Detailed Design Variance	During the design phase, Toronto Hydro's system operators determined that it would be economical to convert three padmounted switches and four overhead switches to SCADA operable switches in order to optimize system reliability and efficiency. This added approximately $250K to the original estimate. Also, significant extra work was required at a specific location in the job area due to access restrictions. The location of an existing switch required access from an on-ramp to highway 404 at Finch Ave. E. To ensure safe and efficient access to this switch location in the future, relocation was required.This invloved a new riser switch, a new 60-ft pole, additional civil work to extend the primary feeder cable to the new pole location and to connect to the existing duct, and the cost of the associated cable and terminations. This also increased the cost of the job by approximately $250K.	
B4 Overhead Infrastructure	EST23979_001	23979_001 W14285 OH & UG lateral Rebuild	$ 298,771	$ 361,726			
B4 Overhead Infrastructure	EST17801_009 EST26547_001	17801_009 ICM- E10387 Bermondsey TS SCADA OH & UG SCADA Switch Installations	$ 293,721	$ 320,088			
B4 Overhead Infrastructure	EST28603_001	28603_001 W14605 Manby-Richview Load Cascades	$ 290,252	$ 570,348	High Level to Detailed Design Variance	The scope of this job was expanded to take on additional load shifting elements between Manby TS and Richview TS from another job that was behind scehdule. These additional elements needed to be completed on an accelerated basis to prepare the system for the summer loading levels. The requisite project streamlining resulting in higher labour requirements than budgeted for under the original high-level design.	
B4 Overhead Infrastructure	EST23677_009	23677_009 ICM E12104 CHIPPING CROSSBURN OH REBUILD POLE & ELECTRICAL INSTALLATION	$ 276,906	$ 334,935			
B4 Overhead Infrastructure	EST20946_008 (EST26553_001 EST26790_X02)	W12462 Rockford Road - 3 Phase Extension W12462 - FESI (EST20946_008)	$ 273,976	$ 288,132			
B4 Overhead Infrastructure	EST20848_001	20848_001 E12459 Banbury/Post Rd OH Rehab NY34M6, NY53M24, NY51M21	$ 263,649	$ 566,806	High Level to Detailed Design Variance	The original job required construction on a route that was later deemed infeasible by the designer. The high-level plan called for feeder construction down Post Rd. and across a ravine, which aligned to the existing route of 51M21. However, the designer determined that the poles installed in the ravine were extremely difficult to access for repair or replacement under contemporary work rules and procedures, and therefore needed to be eliminated by adopting a new feeder configuration.To achieve the desired operational benefits, the planning engineer submitted a revised scope that proposed constructing a feeder tie between 34M7 and 51M21. This work accounts for about half of the total variance. The remainder of the variance was due to the inclusion of additional legacy CSP transformer replacements, which were identified as a reliability concern.	
B4 Overhead Infrastructure	EST24169_001	24169_001 ICM E14319 New SCADA Switches NAR43M24	$ 258,257	$ 171,420			
B4 Overhead Infrastructure	EST20659_001	20659_001 W12383 OH SCADA Switch Replacements NY80M30	$ 212,766	$ 167,507			

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B4 Overhead Infrastructure	EST22041_001	22041_001 W13189 80M1 Stafford Rd & Cloebury Crt 80M1 OH rebuild	$ 185,977	$ 336,517	High Level to Detailed Design Variance	Several equirements were identified during the detailed design stage as a result of detailed field inspections, including: - Replacement for secondary poles was not included in the high level estimate. Field inspection determined these poles were defective, and needed to be replaced, which cost approximately $42K. - The original scope anticipated transfer of existing conductor to new poles. However, existing conductors were determined to be at the end of their life and undersized. They were replaced with primary conductors meeting the current standard for approximately $46K. - The cost for the installation of fuses was higher in the detailed estimate based on the specific contractor unit prices $15K. - One underground radial supply had to be replaced as part of the design This included underground cable, transformers and civil infrastructure to bring existing ducts to the new pole. The transfomers in customers building vault were leaking and did not meet today's standard; cable was at end of life; a decision was made to replace at time of the design. This work cost approximately $35K. - Design costs rose as a percentage of the overall work.	Variance in Allocated Costs
B4 Overhead Infrastructure	EST22037_001	22037_001 W13188 80M1 Finchhurst Dr & Fleetwell Cr 80M1 OH rebuid	$ 153,176	$ 165,942			
B4 Overhead Infrastructure	EST21876_001	21876_001 W13182 OH Rehab 80M1.	$ 132,124	$ 194,215			
B4 Overhead Infrastructure	EST20023_001	20023_001 X12204Replacement of CSP TXMR 2012 budget estimate	$ 94,233	$ 1,191,852	Error	Due to a clerical error, an incorrect estimate was filed for this job. The actual estimated cost for this job was $1.19M, meaning that there was no variance between forecasts and actuals.	
B4 Overhead Infrastructure	EST19455_001	19455_001 X11526 Replacement of 3 phase switch 2012 Estimate	$ 85,494	$ 101,728			
B4 Overhead Infrastructure	EST24060_001	24060_001 E12744 Bell Line Conversion	$ 84,750	$ 113,747			
B4 Overhead Infrastructure	EST19452_001	19452_001 X10449 Replacement of 3 phase switch 2010 estimate	$ 74,272	$ 156,615			
B4 Overhead Infrastructure	EST19453_001	19453_001 X11525 Replacement of 3 phase switch 2012 estimate	$ 74,156	$ 121,126			
B4 Overhead Infrastructure	EST19454_001	19454_001 X111524 Replacement of 3 phase switch 2012 Estimate	$ 74,156	$ 118,775			
B5 Box Construction	EST18738_X01	18738_001 X11452 Millwood MS B2MD,B1MR Partial V/C 2011 Budget Estimate	$ 2,726,725	$ 3,507,821	High Level to Detailed Design Variance	- The amount of infrastructure required to properly and safely convert the 4.16KV overhead was underestimated. In particular, during the detailed design stage, the designer found that an additional $229k was required for poles and anchors, an additional $220k was required for primary and secondary frame/string/transfer, an additional $82k was required for transformer costs and an additional $100k was required for switching. - In addition, the transfer of the estimate to external resources resulted in a higher unit price due to the fully burdened contractor costs being used as opposed to Toronto Hydro's internal costs, which are less aggressively capitalized.	
B5 Box Construction	EST19966_001	19966_001 X13176 Convert Dupont 4kV B4DU to 13.8kV	$ 1,760,167	$ 1,612,799			
B5 Box Construction	EST20919_002	20919_002 X12445-Greenwood Felstead OH Conversion Creation Date: October 01, 2010	$ 1,707,894	$ 2,503,087	High Level to Detailed Design Variance	The original cost estimate for this job only covered half the total cost, as the second phase of this project was expected to be undertaken in a subsequent year. However, due to efficiency of operations, the entire project was completed in a single year. The variance represents the additional costs required to complete the second phase of the job.	
B5 Box Construction	EST18761_001	18761_001 X12352 Voltage Conversion from B7CD 2011 budget estimate	$ 1,329,175	$ 2,561,377	Field Conditions and Execution Re	A number of complex site-specific conditions encountered during detailed design and construction increased the labour cost of this job, including: - Working in a congested area with high pedestrian traffic, requiring significant paid duty police presence. - Working on narrow streets. - Setting-up trucks where vehicles were parked and having those vehicles moved - Working in close proximity to TTC tracks and overhead lines, and working close to existing buildings that are built at streetline.	

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B5 Box Construction	EST20476_001	20476_001 X13178 Convert 4kV B9J to 13.8kV IFRS compliant	$ 733,364	$ 912,470	Field Conditions and Execution Re	Increased costs were related to difficult working conditions, including inclemental weather and other site specific challenges. This job was being performed shortly after the winter ice storm and the weather resulted in a longer than expected execution time. The incremental weather also contributed to higher labour costs as it was difficult to receive hold offs as a result of other competing demands on the control room.	High Level to Detailed Design Varianc
B5 Box Construction	EST26567_001	26567_001 PCI-S11488 WiltshireTS: A5-6W, 2 new 2013 Budget - DO NOT PACKAGE	$ 39,144	$ 164,432	Error	A clerical error in the creation of the filed estimate resulted in labour costs being underestimated for this job by approximately $50,000. This error was amplified by the fact that the standard overhead adder, which was used in the filing to estimate overhead costs such as design and engineering capital for all filed jobs, was applied as a percentage of this lower, erroneous amount.	Variance in Allocated Costs
B6 Rear Lot Construction	EST21484_001	21484_001 W11726 Markland RL VC PH#1 Civil HL Estimate -- DO NOT PACKAGE	$ 5,846,378	$ 3,520,414	High Level to Detailed Design Variance	The scope of work was reduced as the change in design allowed a more efficient design. Instead of routing a main trunk circuit through Mill Rd. and Toledo Rd. the designer was able to route the curcuit exclusively along Mill Rd. This reduced the amount of padmounted switches and removed the main loop construction that was supposed to be routed on Toledo Rd. Toronto Hydro made this change in order to limit the amount of major equipment that would have to be placed on customer property. This was done by using longer lateral loops connected on fewer PMH switchgear units. Furthermore, the southern lateral loops were supplied by dips from overhead poles off Bloor St. This eliminated the need of routing the main loop along Toledo Rd. and the need to supply lateals off of additional PMH switchgear units.	
B6 Rear Lot Construction	EST21185_001	21185_001 W13142 Thorncrest (#11) RL VC Ph#5 Civil IFRS compliant	$ 4,820,258	$ 5,174,033			
B6 Rear Lot Construction	EST21138_002	21138_002 X12113 Forest Hill VC Phase 4 Electrial Bathurst/Eglinton/Old Park/Shallmar	$ 3,920,430	$ 3,677,211			
B6 Rear Lot Construction	EST24342_002	24342_002 X11293 Forest Hill Phase 5 - Civil Marlee/Fairleigh/Allen /Eglinton	$ 3,316,400	$ 3,704,121	High Level to Detailed Design Variance	Rear lot jobs typically involve converting 4 kV circuits to 27.6 kV. Rear lot customers often share a 4 kV lateral supply with customers who are fed from the front lot. In order to complete these rear lot jobs, it is usually the case that all customers in the job area must be converted to the higher-voltage supply at the same time. In this case, the designer determined that to resupply apartment buildings on Marlee Avenue, a new route for the 27.6 kV supply would be required, resulting in additional infrastructure requirements.	
B6 Rear Lot Construction	EST20662_001	20662_001 W12381 Thorncrest (#11) RL VC Ph#1 Civil IFRS compliant	$ 3,243,458	$ 2,917,962	High Level to Detailed Design Variance	The cost of this job decreased relative to the high-level plan due to a reduction in the amount of ducts required versus the filed estimate. There was also a reduction in the estimated amount of restoration costs on private properties.	
B6 Rear Lot Construction	EST20012_002	20012_002 X12114 Forest Hill Electrical Ph#5 UG ELECTRICAL - BUDGET	$ 3,045,761	$ 1,981,825	Error	Due to a clerical error, an incorrect estimate was filed for this job. The actual estimated cost for this job was $1,686,187. The $300K increase in cost was due to higher than anticipated costs for cable pulling, primary and secondary framing and transformer installation.	
B6 Rear Lot Construction	EST28608_001	28608_001 W14674-P07 Markland Woods RL Ph4 Civil IFRS compliant	$ 3,004,199	$ 5,187,728	High Level to Detailed Design Variance	The cost of constructing underground secondary services was not fully estimated until the detailed design stage. In this particular instance, the construction requirements for each specific private property accumulated into a signficant positive variance compared to the high level estimate. Due to the deficiencies and risks associated with the rear lot plant, the work remained prudent and non-discretionary despite these cost increases.	
B6 Rear Lot Construction	EST20714_001	20714_001 W12401 Thorncrest (#11) RL VC Ph#2 Civil IFRS compliant	$ 2,224,908	$ 3,221,974	Third-party Constraints and Requirements	Toronto Hydro was required to complete this job on an accelerated schedule to account for the City of Toronto's scheduled road repairs in the same area. This required additional contractor costs (for extended work days and weekends) to ensure that the work was completed prior to the City road repairs and subsequent road moratorium. Due to the urgency of the job, Toronto Hydro could not prudently defer rear lot conversion till after the road moratorium (which expires at the end of 2018).	High Level to Detailed Design Variance
B6 Rear Lot Construction	EST21321_002	21321_002 W11168 ALBION MG-F1 SILVERSTONE VC REAR FEB 09,2012 LOT ETMGF1 IFRS compliant	$ 2,048,886	$ 1,851,537			
B6 Rear Lot Construction	EST22607_009 EST26539_001	E12615 BANBURY ELEC PHASE 2 PROJECT#E12615 UPCMS#TP-2011-9255 (EST22607_009)	$ 1,513,601	$ 1,385,530			

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B6 Rear Lot Construction	EST20808_001	20808_001 ICM W13019 RL#011 Electrical PH#2 IFRS compliant	$ 1,290,642	$ 307,930	High Level to Detailed Design Variance	To improve the efficiency of job execution in this rear lot area, the asset removal activities associated with this job were reallocated to jobs W13017 and W13020. These jobs are ongoing.	
B6 Rear Lot Construction	EST21315_001	21315_001 W13195 Rexdale-Colony RL VC (Elec) Ph#8	$ 1,237,653	$ 2,688,522	High Level to Detailed Design Variance	When estimating phases two through seven of this job area, the removal costs associated with each phase were included in the individual estimates associated with each phase respectively. However, to maximize execution efficiency, all removals in the rear lot area were ultimately done upon completion of phase eight. This means that the work from the other phases was shifted to this job, resulting in the positive variance.	
B6 Rear Lot Construction	EST21155_001	21155_001 W12564 Rexdale-Colony RL VC (Elec) Ph#4	$ 1,184,060	$ 1,015,894	High Level to Detailed Design Variance	The pole removals that were originally part of the high-level plan for this job were ultimately completed in a separate job for efficiency purposes.	
B6 Rear Lot Construction	EST21248_001	21248_001 W12565 Rexdale-Colony RL VC (Elec) Ph#5	$ 1,030,399	$ 773,777	High Level to Detailed Design Variance	Field inspections during the detailed design phase determined that fewer materials would be required for the underground distribution loop than originally estimated. The number of underground transformers to be replaced was reduced from 11 to 6 based on asset condition as determined through detialed inspections. Less primary cable and secondary cable was required as well.	
B6 Rear Lot Construction	EST19757_001	19757_001 X12185 RearLot (RL025) ConNYSS37_ElPh2 S/E Lawrence/Leslie (LTP_2011_19_002)	$ 968,309	$ 1,952,685	High Level to Detailed Design Variance	The cost of constructing underground secondary services was not fully estimated until the detailed design stage. In this particular instance, the construction requirements for each specific private property accumulated into a signficant positive variance compared to the high level estimate. Due to the deficiencies and risks associated with the rear lot plant, the work remained prudent and non-discretionary despite these cost increases. The work involved constructing new front lot secondary services to the existing meterbase at the rear of each property for approximately 161 customers.	
B6 Rear Lot Construction	EST21211_001	21211_001 W13067 Rathburn Rd OH/UG Conversion IFRS compliant	$ 915,610	$ 1,861,101	High Level to Detailed Design Variance	The cost of rebuilding the secondary service lines from the front lot were higher than expected due to site-specific conditions. Associated cut repair costs were higher than forecasted as well. The total increase related to secondary services was approximately $615K.	Field Conditions & Execution Requirements; Variance in Allocated Costs
B6 Rear Lot Construction	EST24854_009 EST26867_X03	24854_009 ICM E11383 Living Guild OH VC DO NOT PACKAGE from Ver001 from AM 18656 E11383 Livingston Guildwood OH VC Ph 2 Poles Only (EST24854_009)	$ 745,461	$ 1,926,938	High Level to Detailed Design Variance	As detailed in the Phase 1 evidence, this job required pole installations along major streets in order to accommodate the proposed 27.6kV conductors supplying this rear lot area. Costs increased due to the need to replace a larger number of poor condition and/or non-standard height poles than originally estimated. Some areas with an extensive tree canopy also required the use of tree proof wires, which were not included in the original estimate. In addition, the supply to St. Ursula's Catholic School was redesigned to move the transformer further away from the playground area. This requiried additional secondary services that were not included in the original high-level plan.	
B6 Rear Lot Construction	EST21213_001	21213_001 W13068 Thorncrest (#011RL) VC Ph#4 IFRS compliant	$ 636,974	$ 1,154,916	High Level to Detailed Design Variance	When converting load from 4kV - as is generally the case in rear lot conversion projects - Toronto Hydro maintains feeder ties between 4kV stations to provide load relief until the stations can be decommissioned. Rear lot jobs also often involve extending or rerouting existing 27.6kV feeders that will supply the converted rear lot customers. In this instance, the designer determined that the 4kV tie would need to be maintained over the medium-term until the relevant 4kV stations could be fully decommissioned, and that the 4kV circuit would need to be supported by the newly rebuilt pole line accomodating the 27.6kV circuit. To remain ESA compliant, the designer determined that the 4kV equipment would need to be upgraded. Toronto Hydro determined that this was the most prudent option as, for reliability and safety reasons, the rear lot job needed to proceed several years ahead of the final 4kV station decommissioning.	
B6 Rear Lot Construction	EST19759_001	19759_001 X12186 RearLot (RL025) ConNYSS37_ElPh3 S/E Lawrence/Leslie (LTP_2011_19_002)	$ 579,327	$ 634,698			
B6 Rear Lot Construction	EST21251_001	21251_001 W12563 Rexdale-Colony RL VC (Elec) Ph#3	$ 472,090	$ 642,457	High Level to Detailed Design Variance	The cost increase was primarily due to unanticipated work to address a leaking transformer serving a townhouse complex prior to beginning the actual rear lot conversion project. The townhouse complex was part of the 4 kV conversion area that included the rear lot plant and therefore needed to be addressed in conjunction with the rear lot assets to facilitate conversion of all customers in the area to 27.6 kV supply.	
B6 Rear Lot Construction	EST21250_001	21250_001 W12562 Rexdale-Colony RL VC (Elec) Ph#2	$ 211,601	$ 97,865	High Level to Detailed Design Variance	Toronto Hydro planners had anticipated replacing secondary services running to a townhome complex fed from the same feeder as the rear lot services being converted in this job. Toronto Hydro determined that secondary cables servicing the residences were in good condition and did not need to be replaced. This resulted in a reduction of the scope of work.	

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B6 Rear Lot Construction	EST26532_001	X12184 P1RearLot (RL025) ConNYSS37 S/E Lawrence/Leslie (LTP_2011_19_002) (EST19755_003)	$ 191,098	$ 160,279			
B6 Rear Lot Construction	EST21320_001	21320_001 W12567 Rexdale-Colony RL VC (Elec) Ph#7	$ 167,973	$ 1,714,458	High Level to Detailed Design Variance	Rear lot customers often share a primary 4kV feeder or lateral with customers fed from the front lot (e.g. apartment buildings and townhomes embedded in the neighbourhood). Because rear lot conversion jobs are also voltage conversoin jobs (usually from 4kV to 27.6kV), the front lot customers that share a supply must be also be converted in rear lot areas. Similar to W12566, this job was originally intended to be a minor electrical phase of the larger Rexdale Colony rear lot conversion initiative. The original scope was for the replacement of padmount transformers supplying a community housing complex fed from the same 4kV feeder that supplied the rear lot in the area (therefore requiring conversion). After performing detailed design inspections, Toronto Hydro determined that the secondary services feeding the 327 customers in this complex were beyond end-of-life and direct buried, meaning that failures were likely imminent and would be costly to locate and repair reactively. Toronto Hydro determined that the most cost-effective and least intrusive option was to replace these services proactively, as part of the larger coordinated rear lot initiative, as opposed to returning to repair the services reactively or as a deferred planned job.	
B6 Rear Lot Construction	EST21252_001	21252_001 W12566 Rexdale-Colony RL VC (Elec) Ph#6	$ 90,824	$ 1,420,792	High Level to Detailed Design Variance	Rear lot customers often share a primary 4kV feeder or lateral with customers fed from the front lot (e.g. apartment buildings and townhomes embedded in the neighbourhood). Because rear lot conversion jobs are also voltage conversoin jobs (usually from 4kV to 27.6kV), the front lot customers that share a supply must be also be converted in rear lot areas. This job was originally intended to be a minor electrical phase of the larger Rexdale Colony rear lot conversion initiative. The original scope was for the replacement of padmount transformers supplying 77 townhomes fed from the same 4kV feeder that supplied the rear lot in the area (therefore requiring conversion). After performing detailed design inspections, Toronto Hydro determined that the secondary services feeding these townhomes were beyond end-of-life and direct buried, meaning that there was a high risk of failure and that faults would be costly to locate and repair reactively. Toronto Hydro determined that the most cost-effective and least intrusive option was to replace these services proactively, as part of the larger coordinated rear lot initiative, as opposed to returning to repair the services reactively or as a deferred planned job.	
B9 Network Vaults and Roofs	EST24999_001	24999_001 X12834 Single Vault Rebuild Toronto 2012	$ 2,280,222	$ 2,442,434			
B9 Network Vaults and Roofs	EST19033_004	19033_004 X11487 King St West/Yonge St IFRS compliant	$ 1,617,991	$ 1,717,196			
B9 Network Vaults and Roofs	EST20472_001	20472_001 X12334 Rebuild Vault Peter and Adelaide Loc #4299	$ 1,584,953	$ 495,042	High Level to Detailed Design Variance	This job scope originally included the completion of both civil and electrical work involved with the rebuild of network vault #4299. However, Toronto Hydro subsequently split this work into two separate phases (civil and electrical) as the job was too large to complete in one year. The electrical work is scheduled for completion in 2015.	
B9 Network Vaults and Roofs	EST20623_001	20623_001 X12371 Rebuild Vault Peter and King St.	$ 993,550	$ 105,552	High Level to Detailed Design Variance	The original job envisioned a complete rebuild of an existing vault. However, an analysis indicated that the cost to do so would have been significantly over the original estimate, due to previously unidentified space constraints. As a result, detailed tests were performed on the wall structure and it was determined that only the roof rebuild would be performed in the short-term, while a longer-term plan would be developed to permanently address the vault. The cost variance is a result of only rebuilding the vault roof, rather than the entire vault as originally planned.	
B9 Network Vaults and Roofs	EST19372_001	19372_001 X11504 Overlea Blvd/William Morgan	$ 860,673	$ 199,122	HIgh Level to Detailed Design Variance	The engineer designing the estimate had looked at the reports of the vault and determined that a full rebuild was necessary. However, detailed inspection revealed that a less costly option to repair the vault roof and walls would be sufficient to address the deficiencies (the original scope called for the conversion of the vault into a cable chamber, and the construction of a new vault).	
B9 Network Vaults and Roofs	EST20530_001	20530_001 X12350 Rebuild Vault Roof 60 Gloucester Loc #4510	$ 640,029	$ 265,273	High Level to Detailed Design Variance	It was discovered that, due to their age and condition, the two network transformers that were intended for replacement as part of the high-level plan had been replaced reactively during the period between the high-level estimate and the detailed design stage. Inspections by the designer revealed that the transformers no longer needed to be replaced, leaving only the roof rebuild for this project.	

ICM Segment	Estimate	Description	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B9 Network Vaults and Roofs	EST20047_001	20047_001 X12208 Loc 4485, 105 Adelaide St. West 2012	$ 412,180	$ 157,996	High Level to Detailed Design Variance	The original cost estimate included a provision for securing and protecting an adjacent customer owned building during the vault rebuild. However, during construction it was determined that the adjacent building did not require any extensive reinforcement, resulting in lower job cost.	
B9 Network Vaults and Roofs	EST20449_001	20449_001 X12327 Loc 4262, Yorkville and Yonge St 2012	$ 325,373	$ 374,404			
B9 Network Vaults and Roofs	EST18892_002	18892_001 X11362 Network Replacement, Loc#4111	$ 35,970	$ 1,019,064	Error	The estimate was incorrectly filed as approximately $0.04M. The correct estimate should have been approximately $700K. Therefore, the actual variance for this job is $320K. The variance was a result of the need for a second vault as there was no backup power supply to vault # 4111 at that time. The stand alone vault was susceptible to very long power interruptions in case of an emergency power outage. The work performed included: breakout of existing vault ($175k), construction of new vault ($77k) and the associated labour required to equip and rebuild the vault ($46k).	High Level to Detailed Design Variance
B9 Network Vaults and Roofs	EST20030_001	20030_001 X12207 Loc 4287, 60 Simcoe St. Abandon	$ 22,068	$ 26,594			
Grand total			**$ 228,035,009.13**	**$ 286,940,332.88**			

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

INTERROGATORY 6:

REFERENCE(S): none provided

Please provide a summary of all internal audit reports related either directly or indirectly to ICM projects.

RESPONSE:

Please see attachment (Appendix A to this response).

Summaries of Internal Audit Reports Related to the ICM Application

No	Year	Brief Background	Summary Conclusion	Relationship to ICM Application
1	2013	The audit focused on assessing the design and function of the internal controls over the Customer Services – Billing and Metering operations and to ensure that each control process is operating effectively according to the design of the system.	None of the observations noted indicate that a material weakness exists in the internal controls over financial reporting.	This audit is directly related to the ICM True-up Application as some controls over metering, which is an ICM project segment, were examined.
2	2014	The audit evaluated contractor compliance with the respective Term Contract for Civil and Electrical Design-Build Services (the 'Contract') effective November 2011.	The audit found the PSO Office to be in compliance with its own internal processes and those prescribed by Toronto Hydro. The audit noted minor exceptions and opportunities to refine practices but these weaknesses would likely not have a potentially significant negative impact for Toronto Hydro.	This audit is indirectly related to the ICM True-up Application as it reviewed Toronto Hydro's Program Support Office which would have been involved in the design and construction of some of the jobs in the application.
3	2014	The audit evaluated Contractor No. 1's compliance with the respective Term Contract for Civil and Electrical Design-Build Services (the "Contract") effective November 2011.	The audit found Contractor # 1 to be in compliance with the terms of the Contract and supporting schedules. Two exceptions noted where prescribed processes were not being followed consistently but these weaknesses would likely not have a potentially significant negative impact for Toronto Hydro.	This audit is indirectly related to the ICM True-up Application as it pertains to an audit on a specific external contractor we may have used for some of the jobs in the application.
4	2014	The audit evaluated Contractor No. 2's compliance with the respective Term Contract for Civil and Electrical Design-Build Services ("the Contract") effective November 2011.	The audit found Contractor # 2 to be in compliance with the terms of the Contract and supporting schedules. Some exceptions were noted where prescribed processes were not being followed consistently but these weaknesses would likely not have a potentially significant negative impact for Toronto Hydro.	This audit is indirectly related to the ICM True-up Application as it pertains to an audit on a specific external contractor we may have used for some of the jobs in the application.
5	2014	The audit evaluated Contractor No. 3's compliance with the respective Term Contract for Civil and Electrical Design-Build Services (the "Contract") effective November 2011.	The audit found Contractor No. 3 to be in compliance with the terms of the Contract and supporting schedules. Two exceptions noted where prescribed processes were not being followed consistently but these weaknesses would likely not have a potentially significant negative impact for Toronto Hydro.	This audit is indirectly related to the ICM True-up Application as it pertains to an audit on a specific external contractor we may have used for some of the jobs in the application.
6	2014	The audit evaluated Contractor No. 4's compliance with the respective Contract for the Purchase of Audit & Verification Services (the 'Contract') effective May 2013.	The audit found Contractor No. 4 to be in compliance with the terms of the Contract and supporting schedules. Documentation and audit verification procedures were well designed and Contractor No. 4's processes were examined to ensure consistent application were in place and working effectively.The noted exceptions would not create a weakness that would likely have a potentially significant negative impact for Toronto Hydro.	This audit is indirectly related to the ICM True-up Application as it pertains to an audit on a specific external contractor we may have used for some of the jobs in the application.

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

INTERROGATORY 7:

REFERENCE(S): EB-2014-0116, Exhibit OH-1-3-Attach 2

Please provide an updated version of the table.

RESPONSE:

Please see attachment (Appendix A to this response).

Table : Capital Summary Table (ISAs)

		APPROVED						ACTUAL				
		Phase 1: Approved			Phase 2: Approved	Phase 1+2: Approved		Phase 1+2: Actual				Variance
		A	B	C	D	E=C+D	F=A+B+E	G	H	I	J=G+H+I	K=J-F
Schedule Number	Segments	Total 2012 In-Service Additions	Total 2013 In-Service Additions	Total 2014 In-Service Additions	Total 2014 In-Service Additions	Total 2014 In-Service Additions	Total Approved In-Service Additions (2012-2014)	2012 In-Service Additions Actual (Annual)	2013 In-Service Additions Actual (Annual)	2014 In-Service Additions Actual (Annual)	Total Actual In-Service Additions (2012-2014)	2012-2014 $ Variance ISA (TUC SCEN 10) (+over/-under)
B1	Underground Infrastructure	12.74	51.88	23.07	36.70	59.77	124.39	9.68	66.82	103.51	180.01	55.62
B2	Paper Insulated Lead Covered Cable - Piece Outs and Leakers	0.04	3.34	2.12	1.42	3.54	6.92	-	0.13	2.65	2.78	(4.14)
B3	Handwell Replacement	6.05	17.73	6.52	7.22	13.74	37.53	5.41	16.61	14.37	36.40	(1.13)
B4	Overhead Infrastructure	4.02	39.06	21.87	14.78	36.65	79.73	0.50	33.07	50.16	83.73	4.00
B5	Box Construction	0.26	14.35	9.02	5.72	14.74	29.34	0.12	5.65	17.19	22.96	(6.38)
B6	Rear Lot Construction	7.25	27.02	11.52	5.00	16.52	50.79	3.04	28.56	26.44	58.03	7.25
B9	Network Vault & Roofs	1.26	13.00	7.34	0.90	8.24	22.50	0.13	14.73	2.42	17.27	(5.23)
B10	Fibertop Network Units	0.65	5.52	3.02	2.84	5.85	12.02	2.40	6.37	4.86	13.62	1.60
B11	Automatic Transfer Switches (ATS) & Reverse Power Breakers (RPB)	-	1.99	1.28	0.10	1.38	3.36	0.06	1.54	0.32	1.91	(1.45)
B12	Stations Power Transformers	0.17	2.33	1.36	-	1.36	3.86	2.27	0.91	1.94	5.12	1.27
B13.1 & 13.2	Stations Switchgear - Municipal and Transformer Stations	0.77	9.16	5.37	1.41	6.78	16.71	0.83	0.00	4.14	4.97	(11.73)
B20	Metering	2.10	7.75	3.29	3.82	7.11	16.96	0.01	7.13	11.01	18.15	1.19
B21	Externally-Initiated Plant Relocations and Expansions	4.50	20.78	9.72	1.87	11.59	36.87	2.57	7.43	24.43	34.42	(2.45)
BXX	ICM Understatement of Capitalized Labour	3.69	4.63	-	-	-	8.32	-	-	-	-	(8.32)
Total ICM Projects (Excluding Copeland)		**43.49**	**218.53**	**105.49**	**81.78**	**187.27**	**449.29**	**27.02**	**188.94**	**263.43**	**479.38**	**30.09**
B7	Polymer SMD-20 Switches	-	0.93	0.60	1.59	2.19	3.12	-	0.84	1.06	1.91	(1.21)
B8	SCADA-Mate R1 Switches	-	0.87	0.56	1.89	2.45	3.32	-	1.88	0.03	1.91	(1.42)
B14	Stations Circuit Breakers	0.34	0.76	0.22	1.05	1.27	2.36	0.22	0.90	0.27	1.39	(0.97)
B16	Downtown Station Load Transfers	0.30	1.68	0.84	-	0.84	2.82	-	0.08	1.41	1.48	(1.33)
B18.1	Hydro One Capital Contributions	-	1.48	-	2.64	2.64	4.12	5.48	2.61	0.86	8.95	4.83
C1	Operations Portfolio Capital	29.00	87.75	29.66	49.29	78.95	195.70	54.87	93.53	124.65	273.06	77.35
C2	Information Technology Capital	9.25	21.47	6.28	11.25	17.53	48.25	7.64	20.28	22.02	49.94	1.69
C3	Fleet Capital	0.29	0.76	1.75	2.00	3.75	4.80	0.80	0.44	2.23	3.47	(1.33)
C4	Buildings and Facilities Capital	3.76	2.90	3.35	5.00	8.35	15.00	1.77	11.47	39.60	52.83	37.83
	Allowance for Funds Used During Construction	0.15	2.14	0.31	6.83	7.14	9.43	-	-	-	-	(9.43)
	Pre-2012 CWIP	67.00	45.46	-	32.28	32.28	144.73	90.64	36.75	4.39	131.79	(12.95)
Total Normal Capital Budget		**110.09**	**166.19**	**43.56**	**113.82**	**157.38**	**433.66**	**161.42**	**168.79**	**196.51**	**526.72**	**93.06**
Total (Excluding Copeland)		**153.58**	**384.72**	**149.05**	**195.60**	**344.65**	**882.95**	**188.44**	**357.72**	**459.94**	**1,006.10**	**123.15**

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

INTERROGATORY 8:

REFERENCE(S): Exhibit 2

For each segment where the total ISAs were above the approved ISAs, please explain the benefits to customers that have been achieved. Please explain how the jobs are still justified considering the additional costs.

RESPONSE:

There are six segments where actual ISAs exceeded forecast ISAs:

1. Underground Infrastructure
2. Overhead Infrastructure
3. Rear Lot Construction
4. Fibertop Network Units
5. Stations Power Transformers
6. Metering

For each segment, Toronto Hydro's evidence shows the benefits to customers from the work performed by referencing the original rationales provided in the ICM application for undertaking each ICM segment.[1] These were the reasons accepted by the OEB in finding the proposed work necessary and prudent, and, therefore, eligible for ICM

[1] See EB-2015-0173, Toronto Hydro-Electric System Limited Incremental Capital Module True-up Application (March 8, 2016), Exhibit 2, Tab 1, Schedule 1, page 1 (Underground Infrastructure); Exhibit 2, Tab 4, Schedule 1, page 1 (Overhead Infrastructure); Exhibit 2, Tab 6, Schedule 1, page 1 (Rear Lot Construction); Exhibit 2, Tab 8, Schedule 1, page 1 (Fibertop Network Units); Exhibit 2, Tab 10, Schedule 1, page 1(Stations Power Transformers); Exhibit 2, Tab 12, Schedule 1, page 1 (Metering).

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

funding.[2] The benefits to customers from the additional ISAs in each of these segments are the same as those from the work described in the original ICM evidence and accepted by the OEB in approving these segments.

The above-forecast actual ISAs in the first five segments listed above are due to additional prudent and non-discretionary ISAs associated with both filed and analogous jobs.

For material differences in the ISAs associated with the filed jobs, each segment provides a discussion of the major reasons for the observed variances.[3] As these variance explanations for the filed jobs make clear, as Toronto Hydro moved from the high-level estimates underpinning the ICM application to detailed designs, the scope of the jobs, the condition and configuration of the assets addressed and the external constraints on Toronto Hydro's ability to execute the work changed. None of these changes, however, undercut the original justification for the work or changed Toronto Hydro's responsibility to execute the work efficiently in light of the actual conditions encountered when the job was executed.

With regard to the additional ISAs attributable to analogous jobs, Toronto Hydro's evidence explains that the justification for undertaking these analogous jobs was exactly the same as that for the originally proposed jobs: to address aged, deteriorated or

[2] EB-2012-0064, Toronto Hydro Electric-System Limited Partial Decision and Order (April 2, 2013) at p. 24, 28, 30, 34, 36 and 59.
[3] See EB-2015-0173, Toronto Hydro-Electric System Limited Incremental Capital Module True-up Application (March 8, 2016), Exhibit 2, Tab 1, Schedule 1, pages 6-13 ((Underground Infrastructure); Exhibit 2, Tab 4, Schedule 1, pages 6-9 (Overhead Infrastructure); Exhibit 2, Tab 6, Schedule 1, pages 5-8 (Rear Lot Construction); Exhibit 2, Tab 8, Schedule 1, pages 6-7 (Fibertop Network Units). Note that the Stations Power Transformers Segment had no material variances as all completed jobs were within approximately 10% of forecast cost (see Exhibit 2, Tab 10, Schedule 1 at p. 5).

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

damaged equipment so as to enhance safety and reliability or meet regulatory requirements.

That the analogous jobs have the same justification as the filed jobs is to be expected because the work that comprises the analogous jobs is the same as that in the filed jobs. The difference is that the analogous jobs address equipment located on different feeders or in different geographic areas.

The final segment listed above, Metering, is somewhat different in that the work in the segment dealt with activities as opposed to geographically bounded or location specific jobs.[4] The evidence described three different types of metering activities that Toronto Hydro was required to undertake pursuant to the IESO Market Rules and Measurement Canada requirements: Wholesale Metering Market Settlement Compliance; Seal Expiring Meters; and Wireless Collector Upgrades. Rather than using geographic based jobs, the work was based on the number of replacements in each category. Forecast ISAs were only calculated on an overall segment level, not for each of the three types of metering activity.[5] As Toronto Hydro evidence shows, overall capital expenditures in this segment were as forecast, but there is a variance between forecast and actual ISAs because the timing of ISAs relative to capital expenditures during the ICM period was different than estimated based on historical experience. The evidence also provides the justification for the differences between forecast and actual capital expenditures for each of the three types of metering activity.

[4] See EB-2015-0173, Toronto Hydro-Electric System Limited Incremental Capital Module True-up Application (March 8, 2016), Exhibit 2, Tab 12, Schedule 1, pages 4-6.
[5] See EB-2015-0173, Toronto Hydro-Electric System Limited Incremental Capital Module True-up Application (March 8, 2016), Exhibit 2, Tab 12, Schedule 1, page 5.

RESPONSES TO SUSTAINABLE INFRASTRUCTURE ALLIANCE OF ONTARIO INTERROGATORIES

INTERROGATORY 1:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, Table 1

Please expand Table 1 to show the approved versus actual in-service ISAs, along with variances, broken out by each of the three years for which THESL is claiming ICM amounts.

RESPONSE:

Please refer to Toronto Hydro's response to interrogatory 1-SEC-7 for the approved versus actual in-service ISAs, along with the variances, broken out for 2012 to 2014.

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INTERROGATORY 2:

REFERENCE(S): EB-2012-0064, Draft Rate Order, page 4

a) Further to, or as part of, THESL's response to interrogatory 1-Staff-2, please explain why actual 2012 ISAs in this application are being presented as meeting the materiality threshold, given that the values THESL provided in its EB-2012-0064 Draft Rate Order (indicating that "no [2012] ICM expenditures are eligible for recovery through an ICM rate rider ") were filed in April 2013 (i.e., after 2012 financial year-end). Were the 2012 ISA values that were used for the purposes of the Draft Rate Order in 2013 not finalized year-end numbers?

b) On a segment basis, please reconcile and provide explanations for any variances between the Draft Rate Order 2012 ISA values and the 2012 ISA values presented as part of this application.

RESPONSE:

a) The 2012 ISA values that were used for the purposes of the EB-2012-0064 Draft Rate Order were based on the forecasted values forming part of the ICM Phase 1 Decision, which were estimated at a high level in EB-2012-0064 Tab 8, Schedule 5-1 Appendix A (filed December 21, 2012). Actual ISAs were greater than forecast primarily due to higher ISAs in the C1 Operations Portfolio and pre-2012 CWIP coming into service. Please refer to Toronto Hydro's response to interrogatory 1-SIA-3 for a description of the most significant contributors to variances in non-ICM categories of work.

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b) The ISA forecasts were developed at a high level in EB-2012-0064, Tab 8, Schedule 5-1, Appendix A for all segments. The 2012 ISAs for Customer Connections and Reactive Capital portfolio capital expenditures were estimated at 44%, which was determined through application of high level historical average ISA trends to all segments. Given the relatively short-term nature of Customer Connections and Reactive Capital jobs, the capital spending in these segments ultimately came into service faster than forecast. This, combined with the higher spending highlighted in Toronto Hydro's response to interrogatory 1-SEC-7, explains the substantial positive variance in the actual ISAs in the C1 Operations portfolio for 2012.

Pre-2012 CWIP was also estimated on a high level basis as described above. On a three-year basis, the total pre-2012 CWIP amounts coming into service came in under forecast. However, some of the forecast 2013 ISAs shifted forward into 2012, contributing to the realization of ICM segment ISAs above the ICM Materiality Threshold in 2012 on an actuals basis.

Please refer to Toronto Hydro's response to interrogatory 1-SEC-7 for the approved versus actual ISAs and variances by segment for 2012-2014.

Please refer to Exhibit 2, Tabs 1 through 13 for explanations of the variances in ICM segments.

Please refer to Toronto Hydro's response to interrogatory 1-SIA-3 for explanations of material variances for non-ICM work.

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INTERROGATORY 3:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, Figure 1

a) Please provide a categorical breakdown of the work included in the "actual ISAs for non-ICM work" presented in Figure 1.
b) How do these values compare to the forecasts presented in THESL's original 2012-0214 Rate application? Please provide an explanation of any material variances.
c) Did THESL perform any non-ICM work that was categorically not included in its original 2012-2014 non-ICM forecasts? If so, please explain the nature of the work and whether THESL believes it to be non-discretionary.

RESPONSE:

a) Please refer to Toronto Hydro's response to interrogatory 1-SEC 7, "Total Normal Capital Budget" line in Appendix A, for the categorical breakdown of the work included in the "actual ISAs for non-ICM work" presented in Figure 1.

b) The material variances are explained as follows:

<u>B18 HONI Capital Contributions</u>

The OEB approved a total of $4.12 million in forecast ISAs for the ICM period in this non-ICM segment. Toronto Hydro put into service $4.83 million more than forecasted. The difference was the result of two transformer station switchgear replacement projects that were included as part of Toronto Hydro's 2011 Cost of Service Application. The switchgear replacements themselves were substantially

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completed prior to the ICM period. However, the capital contribution payment to HONI for their part of the work did not occur until the ICM period.

C1 Operations Portfolio Capital:

The OEB approved $195.7 million in forecast ISAs for the ICM period in this segment and Toronto Hydro put into service $273.06 million. The primary contributors to the variance are in the following categories: Reactive Capital, Suite Metering, Customer Connections, Historic Road Cut Repairs, Major Tools, and HONI Idle Lines.

1. Reactive Capital

Expenditures for Reactive Capital are forecasted based on historical trends in the quantity and type of work requests issued, equipment failures and reliability. Given the nature of the Reactive Capital program, work volumes and costs can and do vary from one year to the next. The forecasts for 2012-2014 were developed in early 2012 and represented Toronto Hydro's best forecasts at the time. The predominant drivers for the variance between forecasted and actual expenditures for the 2012-2014 period were damage caused by major weather events, including the ice storm in December 2013, and a greater number of higher-cost work requests than anticipated. The manner in which the Reactive Capital ISAs were forecasted in the ICM Application was also a factor in the variance, as explained in Toronto Hydro's response to interrogatory 1-SIA-2.

2. Suite Metering

The addition of non-discretionary Suite Metering activities also contributed to the positive variance in C1. Section 5.1.9 of the Distribution System Code states that

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"When requested to do so by a master consumer, a distributor shall install unit smart meters that meet the specifications prescribed by Ontario Regulation 389/10." All Suite Metering work was non-discretionary as it was necessary to comply with this Code. The ISAs associated with the Suite Metering program were the result of requests from developers or, in the case of existing retrofitted condominium buildings, the condominium corporations. The number of meter points that were commissioned by year are as follows:

Year	2012	2013	2014	Total
Units	9,009	6,911	15,226	31,146

3. Customer Connections

Customer Connections expenditures are based on customer demand and all of the associated work is non-discretionary. Forecast budgets are usually determined based on past years' capital spending, adjusted for any anomalies such as a larger than usual number of anticipated major connection projects. The requests for large services is dependent on a number of factors which include the general state of the economy and interest rates. Greater than forecast ISAs in this category were largely the result of variances in 2012 and 2014. In 2014, Toronto Hydro saw a higher than expected number of large projects which were completed during that year, including significant connections work related to the Pan Am Games and the Queens Quay revitalization project. The manner in which Customer Connections ISAs were forecasted in the ICM Application was also a factor in the variance, in particular in 2012, as explained in the response to interrogatory 1-SIA-2.

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4. Historic Road Cut Repairs

As explained in Toronto Hydro's response to interrogatory 2-Staff-12, Toronto Hydro took an interim approach to estimating forecasted road cut repair costs in Phase 2 of the ICM Application by allocating costs to individual jobs based on trends in historical average costs for road cut repairs generally. However, as noted in Phase 2 of the ICM Application, in which the separate and distinct Historic Road Cut Repairs category of work was approved, the timing and amount of these repairs is generally out of Toronto Hydro's control. Toronto Hydro continues to receive and be legally obligated to pay invoices for repairs for road cuts dating back as far as 30 months. Any variance between the historical estimated repair cost and the actual City invoice represents an obligation to the City of Toronto, pursuant to its authority over highways (public roads) under sections 32 and 33 of the City of Toronto Act, 2006. While Toronto Hydro did not forecast a separate Historic Road Cut Repairs amount in its Phase 1 application, it ultimately incurred amounts related to charges of this nature. This amount is essentially a variance between the total forecasted road cut repairs for 2012-2013 in the Phase 1 application and actual total road cut repair charges for the same period.

5. Major Tools

Toronto Hydro included a forecast for 2012 and 2013 expenditures on Major Tools within the Continuing Projects and Emerging Issues Portfolio ("Emerging") in Segment C1 in Phase 1 if the ICM Application. The Emerging work was ultimately disallowed by the OEB on the basis that Toronto Hydro did not provide sufficiently detailed evidence for the OEB to determine whether expenditures in that portfolio were non-discretionary.

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In fact, expenditures on Major Tools are non-discretionary. Major Tools are a necessity for crews to carry-out construction work in a safe and efficient manner. As tools wear out or break, they are replaced if the cost to repair the item is not reasonable. Furthermore, as new labour saving tools become available, their adoption enables the crews to work more quickly with reduced risk of injury from strains and repetition.

The 2014 expenditures for Major Tools were re-filed separately and approved as part of the Phase 2 Decision (by way of settlement). The 2012 and 2013 yearly forecast for these tools in the Engineering & Construction and Operations departments are similar to the amount that was filed for 2014. The 2014 actuals are in line with the forecast approved.

6. HONI Idle Lines

Toronto Hydro rents idle lines from HONI in order to distribute electricity within the City of Toronto. If these idle lines did not exist, Toronto Hydro would need to build its own lines. Toronto Hydro has continuously used these lines for distribution purposes since at least as early as January 1, 2002. Utilizing existing infrastructure in HONI corridors in these cases is more cost-effective than building new Toronto Hydro plant. In March 2014, Toronto Hydro received an invoice from HONI for the rental of these lines for the period from 2006 to 2013. These charges were the result of a process wherein Toronto Hydro and HONI were “cleaning up” records and leases of mutual concern. The timing of the invoice was at the discretion of HONI.

The rental of the idle lines is considered a capital lease under US GAAP and is therefore recorded in PP&E with a corresponding capital lease obligation liability.

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C4 Buildings and Facilities Capital

The actual ISAs for the Buildings and Facilities Capital Segment were higher than forecast. The driver of this variance was the purchase of a new west-end property and the transfer of staff and functions from 5800 Yonge to the 500 Commissioners location. Both of these items were part of the Operating Centres Consolidation Program, which was subsequently filed and approved as part of Toronto Hydro's 2015-2019 Distribution System Plan.[1] Toronto Hydro was not in a position to accurately forecast the timing of the purchase of the west-end property in either phase of the ICM filing, although it was eventually purchased in 2014. For clarity, Toronto Hydro is only seeking to recover the half-year revenue requirement associated with the 2014 ISAs for this purchase. This amount was not part of the 2015-2019 CIR Application.

Allowance for Funds Used During Construction ("AFUDC")

AFUDC was approved as a discrete line item in the ICM Application. However, in actuals, AFUDC is booked to each specific job resulting in the negative 100% in-service additions variance shown in the table in response to interrogatory 1-SEC-7.

Pre-2012 CWIP

The Pre-2012 CWIP in-service approved amounts were estimated as part of the oral hearing undertaking in EB-2012-0064, Tab 8, Schedule 5-1, Appendix A. As Toronto Hydro explained in its response:

[1] EB-2014-0116, Toronto Hydro-Electric System Limited Application (July 31, 2014), Exhibit 2B, Section E8.3.

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THESL has made its best efforts to provide the requested information in respect of 2013 CWIP in the limited time available. While 2012 is largely historic, the exercise in respect of 2013 entails forecasting. While THESL believes that the information provided in respect of 2013 is directionally accurate, it is necessarily subject to refinement as further data become available.

On a three-year basis, the total pre-2012 CWIP amounts coming into service came in under forecast. However, some of the forecast 2013 ISAs shifted forward into 2012, contributing to the realization of ICM segment ISAs above the ICM Materiality Threshold in 2012 on an actuals basis.

c) No, Toronto Hydro did not perform any non-ICM work that was categorically not included in the original 2012-2014 non-ICM forecasts.

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INTERROGATORY 4:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, Figure 1

For the purposes of calculating ICM revenue requirement and associated rate riders, how did THESL determine which portion of each of the ICM segments (in 2012 and 2014) was considered to be above or below the materiality threshold?

RESPONSE:

Please see Toronto Hydro's response to interrogatory 3-SEC 17 for an explanation of how Toronto Hydro determined which portion of each of the ICM segments would be considered above and below the materiality threshold.

RESPONSES TO SUSTAINABLE INFRASTRUCTURE ALLIANCE OF ONTARIO INTERROGATORIES

INTERROGATORY 5:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, page 21

Does THESL have a process by which it re-examines and re-evaluates the prudence of jobs whose expected costs have materially increased from their original high level estimates? (i.e., are any jobs ever cancelled or re-designed using alternative solutions on account of material costs variances in relation to the high level estimate?)

RESPONSE:

Yes. This process sometimes results in Toronto Hydro redesigning jobs in situations where a cost-effective alternative is available. In the context of the ICM Application, jobs are generally not cancelled unless the planned work was performed sooner on a reactive basis or to coordinate with another job.

RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION INTERROGATORIES

INTERROGATORY 1:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, Table 1, page 13 and Table 2, page 21

a) Please modify Table 1 to show the portion (percentage) of the variance allocated to each of the four variance classification/types shown in Table 2.

b) For each segment please provide the total cost of the "analogous" (i.e. incremental and non-reviewed) jobs.

c) Please provide the criteria for determining a job was "analogous" as opposed to an unrelated part of the ongoing capital budgets.

RESPONSE:

a) Please see Toronto Hydro's response to interrogatory 1-Staff-6 for the percentage of variance allocated to each of the variance codes for the entire ICM program. For a complete list of all jobs with variance codes, please refer to Toronto Hydro's response to interrogatory 1-SEC-5.

b) Please see Toronto Hydro's response to interrogatory 2-AMPCO-1, part (a), which contains the total cost of the analogous jobs.

c) Analogous jobs were selected on the basis that the work was identical in nature to other jobs in the OEB-approved segment and that the underlying drivers of work and specified types of asset intervention were identical to those on which the OEB based its approvals of the originally forecasted segment expenditures.

RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION INTERROGATORIES

INTERROGATORY 2:

REFERENCE(S): Exhibit 1, Tab 2, Schedule 2, Table 1, page 13 and Table 2, page 21

a) Please modify Table 1 to show forecast capital expenditures and actual capital expenditures.

RESPONSE:

ICM Segment	Forecast Capex ($ millions)	Actual Capex ($ millions)	Variance ($ millions)	Variance (%)
Underground Infrastructure	165.56	210.09	44.53	26.9
PILC Piece Outs and Leakers	9.05	7.04	(2.00)	(22.1)
Handwell Replacement	48.36	39.93	(8.43)	(17.4)
Overhead Infrastructure	90.96	115.70	24.73	27.2
Box Construction	37.90	37.84	(0.06)	(0.2)
Rear Lot Construction	58.29	65.53	7.24	12.4
Network Vaults & Roofs	23.85	17.42	(6.43)	(26.9)
Fibertop Network Units	16.28	14.24	(2.04)	(12.5)
Automatic Transfer Switches & Remote Power Breakers	3.51	1.92	(1.59)	(45.3)

RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION INTERROGATORIES

ICM Segment	Forecast Capex ($ millions)	Actual Capex ($ millions)	Variance ($ millions)	Variance (%)
Stations Power Transformers	3.86	6.42	2.57	66.5
Stations Switchgear	18.98	15.41	(3.57)	(18.8)
Metering	22.68	22.65	(0.03)	(0.1)
Externally Initiated Plant Relocations & Expansions	39.55	38.72	(0.83)	(2.1)

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INTERROGATORY 9:

REFERENCE(S): Exhibit 2, Tab 1, Schedule 1, page 5

At the above reference, Toronto Hydro stated the following when discussing its B1-Underground Infrastructure Segment accomplishments:

> Twelve other jobs were deferred to the 2015-2019 period either in light of scheduling conflicts with third-parties (e.g., unforeseen road moratoriums or coordination with major transit projects) or to enable the attainment of other analogous jobs that were identified as more critical during the course of the ICM Period. As shown in Table 2, Toronto Hydro added 18 of these priority jobs, all of which were completed in the ICM Period.

Please provide the estimated total ISA amounts for the 12 jobs that were deferred and the actual ISA amounts for the 18 jobs that were added.

RESPONSE:

The most recent estimated total in-service addition amount for the 12 jobs that were deferred is $15.7 million. The actual in-service addition amount for the 18 analogous jobs is $15.9 million.

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INTERROGATORY 10:

REFERENCE(S): Exhibit 2, Tab 1, Schedule 1, page 7

At the above reference, Toronto Hydro stated when explaining the reasons for the variances in the Underground Infrastructure segment that:

> Prior to the ICM Application, Toronto Hydro's technical standard was to reuse the existing directly buried service connection from the customer lot demarcation line to the meter base. As Toronto Hydro ramped up the replacement of direct buried primary underground cables with equipment housed in concrete-encased ducts, the existing service connections, which were typically nearing or beyond end-of-life, often were disturbed and sustained damage that was an unavoidable part of working with the existing legacy direct-buried infrastructure… In light of these developments, and consistent with the 2009 revision of the standard for placing new primary underground cables into concrete encased ducts, Toronto Hydro revised its standard for the manner of construction of secondary cables and services in underground residential rebuilds, requiring that the secondary bus be placed in concrete-encased ducts up to the lot demarcation line and that service cables be placed in direct-buried ducts from the lot line to the meter base.

a) Please state to what extent Toronto Hydro was aware of the problems identified above prior to the ICM application and why it was only when the replacement of direct buried cable was ramped up that the extent of this problem became evident.
b) Please state whether or not the 2009 revision of the standard for placing new primary underground cables into concrete-encased ducts dealt with the issues identified during the ramp up of the replacement of direct buried cable.

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

RESPONSE:

a) Please note that the reference to the "2009 revision of the standard for replacing new primary underground cable in duct" that appears in Exhibit 2, Tab 1, Schedule 1, at line 17 contains a typo. The standard design practice revision for placing primary underground cable in duct in the horseshoe area of Toronto Hydro's service territory was implemented in 2007.

Toronto Hydro started experiencing secondary cable failures shortly after residential rebuild areas were energized. In late 2008 and 2009, Toronto Hydro identified certain factors that were contributing to secondary cable failures, including the physical condition of the direct buried secondary cables and the environmental conditions in which they were installed.

In the normal course of executing an underground residential rebuild job, construction crews would typically need to move secondary cables to one side during the installation of the concrete encased ducts, and would move cables within the transformer vaults to install ducts. Secondary cables in the targeted rebuild areas had generally deteriorated in condition to the point that any such movement of the cables risked causing cracks or breakage in the insulating jacket that would increase the probability of cable failure. Furthermore, existing secondary cables in these areas were not in ducts and were therefore exposed to many elements which contributed to shortening the life of the cable.

To mitigate the risk of secondary failures, Toronto Hydro was required to replace a portion of the secondary service cable along the road allowance and to splice it with

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

the service cable going to the customer's meter base. This was specified in the 2009 revision of the design standard for underground residential rebuilds.

However, Toronto Hydro customers continued to experience secondary cable failures following the design standard change in 2009. This ultimately led to the need to make a further design standard change in 2011 to replace all of the direct buried secondary service cables from the lot line (i.e., the customer property boundary) to the meter base. The timing of the implementation and roll-out of the 2011 revision was such that many of the high level estimates in the Phase 1 ICM Application would not have accounted for the additional costs related to secondary services.

b) See response to part (a) above.

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INTERROGATORY 11:

REFERENCE(S): Exhibit 2, Tab 1, Schedule 1, page 8

At the above reference, Toronto Hydro stated when explaining the reasons for the variances in the Underground Infrastructure segment that:

> Given that the new design standard was not released until late in 2011, some of the earlier cost estimates presented in the Phase 1 filing, which would have been created in the years prior to and including 2011, would not have included the additional costs of labour and material associated with replacing the service connections.

a) Please state whether the new design standard released in 2011 arose from the 2009 revision referenced in 2-Staff-10. If this is not the case, please explain.
b) Please state whether or not the new design standard was developed internally, or whether it was externally imposed, or some combination of the two. Please discuss the key steps in its development and their timing.
c) Please state how long it would typically take to develop a new design standard and whether the process of developing the standard for placing new primary underground cables into concrete-encased ducts was atypical in any way.
d) Please state when the earliest cost estimates presented in the Phase 1 filing were developed.
e) Given that the process of developing the new design standard appears to have been ongoing since at least 2009, which would suggest that Toronto Hydro would have had an awareness of the potential for increased costs in this area and the Phase 1 application was not filed until May 2012, please explain why Toronto Hydro was unable to incorporate the additional costs of labour and material associated with

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replacing the service connections into the Phase 1 application in light of these considerations.

RESPONSE:

a) As detailed in the response to interrogatory 2-Staff-10, part (a), each successive standard design practice revision arose from experience gained through implementation of the previous standard. Toronto Hydro implemented the 2009 revision to address secondary failures that were occurring following residential underground primary rebuilds. As secondary failures continued to occur following this revision, Toronto Hydro determined that it was ultimately prudent and necessary to expand upon the 2009 revision with additional revisions in 2011. Toronto Hydro identified the following overall benefits related to the 2011 revision:

- avoids returning shortly after the rebuild for on-going reactive repairs related to disturbing the direct-buried secondary cables;
- avoids the higher reactive repair costs associated with secondary cable failure;
- as secondary service cables in these job areas are near or beyond end-of-life, undertaking coordinated, one-time construction activities prevents Toronto Hydro from having to return to the site a few years after the rebuild to dig-up customers' properties to renew secondary service connections;
- secondary bus and service cables are protected within a concrete duct structure on the road allowance, improving performance over the useful life of the assets;
- securing the position in the boulevard on both sides of street facilitates cost-efficient cable replacement in the future; and

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- the replacement of direct-buried secondary cables with secondary cables in direct-buried ducts from the lot line to the meter base results in shorter restoration time when repairing faulted secondary cables in the future, improving reliability and reducing reactive costs.

b) Toronto Hydro developed the revised design standard internally over the course of 2010 and 2011. Toronto Hydro approved the revision in 2011 and implemented it in the second half of the year. The primary reason for developing the revised design standard was to address the frequency of secondary faults by replacing the deteriorated cables within the road allowance and up to the meter base.

c) It typically takes Toronto Hydro ten months to over a year to develop a new design standard. Development of both the 2009 and 2011 design standards was within these timelines.

d) The earliest high level cost estimate was prepared in Q1 2010.

e) A majority of the high level estimates were created in the years prior to and including 2011. As the revised standard was released in the second half of 2011, it could not have been used during the preparation of the original high level estimates. As explained in response to interrogatory 1-AMPCO-4, Toronto Hydro's high level estimates for area rebuilds in the ICM application were typically based on an assessment of historical average costs for similar work. Attempting to update the high level estimates for the ICM Phase 1 filing would not have substantially improved the accuracy of the segment forecasts, as there was little to no historical

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cost information from design or construction on which to base the high level costs for area rebuilds implementing the revised standard.

For a discussion of the overall impact of this design change on job variances, please refer to Toronto Hydro's response to interrogatory 2-SIA-6.

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INTERROGATORY 12:

REFERENCE(S): Exhibit 2, Tab 1, Schedule 1, page 12

At the above reference, Toronto Hydro stated that allocated costs were the source of some of the most significant percentage variances in the Underground Infrastructure segment and noted in this context that:

> Since Toronto Hydro's approach to accounting for allocated costs in the ICM Application was to apply a consistent adder based on a percentage of the project's filed costs, the amounts included in the filing for these activities was based only on the small amount of remaining cost included in the ICM Application. At project closeout, however, the amounts actually allocated to these jobs were based on the jobs' entire scope of work. These amounts were far more than those that had been previously included, creating a major cost variance.

a) Please state whether or not Toronto Hydro's approach to accounting for allocated costs in the ICM application was typical of its approach to allocation of such costs, or was developed specifically for use in preparing the ICM application. If the approach was typical, please explain why Toronto Hydro uses an approach that creates major cost variances and whether or not it has any plans to change this approach. If the approach was not typical, please explain why Toronto Hydro adopted it for the ICM application.

b) Please state the amount of the total cost variance in the underground infrastructure segment that is attributable to the approach to accounting for allocated costs used in the ICM application.

c) For the project in this segment with the largest cost variance attributable to allocated costs, please state the project and provide the amount and calculation of the initial

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adder determined at the time of the ICM application and the amount and calculation of the amount actually allocated with an explanation of the variance.

RESPONSE:

a) The primary driver of the allocated cost variance within the Underground Infrastructure segment is from the road cut repair costs. Toronto Hydro's approach to including the road cut repair expenditures was developed specifically for use in preparing the ICM application. This was the more transparent method of allocating road cut costs, which are an inseparable part of the segment costs.

In earlier applications, Toronto Hydro budgeted road cut repair costs as a total estimated capital expenditure (essentially a separate capital program) based on historical trends within the civil infrastructure investment program. In the ICM Phase 1 Application (2012-2013), Toronto Hydro estimated road cut repair costs based on historical costs as a percentage of the capital program and then applied the costs to all jobs in the applicable segments in order to provide an estimated total for job-specific costs. The utility took this interim approach in an effort to provide forecasts that were reasonably comprehensive for the purposes of determining ICM funding amounts associated with the discrete ICM segments (rather than have a separate ICM segment for road cut repair costs). This universal assumption, applied equally to all of the underlying CAPEX estimates, resulted in the variances referenced above, where the allocated cost for road cuts were estimated based on the small amount of remaining costs included to finish the project in 2012 as opposed to the amounts actually allocated to these jobs based on the jobs' entire scope. Allocating costs in this manner was the only feasible approach that Toronto Hydro

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was able to execute at the time of the Phase 1 filing to ensure that the forecast costs in ICM segments were comprehensive of all cost elements. To the extent that this created some variance at the job level, Toronto Hydro is of the view that it is immaterial to the assessment of overall variances at the ICM segment level over three years.

In the ICM Phase 2 (2014) Application and the subsequent Custom Incentive Rate-setting Application (EB-2014-0116), Toronto Hydro refined its approach. Instead of the application of an adder, the utility began estimating anticipated road cut repair costs directly in the high level estimates for each job.

b) The amount of the total cost variance in the underground infrastructure segment that is primarily attributable to the estimation of allocated costs used in the ICM application is $3.2 million on an ISAs basis.

c) The job with the largest cost variance attributable to allocated costs in the Underground Infrastructure segment was “19005_009 PCI-E11484 Rebuild Ingleton Ph 2 Civil Created October 2010”. This job had a variance of $676,240. Please see the table below for the amount and calculation of the initial adder at the time of the ICM application for the job listed above and the amount and calculation of the amount actually allocated with an explanation of the variance.

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Cost Breakout	Forecasted Cost ($)	Actual ISA ($)	Variance ($)	
Construction Costs before Allocated Costs	14,887	143,538	128,651	
Allocated Costs:				
Road Cut Repair Costs	432	481,130	480,698	Road cut repair costs were forecasted as 2.9% of the total construction cost. Please see Toronto Hydro's response to interrogatory 2-Staff-12, part (a), for further details on the road cut estimation process. Actuals were based on actual road cut repairs incurred on the job. In this instance, the job started prior to the ICM period. Toronto Hydro had estimated $15K in construction costs for this job during the ICM period, prior to the addition of allocated costs. The road cut amount actually incurred is based on the entire scope of work on the job (pre-2012 and post-2012).
Engineering Capital	1,176	69,422	68,246	Engineering capital was forecasted as 7.9% of the total construction costs. Actual engineering capital represents 11.1% of the project costs before EAR. This variance is the result of a higher proportion of engineering capital to

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

Cost Breakout	Forecasted Cost ($)	Actual ISA ($)	Variance ($)	
				total capital costs than originally forecasted at the job level. Toronto Hydro corrected for the error in forecasting of Engineering Capital through "ICM Understatement of Capitalized Labour". See Toronto Hydro's response to interrogatory 1-Staff-4 for additional information as to why this forecast was not reflected at the project level.
Other	1,355	-	(1,355)	
Total	**17,850**	**694,090**	**676,240**	

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

INTERROGATORY 13:

REFERENCE(S): Exhibit 2, Tab 4, Schedule 1, page 4

At the above reference, Toronto Hydro stated, in explaining the variance in segment B4 "Overhead Infrastructure," that:

> Higher than forecasted ISAs in this segment were a result of both job-level variances and the addition of several analogous jobs to the work program. These analogous jobs were urgent and necessary to address equipment performance, asset condition, and other considerations described below.

a) Please state how Toronto Hydro determined that these analogous jobs were ICM work versus non-ICM work.
b) Please state whether any other analogous jobs in this segment were categorized in the non ICM eligible 2012 to 2014 ISAs and, if so, how these jobs were distinguished from those that were included as ICM eligible ISAs.

RESPONSE:

a) Toronto Hydro determined that these jobs were eligible for inclusion in the Overhead Infrastructure segment on the basis that the work was identical in nature to other jobs in the segment and that the underlying drivers of work were identical to those on which the OEB based its approvals of the originally forecasted segment expenditures. A detailed description of work and an explanation of the drivers for each analogous job in this segment can be found at Exhibit 2, Tab 4, Schedule 1, Appendix A.

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

b) Toronto Hydro categorized a small number of analogous jobs as non-ICM work to ensure amounts below ICM threshold were fully utilized. Specifically, the utility considered it appropriate to make use of available ISAs room below the ICM Materiality Threshold in 2012 and 2014 before requesting additional incremental funding for analogous jobs in ICM segments for which actual ISAs were greater than forecast. The utility applied the following criteria to distinguish between ICM and non-ICM analogous jobs:

a. For segments with actual ISA amounts *lower* than forecast (on a three-year basis), *all* analogous jobs were included in the ICM segment (i.e., left in) as ICM-eligible work.
b. For segments with actual ISA amounts *greater* than forecast (on a three-year basis), *all* analogous jobs that were placed into service beginning in 2012 or 2014 were categorized as non-ICM work (i.e., taken out and placed in segment C1 Operations Capital).

Toronto Hydro did not use any other criteria in classifying analogous jobs between ICM and non-ICM categories of work.

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INTERROGATORY 14:

REFERENCE(S): Exhibit 2, Tab 5, Schedule 1, pages 6-7

At the above reference, which is explaining variances in segment B5 "Box Construction" and as part of explanations in other categories, Toronto Hydro makes reference to cost variances arising from the use of contractors:

> Other variances in this category were a function of the need for additional infrastructure that was discovered during the detailed design stage and the use of external contractors versus internal crews to complete the job. Unlike the internal construction cost estimates that are based on unburdened work execution rates, the contractor costs charged to the projects are fully-burdened, as they are intended to recover all costs incurred by the third party contractor, including the administrative overhead costs, costs of contractor vehicles and equipment and other related drivers, which are typically accounted for separately at Toronto Hydro (e.g., through OM&A costs).

a) Please state whether or not Toronto Hydro assumed the use of any external contractors in preparing its cost estimates filed for the segments for which additional cost recovery is being sought in this proceeding. If yes, please state the assumptions used and the basis for them. If no, please explain why not.
b) Please state across all segments how much of the total cost variance for which Toronto Hydro is seeking recovery in this application is attributable to the use of external contractors in place of internal resources.
c) Please provide a breakdown by the categories listed in the above reference of this cost variance.

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RESPONSE:

a) Toronto Hydro did not assume the use of external contractors in preparing its cost estimates filed for the ICM segments. The cost estimates filed for the segments were prepared by an internal system planning group, usually well in advance of the final assignment of the projects to either the internal construction departments or external contractors.

When developing a given year's execution work program forecasts, Toronto Hydro's first objective is to fully utilize internal construction resources. Once the internal resources are fully utilized, the remaining unassigned jobs are made available for assignment to the contract design and construction work force. It is only at this point that a detailed estimate will be developed on the basis of contractor-specific unit prices. Work is assigned to contractors on the basis of job priority, as well as available contractor capabilities and the available capital budget for the year.

b) Toronto Hydro does not have the information necessary to determine the total variance attributable to the use of external contractors in place of internal. This would require the creation of two detailed designs, one internal and one external, with all other factors the same, for all external jobs. The utility does not have the data necessary to provide a breakdown of variance causes by categories below the level of the Variance Codes defined in this Application.

It should be noted that while the transfer of jobs from internal to external resources can cause capital expenditures to vary from high level estimates at the individual job level, Toronto Hydro does not consider the use of external contractors in general to be a driver of higher overall costs in the capital work program over time. External

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contractors compliment Toronto Hydro's internal design and construction resources by providing the utility with the resource flexibility and scalability necessary to implement its large capital program on schedule over multiple years. Toronto Hydro expects to use a mix of both internal and external contractors to accomplish its asset management objectives. As noted above in the response to part (a), Toronto Hydro first exhausts internal resources and then turns to contract resources to accomplish high priority, non-discretionary ICM work.

The alternative approach of executing the entire capital work program using internal resources was explored in EB-2014-0116. Specifically, Toronto Hydro included a construction efficiency metric in its Distribution System Plan that compared Toronto Hydro's fully burdened cost of completing a sample of jobs to the cost for the same jobs had they been completed by external contractors. Comparative results showed that the costs of Toronto Hydro's internal project construction are, on average, slightly *higher* than the costs of the same projects had they been constructed by the utility's design and construction contractors.[1]

c) See the response to part (b) above.

[1] EB-2014-0116, Toronto Hydro-Electric System Limited Custom Incentive Rate-setting Application (July 31, 2014), Exhibit 2B, Section C3.4 at pp. 22-25.

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INTERROGATORY 15:

REFERENCE(S): Exhibit 2, Tab 6, Schedule 1, page 6

At the above reference, which is explaining variances in segment B6 "Rear Lot Construction," Toronto Hydro stated jobs that the high level plan assumed would address only the primary electrical equipment were necessarily revised to include direct-buried secondary services that were found to be in poor condition and added that:

> These are not cases of cost increasing to complete the work within the original scope; rather the job was expanded to address significantly more assets in need of replacement and in accordance with the reliability driver for this segment.

Please state how Toronto Hydro determined that revisions of this kind would be expansions of existing jobs rather than new jobs.

RESPONSE:

Generally, Toronto Hydro determines that revisions of the kind cited above would be expansions of existing jobs, rather than new jobs, based on prudent planning that takes into account compliance with existing standards, customer impact and cost-effectiveness. From a project execution point of view, it is cost effective to replace assets in poor condition in a project area while already working in that area. It would be disruptive to customers to replace infrastructure in an area, only to have to return within a short period of time to replace additional assets not included in the original job. Additionally, an obsolete system co-existing with the new standard may cause reliability issues leading to disruptions to Toronto Hydro's customers and may require additional maintenance to

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sustain existing operations, thereby increasing costs to ratepayers. This approach to planning was confirmed in the OEB's Partial Decision and Order:

> […] as a practical matter cost-effectiveness means that the prudent and cost-effective solution for a distributor, when carrying out non-discretionary work, is to complete other important associated work. The Board therefore does not necessarily expect each job to be non-discretionary, if it is clearly associated with work that is non-discretionary. The Board agrees with THESL that doing only the bare minimum of work may be more expensive and counterproductive in the long run. The Board notes that the guidelines in the Reports contemplate the most cost-effective solution, which may not be the least expensive in the short term.[1]

[1] EB-2012-0064, Toronto Hydro-Electric System Limited Partial Decision and Order (April 2, 2013) at p. 16.

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INTERROGATORY 16:

REFERENCE(S): Exhibit 2, Tab 6, Schedule 1, page 8

At the above reference, which is explaining variances in segment B6 "Rear Lot Construction," and in a number of other segment variance explanations, Toronto Hydro makes references to the impact of errors that were discovered subsequent to the ICM filing.

Please state the approximate cumulative impact of identified errors across all the segments for which cost recovery is sought in this application on the overall recovery amount which is being requested.

RESPONSE:

In the course of responding to this interrogatory, Toronto Hydro discovered a minor oversight related to the compilation of individual job-level forecasts for a small subset of the jobs (31) in the ICM True-up Application. Toronto Hydro neglected to include the forecasted 2013 CWIP coming into service for jobs that were filed for 2014 in the Phase 2 Application.[1] Correcting for this oversight has the effect of increasing the forecast costs for the 31 jobs affected, including some Errors, which in turn decreases the positive variances for these jobs (and slightly increases the negative variances for a minority of jobs). The correction also eliminates two Errors altogether.

[1] The 2013 CWIP amounts in question were filed and approved in Phase 2 of the ICM Application. The amounts can be seen in EB-2012-0064, Tab 9, Schedule A1, in the column titled "2013 CWIP (In-Service in 2014)". For the ICM True-up Application, Toronto Hydro based its forecast costs at job level on the CAPEX estimates that constituted the values shown in the column "2014 Capex". The oversight occurred when Toronto Hydro neglected to also include the 2013 CWIP amounts associated with these same jobs.

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Note that these amounts were already included in the forecasts at the ICM segment level in both the original ICM Application and this ICM True-up Application. Therefore, this change has no bearing on the calculation of the revenue requirement that Toronto Hydro is seeking to recover in this Application.

The total ISAs variance for the corrected list of Errors is shown in the table below.

ICM Segment	Count of Estimate	Variance ($ millions)
Overhead Infrastructure	3	(0.12)
Box Construction	1	0.13
Rear Lot Construction	1	(1.06)
Network Vaults & Roofs	1	0.98
Fibertop Network Units	1	(0.13)
Externally Initiated Plant Relocations	1	0.18
TOTAL	**8**	**(0.02)**

After accounting for the effects of the shifts in timing of these ISAs between years on an actuals basis, the approximate cumulative impact of identified errors across all segments for which cost recovery is sought in this application is a decrease of $0.08 million to revenue requirement.

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INTERROGATORY 17:

REFERENCE(S): Exhibit 2, Tab 7, Schedule 1, page 2

At the above reference, which is explaining variances in segment B9 "Network Vaults and Roofs," Toronto Hydro states as follows:

> As detailed below, Toronto Hydro's actual ISAs in this segment total about $17.3 million, which is $5.2 million less than the overall forecast amounts in this segment but $3.0 million more than the amounts on which the Initial ICM Rate Rider was based.

Please state why there would be a different variance between actuals ISAs and overall forecast amounts in this segment (-$5.2 million) and actual ISAs and the amounts on which the ICM Rate Rider was based (+$3.0 million). Please explain why this difference would exist given that the forecast amounts in this segment would have been the basis on which the ICM Rate Rider was calculated.

RESPONSE:

As explained at Exhibit 1, Tab 2, Schedule 2, page 7, the Initial ICM Rate Rider (or "ICM Rate Rider") was established in the OEB's Phase 1 Decision based on forecast ISAs for 2012 and 2013 only. Forecast 2012 and 2013 ISAs for the Network Vaults and Roofs Segment totalled $14.3 million, which is $3 million less than the total actual ISAs in this segment over the full 2012-2014 ICM period.

As detailed in Exhibit 2, Tab 7, Schedule 1 ("B9 – Network Vaults and Roofs"), Toronto Hydro also forecasted $7.3 million of ISAs in 2014 related to work approved by the OEB

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

in Phase 1 of the ICM Application, plus an additional $0.9 million in Phase 2 for work commencing in 2014.[1] Including the 2014 ISAs brings the forecast total for this segment to $22.5 million, which is $5.2 million greater than the $17.3 million in actual ISAs in this segment over the 2012-2014 ICM period. However, as explained above, the Initial ICM Rate Rider did not fund any ISA amounts for 2014. Pursuant to the OEB's Phase 2 Decision, accepting the terms of the Settlement Agreement, the 2014 rate rider was set at zero with the expectation that any 2014 revenue requirement associated with the 2014 ISAs would be addressed through the ICM True-up Application.

[1] Please note a typo in Table 2 of Exhibit 2, Tab 7, Schedule 1. The correct value for the 2014 Forecast ISAs is $8.2 million (i.e., $7.3 million plus $0.9 million). All other amounts in the table are correct.

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INTERROGATORY 18:

REFERENCE(S): Exhibit 2, Tab 14, Schedule 1, page 6

At the above reference, which is the Background section of Power System Engineering Inc.'s (PSE) Toronto Hydro ICM Variance Evaluation, PSE stated that:

> Torys LLP ("Torys") retained Power System Engineering, Inc. ("PSE") to provide an opinion on the reasonableness of variances between the OEB-approved ISAs and actual ISAs, at a segment level. This report (the "PSE Report") represents PSE's opinion on the segment variances from an engineering perspective.

a) Please state whether or not while preparing its opinion, PSE reviewed the OEB's EB-2012-0064 Partial Decision and Order of April 2, 2013 and other similar documents related to the establishment of the ICM funding. If such documents were reviewed, please state how they were used in preparing PSE's report.
b) Given that PSE states that its report represents PSE's opinion on the segment variances, please state to what extent the OEB can use PSE's report in assessing the reasonableness of variances at the completed job level.
c) Please state whether or not PSE has been asked to produce similar reports for other US or Canadian utilities. If yes, please provide a list of such reports.

RESPONSE:

a) PSE reviewed the OEB's EB-2012-0064 Partial Decision and Order (issued April 2, 2013) (the "Order"). PSE reviewed the Order for general background in relation to the ICM and its procedural history. PSE also used the Order to obtain a sense for

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how the OEB defined terms such as "project." For example, on page 75 of the Order, the OEB states (footnote omitted):

> The Board defines a "project" for the purposes of this application as being determined by the "Schedule Number" listing in THESL's "In-Service Summary of Capital Program." This would mean that "B1 Underground Infrastructure" would be the first project, "B2 Paper Insulated Lead Covered Cable – Piece Outs and Leakers" would be the second project and so on down the list…

The history and these definitions helped frame PSE's approach, which was to evaluate variances at the segment (project) level. No other similar documents were used.

b) The OEB should use PSE's report to evaluate the reasonableness of variance at the segment level and not at the completed job level, with the exception that in certain cases, PSE reviewed variance drivers at the job level to establish an understanding of the causes of such variances. When looking at the variance drivers at the job level, PSE focused on whether the variance drivers were of the type PSE would expect for a job of that kind, not whether the job variance magnitude itself was reasonable.

c) PSE has not been asked to produce a report assessing the reasonableness of variances between forecasted costs and actual costs for large capital project programs.

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INTERROGATORY 19:

REFERENCE(S): Exhibit 2, Tab 14, Schedule 1, pages 11-12

At the above reference, PSE states:

> Through the course of our research, we identified a total of five sources applicable to the electric utility industry that provided guidance in establishing and understanding the compared to final costs. These sources are shown in the following figure, and included AACE International ("AACE"), Alberta Electric System Operator ("AESO"), Vermont ElectricPower Company ("VELCO"), ISO New England ("ISO-NE"), and the U.S. Department of Energy ("US-DOE").

Please state how PSE determined the five sources referenced above and if any other sources were considered and rejected, please state what they were and why they were rejected. If no other sources were considered, please explain why.

RESPONSE:

PSE performed research directed toward identifying cost estimation frameworks that are used in the industry. In conducting this research PSE also encountered some projects that were similar in terms of scale, complexity, and timeframe. The sources referenced in the report represent the cost estimation frameworks we encountered that had explicit estimation frameworks: category characteristics used to establish the expectations associated with estimate classes.

Two sources that were not listed in the report (Ministry of Transportation and Infrastructure and the Joint Federal Government/Industry Cost Predictability Taskforce)

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used similar frameworks to those already listed, and had similar category characteristics for establishing the estimate expectations and estimate class, and would be considered somewhat duplicative to the listed sources. In addition, these sources appeared to be aligned with transportation and building construction sector projects as opposed to electric power industry sector projects.

Two other sources that described similar initiatives that PSE encountered were large projects from Southern California Edison and Commonwealth Edison. These sources were not used as references in our report, because the documents did not address the framework of characteristics used to establish the estimate expectations and estimate class.

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INTERROGATORY 20:

REFERENCE(S): Exhibit 2, Tab 14, Schedule 1, page 19

At the above reference, PSE states:

> Furthermore, variation in accuracy and precision occurs on a segment to segment basis. For example, segments such as Underground Infrastructure (B1) and Paper Insulated Lead Covered Cable (B2) exhibit greater variation due to the limited inspection and testing methods available for pre-assessing actual in-service conditions.

Please state whether PSE's conclusion that segments such as Underground Infrastructure exhibit greater variation than other segments is based on similar assessments which it has done for other utilities, or if not what the basis of it is.

RESPONSE:

The context of this opinion is primarily based on PSE's experience and further reinforced by research.

PSE has over 40 years of experience in project development, planning, engineering and design as well as significant experience in construction and commissioning of overhead and underground electric utility facilities. In the example of underground electric utility projects, and based on PSE's experience, there are limited opportunities, as compared to overhead electric utility projects, for visual inspections to verify actual below grade conditions. This limitation decreases the accuracy of estimation as stated on page 11 of PSE's Report:

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Estimates are dependent upon the available information, time demands, purpose of the estimate, and techniques used.

The research PSE performed identified documents from Southern California Edison as well as Commonwealth Edison which outline some of their experiences with asset renewal programs for underground facilities. Both companies found greater uncertainty in work scope and a wider range in costs for some underground projects.

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INTERROGATORY 21:

REFERENCE(S): Exhibit 2, Tab 14, Schedule 1, page 27

At the above reference, PSE states:

> If forecasted jobs are similar in number to committed jobs, then that is one measure of the work forecasted vs. actual work performed. This is an imperfect measure; however, it is a solution based on the available information and is consistent with the manner in which jobs were filed in Toronto Hydro's ICM application.

Please elaborate on PSE's reference above to this being an imperfect measure, specifically discussing what PSE believes would be a more suitable measure and to what extent the inability to make use of such a measure impacted PSE's assessment of Toronto Hydro's performance.

RESPONSE:

Comparing the number of jobs is not a perfect measure; the preferred method (when the data is available) is to compare forecasted ISAs with actual ISAs. For example, in the previous section of PSE's Report (Section 4.2), PSE compared forecasted ISAs to actual ISAs of completed jobs. However, for partially completed jobs and in-progress jobs, no completed ISAs were available.

The "cancelled" or "deferred" jobs likely had some differences in scope, complexity, etc. as compared to "analogous" jobs. The comparison of the number of forecasted jobs

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versus the number of committed jobs was performed because final ISAs for partially completed and in-progress jobs, and forecast ISAs for analogous jobs, were not available.

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INTERROGATORY 22:

REFERENCE(S): Exhibit 2, Tab 14, Schedule 1, page 31

At the above reference, PSE states at the conclusion of its report that: "Overall, the reasons for variances as defined by Toronto Hydro, and discussed above, are understandable and can be found across the industry."

Please state whether or not PSE would have any views as to how Toronto Hydro's performance regarding the variances discussed would compare to the industry, e.g., would appear to be above expected industry norms, at industry norms or below industry norms.

RESPONSE:

PSE does not have additional views, beyond those stated in its Report, as to how Toronto Hydro's performance regarding the variances compared to expected industry norms. More specifically, PSE's assessment did not develop detailed benchmarks needed to determine below, at, or above industry norm performances. In order to offer such views, a data set of large multi-year capital improvement programs for multiple utilities would be needed to develop a statistical model. That being said, a large majority of Toronto Hydro segment variances were within the expected accuracy range as indicated in figures 4.1 and 4.3 of PSE's Report.

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

ISSUE 2, INTERROGATORY 1:

REFERENCE(S): Exhibit 2

a) Please complete the attached spreadsheet (2-AMPCO-1) and provide the live excel version.

RESPONSE:

Please see attachment (Appendix A to this response).

THESL ICM True-Up
EB-2015-0173

2-AMPCO -1 2012 to 2014 Job Breakdown

#	Forecasted Jobs	# Forecasted Jobs	# Deferred Jobs	# Cancelled Jobs	# Analogous Jobs	ISA $ Forecasted Jobs ($M)	ISA $ Deferred Jobs ($M)	ISA $ Cancelled Jobs ($M)	ISA $ Analogous Jobs ($M)
B1	**Underground Infrastructure**	**172**	**12**	**1**	18	164.1	0	0	15.9
B2	**PILC Piece Outs and Leakers**	**14**	**1**	**1**	1	2.8	0	0	-
B3	**Handwell Replacement**	**"Bucket" Estimates**				36.4	0	0	0.0
B4	**Overhead Infrastructure**	**112**	**3**	**2**	10	80.6	0	0	3.1
B5	**Box Construction**	**22**	**3**	**1**	6	21.1	0	0	1.9
B6	**Rear Lot Conversion**	**31**	**1**	**0**	2	56.4	0	0	1.6
B9	**Network Vaults & Roofs**	**29**	**10**	**0**	9	12.6	0	0	4.7
B10	**Fibertop Network Units**	**68**	**16**	**5**	17	10.4	0	0	3.2
B11	**Automatic Transfer Switches & Remote Power Breakers**	**11**	**0**	**5**	1	1.8	0	0	0.1
B12	**Station Power Transformers**	**10**	**0**	**0**	5	2.2	0	0	2.9
B13.1 & B13.2	**Stations Switchgear**	**17**	**8**	**0**	5	0.9	0	0	4.1
B20	**Metering**	**See Segment Details for Capex Comparison**				18.1	N/A	N/A	N/A
B21	**Externally Initiated Plant Relocations & Expansions**	**27**	**4**	**2**	24	32.6	0	0	1.8
	TOTAL	**513**	**58**	**17**	**98**	440.2	**0.0**	**0.0**	39.2

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

ISSUE 2, INTERROGATORY 2:

REFERENCE(S): Exhibit 2

a) For each ICM Segment, please provide the number of cost estimate errors and the $ value of the cost estimate errors.

RESPONSE:

a) Please see Toronto Hydro's response to interrogatory 2-Staff-16.

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

ISSUE 2, INTERROGATORY 3:

REFERENCE(S): Exhibit 2

a) Please complete the attached spreadsheet (2-AMPCO-3) and provide the live excel version.

AMPCO included asset types under each segment that were identified in EB-2012-0064 & EB-2015-0173. If THESL believes that different asset types would be more reflective of the work forecasted and completed, please adjust the asset types in part a) accordingly.

RESPONSE:

Please see attachment (Appendix A to this response) for a best-efforts comparison of forecast versus actual assets installed by major asset class at the ICM segment level. For the reasons noted below, these units do not allow for a rigorous and detailed comparison of forecast versus actual unit accomplishments. However, the units are directionally comparable (i.e., at an order-of-magnitude level) and can be used to assess general alignment of asset-based accomplishments by segment during the ICM period.

Explanation of the Data Provided

Assets. Toronto Hydro has narrowed the list of assets requested to those that were originally filed in the Phase 1 and/or Phase 2 ICM Application evidence. Toronto Hydro did not establish forecasts for any other asset types in its ICM Application and is not in a position to retroactively do so now (see response to interrogatory 1-AMPCO-4). Furthermore, many of the specific asset types requested by AMPCO are not tracked at the

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

necessary level of granularity (or, in some cases, at all) in Toronto Hydro's financial systems.

Actual Units Installed. As discussed in the "THESL Response re AMPCO Motion Settlement" (EB 2014-0116, Filed: January 21, 2015), Toronto Hydro can only provide actual units installed (as opposed to replaced or removed) for 2012 to 2014, based on data kept for financial tracking purposes. Toronto Hydro has provided these units for the relevant major asset classes at the maximum level of granularity facilitated by the financial tracking system.

Forecast Units Installed. Toronto Hydro derived the forecasted units installed by summing the unit counts that appeared in the original ICM segment narratives. For geographical or feeder based programs (e.g., Overhead Infrastructure), these asset counts were originally determined by reviewing maps of job areas and manually counting the major assets to be addressed. These forecasts were developed specifically for the filing in order to provide a sense of scale for the work forecasted in the application. As is generally the case at the high-level estimating stage, Toronto Hydro assumed a one-to-one relationship between units removed and units installed for programs that are like-for-like in nature (e.g., Underground Infrastructure).[1] In practice, units installed will most often vary from the number of units replaced due to the application of updated standard design practices and consideration for site-specific design requirements.

1 The main exceptions to like-for-like replacement are the Rear Lot Construction segment, which even at the high-level must necessarily assume a new front-lot underground plan, and the Network Vaults & Roofs and ATS & RPBs segments, which may include work that is not like-for-like, such as decommissioned units.

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

Additional caveats related to both the forecast and actual units installed are provided in footnotes to the attached table.

Toronto Hydro has excluded the Metering segment from the table as an activity-based discussion of variances is already provided at Exhibit 2, Tab 12, Schedule 1 of this Application.

2-AMPCO-3

Segment		Assets	Unit of Measure	Forecast Installs (Units)			Actual Installs (Units)		
				Non-Linear Units	Linear Units	Total Units	2012-2014 ISA Quantities (Forecasted Jobs)	2012-2014 ISA Quantities (Analogous Jobs)	2012-2014 ISA Quantities
B1	Underground Infrastructure	Primary Cable	M	-	601,275	601,275	447,045	112,861	559,906
		Submersible Transformers	EA	976	-	976	473	78	551
		SF6-Insulated Pad-mounted Switchgear	EA	78	-	78	84	45	129
		SF6-insulated Vault-installed Switchgear	EA	133	-	133	154	12	166
B2	PILC Cables	Piece Out and Leakers [1]	EA	299	-	299	-	-	-
B3	Handwell Replacement	Handwells[3]	EA	7,165	-	7,165	7,756	-	7,756
B4	Overhead Infrastructure	Poles	EA	5,570	-	5,570	5,689	175	5,864
		Transformers[2]	EA	156	-	156	1,490	27	1,517
		Conductor	M	-	204,000	204,000	226,070	5,351	231,421
		Switches[2]	EA	138	-	138	308	30	338
		Porcelain Insulators[1]	EA	3,403	-	3,403			
B5	Box Construction	Poles	EA	2,364	-	2,364	1,949	20	1,969
		Switches	EA	260	-	260	115	12	127
		Transformers	EA	496	-	496	525	42	567
		Conductor	M	-	129,105	129,105	135,989	6,653	142,642
B6	Rear Lot Construction	Poles	EA	216	-	216	211	-	211
		Switches	EA	17	-	17	58	-	58
		Transformers	EA	302	-	302	340	17	357
		Conductor	M	-	13,665	13,665	31,169	-	31,169
		Cable	M	-	89,979	89,979	80,343	3,410	83,753
		Underground Civil Work	M	-	37,421	37,421	51,509	4,199	55,708
B9	Network Vaults & Roofs	Vaults - Decommissioned	EA	3	-	3	17	9	26
		Vaults - Complete Rebuild	EA	19	-	19			
		Vaults - Roof Rebuild	EA	9	-	9			
B10	Fibertop Network Units	Network Units	EA	104	-	104	145	40	185
B11	Automatic Transfer Switches & Reverse Power Breakers	Automatic Transfer Switches	EA	12		12	27	-	27
		Reverse Power Breakers	EA	2		2			
B12	Station Power Transformers	Transformers	EA	10	-	10	5	8	13
B13	Stations Switchgear	MS Switchgear	EA	10	-	10	-	2	2
		TS Switchgear	EA	4	-	4			

Note:

[1] *Actuals data does not track this asset.*

[2] *Forecast only includes amounts filed in Phase 2 as no forecasts were filed in Phase 1; actuals includes all 2012-2014 data.*

[3] *Forecast only includes amounts filed in Phase 2 as no forecasts were filed in Phase 1; actuals includes all 2012-2014 data. Data in Actuals for financial statements was only tracked discretely starting from 2013.*

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

ISSUE 2, INTERROGATORY 4:

REFERENCE(S): Exhibit 2

a) Please provide THESL's Reactive Capital program budget and actuals for the years 2009 to 2015.

b) Please provide a breakdown of THESL's Reactive Capital Asset Replacement Programs and corresponding asset types replaced. Provide the total number of asset units replaced by type under these programs for the years 2009 to 2015.

RESPONSE:

a) Please see the table below, which shows the Reactive Capital program ISAs approved for the 2012-2014 ICM period and the related actuals. This Application is concerned with ISA variances in 2012-2014 ICM segments. Expenditures in the Reactive Capital program are, by their nature, highly volatile year-over-year. Toronto Hydro believes that AMPCO's request for additional information outside of the ICM period would have little or no probative value in assessing Reactive Capital variances during the ICM period. For a discussion of variances in the Reactive Capital program during the ICM period, please refer to Toronto Hydro's response to interrogatory 1-SIA-3.

Reactive Capital	2012 ISA ($ millions)	2013 ISA ($ millions)	2014 ISA ($ millions)
Approved	11.4	32.7	23.7
Actual	18.4	36.1	41.4

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

b) Total asset quantities installed in the Reactive Capital program for 2012 to 2014 are provided in the table below.

Asset Type	Unit of Measure	2012 Qty	2013 Qty	2014 Qty	Total Quantities
Substation Equipment	EA	2	59	193	254
Poles, Towers Fixtures	EA	281	306	767	1,354
OH Dist Lines and Feeders	M	23,369	101,481	94,410	219,260
UG Conduit	M	73	799	97	968
UG Dist Lines and Feeders	M	46,718	88,803	86,227	221,748
Distribution Transformers	EA	520	826	2,281	3,627
Services	M	4,928	3,750	171,825	180,503
Distribution Metering Equip	EA	19	483	187	689
Tools and Equipment	EA	23	20	155	198
System Supervisory Equipment	EA	1	14	19	34
Smart Meters	EA	-	1,663	1,412	3,075
Building Substations	EA	-	-	29	29
Fibre Optic Network	EA				

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

ISSUE 2, INTERROGATORY 5:

REFERENCE(S): Exhibit 2, Tab 1, Schedule 1, Underground Infrastructure Segment

Preamble:

The evidence (page 5) states that one job was cancelled and 12 other projects were deferred to the 2015-2019 period either in light of scheduling conflicts or to enable the attainment of other analogous jobs that were identified as more critical during the ICM period, and 18 priority jobs were added.

a) Please provide a job number/title and forecasted ISA $ for the 12 deferred jobs.
b) Please identify which of the jobs in part a) were deferred to enable the attainment of other analogous jobs and why.

RESPONSE:

a) The most recent forecasted total in-service addition amounts for the 12 deferred jobs is $15.7 million. Job-level details are included in the table below.

Approved Estimate	Estimate Description	Forecasted ISA
EST21297_001	E13077 UG Rehab of NY51M8 - Elec E13077 btn Leslie and Bayview	$1,179,192.45
EST21449_001	ICM NY51M24 UG Rebuild- E of Don Mills E13102 Forest Manor-Electrical	$ 347,359.62
EST20059_009	E12210 VENTURE DR UG SCNT47M1 - Civ/Elec DO NOT PACKAGE for budget Civ	$1,775,922.61
EST18585_001	W11385 Northwoods Subdivision - UG DB Rebuild	$4,669,681.52

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

Approved Estimate	Estimate Description	Forecasted ISA
EST20664_001	E12385 Don Mills/Egltn UG Rebuild (Civ) NY53M1	$ 786,849.76
EST20665_001	E12386 Don Mills/Eglinton - ELEC NY53M1 UG Rebuild	$ 416,935.38
EST21663_001	E13147 Nugget Avenue UG Rebuild SCNAH9M23 Civil	$ 890,176.11
EST23043_001	W14133 85M7 UG DBFestival & Carnival	$2,128,627.00
EST21290_001	E13074 UG Rehab of NY51M7 - Electrical btn Leslie and Bayview	$ 993,119.00
EST20744_001	E12429 Cherrystone Aspenwood NY51M27 UG Rebuild Civil	$1,212,949.39
EST20746_001	E12430 Cherrystone Aspenwood NY51M27 UG Rebuild Electrical	$ 367,235.48
EST27221_001	E15023 P01 Sheppard Underground DB Cable Civ Ellesmere TS SCNAH9M23, S	$ 960,706.83
Total		**$15,728,755.16**

b) The jobs in the list above were deferred for various reasons, including scheduling constraints related to road cut moratoriums, clearance conflicts with other utilities in the job area, and conflicts with major projects being undertaken by external agencies (e.g., Metrolinx's Eglinton LRT project).

Jobs EST21297_001, EST21449, EST20059_009, EST21290_001, EST20744_001, and EST20746_001 were deferred due to general resource constraints. There is generally not a strict one-to-one relationship between added jobs and deferred jobs. As constraints arise through the course of the annual work program, Toronto Hydro will re-examine its list of in progress and planned jobs, which may include high-priority analogous jobs that were not previously on the list, and will defer planned

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

work as needed on the basis of the relative priority of jobs and the resources available. In practice, this means that an analogous job may be undertaken on the basis of being an urgent priority, and the decision regarding which jobs to defer will be made as part of a later reforecasting exercise, taking into account not only the analogous jobs that have been added, but also any changes in costs and resource requirements related to planned jobs as they evolve from high level to detailed estimates and eventually to construction.

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

ISSUE 2, INTERROGATORY 6:

REFERENCE(S): Exhibit 2, Tab 1, Schedule 1, page 7, Underground Infrastructure Segment

Preamble:
THESL indicates that the most frequent source of scope change due to a change in THESL's technical design standard related to secondary cables and secondary services that connect customers to the distribution system in neighbourhoods with underground distribution configurations.

a) Please provide a list of other LDCs that THESL is aware that have also adopted the same or similar new technical standard for this work.
b) Please explain why the additional costs related to implementation of this standard were not incorporated into the October 2012 evidence update given that the new standard was released in late 2011.
c) Please provide the total cost variance due to a change in the technical standard.

RESPONSE:

a) The standard design practice was developed based on a prudent assessment of the specific characteristics of Toronto Hydro's existing legacy, underground, direct-buried residential plant, including the historical and expected performance of the assets and the expected costs and benefits of various intervention options over the full lifecycle of the rebuilt distribution plant. Toronto Hydro is not aware of the extent to which other LDCs have adopted the same or similar technical standards for similar work.

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b) Please refer to Toronto Hydro response to interrogatories 2-Staff-10 and 2-Staff-11.

c) Please refer to Toronto Hydro's response to interrogatory 2-SIA-6, part (a).

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

ISSUE 2, INTERROGATORY 7:

REFERENCE(S): Exhibit 2, Tab 1, Schedule 1, page 9, Underground Infrastructure Segment

Preamble:

THESL indicates that the some jobs as originally scoped have not gone over or under cost, but have expanded or retracted to address more or fewer assets in need of replacement.

a) With respect to completed jobs, please provide the number of jobs where the assets replaced were more, less, or exactly the same as forecasted.
b) Please provide the job numbers fort the jobs where the scope of work did not change.

RESPONSE:

Please see Toronto Hydro's response to interrogatory 1-AMPCO-4.

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

ISSUE 2, INTERROGATORY 8:

REFERENCE(S): Exhibit 2, Tab 1, Schedule 1, Appendix A, Underground Infrastructure Segment

a) For each of the 18 jobs listed in Appendix A, please provide a map of the job area.
b) For each of the 18 jobs listed in Appendix A, please provide the number of phases in each job.
c) For each of the 18 jobs listed in Appendix A, please provide an Asset Replacement Table that lists the quantities of assets replaced.
d) For each of the 18 jobs listed in Appendix A, please provide the historical reliability performance of the equipment.
e) Please provide the total number of assets replaced that are at or beyond end of life.
f) Please provide the total number of assets replaced that are in very poor, poor, fair, good and very good condition.

RESPONSE:

a) Please see attachment (Appendix A to this response).

b) The following table includes the number of phases for each job.

Scope	Title	Phases
W10335	Blaketon MS fusing and Scada Installation	1
E11217	Celeste Dr 47M14 UGg Rebuild	1
E11640	Replace Submersible Transformers SS68-F9	1
W12293	FESI - DB Sub Loop Cable Replacmnt (Finch TS)	1
E14118	Upgrade E5-M8 UG sections Lawrence Pharmacy	1

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Scope	Title	Phases
E12726	P002 Agincourt Mall UG Rebuild Cavanaugh 502M26	2
E11371	Finchdene Industrial SCNAR26M31 UG Rebuild (Civil)	1
W12307	FESI Downsview Dells Rebuild	1
E13286	Salinger Sanwin Crt 68-F9 UG Rebuild	1
E11445	Tineta-Kimroy UG VC	1
W12298	Finch Stn Egress - UG Cable Enhancmnt & Switch Installation	1
E13045	P1-Wilfred Ave-UG Rebuild (Elec)-Fairchild TS-	1
E12082	Baylawn Petworth UG Rebuild VC-Electrical	2
W12860	Jane MS Egress Cable Replacement - CIVIL	2
E13500	P01 Scarborough East Level 4 Transformers Replacement	1
W12367	FESI - Lateral Cable Replacement - Jane St (Phase 2)	1
E12845	155 Morningside Replace Rusted PT71226 Sheppard TS	1
E11570	Sheppard Neilson PSC48419 Reconfigure Tie 47M3 47M1 H9M24	1

c) The following table displays the number of units installed for each analogous job in this segment.

Estimate	Asset	Total Quantities
EST16873_002EST25422_001	Primary Cable (m)	37,642
EST16873_002EST25422_001	SF6-Insulated Pad-mounted Switchgear	40
EST18275_003	Primary Cable (m)	833
EST18275_003	Submersible Transformers	5
EST18723_002	Primary Cable (m)	1,540
EST18723_002	Submersible Transformers	9

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Estimate	Asset	Total Quantities
EST18781_003EST26830_003	Submersible Transformers	15
EST20402_003	SF6-insulated Vault-installed Switchgear	9
EST20402_003	Primary Cable (m)	60,198
EST20402_003	SF6-Insulated Pad-mounted Switchgear	3
EST20473_002	Primary Cable (m)	347
EST20496_003	Primary Cable (m)	191
EST20496_003	Submersible Transformers	2
EST20728_002	Primary Cable (m)	610
EST20728_002	Submersible Transformers	28
EST22941_003	SF6-insulated Vault-installed Switchgear	3
EST22941_003	Primary Cable (m)	3,639
EST24035_003	Primary Cable (m)	3,111
EST24035_003	Submersible Transformers	1
EST25111_003	Primary Cable (m)	840
EST25111_003	Submersible Transformers	1
EST26148_003	Primary Cable (m)	485
EST26148_003	Submersible Transformers	2
EST26751_001EST26064_003	Primary Cable (m)	2,505
EST26751_001EST26064_003	Submersible Transformers	11

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Estimate	Asset	Total Quantities
EST27119_001EST27162_001	Submersible Transformers	4
EST29036_002	Primary Cable (m)	920
EST29036_002	SF6-Insulated Pad-mounted Switchgear	2

d) The following table provides historical reliability information for feeders addressed by each job.

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Scope	Title	Feeder	2009		2010		2011	
			CI	CHI	CI	CHI	CI	CHI
W10335	Blaketon MS fusing and Scada Installation	HLF2 and HLF4	0	0	264	666	0	0
E11217	Celeste Dr 47M14 UGg Rebuild	NA47M14	4,357	4,018	14,227	7,658	11,491	7,586
E11640	Replace Submersible Transformers SS68-F9	SS68-F9	7,992	12,888	7,075	12,179	6,121	7,496
W12293	FESI - DB Sub Loop Cable Replacmnt (Finch TS)	55M25	3,828	4,717	306	705	20,315	3,534
E14118	Upgrade E5-M8 UG sections Lawrence Pharmacy	NAE5-2M8	9,680	6,930	3,236	173	32	171
E12726	P002 Agincourt Mall UG Rebuild Cavanaugh 502M26	NA502M26	0	0	1	2	0	0
E11371	Finchdene Industrial SCNAR26M31 UG Rebuild (Civil)	NAR26M31	0	0	730	61	22	100
W12307	FESI Downsview Dells Rebuild	55M25	3,828	4,717	306	705	20,315	3,534
E13286	Salinger Sanwin Crt 68-F9 UG Rebuild	SS68-F9	7,992	12,888	7,075	12,179	6,121	7,496

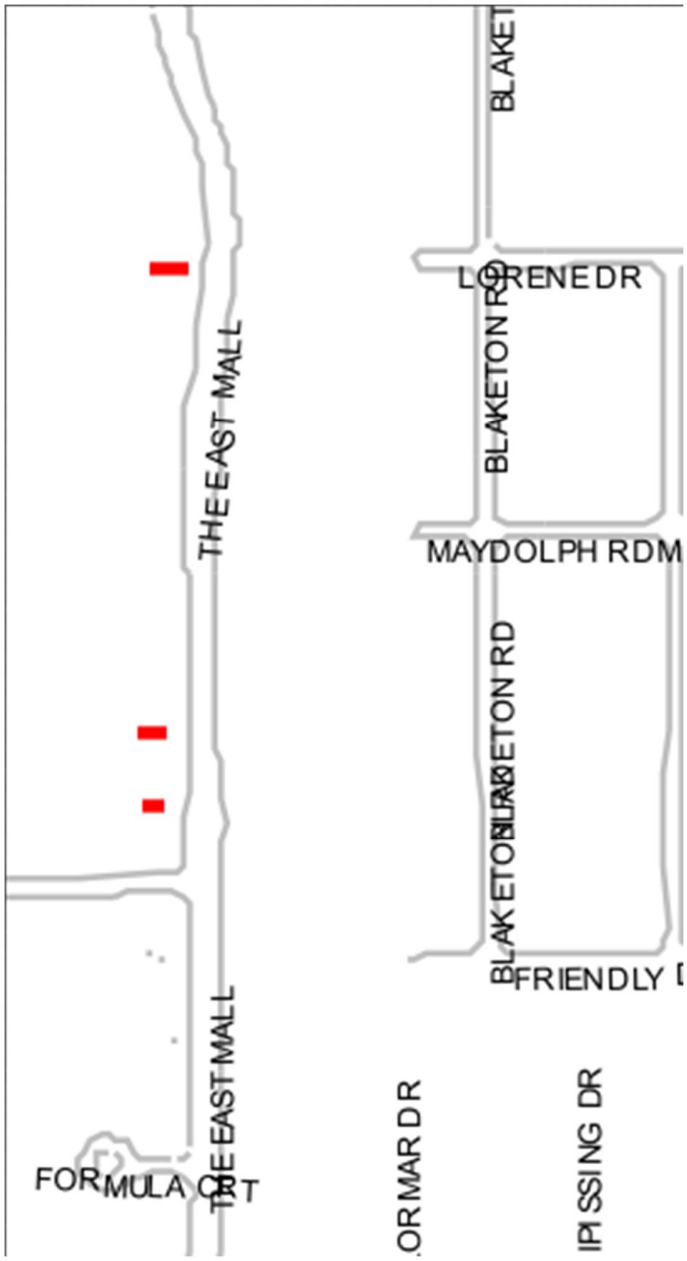
RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

Scope	Title	Feeder	2009		2010		2011	
			CI	CHI	CI	CHI	CI	CHI
E11445	Tineta-Kimroy UG VC	KHF2	0	0	0	0	76	171
W12298	Finch Stn Egress - UG Cable Enhancmnt & Switch Installation	55M3, M25, M28 and M30	5,291	8,660	8,727	8,586	27,486	5,440
E13045	P1-Wilfred Ave-UG Rebuild (Elec)-Fairchild TS-	80M5	11,116	5,638	21,629	4,652	17,389	6,356
E12082	Baylawn Petworth UG Rebuild VC-Electrical	SGF2	228	292	60	55	320	665
W12860	Jane MS Egress Cable Replacement - CIVIL	SS55-F1, F2, F3,F4 and F5	1,100	1,828	222	500	2,145	3,184
E13500	P01 Scarborough East Level 4 Transformers Replacement	Ellesmere TS and Scarborough TS	75,297	66,900	57,108	39,795	40,401	38,581
W12367	FESI - Lateral Cable Replacement - Jane St (Phase 2)	55M8	15,626	6,944	6,227	3,920	10,734	8,973
E12845	P02 155 Morningside Replace Rusted PT71226 Sheppard TS	RJF2	0	0	0	0	0	0
E11570	P02 Sheppard Neilson PSC48419 Reconfigure Tie 47M3 47M1 H9M24	NT47M3, NT47M1, H9M24	53,789	27,948	113,922	52,891	16,746	9,881

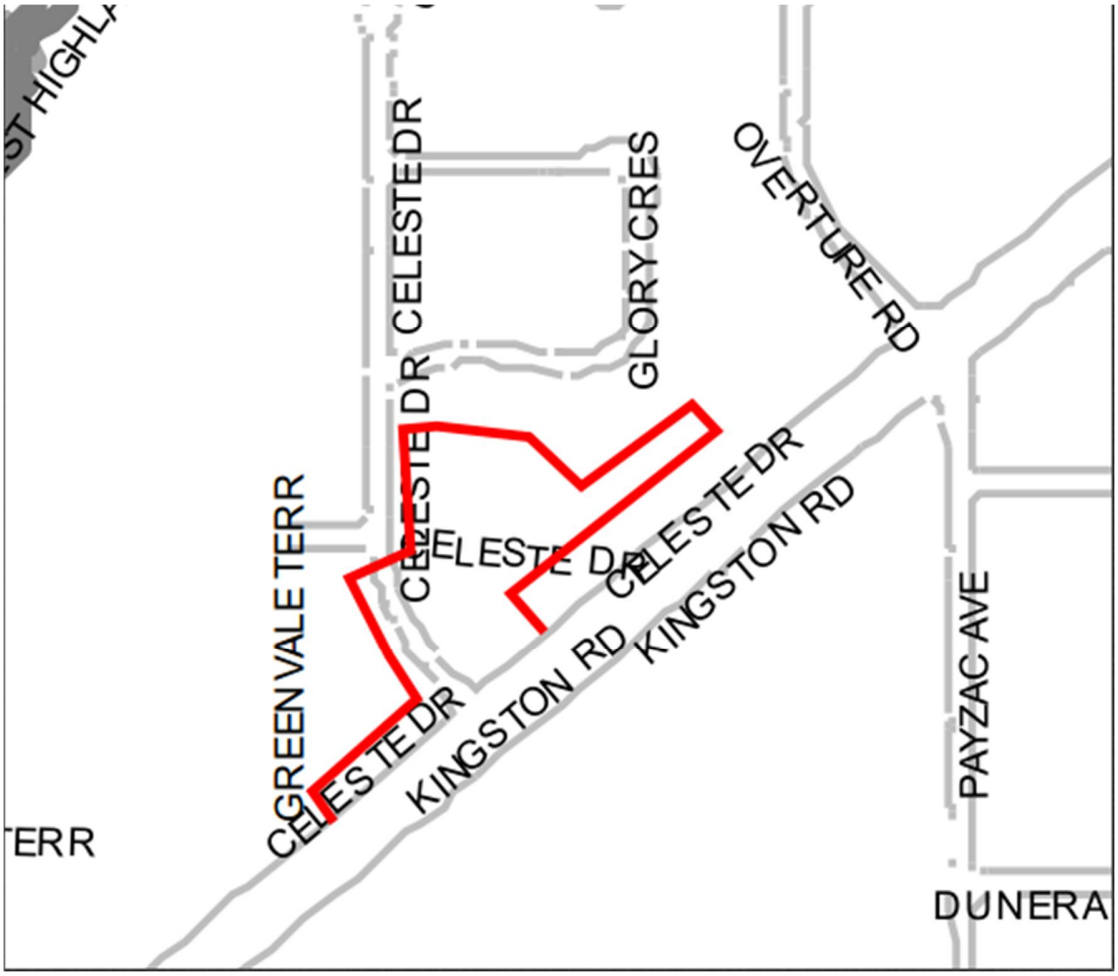
RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

e) Toronto Hydro did not provide asset age data at the job-level in this segment in the original ICM Application and does not have detailed records of the age of the assets replaced in each job. Generally, jobs in this program are triggered by the need to replace direct-buried XLPE cable that is past end-of-life and/or has failed repeatedly.

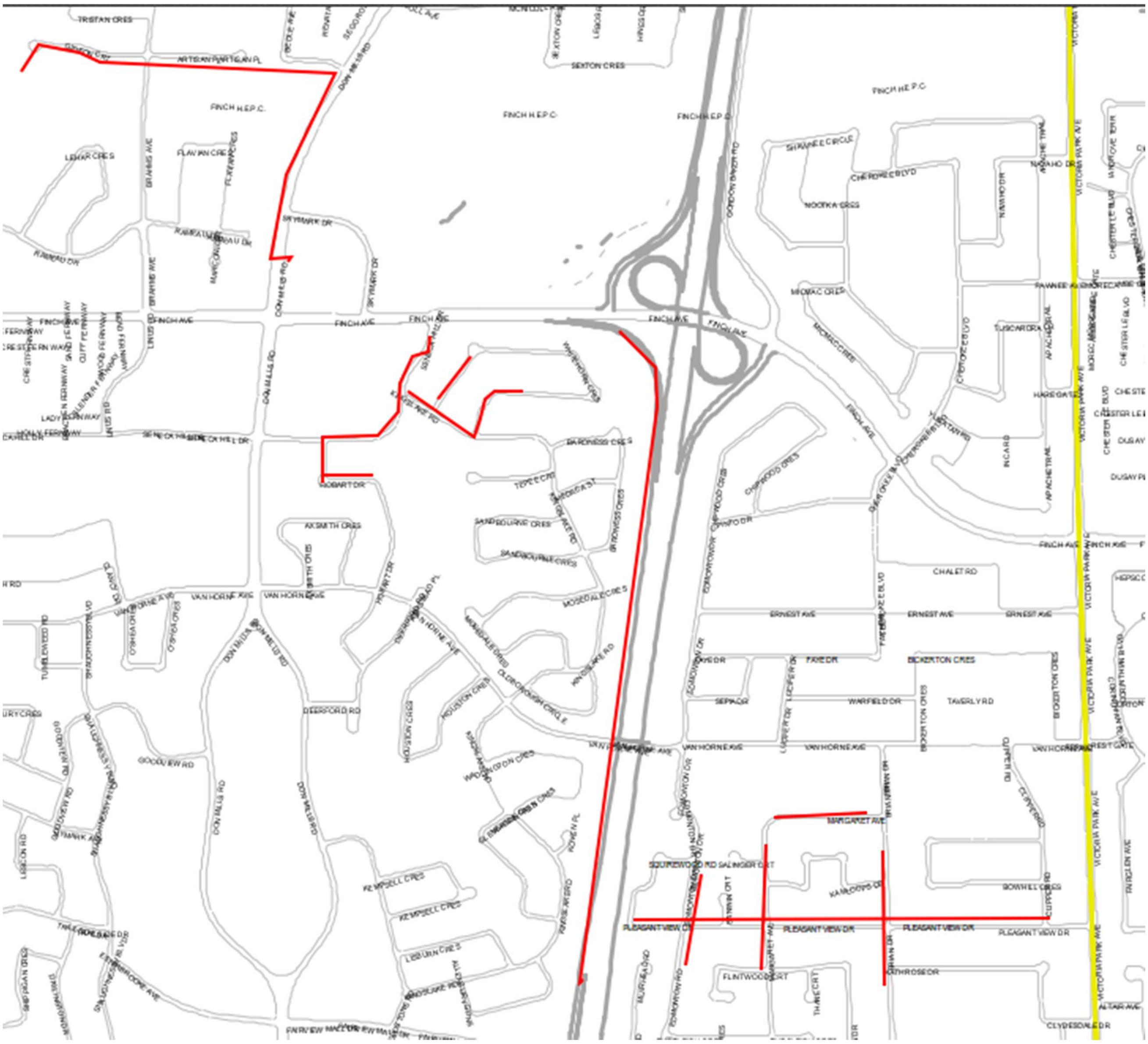
f) Toronto Hydro did not provide asset condition data at the job-level in this segment in the original ICM Application and does not have detailed records of the condition of the assets replaced in each job. Generally, jobs in this program are triggered by the need to replace direct-buried XLPE cable that is past end-of-life and/or has failed repeatedly. Toronto Hydro does not collect condition data for direct-buried underground cable.



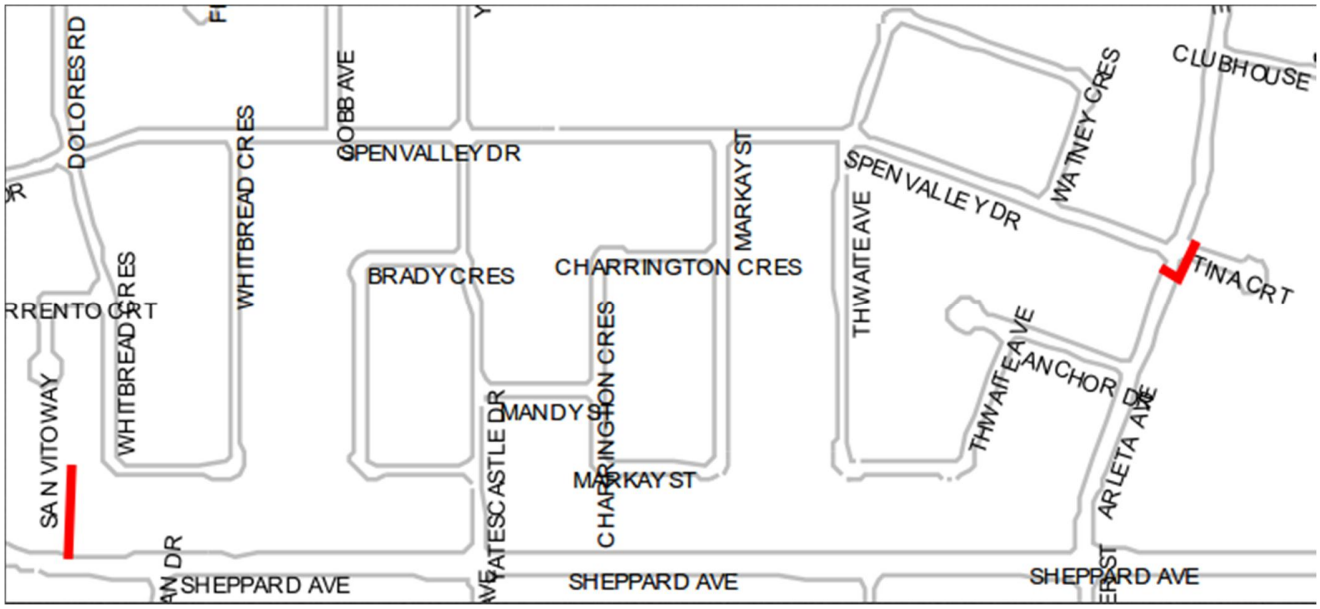
W10335 Blaketon MS PCI – W10335 Blaketon MS F2/F4



E11217 Celete Drive Rebuild NA47M15



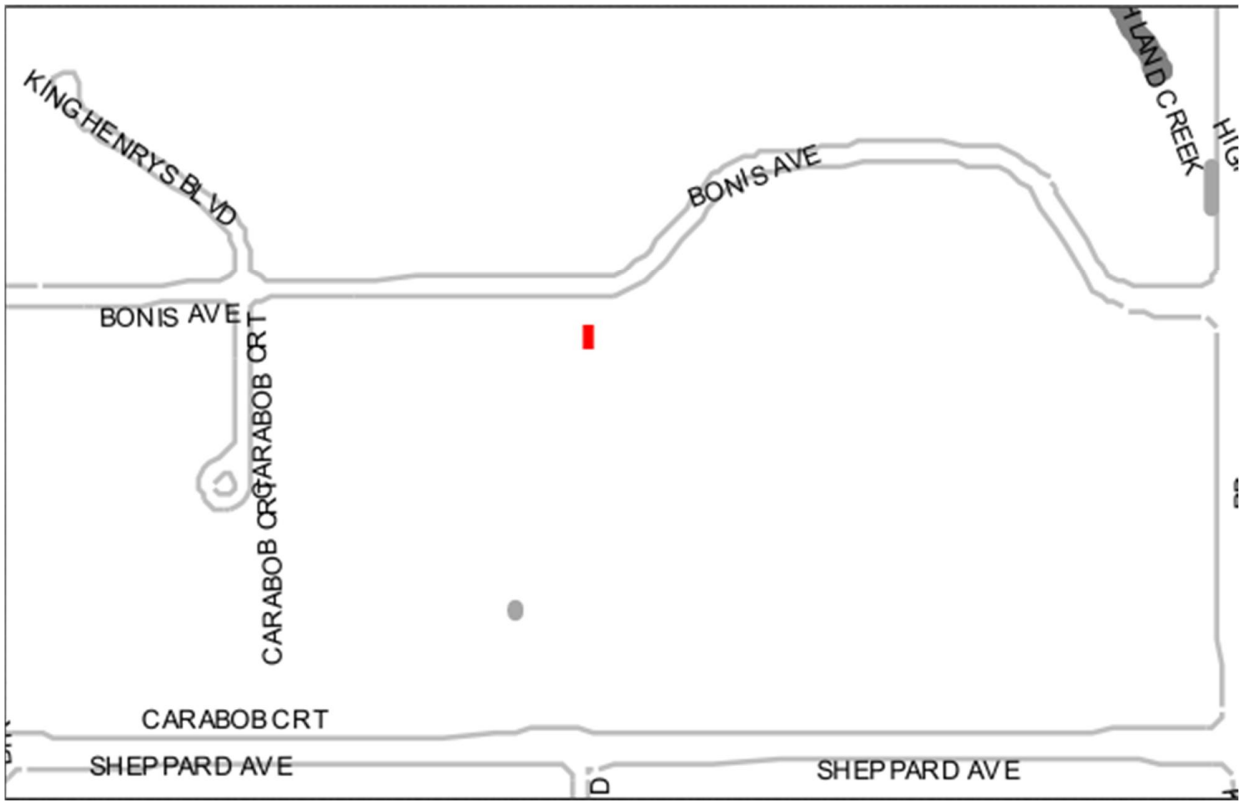
E11640 – FESI SubmTxmr Replmt NYSS68-F9



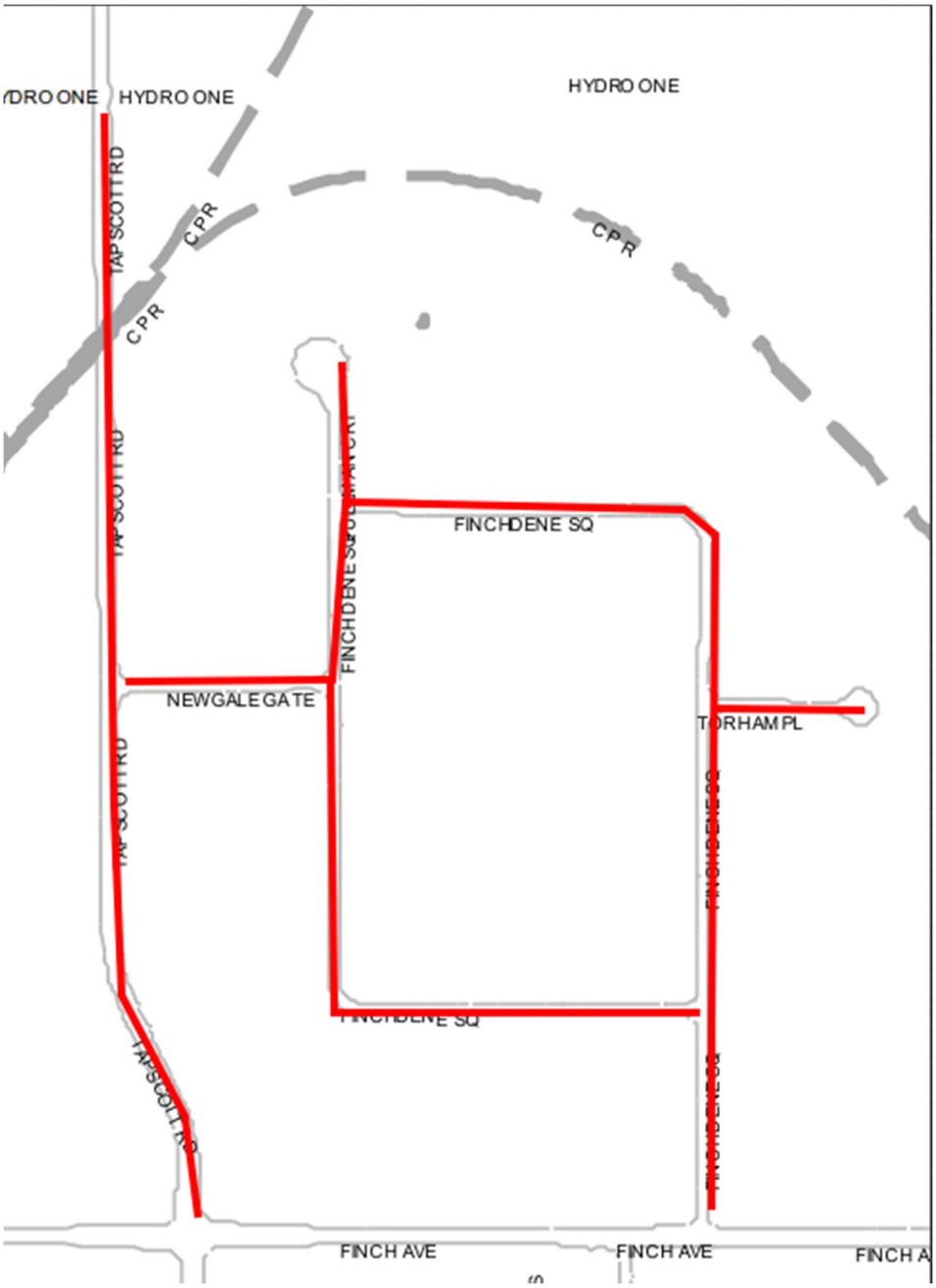
W12293 Finch TS Sub Loop cable RpImt



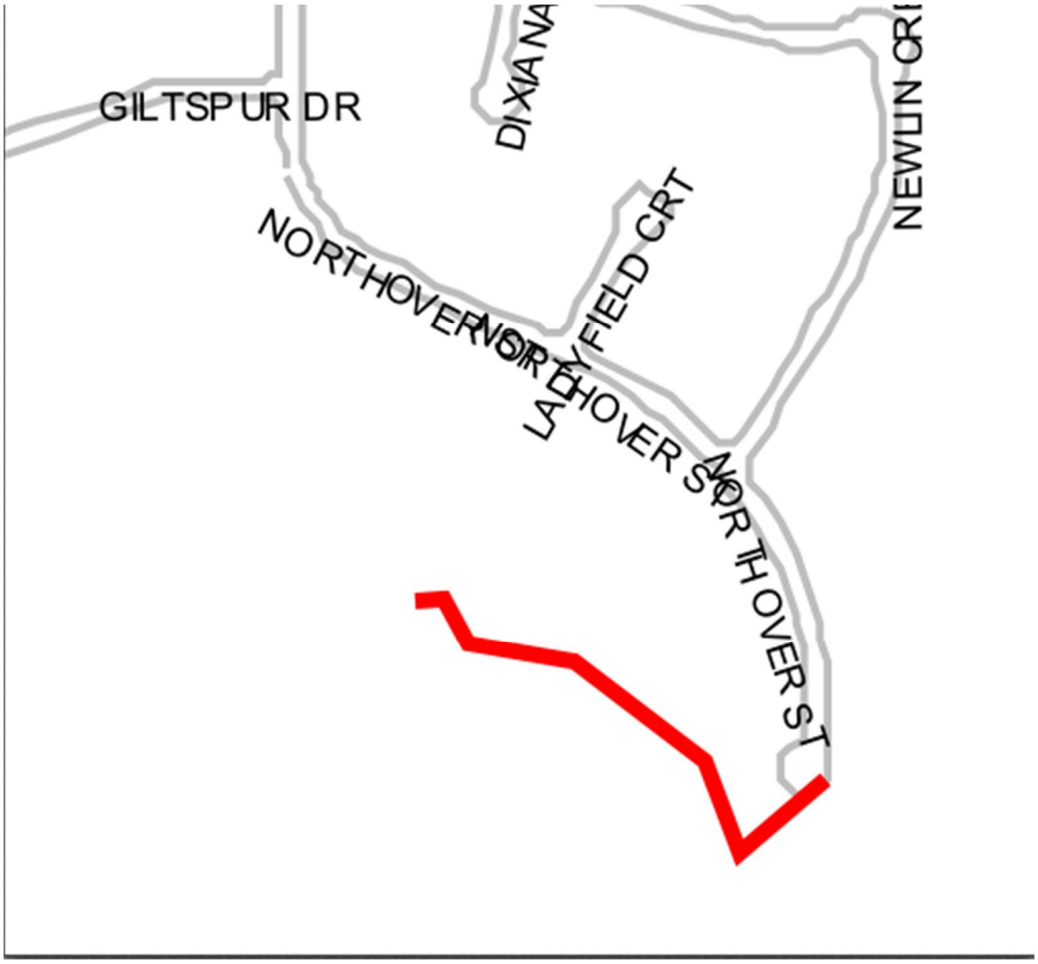
E14118 Ugrade Lawrence Pharmacy



E12726 Agincourt Mall Rebuild



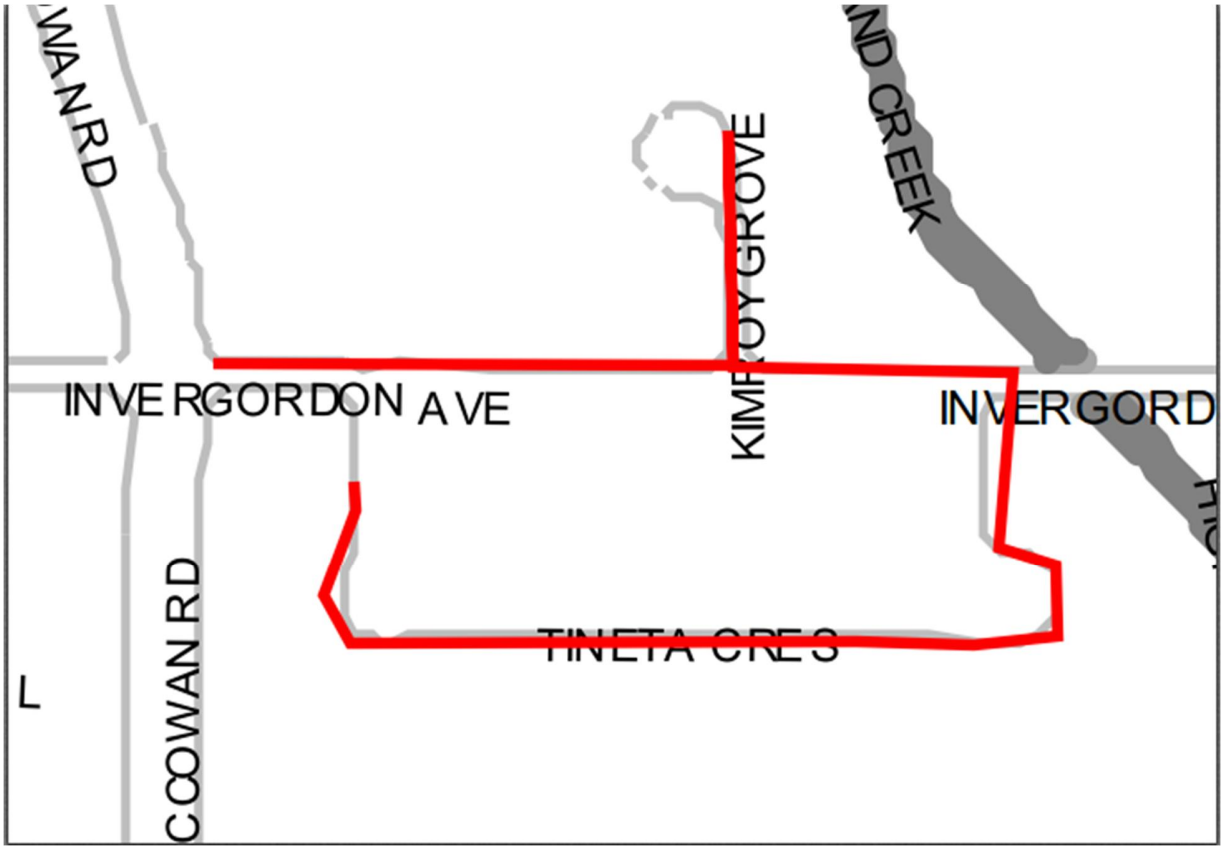
E11370 Finchdene Subd UG Rbld Civil



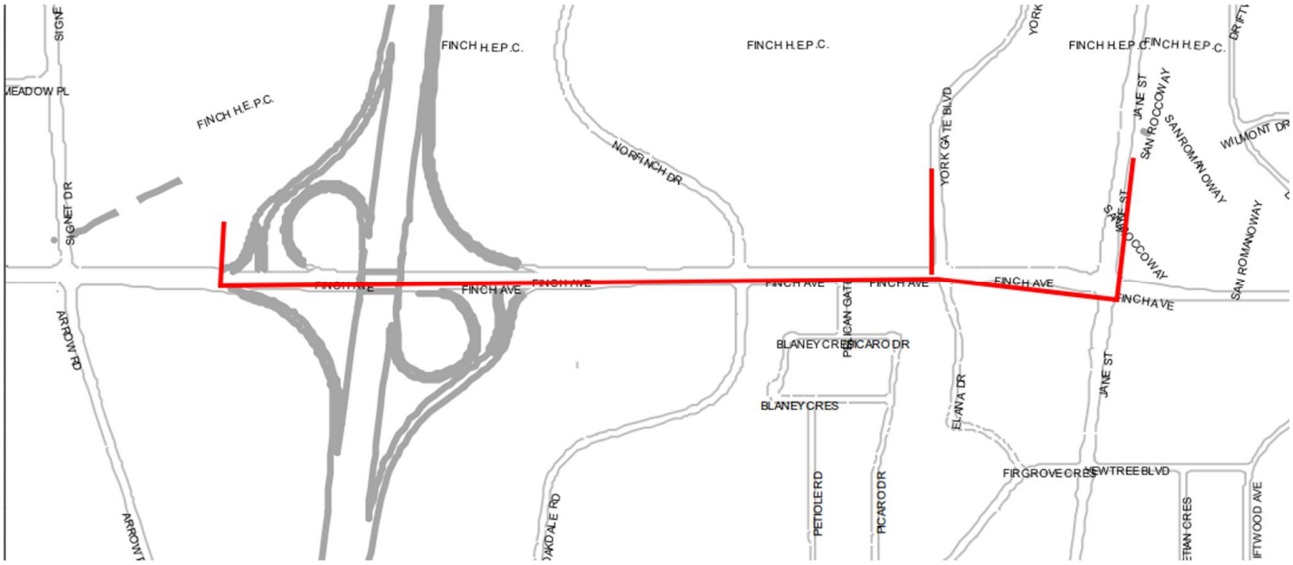
W12307 FESI Downsview Dells Rebuild



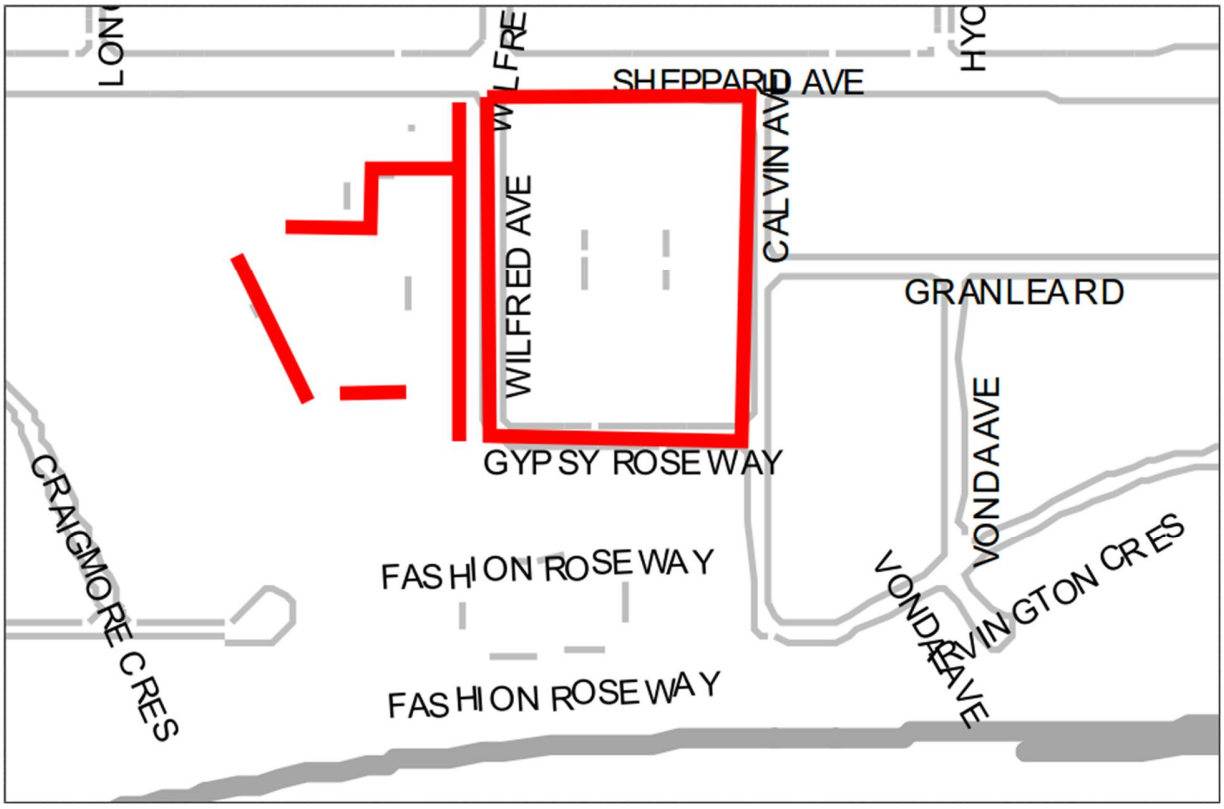
E13286 Salinger Sanwin Subm Transf



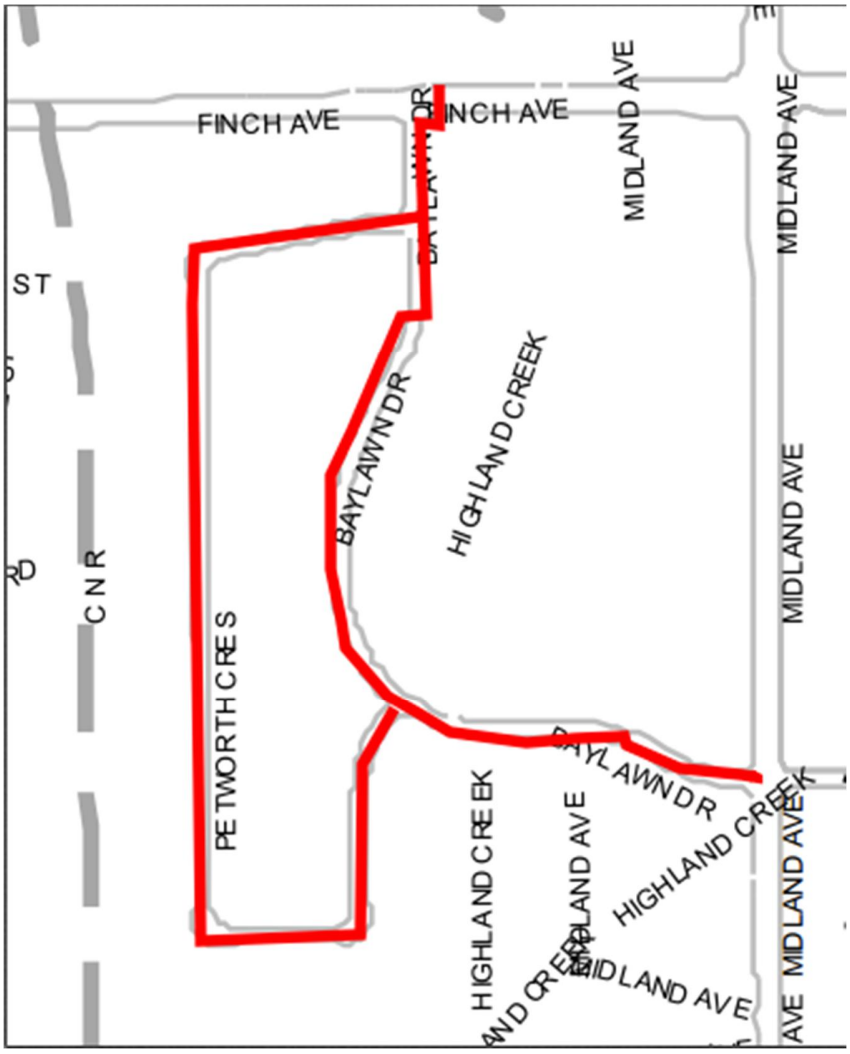
E11445 Tineta Kimroy UG Rebuild



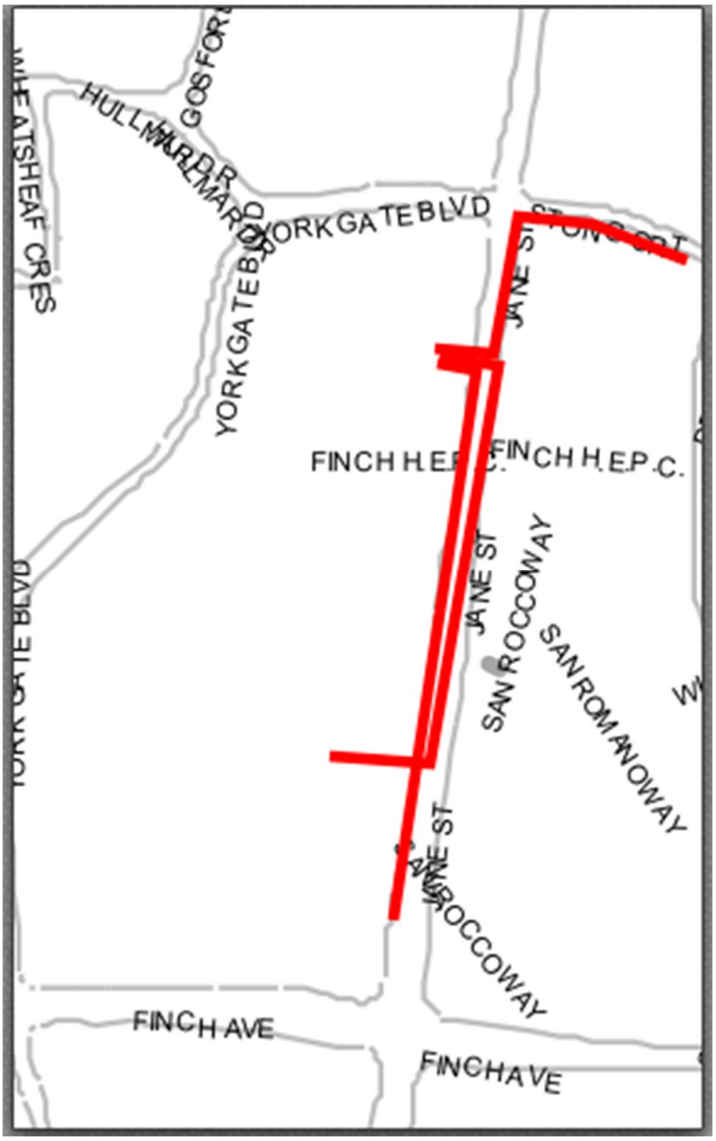
W12298 Finch TS Stn Egress



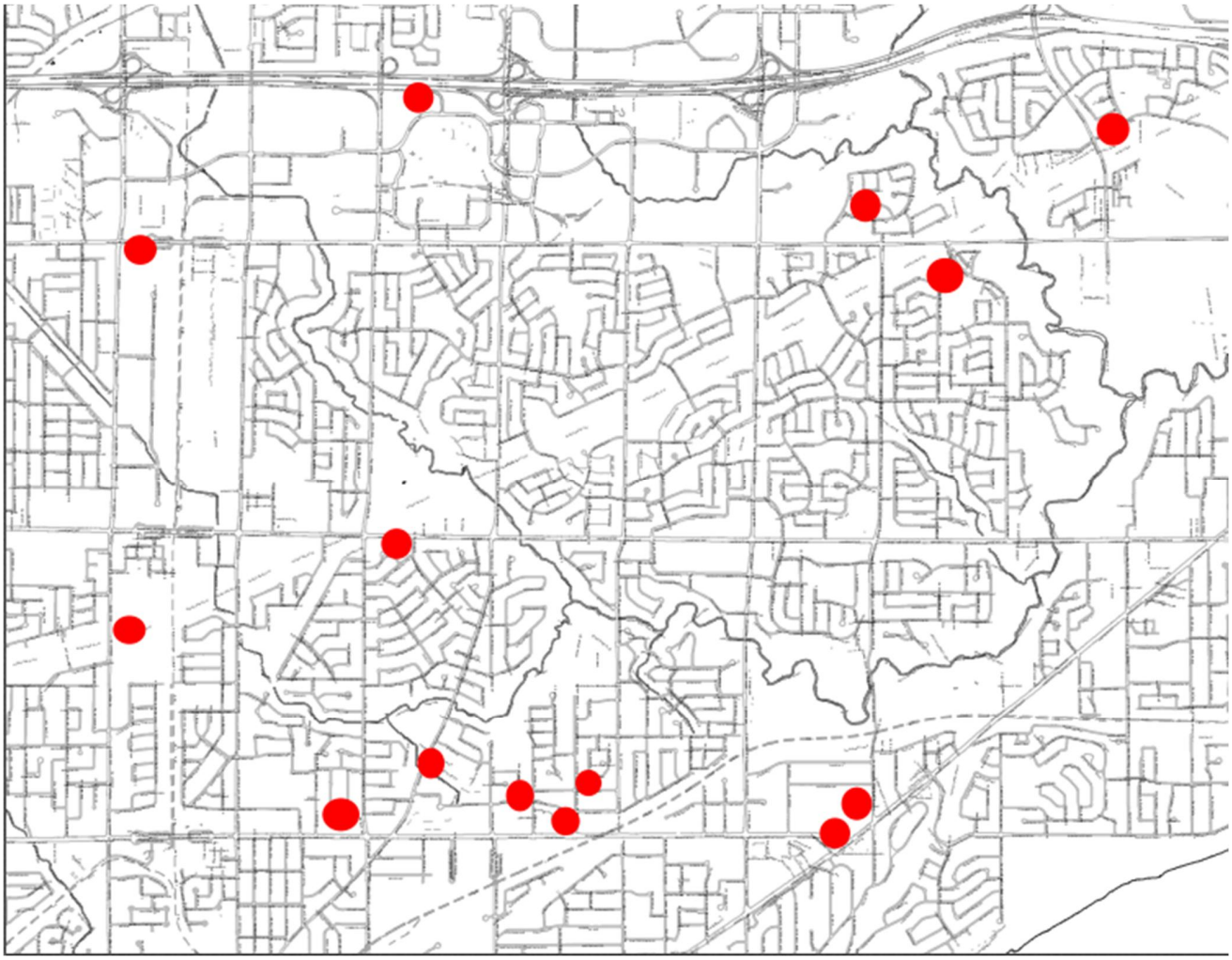
E13045 Wilfred UG Rebuild Electrical



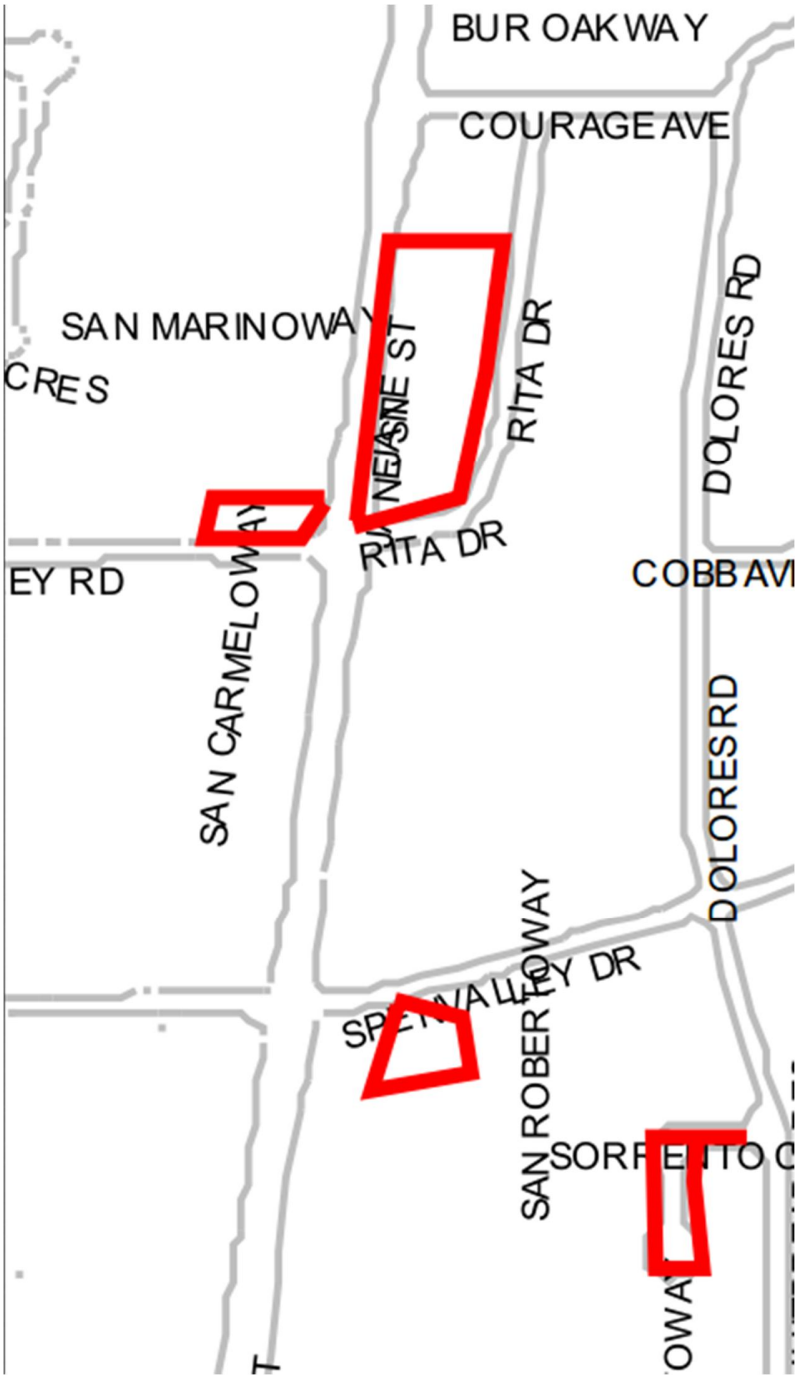
E12082 Baylawn/Petworth UG Repl Elect



W12860 Jane MS Egress Civil



E13500 FESI – 27.6/4.16 KV Sub Tx Replace



W12367 FESI – Lat Cable Repl Jane Ph2



E12845 155 Morningside PT171226



E11570 Sheppard-Neilson Swgr Repl

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ISSUE 2, INTERROGATORY 9:

REFERENCE(S): Exhibit 2, Tab 4, Schedule 1, Overhead Infrastructure Segment

Preamble:

THESL indicates that out of 112 forecasted jobs, 5 jobs were deferred or cancelled and 10 jobs were added. Eight of the 10 added jobs were completed as urgent capital work.

a) With respect to completed jobs, please provide the number of jobs where the assets replaced were more, less, or exactly the same as forecasted.
b) Please provide the job numbers for the jobs where the scope of work did not change.
c) Please explain why the 8 added jobs were not completed under THESL's Reactive Capital program.

RESPONSE:

a) Please refer to Toronto Hydro's response to interrogatory 1-AMPCO-4.

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

c) The Reactive Capital program is unplanned work. It occurs in response to an asset failure or detection of a severe asset deficiency (e.g., a severely cracked pole) that cannot be addressed by planned capital replacement procedures and timelines and must be reactively replaced to ensure the safety of the public and Toronto Hydro employees. Reactive work is usually executed on the same day, following the detection of an asset requiring replacement. The eight analogous jobs involved replacement of assets that posed a risk of failure similar to the other planned work in

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this segment. The assets had not failed and did not feature severe asset deficiencies of the nature described above.

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

ISSUE 2, INTERROGATORY 10:

REFERENCE(S): Exhibit 2, Tab 4, Schedule 1, Overhead Infrastructure Segment

a) For each of the 10 jobs, please provide outage frequency data and condition data related to justify the equipment to be replaced.

RESPONSE:

The descriptive justification for each job, including any relevant condition information, has been provided in Exhibit 2, Tab 4, Schedule 1, Appendix A. The following tables supplement this information with reliability data that is comprehensive of all feeders impacted by each job. Reliability data has not been provided for jobs that are driven purely by pole condition, as historical reliability performance is not the driver of this type of work.

Table 1.1 - W10365-RICHVIEW TS88M1-16 Stdzn

	Cumulative Total Number of Outages (2005-2011)	
Feeder	Sustained Outages	Momentary Outages
88M1	7	16
88M3	8	9
88M8	6	8
88M11	24	27
88M13	29	10
88M14	5	12
88M15	18	18
88M16	12	9

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1 **Table 1.2 - W12463-FESI Insulator Replacement**

	Cumulative Total Number of Outages (2005-2011)	
Feeder	Sustained Outages	Momentary Outages
80M2	44	23

2 **Table 1.3 - ICM X12461 O/H Flamborough Drive**

	Cumulative Total Number of Outages (2005-2011)	
Feeder	Sustained Outages	Momentary Outages
35M12	39	12

3 **Table 1.4 - ICM W12992 FESI - Lomar Dr OH Reb 55M-25**

	Cumulative Total Number of Outages (2005-2011)	
Feeder	Sustained Outages	Momentary Outages
55M25	51	19

4 **Table 1.5 - ICM E14547 Owen Blvd OH Rebuild**

	Cumulative Total Number of Outages (2005-2011)	
Feeder	Sustained Outages	Momentary Outages
80M29	94	54

5 **Table 1.6 - PCI E13633-Switch Automation SCNAH9M30**

	Cumulative Total Number of Outages (2005-2011)	
Feeder	Sustained Outages	Momentary Outages
9M30	50	37

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ISSUE 2, INTERROGATORY 11:

REFERENCE(S): Exhibit 2, Tab 4, Schedule 1 Appendix A, Estimate EST26014_004

a) Please confirm the number of poles replaced.

b) Please explain the high average unit cost per pole.

RESPONSE:

a) The detailed description for this job unintentionally omitted two concrete poles that were replaced in conjunction with the three wood poles mentioned. Five poles were replaced in total.

b) For this project, the average unit costs by type were $16,476 for wood poles, $23,107 for concrete poles, and $2,118.11 for three riser switches. The actual unit cost of any given pole can vary significantly depending on the specific application of the pole in the system and the overall complexity of work for the job. The more complex a job or asset installation, the greater the labour component associated with the underlying units. For example, in this job, one of the wood poles was more expensive as it was a dead-end pole with riser switches. Given the small sample size in this job (i.e., only three wood poles), the effect on the average cost of poles was significant.

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ISSUE 2, INTERROGATORY 12:

REFERENCE(S): Exhibit 2, Tab 5, Schedule 1, Appendix A, Box Construction

a) For each of the analogous jobs, please provide the total number of assets addressed, the number of assets at or beyond useful life, the number of assets in poor or very condition and the circuit length.

b) For each of the analogous jobs, please provide data on the deteriorating performance of the affected feeders.

RESPONSE:

a) The overhead assets in these projects were built to 4 kV box construction standards generally constructed in the 1950s. The assets were mostly well past end-of-life and were typically in poor condition. The assets included in these projects were fed from the following stations and were installed in the same timeframe: Eglinton (60 years old), College (58 years old), Danforth (50 years old) and Wiltshire (68 years old). For a further asset breakdown by job, please refer to Exhibit 2, Tab 5, Schedule 1, Appendix A, Box Construction under the column titled 'Rationale/Driver for Inclusion'. Approximate circuit lengths for the associated converted feeders are as follows: B-6-EG (3.5 km), B-71-EG (4.6 km) and B-2-CD (3.3 km).

b) The feeders in question were part of the Box Construction Conversion program, which is driven by several factors, one of which is reliability. As an asset moves beyond end-of-life, the performance of those assets deteriorates and in the case of 4 kV assets, Toronto Hydro sees increased average outage durations. The average outage duration for customers fed form 4 kV lines is approximately 1.65 hours, as

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

opposed to the duration for customers fed from 13.8 kV lines which is 1.26 hours. There were 22 outages on B-71-EG prior to conversion, four outages on B-2-CD, three outages on B-3-DA, and 28 outages on B-2-W.

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ISSUE 2, INTERROGATORY 13:

REFERENCE(S): Exhibit 2, Tab 6, Schedule 1, page 6, Rear Lot Construction

Preamble:

The Rear Lot Construction Segment has an ISA cost variance of $7.2 million. THESL indicates that some jobs were expanded to address significantly more assets in need of replacement. In other cases, originally targeted assets were found to be in adequate condition and remained in service.

a) For completed jobs, please provide the total number of assets forecasted for replacement, the actual number of assets replaced and the number of assets forecast for replacement that remained in service.

RESPONSE:

a) Please refer to Toronto Hydro's response to interrogatory 2-AMPCO-3 for a comparison of forecast units versus actual units at the segment level. Toronto Hydro does not maintain a dataset of the specific assets forecasted for replacement that ultimately remain in service after completion of a job.

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ISSUE 2, INTERROGATORY 14:

REFERENCE(S): Exhibit 2, Tab 6, Schedule 1, Appendix A EST18240_003, Rear Lot Construction
EB-2012-0064, Tab 4, Schedule B6, pages 48-49

Preamble:
At the first reference, THESL includes a cost of $260,044.86 for an analogous job (Banbury/Larkfield) to convert aged and unreliable overhead rear lot distribution to the underground front yard distribution.

At the second reference, THESL discusses original ICM Rear Lot Conversion jobs at Banbury-Larkfield-Charnwood (E 12615, E12076) and states "These jobs represent the final phases for conversion of the area."

a) Please explain the need for the additional conversion work at Banbury/Larkfield as an analogous job.
b) Please provide the final asset count by asset type installed and ISA amounts related to the original ICM jobs E12615 and E12076.

RESPONSE:

a) The rear lot conversion of Banbury-Larkfied-Charnwood area was completed through five jobs:
    1) E11197 – Charnwood Area rear lot voltage conversion (Civil)
    2) E12437 – Charnwood Area rear lot voltage conversion (Elec)
    3) E12076 – Banbury Larkfield RL-Rebuild UG-Don Mills West MS

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4) E11778 – Banbury Larkfield RL Rebuild UG VC SS37F2_F4 Ph 2-Civil
5) E12615 – P1-Banbury Larkfield RL-Rebuild UG Phase 2 (Elec)-Don Mills MS

The analogous jobs (E11778 and E12437) were not additional, but were in fact identified in the original rear lot conversion plan for the Banbury-Larkfield-Charnwood area. Both are examples of jobs that were originally budgeted as part of the Continuing Projects and Emerging Issues ("Emerging") portfolio in Phase 1 of the ICM Application. Both jobs were substantially complete on a capital expenditure basis by the end of 2012, prior to the OEB's Phase 1 Partial Decision. Toronto Hydro has reallocated both non-discretionary jobs to the appropriate ICM segment as analogous jobs in this Application. The utility has also provided detailed justifications for the jobs which are commensurate with the level of detail provided for similar jobs in the original ICM Application.

For a complete discussion of the history and treatment of Emerging work, please refer to Toronto Hydro's response to interrogatory 2-SIA-7.

b) The final asset counts for both jobs are provided below, as extracted from the final estimate that was packaged for construction for each job.

	E12615 - EST22607-009	E12076 - EST19501-009
Actual ISA	$1,385,530	$2,600,544
Underground Transformers	17	31
Primary Cable	4960 m	6065 m

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ISSUE 2, INTERROGATORY 15:

REFERENCE(S): Exhibit 2, Tab 6, Schedule 1, Appendix A EST18240_003, Rear Lot Construction

a) Please provide the asset count by asset type.

RESPONSE:

a) Please see chart below.

Asset Type	Asset Count
Underground Transformer	17
Primary 28 kV Cable	2966 m

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ISSUE 2, INTERROGATORY 16:

REFERENCE(S): Exhibit 2, Tab 7, Schedule 1, Network Vaults and Roofs

a) Page 3: Please confirm the number of forecasted jobs to address 50 vaults in poor or very poor condition.

b) Page 4: Nine jobs were deferred and one was rescheduled for the 2015-2019 period. Has the work for the remaining 8 jobs been rescheduled? If not, why not?

c) Page 4: On what basis were the 9 analogous more critical than the originally scheduled jobs.

RESPONSE:

a) There is a typo on page 3 of the reference. Line 11 states that 19 jobs were forecasted when, in fact, a total of 29 jobs were filed in this segment. This is consistent with the 29 total forecasted jobs shown in Table 2 on page 4.

The total population of "poor" and "very poor" condition vaults identified in Phase 1 of the ICM Application was 50. The 29 jobs filed over the course of Phase 1 and Phase 2 were intended to address 43 vault locations through a combination of full rebuilds, roof rebuilds and decommissioning.

b) All deferred jobs have been rescheduled for the 2015-2019 period.

c) Pages 4 and 5 of Exhibit 2, Tab 7, Schedule 1, Network Vaults and Roofs, lists the primary reasons for inclusion of the analogous jobs:

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- The vaults or vault roofs had deteriorated to the point that they posed immediate potential safety and reliability risks; or
- The vault experienced a fire from failed electrical equipment, which in turn triggered the need to undertake planned rebuild in the near-term.

Despite its best efforts to anticipate and plan around challenges, Toronto Hydro must be prepared to respond to circumstances "on the ground" in order to make the most efficient use of resources and ultimately deliver the best value for its customers. From a planning perspective, this means that the utility must be able to substitute, defer and add projects in the annual work program at any given time, to accommodate the operational realities that it encounters in the course of executing its work program. Detailed justifications for the inclusion of each analogous job are provided in Appendix A of the referenced schedule.

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ISSUE 2, INTERROGATORY 17:

REFERENCE(S): Exhibit 2, Tab 7, Schedule 1, pages 4 to 5, Network Vaults and Roofs

Preamble:

THESL's proposed to undertake the following activities: Roof rebuild (15 vaults); Vault Rebuild (27); Vault decommissioning (8).

a) Of the 19 completed jobs (out of 29 forecasted jobs), please confirm the number of roof rebuilds, vault rebuilds and vault decommissioning undertaken.

b) Please provide the number of roof rebuilds, vault rebuilds and vault decommissioning undertaken under analogous jobs.

c) Please provide the asset counts by asset type for other asset replacements under analogous jobs.

RESPONSE:

a) Toronto Hydro completed 23 jobs in this segment over the course of the ICM period. Nine analogous jobs were completed in addition to 14 of the 29 forecasted jobs. (Toronto Hydro completed, partially completed, or initiated 19 of the 29 forecasted jobs.)

The 14 forecasted and completed jobs consisted of three roof rebuilds, nine vault rebuilds and the decommissioning of two vaults.

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b) The nine analogous consisted of five roof rebuilds, four vault rebuilds and one vault decommissioning.

c) The following table summarizes other asset types replaced under the analogous jobs.

Asset	Total ISA Quantities
UG Conduit	121
UG Distribution Lines and Feeders	13,835
Distribution Transformers	13
Vault	9
Poles, Towers Fixtures	1
OH Distribution Lines and Feeders	200

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ISSUE 2, INTERROGATORY 18:

REFERENCE(S): Exhibit 2, Tab 8, Schedule 1, pages 4 to 7, Fibertop Network Units

Preamble:

THESL indicates that 3 jobs were cancelled because the units were replaced reactively, either due to failure or imminent failure as assessed through regular network vault inspections. THESL also deferred 16 jobs to 2015 and added 17 analogous jobs that were identified as more critical or more opportune during the course of the ICM period.

a) Please explain why the 17 added jobs were not replaced reactively.
b) Please explain "more opportune".
c) Please discuss how the analogous jobs were identified.
d) On what basis were the 17 analogous more critical than the 16 originally scheduled jobs.
e) Page 7: For each analogous job in Table 3, please provide the $ and the number of units replaced.

RESPONSE:

a) Reactive replacements are reserved for units that have failed or are identified during a field inspection as being immediately hazardous to crews or the general public (e.g., on the basis of excessive rust or an active leak). While not all fibertop units represent an immediate hazard, all units are considered beyond end-of-life and are at risk of catastrophic failure, which can result in a vault fire. Proactively replacing end-of-life fibertop units is necessary to manage the excessive failure risk that these assets carry

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due to their defective design. Replacing these units after a vault fire has occurred can increase the cost of replacement from approximately $150,000 to over $1 million.

b) As described on page 6 of the referenced schedule, some jobs were prioritized to take advantage of outage coordination opportunities. This translates directly into cost savings and reduced reliability impacts related to planned work.

c) Toronto Hydro has provided a detailed explanation of the prioritization of fibretop units at pages 3 to 7 of the referenced schedule.

d) Please see responses to parts (b) and (c) above.

e) The following table includes the final cost and the number of units replaced for each analogous job.

Estimate Number	Job Title	ISAs	Number of units
18794	X11402 NETWORK UNIT REPL LOC#4484 A46GD	$261,044.44	2
22031	X11759 LOC4164 - N/W CHANGEOUTS	$137,662.14	2
22682	X11792 LOC4657 - N/W CHANGEOUTS	$115,777.81	2
22685	X11793 LOC4426 - N/W CHANGEOUTS	$115,547.26	2
22688	X11795 LOC4106 - N/W CHANGEOUTS	$122,827.61	2
22689	X11796 LOC4768SV - N/W CHANGEOUTS	$114,076.33	2
22676	X11787 LOC4198 - N/W CHANGEOUTS	$115,366.97	2
22678	X11790 LOC4709 - N/W CHANGEOUTS	$113,204.97	2
23268	X12262 Bridgeman TS LOCN. #4789 & 4648	$668,727.95	6

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Estimate Number	Job Title	ISAs	Number of units
23617	X11837 LOC4719 - N/W CHANGEOUTS	$1,643.89	2[1]
19875	X12192 Network Replacement Loc#4177	$84,836.22	0[2]
21842	X12548 Network Replacement - Cecil	$527,504.42	6
28154	ICM-X14453 Loc4529WV/N1083NW	$266,554.13	4
28192	ICM X14458 LOC4736NV - N/W CHANGEOUTS	$123,036.85	2
32885	X11507 NETWORK C/O LOC#4845 A44 & A42CE	$423,626.66	4

[1] This job was substantially completed prior to the ICM period. The pre-2012 costs were added to the total ISA amounts in 2012 as pre-2012 CWIP coming into service in the ICM period. The total cost of this job was $113K.
[2] This location was abandoned instead of being replaced.

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ISSUE 2, INTERROGATORY 19:

REFERENCE(S): EB-2012-0064, Tab 4, Schedule B10, page 15
Exhibit 2, Tab 8, Schedule 1, page 6, Fibertop Network Unit

Preamble:
At the first reference THESL indicates the replacement cost of the Fibertop Network Unit with a standardized Submersible Network Unit is $145,000 ($115,000 Material Cost and $30,000 Labour Cost).

At the second reference, THESL indicates the average cost of completed jobs in the segment was $183,000 and the average cost of analogous jobs was $213,000.

a) Please provide the material cost and labour costs separately for the $183,000 and $213,000 average costs.
b) Please explain the increase in costs from the original estimate at reference 1.

RESPONSE:

a) The questions are based on a misunderstanding of the average costs discussed at Exhibit 2, Tab 8, Schedule 1, page 6. These are the averages of final costs for completed jobs. As a job can consist of more than one unit, these averages are not comparable to the $145,000 figure referenced in the original ICM Application.

b) Please see part (a) above.

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ISSUE 2, INTERROGATORY 20:

REFERENCE(S): EB-2012-0064, Tab 4, Schedule B11, page 4

Preamble:

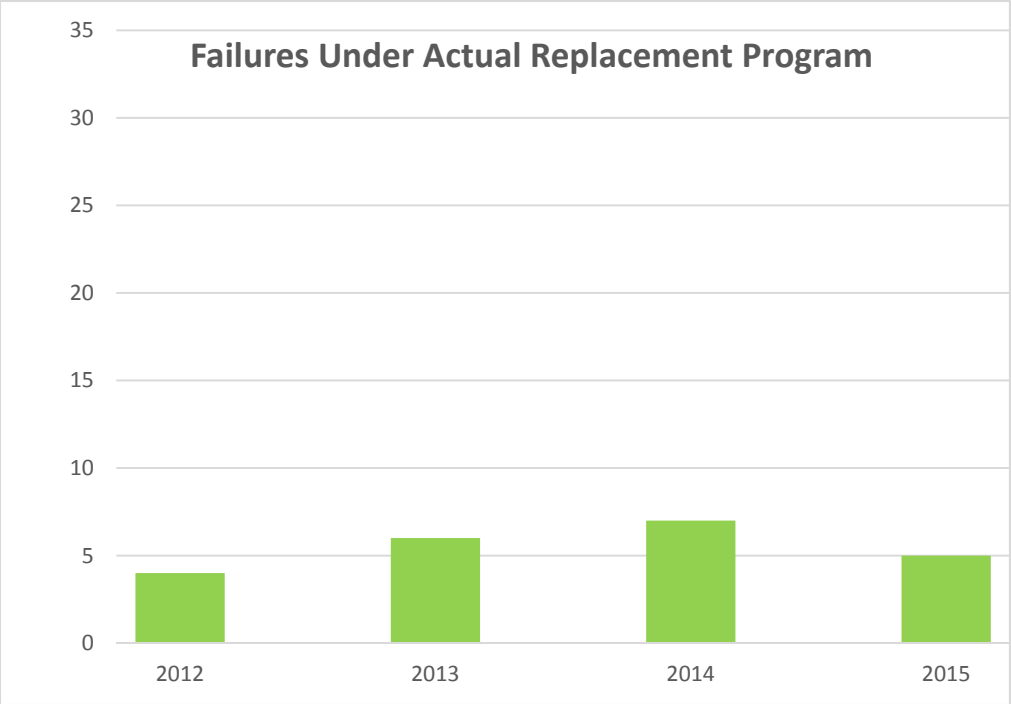
THESL indicates that 30 ATS and 6 RPB are to be replaced over the next 3 years. Figure 1 on page 4 provides the predicted ATS failures.

a) Please update Figure 1 to show the number of ATS run to failure compared to proactively replaced.
b) Please confirm the number of RPB replaced in the ICM period 2012-2014.

RESPONSE:

a) The original figure projected estimated failures under a run-to-failure (i.e., do nothing) scenario, compared to the projected failures if Toronto Hydro was to undertake the proposed proactive replacement program. To update this figure, Toronto Hydro has provided the actual number of ATS failures for the years in question. The updated Figure 1 is shown below:

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b) There were no RPB assets replaced as part of the planned capital program between 2012 and 2014. However, seven RPB locations were replaced reactively in the same timeframe.

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ISSUE 2, INTERROGATORY 21:

REFERENCE(S): Exhibit 2, Tab 9, Schedule 1, page 6 Automatic Transfer Switches (ATS) and Reverse Power Breakers (RPB)

Preamble:
THESL indicates that 5 forecast jobs were cancelled as the work was performed on a reactive basis. THESL added one analogous job deemed critical to replace 2 ATS switches.

a) Please explain why the analogous job was not undertaken on a reactive basis.

RESPONSE:

a) Assets are frequently reprioritized for intervention based on new information, such as deterioration in condition or the occurrence of failures. ATSs can experience functional failures while remaining in service, in that while the equipment may not perform some aspect of its intended function, it continues to conduct electricity and the functional failure does not create an outage. Failures of function such as these do not by themselves demand reactive response.

However, when these assets experience functional failures in the field, Toronto Hydro considers the (complete) failure risk to have increased and, depending on the specific circumstances, will subsequently add them to a defective equipment list, whereby the assets are flagged for replacement as soon as the necessary crew resources become available. Jobs on the defective equipment list may be replaced as part of the planned

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program if resources are available to carry out the work in a timely manner, or they may be carried out a reactive basis depending on the severity of the failure.

The analogous job in this segment was added because it was most effective to execute the urgent and non-discretionary job on a planned basis, similar to the originally forecasted jobs.

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ISSUE 2, INTERROGATORY 22:

REFERENCE(S): Exhibit 2, Tab 10, Schedule 1, Stations Power Transformer

Preamble:

All of the original 10 forecasted jobs were completed or in progress by the end of 2014.

a) Please explain why none of the transformers identified in the 5 added jobs were replaced reactively.
b) Please explain why THESL believes the 5 added jobs qualify as ICM work.
c) For the 5 added jobs, please provide the total number of transformers to be replaced and the which transformers are in poor, very poor and fair condition.
d) For each transformer to be replaced, please provide the age, transformer leakage information (Y/N), and detailed DGA analysis/results.

RESPONSE:

a) None of the eight transformers identified in the five analogous jobs were replaced reactively because Toronto Hydro does not allow stations power transformers to run to failure. The decision was made to replace these eight transformers proactively, before failure, because transformer failures result in large impacts to both Toronto Hydro and its customers. These impacts are:
    i. Significantly increased costs: Reactive transformer replacements typically cost 2-2.5 times the cost of a proactive transformer replacement.
    ii. Long customer outages: Stations power transformer failures typically result in long outages to large numbers of customers: from hundreds to thousands.

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iii. Risk of collateral damage: The eight transformers identified are all oil-insulated. Failure of any of these transformers runs the risk of setting large fires, or exploding upon transformer failure which can cause damage to other surrounding station equipment.

iv. Delay of planned work: When a transformer fails, Toronto Hydro crews are redirected from their planned work in order to restore power to customers and replace the failed transformer. As a result, planned work is put on hold until the failed transformer is replaced, causing disruptions and delays to other capital projects.

Upon replacement, all eight transformers identified had reached their end-of-life, were in poor condition, or had deteriorated dissolved gas analysis results. Therefore, to mitigate the risk of their failure and avoid the above impacts, the decision was made to replace these transformers proactively.

b) The five added jobs qualify as ICM work because they are identical in nature to other jobs in the ICM segment and are justified as prudent and non-discretionary using the same criteria that informed the OEB's approval of forecast ISAs in this segment. Detailed explanations for each analogous job have been provided at Appendix A of the referenced schedule.

c) The total number and condition of the transformers replaced for each of the five added jobs are as follows. All transformers had DGA evidence of significant faulting.

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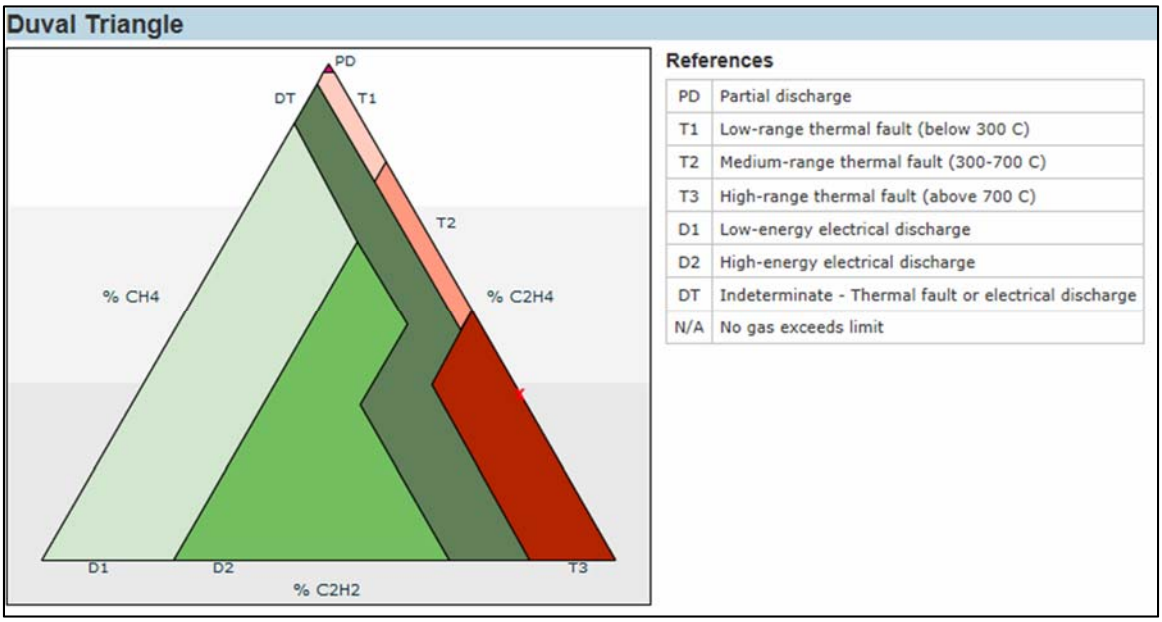
Added Job	Total Number of Transformers Replaced	Transformer	Condition
S10109 University MS: Replace 4 Trans.	4	TR1	Poor
		TR2	Very Poor
		TR3	Poor
		TR4	Very Poor
S11656 Sherbourne MS: Replace TR3	1	TR3	Fair
S11099 Centennial D'arcy MS: Replace TR	1	TR1	Fair
S11029 Highlevel MS -Replace TR#3	1	TR3	Fair
S11150 Highlevel MS -Replace TR#4	1	TR4	Poor

d) The age, leakage information, and dissolved gas analysis is given in the table below. The dissolved gas analysis was performed by an independent laboratory, WEIDMANN Diagnostic Solutions Inc., for all transformers replaced as part of the five analogous jobs. For each of these transformers WEIDMANN diagnosed a fault. Additionally, WEIDMANN reports stated that for all transformers, with the exception of Centennial D'Arcy Magee TR1, the carbon monoxide (CO) levels presented "indications of overheated cellulose insulation" or "indications of significantly overheated cellulose insulation". The Duval Triangles for each transformer, produced by WEIDMANN, are shown following the table.

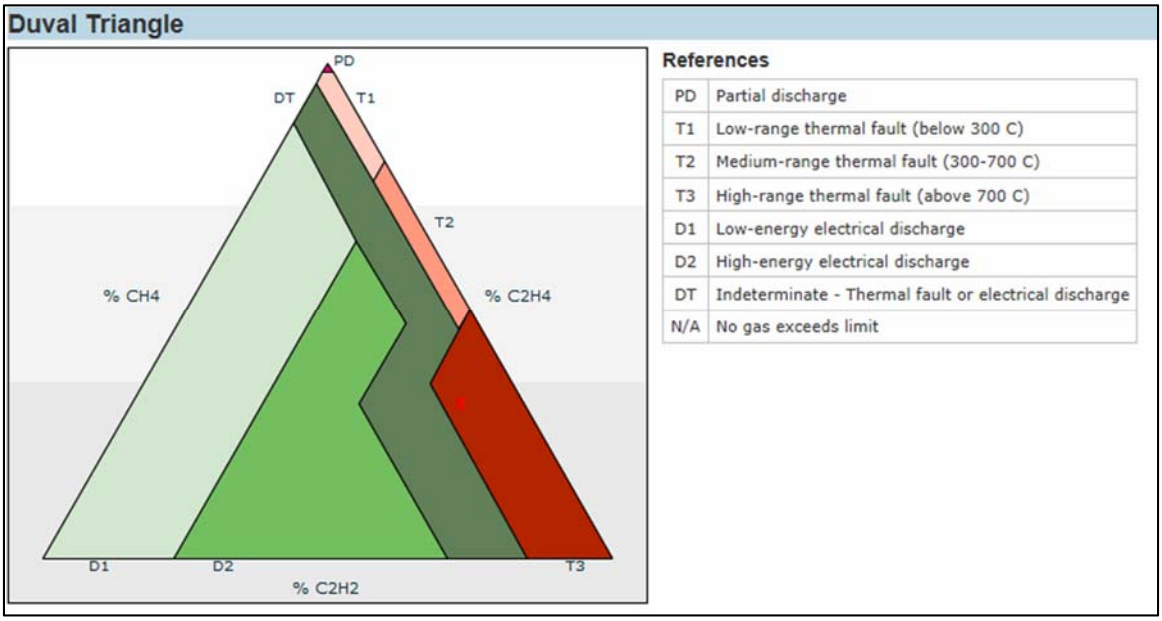
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Added Job	Transformer	Age (in 2011)	Oil Leak	DGA Results	Acetylene (C_2H_2) (ppm)	Ethylene (C_2H_4) (ppm)	Methane (CH_4) (ppm)	Carbon Monoxide (CO) (ppm)
S10109 University MS: Replace 4 Trans.	TR1	56	No	"High-range thermal fault (above 700 C)"	0	24	12	424
	TR2	56	No	"High-range thermal fault (above 700 C)"	6	31	17	550
	TR3	56	No	"High-range thermal fault (above 700 C)"	2	89	14	490
	TR4	56	No	"High-range thermal fault (above 700 C)"	7	215	15	515
S11656 Sherbourne MS: Replace TR3	TR3	54	No	"High-range thermal fault (above 700 C)"	5	17	12	376
S11099 Centennial D'arcy MS: Replace TR	TR1	42	No	"Arcing - High-energy discharge"	20	12	3	38
S11029 Highlevel MS -Replace TR#3	TR3	40	No	"High-range thermal fault (above 700 C)"	<1	74	7	1101
S11150 Highlevel MS -Replace TR#4	TR4	54	No	"High-range thermal fault (above 700 C)"	<1	20	19	515

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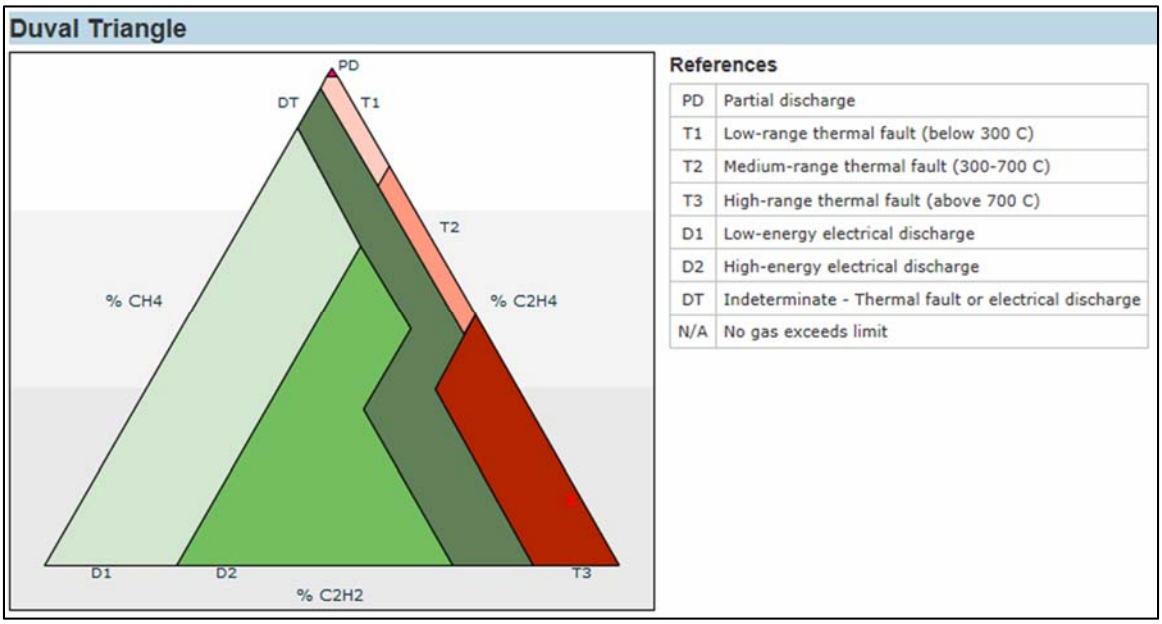


1 **Figure 1: Duval Triangle of University MS TR1**

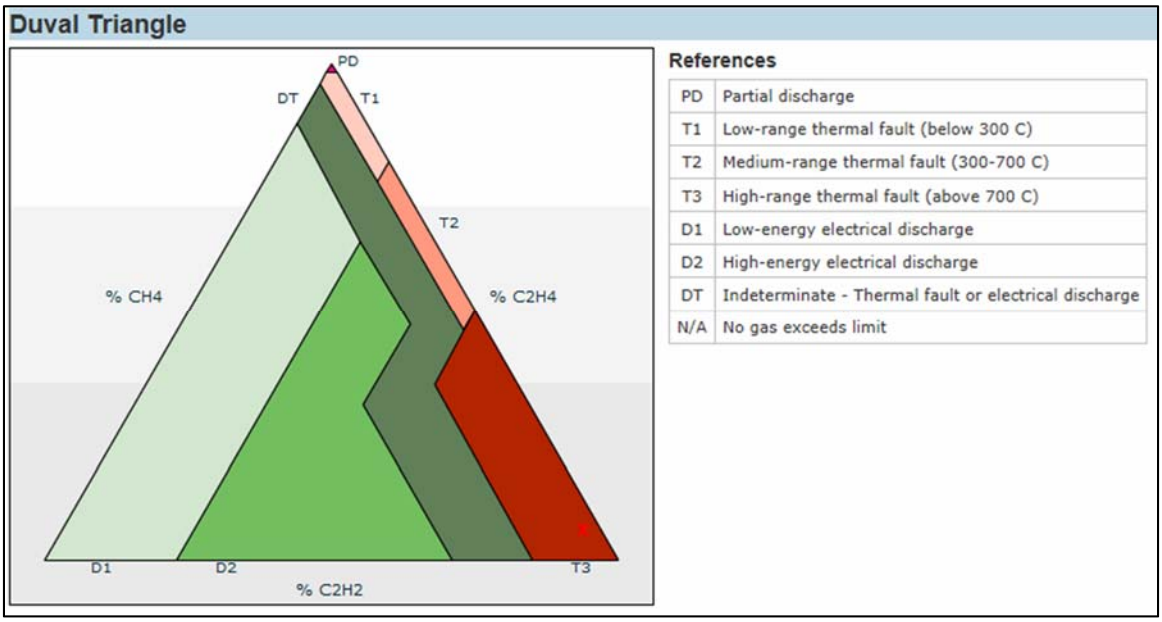


2 **Figure 2: Duval Triangle of University MS TR2**

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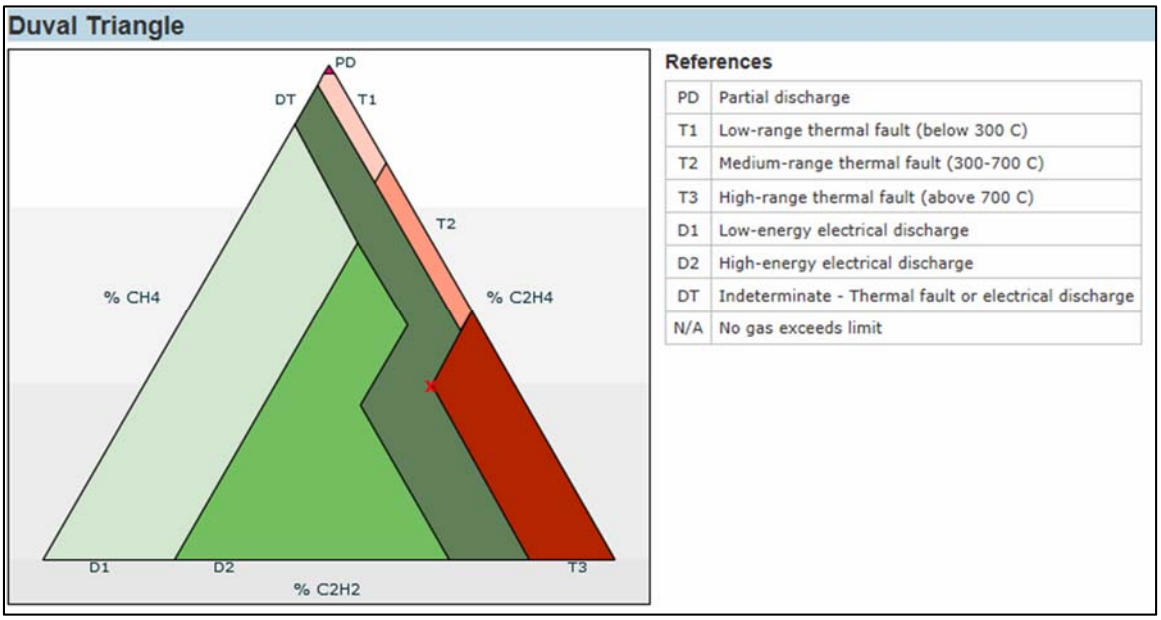


1 **Figure 3: Duval Triangle of University MS TR3**

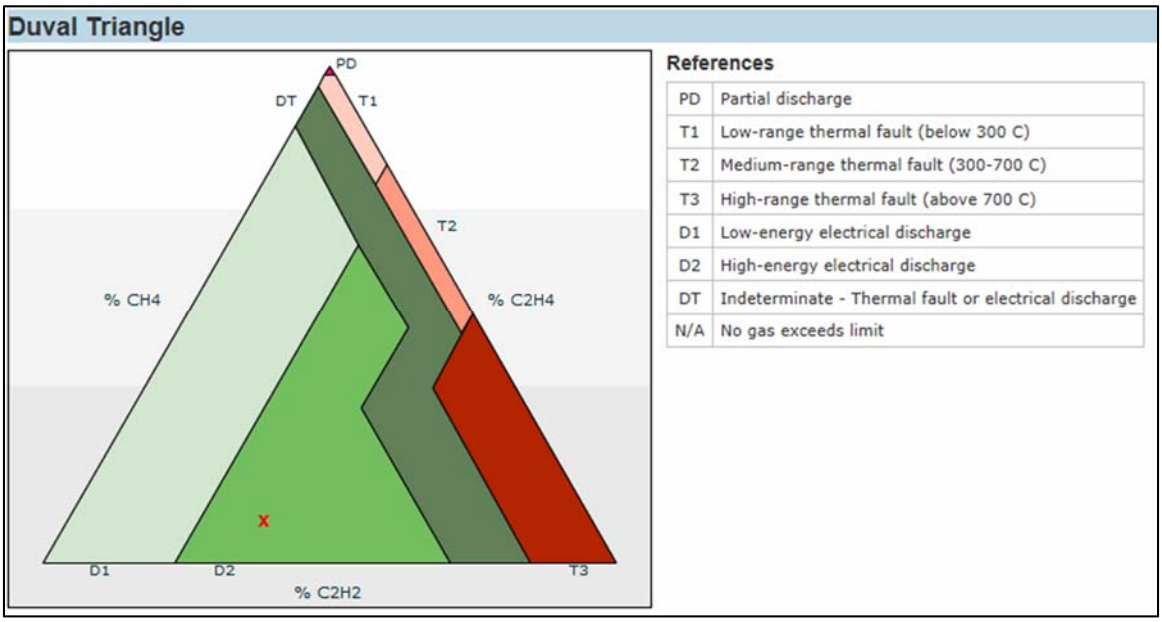


2 **Figure 4: Duval Triangle of University MS TR4**

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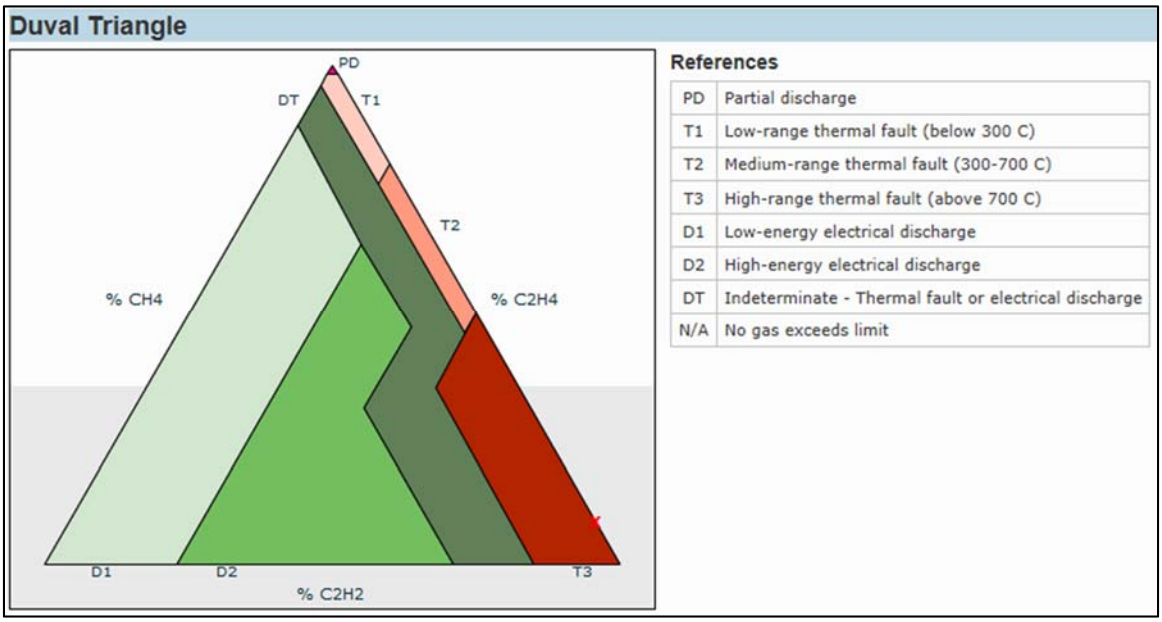


1 **Figure 5: Duval Triangle of Sherbourne MS TR3**

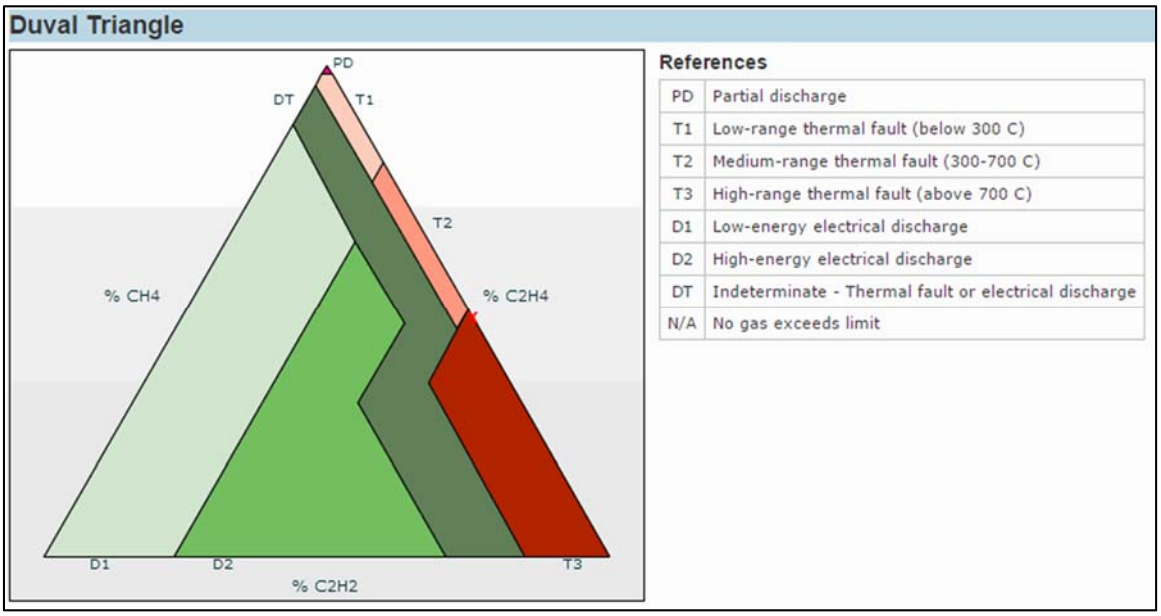


2 **Figure 6: Duval Triangle of Centennial D'Arcy Magee MS TR1**

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1 **Figure 7: Duval Triangle of High Level MS TR3**



2 **Figure 8: Duval Triangle of High Level MS TR4**

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ISSUE 2, INTERROGATORY 23:

REFERENCE(S): Exhibit 2, Tab 11, Schedule 1, Stations Switchgear

a) Please provide the forecast and actual asset count by asset type for this segment, excluding analogous jobs.
b) Please provide the number of jobs deferred and the associated ISA $.
c) Page 5: Please explain how final commissioning and feeder transfer work following the replacement of certain switchgear qualifies as ICM work.
d) Page 6: Please provide additional condition and reliability data to support the need to replace the 45 year old switchgear at Jane MS that needed to be replaced on a priority basis.

RESPONSE:

a) Table 1 provides the forecasted and actual asset count by asset type:

Table 1: 2012-2014 Job Breakdown by Asset Type (excluding analogous jobs)

Asset Type	Forecasted Asset Count	Actual Asset Count
MS Switchgear	10	0
TS Switchgear	4	0

b) Table 2 shows the number of 2012-2014 deferred jobs and the associated ISA ($):

Table 2: 2012-2014 Deferred job count and associated ISA ($)

Asset Type	Number of Jobs	ISA ($M)
2012 - 2014 Deferred Jobs	8	$3.94

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

c) A switchgear renewal job can only be considered complete once it has been placed in-service. In order to bring a switchgear in-service, it needs to go through the following steps:

1) Electrical installation of the new switchgear
2) Testing and final commissioning to ensure the new switchgear:
    - is assembled and connected correctly,
    - has devices which are properly calibrated with correct ratings, and
    - meets the specified design intent to ensure safe start-up of the equipment for the first time it is energized
3) Transfer load from old switchgear feeders to new switchgear feeders

Without these steps, the switchgear is not useful to the system. Therefore the final commissioning and feeder transfer work qualifies as ICM work just the same as the replacement and installation of a switchgear would qualify as ICM work as one requires the other.

d) Corona on the bus bars caused a circuit breaker to fail in late 2008. As a result of this failure, Customers Interrupted (CI) was 1,754 and Customer Hours Interrupted (CHI) was 1,832.2 hours. Furthermore, the following reoccurring issues were identified as a result of the deterioration of the Jane MS Switchgear:

- Presence of moisture in the incoming cells
- Insulation breakdown of the inter-cell secondary wire due to old age
- Station building foundation shifting due to old age resulting in uneven floor, making it difficult to remove breakers

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

Since further Switchgear deterioration was expected, any modification or repair work on the existing Switchgear was no longer deemed cost-effective.

Jane MS and Sentinel MS supply the North West pocket of the 13.8 kV system area in North York, and are back-ups for each other. As only two stations supply this 13.8 kV area, the reliability of each station is essential for customer service.

Replacement of the old switchgear with an arc resistant design and vacuum circuit breakers protects the equipment from arc faults and addresses all reliability and safety issues concerning legacy air-magnetic circuit breakers. Toronto Hydro also expects additional benefits from the installation of a standard SCADA communication system at the same time as switchgear replacement.

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

ISSUE 2, INTERROGATORY 24:

REFERENCE(S): Exhibit 2, Tab 12, Schedule 1, Metering

a) Please provide the forecasted and actual number of jobs.

b) For the various types of meters, please provide the forecasted and actual quantities and forecasted and actual costs.

RESPONSE:

a) As stated in Toronto Hydro's Application, for the purposes of this Application, the Metering segment is summarized at the activity level and not the job-level.[1] This is necessary due to the nature of the activities within this segment, which are generally based on units rather than geographical areas. As a result, the Metering segment is discussed in terms of dollars invested and units, rather than jobs completed.[2]

b) See part (a) above. Exhibit 2, Tab 12, Schedule 1, Table 2 summarizes the forecasted and actual capital expenditures for each of the three major activities carried-out in this segment, including comparisons of units where relevant.

[1] EB-2015-0173, Toronto Hydro-Electric System Limited Incremental Capital Module True-up Application (March 8, 2016), Exhibit 2, Tab 12, Schedule 1 at p. 5.
[2] Ibid.

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

ISSUE 2, INTERROGATORY 25:

REFERENCE(S): Exhibit 2, Tab 13, Schedule 1, Externally-Initiated Relocations

Preamble:

THESL added 24 analogous jobs to this segment.

a) Please provide the prior Board approval to support the addition of new jobs requested by 3rd parties to the ICM work under this segment.

RESPONSE:

As stated in evidence, this segment was proposed to account for jobs that were required as a direct result of, or were uniquely enabled by, work undertaken by third-parties such as governments or their agencies.[1] Under statute, Toronto Hydro is required to relocate its facilities that are located within a public road right-of-way in a cooperative fashion with the Road Authority (a defined term meaning the City of Toronto or the Ontario Ministry of Transportation).[2] When requests are made by private entities, relocation work is often executed on a like-for-like basis.[3] As acknowledged by the OEB in its Partial Decision and Order, the timing of much of the work within this segment is beyond Toronto Hydro's control and cannot be deferred.[4]

[1] EB-2015-0173, Toronto Hydro-Electric System Limited Incremental Capital Module True-up Application (March 8, 2016), Exhibit 2, Tab 13, Schedule 1.
[2] EB-2015-0173, Toronto Hydro-Electric System Limited Incremental Capital Module True-up Application (March 8, 2016), Exhibit 2, Tab 13, Schedule 1, at p. 2.
[3] Ibid.
[4] EB-2012-0064, Toronto Hydro-Electric System Limited Partial Decision and Order (April 2, 2013) at p. 61.

RESPONSES TO ASSOCIATION OF MAJOR POWER CONSUMERS IN ONTARIO INTERROGATORIES

For a general discussion of where the OEB provided approval for substitutions, additions and deletions within project segments, please see Toronto Hydro's response to interrogatory 1-Staff-3, part (a).

RESPONSES TO CONSUMERS COUNCIL OF CANADA INTERROGATORIES

INTERROGATORY 9:

REFERENCE(S): Exhibit 2, Tab 1, Schedule 1, page 5

With respect to the Underground Infrastructure Segment please provide:

a) A complete list of all the jobs that were forecast in the ICM proceeding (Phase 1 and 2) and the corresponding budgets;
b) A complete list of the actual amount spent on each of those jobs.

RESPONSE:

Please see attachment (Appendix A to this response).

Estimate	Description	Job Status	Forecasted ISA	Actual ISA
EST28590_001 EST28591_001	28590_001 W12077 Hoggs Hollow Phase 4 28591_001 W12077 Hoggs Hollow Phase 5	Partially Complete	$8,835,099.91	$2,604,348.88
EST18628_010	18628_010 PCI-E11401 Finchdene UG Rbld - Elect. DUPLICATION OF VERSION 3 FOR ICM	Complete	$6,851,850.26	$6,519,595.22
EST22984_001	22984_001 W14134 85M7 UG DB PH#1 rebuild Hidden Tr	Complete	$3,951,572.14	$4,929,477.05
EST19999_009	19999_009 E12195 Mammoth Hall 47M1 UG Rebuild DO NOT PACKAGE for budgeting only -CIVIL	Complete	$3,421,254.18	$3,104,083.93
EST22715_001 EST28318_001	22715_001 W13278 - Northview heights Civil Rebuild	Partially Complete	$3,293,761.13	$4,070,571.36
EST24856_009	24856_009 ICM E12529 Braymore UG Rehab Ph2 Civil DO NOT PACKAGE	Complete	$2,690,846.04	$2,240,726.97
EST19001_009	19001_009 ICM - E11483 - INGLETON REHAB PHASE 1 DPE PLANNED - 3110	Complete	$2,674,297.21	$2,946,436.13
EST22049_001	22049_001 E13194 UG Rehab of NY51M29 Don Mills and Duncan Mills area	In Progress	$2,501,791.35	$0.00
EST18585_001	18585_001 W11385 Northwoods Subdivision - UG DB Rebuild	Deferred	$2,497,560.16	$0.00
EST27943_001	27943_001 W14542 Robert Hicks_Torresdale Civil Ph3 80M8	In Progress	$2,422,794.77	$0.00
EST20200_001 EST20209_001	20200_001 E12240 Durnford-Rylander-Tideswell-Shepp Civil	Complete	$2,411,139.30	$2,998,541.87
EST25279_001	25279_001 E11139 Cassandra UG Cable Replace Civil for 2012 Budget	Complete	$2,398,000.00	$4,498,933.52
EST18675_002	18675_002 ICM X11444 Tichester civil & elec UG-DB 35M9 Created Oct 2010	Complete	$2,320,045.82	$2,709,515.95
EST18652_002 EST26536_001	18652_002 E11421 Dundalk NAE5-1M29 UG Reb (Civil) Deferred from 2011	Complete	$2,276,806.28	$4,592,618.27
EST27942_001	27942_001 W14541 Robert Hicks_Torresdale Civil Ph2 80M8	In Progress	$2,176,609.41	$0.00
EST19522_001 EST22814_X03	W12077 Hoggs Hollow UG Rebuild	Partially Complete	$2,099,306.24	$3,446,639.28
EST27941_001	27941_001 W14540 Robert Hicks_Torresdale Civil Ph1 80M8	Complete	$2,063,099.62	$1,260,811.99
EST19628_001	19628_001 E12128 Morningview 47M3 UG Ph 3 - Civil Civil portion of Phase 3	In Progress	$1,963,664.65	$0.00
EST18719_001	18719_001 E11438 Old Finch 47M3 UG Reb Ph 1-Civil Civil portion of Old Finch/Littles	Complete	$1,950,375.58	$3,028,049.17
EST24224_001	24224_001 E14327-P01 Port Royal N UG Reconfigure NT63M4 - Civil	In Progress	$1,901,269.69	$0.00

Estimate	Description	Job Status	Forecasted ISA	Actual ISA
EST23043_001	23043_001 W14133 85M7 UG DBFestival & Carnival	Deferred	$1,898,675.79	$0.00
EST22928_009	22928_009 ICM E11380 FES-12 EMPRINGHAM/MCLEVIN RC3110 2011 CapEx WBS Rev Nov 22_10	Complete	$1,835,306.18	$1,765,780.96
EST19622_001	19622_001 E12126 Morningview 47M3 UG Ph 1 - Civil Civil portion of Phase 1	Complete	$1,814,027.11	$2,597,923.96
EST20979_009	20979_009 E12595 Revlis U/G Rebuild, Ph. 3 Cvl DO NOT PACKAGE for PCI	Complete	$1,771,654.39	$2,714,342.36
EST21868_001	21868_001 E13152 Rebuild UG Trunk NT63M12 M8 Briml y -Civil	In Progress	$1,719,974.39	$0.00
EST18653_002	18653_002 E11421 Dundalk NAE5-1M29 UG Reb (Elec) Deferred from 2011	Complete	$1,694,055.84	$2,455,570.81
EST21853_009	21853_009 ICM E11301 FESI-12 HUPFIELD UG REBD PH1 RC3110 2011 CapEx WBS Rev Nov 22_10	Complete	$1,670,932.08	$1,976,403.49
EST22716_001	22716_001 W13239 - Northview Heights Elec Rebuild	In Progress	$1,664,411.92	$0.00
EST21731_001	21731_001 W13162 Starview - Rockbank UG Rehab 55M21	Complete	$1,616,536.11	$2,171,549.49
EST19032_001	19032_001 W11456 NY80M30 trunk & Lateral Cable Enh S/O HWY 401	Complete	$1,597,121.96	$1,722,564.00
EST19626_001	19626_001 E12127 Morningview 47M3 UG Ph 2 - Civil Civil portion of Phase 2	Complete	$1,586,540.33	$2,411,969.42
EST20978_009	20978_009 ICM E12494 Revlis Ph2 Civil Updated: Feb 7, 2012	Complete	$1,582,680.00	$2,022,394.36
EST23297_001	23297_001 E14190 UG Rebuild H9M30 Kingston Mason - CivilCreated Aug 2011	Partially Complete	$1,535,741.71	$929,309.03
EST22319_001	W13193 - UG Primary Rehab - Arrow Rd 55M21 (EST21664_001)	In Progress	$1,512,766.31	$0.00
EST22424_009	22424_009 ICM E11592 FESI Leslie & Nymark Ph2-51M6 UG Cable & Switchgear Replacement	Complete	$1,497,236.01	$1,290,742.05
EST27565_001	27565_001 E12225 Mammoth Hall 47M1 UG Rebuild Ph2 -Electrical	In Progress	$1,421,012.06	$0.00
EST20637_001 EST24798_X03	20637_001 E13014 Holmcrest 47M13 UG Rebuild- Civil	Complete	$1,410,970.01	$2,234,038.55
EST21551_008	21551_008 E11592 FESI Leslie Nymark Repl Sw Pt. 1 Switchgear and Cable Replacement (Ph 1)	Complete	$1,408,997.68	$786,148.45
EST24578_009	24578_009 Bluffwood Saddletree UG Rebuild Civil for 2012 Budget	Complete	$1,391,294.40	$1,899,086.59
EST24850_009	24850_009 ICM E1544 Blackwell Coxworth Rebuild-Civ DO NOT PACKAGE (from WT12121 Ver 009)	Complete	$1,384,261.09	$1,809,510.42

Estimate	Description	Job Status	Forecasted ISA	Actual ISA
EST21434_001	21434_001 E13106 NY51M24 DB Cable Replacement Don Mills & Sheppard (Part 2 Civil)	Partially Complete	$1,347,510.54	$2,559,206.34
EST21854_009	21854_009 ICM E11372 FESI-12 HUPFIELD UG RBLD P2 RC3110 2011 CapEx WBS Rev Nov 22_10	Complete	$1,331,575.35	$1,403,412.03
EST20058_009	20058_009 E12212 VENTURE Drive UG Rebuild Civil SC DO NOT PACKAGE for budget	Complete	$1,318,900.00	$1,791,612.79
EST21262_001	21262_001 W12464 Antibes/Torresdale UG Rebuild Creation Date: October 1, 2010	Complete	$1,316,846.51	$1,070,868.24
EST21287_009	21287_009 E12520 FESI Conlins Milner NT47M1 - Elec DO NOT PACKAGE for budget only	Complete	$1,300,849.37	$1,443,398.22
EST21933_001	21933_001 E13184 Rebuild UG Trunk 502M21M28 Warden -Civil	Partially Complete	$1,295,619.03	$986,836.43
EST18320_001	18320_001 E11223 Clappison 47M17 UG Rebuild- Civil	Complete	$1,283,971.52	$2,047,529.88
EST20043_001	20043_001 E12206 Fenn/Foursome/Danville 80M29 UG Civil portion of project	Complete	$1,283,902.39	$1,621,156.82
EST21298_001	21298_001 E13078 UG Rehab of NY51M8 - Civil E13078 btn Leslie and Bayview	Complete	$1,260,887.58	$684,957.91
EST19437_009	19437_009 ICM - E12081 INGLETON REBUILD PHASE A ELECT ONLY - PLANNED 3110	Complete	$1,260,017.11	$1,305,761.73
EST24386_001	24386_001 W14350 P01 - Gordon Mackay UG Re. OH Reh HIGH LEVEL FROM Amar/ Christi	Complete	$1,253,762.24	$609,953.54
EST20233_001	20233_001 E12250 Scenic Millway UG Rebuild 51M21 53M24 -Civil	Complete	$1,250,243.81	$6,856,116.52
EST18720_001	18720_001 E11439 Old Finch 47M3 UG Reb Ph 1 (Elec) Electrical portion of Old Finch/Littles	Complete	$1,246,960.00	$1,930,540.68
EST20335_001	20335_001 E12277 Nashdene Tiffield UG Rebuild Civil Portion of Project SCNAR26M2	Complete	$1,222,025.88	$3,125,928.17
EST19442_009	19442_009 ICM - E12094 - INGLETON REBUILD PHASE 1 ELECT ONLY - 3110	Complete	$1,215,673.29	$1,239,636.76
EST20066_001	20066_001 E12209 Dalmatian/Choiceland 47M13 UG Reb Civil portion of project	Complete	$1,198,167.89	$1,474,535.16
EST24658_009 EST19449_X03	24658_009 E12096 Ingleton Rebuild UG Ph3 (Elec) for 2012 Budget	Complete	$1,182,837.48	$916,433.75

Estimate	Description	Job Status	Forecasted ISA	Actual ISA
EST20207_001	20207_001 E12239 Royal Rouge Trail - Civil Civil	Complete	$1,156,167.13	$1,531,329.44
EST20430_001	20430_001 E12157 New Feeder H9M23 - Civil	Complete	$1,146,782.73	$1,270,600.40
EST21291_001	21291_001 E13075 UG Rehab of NY51M7 - Civil	Complete	$1,131,850.01	$1,246,650.96
EST20179_001	20179_001 E12237 Cassandra UG Cable Replace (Elec) UG Cble replacement of 53M25	Complete	$1,131,747.75	$742,656.83
EST23947_001	23947_001 W14284 Pellatt Ave UG BD Rebuild	Complete	$1,129,261.15	$832,871.85
EST21433_001	21433_001 E13104 NY51M24 DB Cable Replacement Don Mills & Sheppard (Part 1 Civil)	Complete	$1,124,245.95	$3,379,480.46
EST21334_001	21334_001 NY51M30 UG Rehab along Leslie north Bond E13093 - Electrical Project	Complete	$1,117,952.36	$930,765.50
EST20263_001	20263_001 E12259 Bridletowne Circle 502M22 Civil Civil Works for Cable Replacement	Complete	$1,090,095.86	$1,456,930.16
EST20136_001	20136_001 E12230 52M3 McCowan and Kingston Civil Works for Cable Replacement	Complete	$1,088,534.93	$1,309,664.60
EST20051_009	20051_009 E12213 MORNINGSIDE ELECTRICAL DO NOT PACKAGE for budget	In Progress	$1,069,112.36	$0.00
EST24149_001	24149_001 E14321 Establish Neilson Tapscott R26M34 Feeder Main -Civil	Complete	$1,061,478.29	$1,021,077.09
EST21288_009	21288_009 E13079 FESI Conlins Milner NT47M1 - Elec DO NOT PACKAGE	In Progress	$1,044,052.20	$0.00
EST21589_001	21589_001 E13124 Rebuild Orange File SD 502M22 UG Civil	Complete	$1,009,019.65	$1,027,039.37
EST22356_009	22356_009 ICM E11356 FESI 47M3 PENNYHILL UG RBLD RC3110 2011 CapEx WBS Rev Nov 22_10	Complete	$996,620.55	$1,332,986.46
EST20059_009	20059_009 E12210 VENTURE DR UG SCNT47M1 - Civ/Elec DO NOT PACKAGE for budget Civ	Deferred	$993,420.50	$0.00
EST20447_002	20447_002 E12323 Dynamic Drive SCNAR25M32-Civil Markham,Dynamic,Passmore,McNicol	Complete	$989,101.56	$1,264,015.33
EST20989_001	20989_001 W12490 UG DB Cable Rehab - Bombardier 85M1	Complete	$974,918.89	$1,035,900.01
EST27221_001	27221_001 E15023 P01 Sheppard Underground DB Cable Civ Ellesmere TS SCNAH9M23, S	Deferred	$960,706.83	$0.00

Estimate	Description	Job Status	Forecasted ISA	Actual ISA
EST21585_001	21585_001 E13123 Rebuild Trunk 502M1M22 Birchmount Civil	Complete	$914,007.51	$1,663,958.21
EST21663_001	21663_001 E13147 Nugget Avenue UG Rebuild SCNAH9M23 Civil	Deferred	$890,176.11	$0.00
EST21506_009	21506_009 ICM E11191 FESI-12 MCLEVIN/ALFORD UG REB RC3110 2011 CapEx WBS Rev Nov 22_10	Complete	$884,149.79	$858,988.81
EST24843_009	24843_009 PCI E12275 Muirbank UG Rebuild Ph 2 DO NOT PACKAGE - Civil	Complete	$839,300.00	$1,696,431.23
EST20902_002	20902_002 W12449 UG Lat Cbl & Tx Rehab - Bathurst FESI 80M2	Complete	$796,854.20	$554,039.30
EST20664_001	20664_001 E12385 Don Mills/Egltn UG Rebuild (Civ) NY53M1	Deferred	$786,849.76	$0.00
EST20169_001	20169_001 E12234 Rebuild 3-Phase Neilson Civil portion of project	Complete	$767,266.01	$855,384.21
EST11197_001	11197_001 Leeward 53M9 UG Cable & Tx repl.	In Progress	$731,833.27	$0.00
EST21202_001 EST21110_001	21202_001 E13069 NY51M24 UG Rebuild North of Finch Off Don Mills Road - Civil	Partially Complete	$706,461.48	$339,076.31
EST20067_001 EST20067_010	20067_001 E12228 Dalmatian/Choiceland 47M13 UG Reb Electrical portion of project	Complete	$705,184.41	$926,672.80
EST20380_001	20380_001 W11614 Ladyshot and Eldorado Crt Direct Buried Cable Replacement	Complete	$688,981.37	$1,941,960.92
EST19448_009 EST26550_001	19448_009 E12095 Rebuild Ingleton PH 2 UG Elect DO NOT PACKAGE	Complete	$676,044.16	$655,092.74
EST24859_009	24859_009 ICM E12530 BRAYMORE W PH2 - ELECT DO NOT PACKAGE	Complete	$675,550.17	$873,380.68
EST21188_001	21188_001 UG Rebuild of SCNAE5-1M25 for E13066 by Brimley Rd and Skagway Avenue	Complete	$652,821.78	$696,585.33
EST21864_001	21864_001 E13129 Rebuild UG Trunk NT63M8 M11 McCow an - Civil	In Progress	$646,503.20	$0.00
EST20973_009	20973_009 E12493 REVLIS PART 1 CIVIL do not package	Complete	$619,626.41	$693,549.67
EST24664_009	24664_009 ICM - E11087 47M1 Grand Marshall UG Repl DO NOT PACKAGE	Complete	$570,429.05	$1,468,214.03
EST20260_001	20260_001 E12217Rebuild Windfield MS Area with VC OH 51M21	In Progress	$568,651.36	$0.00
EST20812_003	20812_003 W12435 Astral / Paul David UG DB Rebuild 85M9 - - copied from version 002	Complete	$563,530.00	$412,751.28
EST24717_009	24717_009 E12317 Ingleton/Middleton Main (Elect.) for 2012 Budget	Complete	$562,432.92	$594,028.33

Estimate	Description	Job Status	Forecasted ISA	Actual ISA
EST21356_009	21356_009 E13042 FESI UG Rebuild NT63M8 Revlis sub DO NOT PACKAGE for budget	Partially Complete	$552,077.34	$771,352.72
EST19464_001	19464_001 E12226 Yorkminster 80M27/M29 Tie (Elec) Electrical portion of the project	Complete	$535,546.54	$1,234,603.70
EST20313_001	20313_001 E12281 Meadowvale/Heatherbank 47M17 Cabl Electrical portion of project	Complete	$532,386.56	$1,268,143.85
EST23241_002	23241_002 Harrison Garden-UG Primary Rehab-Phase 2 2012 costs FESI- E12656	Complete	$520,030.28	$533,507.15
EST22073_002 EST26551_001	22073_002 Keegan Cresc UG Rebuild W11615 W11615 11-E639	Complete	$485,935.84	$466,638.19
EST20697_001	20697_001 E12408 Thimble Berryway Aspenwood UGRbld Civil NY51M3 NY51M27	Complete	$483,045.89	$848,604.59
EST24852_009	24852_009 ICM E12121 Blackwell Coxworth Rebuild-El DO NOT PACKAGE (from Ver001 from AM19590	Complete	$480,372.16	$563,994.09
EST20744_001	20744_001 E12429 Cherrystone Aspenwood NY51M27 UG Rebuild Civil	Deferred	$479,982.97	$0.00
EST20520_009	20520_009 ICM E12348 Muir Dr./Scar G.C. civil DO NOT PACKAGE	Complete	$478,980.12	$445,359.48
EST19627_001	19627_001 E12127 Morningview 47M3 UG Ph 2 - Elec Electrical portion of Phase 2	In Progress	$469,264.05	$0.00
EST20638_001	20638_001 ICM E13015 Holmcrest Rebuild-Elec WBS/IFRS Compliant	Complete	$469,233.58	$448,246.45
EST24500_009	24500_009 ICM-E12153 Melford Transfer 26M34 to M22	Complete	$465,846.27	$643,500.93
EST21167_001	21167_001 E13064 Rodda UG Rebuild Electrical SCNA47M14	In Progress	$451,247.25	$0.00
EST20345_001	20345_001 E11616 Meadowvale/Heatherbank 47M17 Civi	Complete	$435,838.41	$256,998.12
EST22591_001	22591_001 E13267 UG Rebuild 63M8 Silver star Midla nd - Civil	Complete	$432,376.19	$293,390.51
EST20044_001	20044_001 E12227 Fenn/Foursome/Danville 80M29 UG Electrical portion of project	Complete	$432,264.68	$1,089,206.46
EST20298_001	20298_001 E12266 Country Lane NY51M21 Civil Portion of Project	Complete	$431,552.82	$260,018.75
EST21139_001 EST21141_001	21139_001 E13060 Galloway UG Rebuild Civil SCNA47M14	Complete	$431,228.74	$451,852.29
EST21357_009	21357_009 ICM E13043 Revlis 2 U/G Rebuild - Elec Updated: Feb 7, 2012	In Progress	$429,020.78	$0.00

Estimate	Description	Job Status	Forecasted ISA	Actual ISA
EST20674_001 EST20674_002	20674_001 E12394 James Gray Dr UG Rebuild NY51M3 Civil	Complete	$425,677.90	$877,850.26
EST20432_001 EST25413_X01	20432_001 E12319 New Feeder H9M23 - Electrical	Complete	$424,291.33	$897,132.30
EST20106_001	20106_001 E12202 3100 Kingston 52M3 UG Reb - Elec Direct Buried Cable Replacement - Elec	In Progress	$423,535.96	$0.00
EST19788_003	19788_003 E11582 NY51M24 SCADA Installation Don Mills Road at Van Horne Avenue	In Progress	$419,061.20	$0.00
EST20665_001	20665_001 ICM E12386 Don Mills/Eglinton - ELEC NY53M1 UG Rebuild	Deferred	$416,935.38	$0.00
EST20478_001	20478_001 E12336 Blue Anchor UG Rebuild Civil	Complete	$413,749.60	$430,552.32
EST20239_001	20239_001 E12251 Scenic Millway UG Rebuild 51M21 Electrical	In Progress	$408,523.53	$0.00
EST18845_004	18845_004 W11455 Yonge Trunk Cable Rehab RC3620 2011 CapEx WBS Rev Nov 22_10	Complete	$392,427.90	$318,744.62
EST20424_001	20424_001 E12316 Mammoth Hall 47M1 UG Rebuild Ph1 Electrical	Complete	$391,336.39	$433,232.27
EST20525_001	20525_001 E13011 H9M30 Muir Dr-Golf Club UG Rebuild - ELectrical	In Progress	$382,380.58	$0.00
EST19623_001	19623_001 E12126 Morningview 47M3 UG Ph 1 - Elec Electrical portion of Phase 1	In Progress	$379,268.12	$0.00
EST18319_001	18319_001 E12267 Clappison 47M17 UG Rebuild (Elec) Centennial Park III Subdivisi	In Progress	$378,042.32	$0.00
EST27358_001	27358_001 E13616-P27 1090 Don Mills Load Balancing NY53M27	In Progress	$372,979.18	$0.00
EST21865_001	21865_001 E14010 Rebuild UG Trunk NT63M8 M11 McCow an - Electrical	In Progress	$372,190.36	$0.00
EST20210_001	20210_001 E12244 Tideswell/Rylander/Durness -Cable Electrical	In Progress	$369,148.24	$0.00
EST20001_001	20001_001 E12188 435 Markham Road H9M30 UG Rebuild Replacing cables and transformers	Complete	$362,080.98	$240,020.51
EST27210_001	27210_001 E13605 P02 50 Aurora Crt Civ Rebld Canavagh TS	Complete	$356,029.74	$278,978.85
EST21297_001	21297_001 E13077 UG Rehab of NY51M8 - Elec E13077 btn Leslie and Bayview	Deferred	$341,400.55	$0.00
EST24846_009	24846_009 PCI E10112 Purple Sageway 51M3 UG DO NOT PACKAGE - Civil	Complete	$337,331.46	$491,284.67

Estimate	Description	Job Status	Forecasted ISA	Actual ISA
EST20261_001	20261_001 E12256 Bridletowne Area 502M22Electrical Cable Replacement	Complete	$337,026.86	$1,306,150.43
EST20645_001	20645_001 E12377 Goldenwood Road UG Rehab NY51M3	Complete	$335,926.02	$480,694.69
EST21446_001	21446_001 NY51M24 UG Rebuild-Sheppard & Don Mills E13103 Buchan Crt by Sheppard-	In Progress	$323,688.53	$0.00
EST20170_001	20170_001 E12235 Rebuild 3-Ph Neilson Industrial Electrical portion of project	In Progress	$317,278.45	$0.00
EST20206_001	20206_001 E12243 Durnford-Rylander/Tidewell- Cable Electrical	In Progress	$311,467.14	$0.00
EST21290_001	21290_001 E13074 UG Rehab of NY51M7 - Electrical btn Leslie and Bayview	Deferred	$285,683.86	$0.00
EST21565_001	21565_001 E13121 McGriskin UG Rebuild SCNAH9M23 Civil	Complete	$284,878.02	$295,038.09
EST28599_001	28599_001 W14667 - P01 Jane/Gosford UG Rebuild IFRS compliant	Complete	$283,456.14	$911,085.34
EST20333_001	20333_001 E11116 Cougar Crt - Civil Created November 2009	Partially Complete	$251,412.18	$362,933.94
EST21447_001	21447_001 NY51M24 UG Rebuild-Sheppard & Don Mills E13108 Buchan Crt by Sheppard-Civil	Complete	$241,974.99	$253,903.31
EST20383_001	20383_001 E12288 NT47M1 UG Rebuild - Electrical Hutcherson Sq. and Hatchet Pl	Partially Complete	$233,589.43	$375,354.24
EST21450_001	21450_001 ICM NY51M24 UG Rebuild- E of Don Mills E13108 Forest Manor-Civil	In Progress	$232,868.58	$0.00
EST24636_009	24636_009 ICM E12276 MUIRBANK 47M13 UG REB PHASE 1 MUIRBANK PHASE 1 - ELECTRICAL	Partially Complete	$231,604.32	$240,292.05
EST20208_001	20208_001 E12242 Royal Rouge Trail - Electrical Electrical	In Progress	$221,231.33	$0.00
EST20672_001 EST20672_002	20672_001 E12393 James Gray Dr UG Rebuild NY51M3 Electrical	In Progress	$199,373.48	$0.00
EST26035_X01	UG Cable Replacement on 85M31 at Lodestar Road, Toronto (Civil) NY85M31 (EST21663_001)	In Progress	$197,860.18	$0.00
EST21500_001	21500_001 ICM NY51M24 UG Rebld on Don Mills E13099 btn Sheppard and Graydon-Electrical	Complete	$194,978.98	$329,653.92
EST20388_001	20388_001 E12300 47M1 Hutcherson and Berner Trail Civil Works for Cable Replacem	Complete	$192,887.76	$753,065.55

Estimate	Description	Job Status	Forecasted ISA	Actual ISA
EST20737_001	20737_001 E12425 Spire Hillway UG Rebuild NY51M27 Civil	Complete	$191,634.89	$347,377.92
EST20746_001	20746_001 E12430 Cherrystone Aspenwood NY51M27 UG Rebuild Electrical	Deferred	$188,169.64	$0.00
EST21166_001	21166_001 E13063 Rodda UG Rebuild Civil SCNA47M14	In Progress	$177,864.46	$0.00
EST24683_009	24683_009 ICM - E13037 Bridletowne UG Rebuild Electrical - Do Not Package	Complete	$164,307.36	$205,479.86
EST23556_001	23556_001 E12666 Phase 1 Reconfigure 80M29 -Harris on Garden	Complete	$161,865.00	$218,665.56
EST20948_009	20948_009 E11072 Bridletowne U/GRebuild Elect Created November 2009	Complete	$156,045.75	$236,947.68
EST20477_001	20477_001 E12335 Blue Anchor UG Rebuild Elec	Complete	$142,857.38	$150,476.11
EST20648_001	20648_001 E12379 Pineway Craigmont UG Rehab NY51M3 Electrical	Complete	$139,029.98	$264,134.44
EST20300_001	20300_001 E12268 Country Lane UG Rebuild NY51M21 - Electrical portion of project	Complete	$138,560.98	$186,306.71
EST26034_X01	UG Cable Replacement on 85M31 at Lodestar Road, Toronto (Electrical) NY85M31 (EST21664_001)	In Progress	$135,352.71	$0.00
EST20738_001	20738_001 E12426 Spire Hillway UG Rebuild NY51M27 Electrical	In Progress	$127,927.05	$0.00
EST20722_001	20722_001 E12418 Artisan Place UG Rebuild NY51M27 Civil	Complete	$100,205.58	$301,307.91
EST20725_001	20725_001 E12419 Artisan Place UG Rebuild NY51M27 Electrical	In Progress	$80,255.44	$0.00
EST22137_001	22137_001 E14031 UG Rebuild Scenic Hill SD XJF1 - Electrical	Complete	$79,537.72	$89,840.96
EST21449_001	21449_001 ICM NY51M24 UG Rebuild- E of Don Mills E13102 Forest Manor-Electrical	Deferred	$79,100.43	$0.00
EST22135_001	22135_001 E13203 UG Rebuild Scenic Hill SD XJF1 - Civil	Complete	$79,037.97	$210,686.61
EST19399_004	19399_004 W11460 YONGE & JOHNSTON LATERAL CABLE R Yonge & Johnston	Complete	$29,951.21	$28,609.97
EST20438_009	20438_009 PCI-EII472 INGLETON REHAB PHASE A CIVIL DPE Planned - 3110	Complete	$28,328.77	$591,319.63
EST20558_001	20558_001 E12357 Morningview SCNAR26M23 RC3620 2011 CapEx WBS Rev Nov 22_10	Cancelled	$23,271.35	$0.00

Estimate	Description	Job Status	Forecasted ISA	Actual ISA
EST19005_009	19005_009 PCI-E11484 Rebuild Ingleton Ph 2 Civil Created October 2010	Complete	$17,849.51	$694,090.38
EST22215_009	22215_009 PCI-E11618 Ingleton Feeder Main Phase B UPCMS #TP-2011-8054	Complete	$6,375.08	$319,469.21

RESPONSES TO CONSUMERS COUNCIL OF CANADA INTERROGATORIES

INTERROGATORY 10:

REFERENCE(S): Exhibit 2, Tab 1, Schedule 1, page 5

With respect to the Underground Infrastructure Segment please provide the impact on the requested ICM amounts to be recovered assuming the 18 analogous jobs are not approved as part of the ICM.

RESPONSE:

If these jobs were not approved, the requested ICM True-up Rate Rider amount of $11.1 million would be reduced by $2.9 million. However, for reasons explained in Exhibit 2, Tab 4, Schedule 1 at pages 5-6, it is appropriate for the OEB to approve recovery in respect of the analogous jobs as part of this Application.

RESPONSES TO CONSUMERS COUNCIL OF CANADA INTERROGATORIES

INTERROGATORY 11:

REFERENCE(S): Exhibit 2, Tab 4, Schedule 1, page 5

With respect to the Overhead Infrastructure Segment please provide:

a) A complete list of all of the jobs that were forecast in the ICM proceeding (Phase 1 and 2) and the corresponding budgets for each job;
b) A complete list of the actual amount spent on each of those jobs.

RESPONSE:

Please see attachment (Appendix A to this response).

Estimate	Description	Job Status	Forecasted ISA	Actual ISA
EST20565_002	20565_002 ICM-W12351 Lawrence- Keele-CSP/Pri Rep Creation Date: October 1, 2010	Complete	$4,413,402.70	$7,026,236.70
EST24668_009 EST24669_009 EST24851_009 EST24881_009	Rebuild Broadlands MS Area with VC	Complete	$3,462,379.88	$2,776,278.99
EST19970_010	19970_010 X12196-Bathurst-Lawrence CSP Phase 3 DUPLICATION OF VERSION 2 FOR ICM	In Progress	$2,793,088.74	$0.00
EST23878_001	23878_001 W14276 - OH Feeder Rehab - Signet/Weston 55M1	In Progress	$2,511,430.69	$0.00
EST23567_001	23567_001 ICM W13351 FESI Rebuild & CSP Repl #2 NY85M1	In Progress	$2,005,774.73	$0.00
EST27813_010	27813_010 PCI W10487 NY85M3 Downsview Airport Ph 2 DUPLICATION OF VERSION 2 FOR	Complete	$1,896,839.79	$1,927,004.60
EST24951_001	24951_001 Danger and Caution Pole Replacement	Partially Complete	$1,856,192.04	$1,963,593.39
EST21190_001	21190_001 E12508 NY80M4 Rebuild Phase 1 Replace wires,Tr, Insulator Nov 12, 2010	In Progress	$1,790,035.06	$0.00
(EST24598_009) EST22850_009 EST26533_001 EST26534_001 EST26842_X01	22850_009 E12436_Repl Failing OH Assets_PH3 POLES FOR 2012 BUDGET 24598_009 E12436_Repl Fail OH Assets_Ph 3_ELECT (FOR 2012 BUDGET)	Complete	$1,766,944.72	$1,354,362.32
EST21785_001	21785_001 E13153 OH Rebuild 51M8	Partially Complete	$1,690,749.47	$1,876,634.62
EST19886_001	19886_001 X12179 Replacement of CSP TX 2012 budget estimate	In Progress	$1,636,821.10	$0.00
EST20875_001	20875_001 X12453-35M12-OH Rebuild-Geo Anderson IFRS compliant	Complete	$1,627,291.19	$1,799,324.32
EST20572_002	20572_002 W12291 FESI - Magellan OH Rebuild 55M25 To be reviewed prior to authorization	Complete	$1,624,395.61	$1,744,908.33
EST24161_001	24161_001 W13376 VOLTAGE CONVERSION (B-1RK) 2013	Complete	$1,589,640.20	$2,854,304.16
EST20578_001	20578_001 E12358 51M21 Rebuild OH Sections Part 1	Complete	$1,578,973.89	$5,926,484.80
EST24698_009 EST25263_009	24698_009 E11333 Brimley Anson VC PEF1 DO NOT PACKAGE for budget purposes	Partially Complete	$1,577,454.04	$351,340.88
EST19871_001	19871_001 X12175 Replacement of CSP TX 2012 budget estimate	Complete	$1,417,803.21	$834,435.57
EST21690_001	21690_001 W13131 - Refurbish OH Feeder 55M28 Falstaff Area	In Progress	$1,397,651.52	$0.00
EST20939_001	20939_001 W12442 FESI CSP Replacement NY85M1	Complete	$1,391,625.35	$2,227,251.12
EST21639_001	21639_001 W13130 - Refurbish OH Feeder 55M28 Epsom Downs Area	In Progress	$1,352,326.47	$0.00
EST20873_008 EST26538_001	20873_008 W12199 Riverside Dr Voltage Conv. part 2 Creation Date: October 1, 2010	Complete	$1,341,833.27	$1,338,274.21

Estimate	Description	Job Status	Forecasted ISA	Actual ISA
EST22184_001	22184_001 W13198 Refurbish Trunk Feeder 85M10 Regent - Wilson	Complete	$1,235,533.53	$1,027,578.09
EST22208_001	22208_001 W13205 Refurbish 85M10 Laterals Ph1 of 2	Complete	$1,212,953.96	$1,666,575.49
EST23978_001	23978_001 E14286 OH Rebuild 64F2 Ruddington MS VC Created 3 Nov 2011	In Progress	$1,211,380.78	$0.00
EST22245_001	22245_001 W13211 Goulding MS F1&F2 VC PH#1	Complete	$1,204,619.71	$1,746,941.29
EST22203_001	22203_001 ICM E12570 53M25 OH Rehab	Partially Complete	$1,195,825.05	$1,624,799.35
EST19861_001	19861_001 X12172 Replacement of CSP TX 2012 budget estimate	Complete	$1,160,819.21	$935,144.24
EST21025_010	21025_010 ICM-X12501 OH Rebuild NY35M12 DUPLICATION OF VERSION 3 FOR ICM FILING	In Progress	$1,142,790.27	$0.00
EST20456_002	20456_002 W12309 Spenvalley 55M25 Overhead Rebuild Arleta/Spenvalley/Yatescastle/Sheppard	Complete	$1,118,174.21	$1,034,324.15
EST26151_001	26151_001 W13482 Install/Redegn Guying Var Loc Ph3	Complete	$1,113,911.77	$189,558.37
EST19862_001	19862_001 X12173 Replacement of CSP TX, 35M1 2012 budget estimate	Complete	$1,104,227.67	$906,240.00
EST21999_001	21999_001 W13167 Feeder Reconfigure & Rebuild Clayson - Bartor , 55M21	Partially Complete	$1,102,144.78	$433,164.81
EST21193_001	21193_001 E12509 NY80M4 Rebuild Phase 2 Updated on Nov 12, 2010	In Progress	$1,076,441.82	$0.00
EST24007_001	24007_001 W14289 OH Rebuild off Gary Ave	Partially Complete	$1,028,999.11	$238,802.37
EST26540_001	W12284 CSP TX and Conductor Repl YK11M5 PHASE 1 (EST20379_004)	In Progress	$1,023,299.74	$0.00
EST20773_002	20773_002 WBS/IFRS Compliant Creation Date: October 1, 2010	Complete	$1,018,515.73	$1,625,810.02
EST22248_001	22248_001 W13216 Goulding MS F1 and F4 VC Ph#2	Complete	$988,559.91	$1,174,772.35
EST19775_001	19775_001 X12154 Replacement of non-standard, 34M6 2012 Estimate	Complete	$965,481.56	$804,970.06
EST16616_005	16616_005 W10275 Manby TS-Horner TS Load Transfer FEB 08,2012 Electrical for approval	Complete	$953,275.74	$773,478.93
EST20412_003	20412_003 WBS7/IFRS Compliant Creation Date: October 01, 2010	In Progress	$905,950.01	$0.00
EST20774_001	20774_001 E12433 Voltage Conversion KHF2	Partially Complete	$901,497.93	$1,171,592.77
EST20499_001	20499_001 WBS/IFRS Compliant Creation Date: October 01, 2010	Complete	$849,142.59	$853,096.36
EST22229_001	22229_001 ICM E12574 - SCREF3 OH REHAB	Partially Complete	$831,538.87	$1,142,288.70
EST20595_001	20595_001 E12361 51M21 Rebuild OH Sections Part 2	Complete	$827,320.79	$3,297,813.78
EST24089_001	24089_001 W14315 Carmichael OH rebuild & Upgrade	Complete	$811,451.12	$893,859.78
EST21531_001	21531_001 E13111 OH Rebuild R43M28 SCNAR43M28	Complete	$804,980.13	$1,323,794.52

Estimate	Description	Job Status	Forecasted ISA	Actual ISA
EST23430_001	23430_001 W13329- ETR30M12 along Evans/Royal York P03_New Feeder Construction	Cancelled	$804,965.44	$0.00
EST22180_001	22180_001 W13204 80M1 Elynhill_Ellerslie_Betty Ann Park Home OH Rehab	Complete	$799,085.54	$779,255.36
EST18456_004 EST26546_001	18456_004 E11374 - OH SCADAMATE 51M7_30, 53M25_28 SCADAMATE INSTALLATION NY34M6	Complete	$788,916.82	$156,761.39
EST27668_001	27668_001 W13634 Evans -Royal York Reconfiguration R30M1, R30M8, 30M12	Deferred	$767,556.32	$0.00
EST20892_001	20892_001 X12460 - 35M12-O/H Rebuild--Arrowsmith IFRS compliant	Complete	$761,553.24	$1,028,092.95
EST28560_001	28560_001 W14658 VC of West Islington feeder AF1 IFRS compliant	Deferred	$749,995.58	$0.00
EST22211_001	22211_001 W13206 Refurbish 85M10 Laterals Ph2 of 2	In Progress	$739,233.18	$0.00
EST23093_001	23093_001 W14149 - OH Feeder Rehab 55M9 Finch / Weston / Toryork	Complete	$730,821.53	$791,853.85
EST23323_001	23323_001 W14181 Kingsway MS VC	Complete	$730,772.90	$872,486.19
EST21517_001	21517_001 W13113 FESI Feeder Rehab_CSP PH#1	Complete	$711,238.41	$782,788.39
EST21920_001	21920_001 W13185 80M1 Carney Rd Distribution Rehab	In Progress	$701,383.83	$0.00
EST20296_001	20296_001 OH rebuild Spenvalley and Sorroundings	Complete	$689,662.40	$1,005,338.73
EST28571_001	28571_001 W14659 VC of West Islington feeder AF2 Electrical Project	In Progress	$683,888.60	$0.00
EST18523_001	18523_001 W11289 FESI NY55M22 - Rowntree Conting Phase 6 of 6	In Progress	$665,159.77	$0.00
EST19735_001	19735_001 X12148 Replacement of CSP,34M7 2012 Estimate	Complete	$647,903.23	$166,771.65
EST21998_001	21998_001 W13187 80M1 Clarkhill_Glenborough Park 80M1 OH rebuid	Complete	$642,258.74	$1,043,487.66
EST28605_001	28605_001 W14677 P05-Manby Richview Load Cascades IFRS compliant	In Progress	$634,191.57	$0.00
EST22173_001	22173_001 W13197 80M1 Ellerslie Betty Ann Park Hom OH Rehab	Complete	$580,533.02	$535,836.53
EST27810_001	27810_001 W13364 Kingsway voltage conversion rev 2 2013	Complete	$563,947.68	$1,378,726.17
EST21457_001	21457_001 E13110 SS68-F9 OH Rebuild Pleasant View	In Progress	$540,355.73	$0.00
EST23089_001	23089_001 W14150 - OH Feeder Rehab 55M9 Milvan / Penn	Complete	$538,125.47	$1,463,143.08
EST19581_001	19581_001 X12124 Replacement of non standard CSP 2012 Estimate	Complete	$531,346.44	$411,139.25
EST19792_001	19792_001 X12158 Replacement of 3 ph switch IFRS compliant	Complete	$530,770.46	$370,397.49
EST20684_004 EST26499_001	20684_004 W12397-SMD 20 Switch Replacement RC3620 2011 CapEx WBS Rev Nov 22_10	Complete	$526,062.45	$644,073.11

Estimate	Description	Job Status	Forecasted ISA	Actual ISA
EST24666_009	24666_009 E11645_Repl Failing OH Assets_PH 2A for 2012 Budget	Complete	$525,863.42	$514,797.71
EST19837_003	19837_003 X12163 SCADA SWITCH REPLACEMENT WBS7/PW-DPC	Complete	$524,169.23	$567,168.35
EST24333_001	24333_001 ICM W14345 Voltage Conversion RBF2 Ph#1 2014	In Progress	$515,254.87	$0.00
EST28570_001	28570_001 W14661 VC of West Islington feeder AF6 IFRS compliant	In Progress	$512,020.21	$0.00
EST21569_001	21569_001 FESI - Refurbish OH Feeder R30M10	In Progress	$497,004.68	$0.00
EST21518_003	21518_003 WBS/IFRS Compliant-W13115 FESI Creation Date: October 1, 2010	In Progress	$496,058.67	$0.00
EST24320_001	24320_001 W14343 Voltage Conversion PH-2 2014	Complete	$486,147.69	$606,132.19
EST21280_X03	E11243 Repl Failing OH Assets PH 2A (EST24666_009)	Partially Complete	$463,328.30	$118,634.41
EST20881_001	20881_001 E12457 Pole and CSP Transformers NY80M5 OH Rebuild	Complete	$444,019.68	$768,828.25
EST25898_003	25898_003 W13454 VC Hollywood MS The Queensway/Kipling	Complete	$435,566.51	$453,888.59
EST21578_001	21578_001 ICM E11742 SCNA47M13 OH Rehab	In Progress	$420,614.00	$0.00
EST23696_001	23696_001 ICM W12669 Martin Ross rebuild	Complete	$411,790.56	$745,574.74
EST28075_001	28075_001 W14125 38M27 North Queen conductor upgra	Complete	$396,792.04	$515,857.80
EST19892_001	19892_001 X12176 Replacement of 3 ph switch IFRS compliant	Complete	$375,933.26	$500,325.48
EST22205_001	22205_001 E11765Pole Replacement Deanvar Ave CE-F1	Complete	$369,461.69	$554,168.38
EST23928_001	23928_001 E13359 Remove YH feeder loads after VC Created in 27 Oct 2011	Complete	$345,115.52	$447,749.30
EST24052_001	24052_001 W14306 - 85M5 Mcallister Rd. OH rebuild W14306 - 85M5-Mcallister Rd. O	Complete	$330,024.16	$204,760.20
EST19965_009 EST20391_009	19965_009 ICM - E11088 NY Panacomm Repl "D" Replacing North York Panacomm RTUs 20391_009 ICM - E11088 NY OH SCADA INSTALL "A"	Complete	$309,641.43	$801,892.06
EST19785_003	19785_003 X12156 New SCADA Sw NY53-M8 Created Oct 2010	In Progress	$302,500.51	$0.00
EST23979_001	23979_001 W14285 OH & UG lateral Rebuild	Complete	$298,770.84	$361,725.96
EST22598_001	22598_001 Feeder Riser SCADA Installations 88M13, 88M15, 88M46	In Progress	$294,956.40	$0.00
EST17801_009 EST26547_001	17801_009 ICM- E10387 Bermondsey TS SCADA OH & UG SCADA Switch Installations	Complete	$293,721.43	$320,087.79
EST28603_001	28603_001 W14605 Manby-Richview Load Cascades	Complete	$290,252.22	$570,348.48

Estimate	Description	Job Status	Forecasted ISA	Actual ISA
EST23677_009	23677_009 ICM E12104 CHIPPING CROSSBURN OH REBUILD POLE & ELECTRICAL INSTALLATION	Complete	$276,905.64	$334,935.30
EST20946_008 (EST26553_001 EST26790_X02)	W12462 Rockford Road - 3 Phase Extension W12462 - FESI (EST20946_008)	Complete	$273,976.30	$288,131.58
EST20848_001	20848_001 E12459 Banbury/Post Rd OH Rehab NY34M6, NY53M24, NY51M21	Complete	$263,649.31	$566,806.22
EST24169_001	24169_001 ICM E14319 New SCADA Switches NAR43M24	Complete	$258,257.48	$171,420.08
EST24139_001	24139_001 E14318 New SCADA Switches on NY51M3	Deferred	$242,944.84	$0.00
EST20659_001	20659_001 W12383 OH SCADA Switch Replacements NY80M30	Complete	$212,766.15	$167,507.20
EST19894_003 EST26545_001	19894_003 X12182 NY34 Feeder Scada Inst RC3620 2011 CapEx WBS Rev Nov 22_10	Complete	$211,093.54	$218,748.44
EST22041_001	22041_001 W13189 80M1 Stafford Rd & Cloebury Crt 80M1 OH rebuild	Complete	$185,976.89	$336,517.11
EST20416_002	20416_002 ICM X12318 Repl Manu SW&Inst SCADA SW 34M1	In Progress	$170,971.41	$0.00
EST22037_001	22037_001 W13188 80M1 Finchhurst Dr & Fleetwell Cr 80M1 OH rebuid	Complete	$153,175.85	$165,942.30
EST23354_002	23354_002 W12253 Repl OSL3310 with Scada sw YK11M7 W12253 Repl OSL3310 with Scad	In Progress	$135,902.36	$0.00
EST21876_001	21876_001 W13182 OH Rehab 80M1.	Complete	$132,123.81	$194,215.13
EST20023_001	20023_001 X12204Replacement of CSP TXMR 2012 budget estimate	Complete	$94,232.99	$1,191,852.05
EST19806_001	19806_001 Remote Switch Install - Finch 85M31 & M2	Cancelled	$88,584.52	$0.00
EST19455_001	19455_001 X11526 Replacement of 3 phase switch 2012 Estimate	Complete	$85,494.21	$101,727.66
EST24060_001	24060_001 E12744 Bell Line Conversion	Complete	$84,750.12	$113,746.65
EST19452_001	19452_001 X10449 Replacement of 3 phase switch 2010 estimate	Complete	$74,271.67	$156,614.65
EST19453_001	19453_001 X11525 Replacement of 3 phase switch 2012 estimate	Complete	$74,155.83	$121,125.83
EST19454_001	19454_001 X111524 Replacement of 3 phase switch 2012 Estimate	Complete	$74,155.83	$118,775.00

RESPONSES TO CONSUMERS COUNCIL OF CANADA INTERROGATORIES

INTERROGATORY 12:

REFERENCE(S): Exhibit 2, Tab 4, Schedule 1, page 5

With respect to the Overhead Infrastructure Segment please provide the impact on the requested ICM amounts to be recovered assuming the 10 analogous jobs are not approved as part of the ICM.

RESPONSE:

If these jobs were not approved, the requested ICM True-up Rate Rider amount of $11.1 million would be reduced by $0.56 million. However, for reasons explained in Exhibit 2, Tab 4, Schedule 1 at pages 5-6, it is appropriate for the OEB to approve recovery in respect of the analogous jobs as part of this Application.

RESPONSES TO CONSUMERS COUNCIL OF CANADA INTERROGATORIES

INTERROGATORY 13:

REFERENCE(S): Exhibit 2, Tab 6, Schedule 1, page 4

With respect to the Rear Lot Construction Segment please provide:

1. A complete list of all of the jobs that were forecast in the ICM proceeding (Phase 1 and 2) and the corresponding budgets for each job;
2. A complete list of the actual amount spent on each of those jobs.

RESPONSE:

Please see attached (Appendix A to this response).

Estimate	Description	Job Status	Forecasted ISA	Actual ISA
EST21484_001	21484_001 W11726 Markland RL VC PH#1 Civil HL Estimate -- DO NOT PACKAGE	Complete	$5,846,378.38	$3,520,414.21
EST18580_001	18580_001 E11382 Livingston VC Trans rear ug front see E11383 OH vc Livingston	In Progress	$5,330,325.96	$0.00
EST21185_001	21185_001 W13142 Thorncrest (#11) RL VC Ph#5 Civil IFRS compliant	Complete	$4,820,257.69	$5,174,032.75
EST21138_002	21138_002 X12113 Forest Hill VC Phase 4 Electrial Bathurst/Eglinton/Old Park/Shallmar	Complete	$3,920,430.42	$3,677,210.78
EST24342_002	24342_002 X11293 Forest Hill Phase 5 - Civil Marlee/Fairleigh/Allen/Eglinton	Complete	$3,316,400.33	$3,704,120.81
EST20662_001	20662_001 W12381 Thorncrest (#11) RL VC Ph#1 Civil IFRS compliant	Complete	$3,243,458.06	$2,917,962.45
EST20012_002	20012_002 X12114 Forest Hill Electrical Ph#5 UG ELECTRICAL - BUDGET	Complete	$3,045,760.95	$1,981,824.52
EST28608_001	28608_001 W14674-P07 Markland Woods RL Ph4 Civil IFRS compliant	Complete	$3,004,198.85	$5,187,728.30
EST20677_008	20677_008 W11219 Rathburn SAF1 VC Pt3 UG Elec UG electrical	Partially Complete	$2,848,645.11	$3,785,633.30
EST19501_009 EST26541_001	19501_009 E12076 PH 1 BANBURY ELECT REAR LOT For 2012 budget	Complete	$2,553,265.70	$2,600,544.44
EST20714_001	20714_001 W12401 Thorncrest (#11) RL VC Ph#2 Civil IFRS compliant	Complete	$2,224,907.56	$3,221,974.45
EST21321_002	21321_002 W11168 ALBION MG-F1 SILVERSTONE VC REAR FEB 09,2012 LOT ETMGF1 IFRS compliant	Complete	$2,048,885.74	$1,851,537.14
EST25424_001	25424_001 WBS/IFRS Compliant Creation Date: October 1, 2010	Deferred	$1,577,291.27	$0.00
EST22607_009 EST26539_001	E12615 BANBURY ELEC PHASE 2 PROJECT#E12615 UPCMS#TP-2011-9255 (EST22607_009)	Complete	$1,513,600.81	$1,385,529.80
EST20701_001	20701_001 W13017 RL#011 Electrical Ph#1	In Progress	$1,443,776.51	$0.00
EST20808_001	20808_001 ICM W13019 RL#011 Electrical PH#2 IFRS compliant	Complete	$1,290,642.26	$307,929.95
EST21315_001	21315_001 W13195 Rexdale-Colony RL VC (Elec) Ph#8	Complete	$1,237,653.36	$2,688,521.61
EST21155_001	21155_001 W12564 Rexdale-Colony RL VC (Elec) Ph#4	Complete	$1,184,060.46	$1,015,893.82
EST21248_001	21248_001 W12565 Rexdale-Colony RL VC (Elec) Ph#5	Complete	$1,030,399.02	$773,776.93
EST21034_001	21034_001 W12561 REXDALE / COLONY PHASE I INSTALL IFRS compliant	Complete	$997,198.71	$1,044,349.82
EST19757_001	19757_001 X12185 RearLot (RL025) ConNYSS37_ElPh2 S/E Lawrence/Leslie (LTP_2011_19_002)	Complete	$968,308.80	$1,952,685.18

Estimate	Description	Job Status	Forecasted ISA	Actual ISA
EST21211_001	21211_001 W13067 Rathburn Rd OH/UG Conversion IFRS compliant	Complete	$915,610.36	$1,861,101.45
EST24854_009 EST26867_X03	24854_009 ICM E11383 Living Guild OH VC DO NOT PACKAGE from Ver001 from AM 18656 E11383 Livingston Guildwood OH VC Ph 2 Poles Only (EST24854_009)	Complete	$745,461.46	$1,926,938.28
EST24944_001	24944_001 W13020 RL#011 Electrical PH#5 IFRS compliant	In Progress	$639,919.64	$0.00
EST21213_001	21213_001 W13068 Thorncrest (#011RL) VC Ph#4 IFRS compliant	Complete	$636,973.55	$1,154,916.43
EST19759_001	19759_001 X12186 RearLot (RL025) ConNYSS37_ElPh3 S/E Lawrence/Leslie (LTP_2011_19_002)	Complete	$579,326.83	$634,698.16
EST21251_001	21251_001 W12563 Rexdale-Colony RL VC (Elec) Ph#3	Complete	$472,089.84	$642,456.63
EST21250_001	21250_001 W12562 Rexdale-Colony RL VC (Elec) Ph#2	Complete	$211,601.28	$97,864.64
EST26532_001	X12184 P1RearLot (RL025) ConNYSS37 S/E Lawrence/Leslie (LTP_2011_19_002) (EST19755_003)	Complete	$191,097.82	$160,278.87
EST21320_001	21320_001 W12567 Rexdale-Colony RL VC (Elec) Ph#7	Complete	$167,972.71	$1,714,457.81
EST21252_001	21252_001 W12566 Rexdale-Colony RL VC (Elec) Ph#6	Complete	$90,824.25	$1,420,792.39

RESPONSES TO CONSUMERS COUNCIL OF CANADA INTERROGATORIES

INTERROGATORY 15:

REFERENCE(S): Exhibit 2, Tab 1, Schedule 1, Appendix A (Underground Infrastructure)

In the column titled "Rationale/Driver for Inclusion" please list for each job (that was undertaken) which of the five types of variances (that are described in this exhibit) are applicable to that job and how each type of variance affected the job.

RESPONSE:

Toronto Hydro is unable to list the variance codes for the analogous jobs listed in Appendix A of the Underground Infrastructure segment because these particular jobs, although identical in nature to the jobs included under each project segment, were not included in the original filing. Consequently, as there were no forecast amounts approved by the OEB, no forecast to actuals reconciliation can be performed and no variance can be reported. Variance codes or explanations are provided by Toronto Hydro for ICM segments where actual ISAs varied from forecast ISAs. For more information on the application of these variance codes, please see Exhibit 1, Tab 2, Schedule 2, pages 18-27.

RESPONSES TO CONSUMERS COUNCIL OF CANADA INTERROGATORIES

INTERROGATORY 16:

REFERENCE(S): Exhibit 2, Tab 11, Schedule 1

THESL spent significantly less than forecast in the Stations Switchgear Segment. Was money allocated from this segment to undertake jobs in other segments?

RESPONSE:

No. As explained in Toronto Hydro's response to interrogatory 1-CCC-6, the Board's Partial Decision and Order permitted Toronto Hydro to shift funding among jobs within a project segment, but did not permit the moving of funds among project segments.[1]

[1] EB-2012-0064, Toronto Hydro-Electric System Limited Partial Decision and Order (April 2, 2013) at p. 75.

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

INTERROGATORY 9:

REFERENCE(S): Exhibit 2

What contingency amount did the Applicant build into the ICM job budgets at the time of the Board's approvals?

RESPONSE:

Toronto Hydro did not build any contingency amounts into the ICM job budgets.

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

INTERROGATORY 10:

REFERENCE(S): Exhibit 2

With respect to the Applicant's budget history regarding capital work:

a) Over the past 10 years, what is the average variance between actual versus budgeted capital projects where the level of planning at the time of budgeting was the same or similar to what was provided in the EB-2012-0064 proceeding?

b) Please provide full details on the methodology to determine part (a).

RESPONSE:

a) The present application is concerned only with the difference between forecast and actual ISAs in ICM Segments for the years 2012-2014. The information requested would be significantly influenced by historical circumstances and factors (such as the character of the jobs undertaken, internal systems, capital constraints, etc.) that would have little or no bearing on the variances which are the subject of this application. Therefore, Toronto Hydro believes that the information that SEC requests is not relevant to, and would have little or no probative value in the assessment of these variances.

b) See response to part (a) above.

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

INTERROGATORY 11:

REFERENCE(S): Exhibit 2, Tab 1, Schedule 1

What lessons has the Applicant learned regarding its budgeting process for underground infrastructure segment projects? Were any of those lessons incorporated into the budgeting process in the EB-2014-0116 Custom IR application capital forecasts?

RESPONSE:

The observed variances for jobs in the Underground Infrastructure segment were, in part, the result of the timing of Toronto Hydro's ICM application relative to the 2011 change in standard design practice for underground residential rebuilds. (Please refer to Toronto Hydro's responses to interrogatories 2-Staff-10 and 2-Staff-11 for more information on this change and to the response to interrogatory 2-SIA-6 for an assessment of the impact of this change.) In general, the forecasts in forward-looking rate-setting applications represent a snapshot in time. As conditions evolve and new information becomes available, the actual program will necessarily deviate from those forecasts. In this segment, the effect of the standard design practice revision on job-level costs was significant for 11% of the jobs when moving between the high-level estimates, which formed the snapshot in the filing, and the detailed estimates that were based on the new standard. This was because detailed estimates and actual construction costs for this new standard were not available when the ICM estimates were being prepared during the Phase 1 proceeding.

Following the change in standard design practice and the roll-out to design staff in mid-2011, designers began work on building detailed design estimates for existing scopes of

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

work based on the new requirements for underground residential rebuilds. Significant cost variances between the high-level and detailed estimates were the subject of review through Toronto Hydro's change process, and over time, as designers, field crews and planning engineers gained more experience with the new standard, the quality of subsequent high-level and detailed estimates improved. The estimates in Toronto Hydro's CIR Application (EB-2014-0116) benefited from this experience.

Toronto Hydro notes that the other 89% of forecasted and completed jobs that did not cite the change in standard design practice as a primary cause of variance either did not have material cost variances or experienced variances due to a host of other causes that Toronto Hydro normally encounters in the course of carrying out capital work on underground plant.

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

INTERROGATORY 12:

REFERENCE(S): Exhibit 2, Tab 1

Please provide a table that shows, for each ICM segment, and for each asset, the forecasted/budgeted number that were to be replaced, and actual number replaced.

RESPONSE:

Please see response to interrogatory 2-AMPCO-3.

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

INTERROGATORY 13:

REFERENCE(S): Exhibit 2, Tab 1, Schedule 1, Appendix A

For each segment with a similar index of added jobs, please add the following information to each listed job:

a) Year the job went into service
b) The budgeted amount for the project
c) Explanation for any variance of +/- 5% of the budgeted amount and actual amount

RESPONSE:

a) Please see attachments (Appendices A to J) for the year that each job went into service.

b) As these jobs did not contribute to Toronto Hydro's approved ISA forecasts in the ICM Decisions and Rate Order, there is no budgeted amount to report.

c) Please see response to part (b).

ICM Segment **B1 Underground Infrastructure**

Estimate	Description	ISAs	ISA Complete year
EST16873_002EST25422_001	W10335 BLAKETON MS PCI -W10335 Blaketon MS F2/F4	$211,486.14	2013
EST18275_003	E11217 Celeste Drive Rebuild NA47M15	$311,283.11	2013
EST20728_002	E11640-FESI SubmTxmr Replmt NYSS68-F9	$626,026.66	2013
EST20473_002	PCI W12293 Finch TS Sub Loop cable Rplmt	$133,665.93	2013
EST22941_003	PCI - E14118 Ugrade Lawrence Pharmacy	$557,344.45	2013
EST24035_003	PCI - E12726 Agincourt Mall Rebuild	$557,166.36	2013
EST22503_001	PCI E11371 FINCHDENE SUBD UG RBLD CIVIL	$5,154,091.29	2013
EST20496_003	PCI W12307 FESI Downsview Dells Rebuild	$67,425.55	2013
EST26148_003	PCI E13286 SALINGER SANWIN SUBM. TRANSF.	$589,475.85	2013
EST18723_002	PCI E11445 - Tineta-Kimroy UG Rebuild	$1,560,413.11	2013
EST20402_003	PCI W12298 FINCH TS STN EGRESS	$2,869,922.47	2013
EST26751_001EST26064_003	PCI-E13045_Wilfred UG Rebuild_ELECTRICAL	$646,951.63	2012
EST18781_003EST26830_003	E12082 BAYLAWN/ PETWORTH UG REPL. ELECT	$347,406.63	2012
EST26936_002	PCI - W12860 JANE MS EGRESS CIVIL	$796,885.81	2013
EST27119_001EST27162_001	E13500 - FESI - 27.6kV Sub TX Replace E13500 - FESI - 4.16 kV Sub TX Replace	$77,440.68	2013
EST27253_001	PCI W12367 FESI-Lat Cable Repl Jane Ph 2	$855,489.25	2013
EST25111_003	PCI E12845 155 Morningside PT171226	$92,381.45	2013
EST29036_002	PCI E11570 Sheppard-Neilson Swgr repl	$442,563.53	2013

ICM Segment **B4 Overhead Infrastructure**

Estimate	Description	ISAs	ISA Complete year
EST17186_003	W10365-RICHVIEW TS 88M1-16 Stdzn	$208,946.91	2013
EST20956_003	W12463-FESI-Insulator Replacement	$225,127.22	2013
EST24137_002	W12750 Emergency Pole & TX Replacement	$228,674.43	2013
EST20893_003	ICM X12461 O/H Flamborough Drive	$741,161.90	2013
EST25755_003	PCI W12902 - POLE REPLACEMENT	$204,538.96	2013
EST26827_002	ICM W12992 FESI - Lomar Dr OH Reb 55M-25	$610,633.03	2013
EST26014_004	ICM W12921 CAUTION POLE SPOT REPLACEMENT	$101,995.46	2013
EST28229_001	PCI-E13479 P03 Batch Pole Replacement	$168,708.99	2013
EST27986_002	ICM E14547 OWEN BLVD OH RBLD	$344,045.64	2013
EST27665_002	PCI E13633-Switch Automation SCNAH9M30	$298,300.46	2013

ICM Segment **B5 Box Construction**

Estimate	Description	Actual ISA	ISA Complete year
EST16466_005	W10246_EGLINTON MS 4KV OH STAGE#2 PH#1	$230,417.55	2012
EST16470_003	W10247 Eglinton MS VC Stage 2 B71EG	$77,606.37	2012
EST20027_001EST19157_003	X12056 B2CD VC ADVANCE POLE INSTALL	$1,257,783.75	2012
EST19412_002	PCI- X11513 B3DA Conversion	$287,840.58	2013
EST30261_002	111 BATHURST ST.(O/H CONVERSION) WBS-CCM RC4330 CAPEX for IFRS	$0.00	No ISA
EST27656_003	X13173 conversion B1-2W	$0.00	No ISA

ICM Segment B6 Rear Lot Construction

Estimate	Description	Actual ISA	ISA Complete year
EST23111_003	E11778 BANBURY / LARKFIELD RL PH.2	$260,044.86	2013
EST18240_003	E12437 LesMill MS F2 Rear Lot V. C.-Elec	$1,367,634.45	2013

ICM Segment B9 Network Vaults and Roofs

Estimate	Description	ISAs	ISA Complete year
EST18912_003	X11390 Vault Loc 4407 Rebd-Yonge-Delisle	$690,908.82	2013
EST24715_003	PCI-X11581.V.#4588.Cumberland & Bellair	$163,383.29	2012
EST18913_003	PCI-X06394 Network Replacement, Loc#4792	$1,458,516.76	2013
EST20406_003	PCI X12314 LOC 4557 VAULT REBUILD	$492,693.87	2013
EST24000_003	PCI W11874 REBUILD VAULT ROOF #00001	$84,522.24	2013
EST19687_003EST27251_001	PCI X11560 Loc#4313 Reb Vault Eglin Ph1	$1,318,979.57	2013
EST25128_003	PCI - X11747 URGENT REBUILD 3441 A71CS	$231,511.44	2013
EST28429_003	X14589 Vlt Roof Rlbd Loc #4443 Bay_Irwin	$90,755.80	2014
EST30717_003	X14754 LOC 4481 ROOF REHAB A51DX	$139,824.72	2014

ICM Segment B10 Fibertop Network Units

Estimate	Description	Actual ISA	ISA Complete year
18794	X11402 NETWORK UNIT REPL LOC#4484 A46GD	$527,504.42	2013
22031	X11759 LOC4164 - N/W CHANGEOUTS	$84,836.22	2012
22682	X11792 LOC4657 - N/W CHANGEOUTS	$1,643.89	2012
22685	X11793 LOC4426 - N/W CHANGEOUTS	$668,727.95	2012
22688	X11795 LOC4106 - N/W CHANGEOUTS	$113,204.97	2013
22689	X11796 LOC4768SV - N/W CHANGEOUTS	$115,366.97	2012
22676	X11787 LOC4198 - N/W CHANGEOUTS	$122,827.61	2012
22678	X11790 LOC4709 - N/W CHANGEOUTS	$115,547.26	2012
23268	X12262 Bridgeman TS LOCN. #4789 & 4648	$115,777.81	2012
23617	X11837 LOC4719 - N/W CHANGEOUTS	$261,004.44	2012
19875	X12192 Network Replacement Loc#4177	$423,626.66	2014
21842	X12548 Network Replacement - Cecil	$123,036.85	2014
28154	ICM-X14453 Loc4529WV/N1083NW	$266,554.13	2014
28192	ICM X14458 LOC4736NV - N/W CHANGEOUTS	$114,076.33	2012
32885	X11507 NETWORK C/O LOC#4845 A44 & A42CE	$137,662.14	2012

ICM Segment B11 Automatic Transfer Switches and Reverse

Estimate	Description	ISAs	ISA Complete year
EST18831_003	X11414 ATS Rplmt. Locn #D9010 Richmond	$86,350.68	2012

ICM Segment **B12 Stations Power Transformers**

Estimate	Description	ISAs	ISA Complete year
EST14189_003	S10109 University MS: Replace 4 Trans.	$499,445.85	2012
EST20904_003	S11656 Sherbourne MS: Replace TR3	$604,537.61	2012
EST20537_003	S11099 Centennial D'arcy MS: Replace TR	$660,225.34	2012
EST17686_002	S11029 Highlevel MS -Replace TR#4	$602,122.49	2013
EST17920_002	S11150 Highlevel MS -Replace TR#3	$509,373.98	2012

ICM Segment **B13 Stations Switchgear**

Estimate	Description	ISAs
EST14232_003	S09346 Commission New A5-6GD SWGR (2009)	$240,260.77
EST15450_005	S10157 GlengroveTS:Repl A5-A6 with A7-A8	$172,554.03
EST18244_003	W11203 A3-4T STRACHAN FEEDER TRANS- IFRS	$332,999.85
EST18745_003	S11446 Strachan A9-10T Feeder Transfer	$98,878.52
EST19121_003	S11458 Jane MS: Replace 13.8kV SWGR	$3,211,067.13

ICM Segment **B21 Externally Initiated Plant Relocations**

Estimate	Description	Actual ISA	ISA Complete year
EST20651_002	X11633 Roncesvalles Dundas St W TTC	$237,783.99	2012
EST20975_003EST21411_003	E11664 Duncan Mills Bridge	$96,358.30	2012
EST20587_003	X11627 Tra A10T-12T to A54-57-58T	$298,248.07	2012
ESTAS12016_001	E12667 Reconfig distrib R2634 Tapscott	$83,488.08	2012
EST24212_003	PCI - W12756 EDENBRIDGE DR EXPANSION/ PO	$64,308.42	2012
EST21468_003	PCI W11825 CARLINGVIEW OH PLANT RELOC	$220,443.04	2013
EST26317_003	PCI-X13514 FRONT AND JARVIS RELOCATION	$91,855.99	2013
EST27658_001	ICM-W13629 Ext Init Knightwood UG Relc	$148,808.40	2013
EST29920_003	X14725-VAULT LOC.4761 ROOF REB.	$77,789.43	2014
EST31038_001	W13501 Park Lawn StLt Pole Relocation	$93,127.20	2014
EST29748_003	X13750 York ST cable p/o	$143,858.04	2014
EST30437_003	W14765 - GO Transit Expansion Creation Date: October 1, 2010	$160,624.85	2014
EST27118_001	PCI Queens Quay Ph 1_2_3 ELECTRICAL WBS-CCM RC4330 CAPEX for IFRS	$0.00	No ISA
EST28276_003	ICM W12851 Eglinton Crosstown Part 1 - 5 Eglinton Ave W and Blackthorn	$0.00	No ISA
EST28283_003	ICM W12854 EGLINTON CROSSTOWN Part 4-5 Eglinton Between Park Hill and Flanders	$0.00	No ISA
EST28320_003	ICM W12852 EGLINTON CROSSTOWN Part 2 - 5 Eglinton and Little	$0.00	No ISA

ICM Segment **B21 Externally Initiated Plant Relocations**

Estimate	Description	Actual ISA	ISA Complete year
EST28547_003	ICM W12853 EGLINTON CROSSTOWN Part 3 - 5 Eglinton and Dufferin	$0.00	No ISA
EST30541_003	S14748 EsplanadeTS Cable Suprt "Dis Sup" Terminate Two Neutral Cables 2014	$0.00	No ISA
EST29932_003	X12998 TTC Leslie St. Connection Track Created Oct 2010	$0.00	No ISA
EST31635_003	W14818 Metrolinx Weston Underpass OH Restoration	$0.00	No ISA
EST32087_003	W14850 TTC Bakersfield poles relocation Creation Date: February 18,2014	$0.00	No ISA
EST33647_001	X13750 York ST cable p/o - Electrical Transfer from DPC to DCW	$0.00	No ISA
EST33163_003	E14904 #2740 Lawrence HONI Interference E5-1M23	$0.00	No ISA
P0091683	O/H Sec Bus Upgrds & Reloc To Ttc Poles	$0.00	No ISA

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

INTERROGATORY 14:

REFERENCE(S): Exhibit 2, Tab 14

Please provide where, in the EB-2012-0064 proceeding record, the Applicant informed the Board and parties that it would be reasonable if project variances could be up to 50% of the budgeted cost at that time.

RESPONSE:

On October 31, 2012, Toronto Hydro filed with the Board a general update to its evidence in Phase 1 of the proceeding. The general update contained an Addendum to the Manager's Summary, which, starting at page 4, included a section entitled "Forecasts and True-Up." This section explained in some detail how Toronto Hydro continues to refine its cost estimates as projects progress from planning to execution. On the subject of cost variances, the section includes the following paragraphs:

> By necessity, the closer the utility gets to job execution, the more refined its forecasts will be. It is not until very close to the execution point of a job (and even sometimes well into project construction) that it is possible, or prudent, for a utility such as THESL to produce a detailed and fine-grained workplan in respect of job timing and cost estimates.
>
> These factors have become especially salient for THESL in 2012 given the passage of time, and the uncertainty with respect to rates funding for 2012 capital work. THESL has had to postpone certain jobs originally forecasted in its 2012 workplan. Accordingly, while THESL believes that

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

> the information in this update constitutes an appropriate snapshot in time, the forecasts provided are still directional in nature, and actuals may differ from those forecasts. [EB-2012-0064, Tab 2, Addendum, Filed: 2012 Oct 31, page 5, emphasis added].

To illustrate the magnitude of the changes, on page 12 of the Addendum, Toronto Hydro provided "Table 2: Overall Cost Impacts by ICM Segment", reproduced below. By year and in total across 2012 and 2013, Table 2 set out the original cost, the updated cost, and the variance dollar amount for each segment. Although the percentage variances were not provided in Table 2, it can be observed from the table that several cost variances exceeded 50%, and that the variances occurred in both directions.

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

Table 2: Overall Cost Impacts by ICM Segment

$Millions

Projects	Segments	2012 Original Cost	2012 Update Cost	Update - Original Variance	2013 Original Cost	2013 Update Cost	Update - Original Variance	2014 Original Cost	2014 Update Cost	Update - Original Variance	Total Original Cost	Total Update Cost	Update - Original Variance
Underground Infrastructure and Cable	Underground Infrastructure	46.9	28.8	(18.2)	53.0	58.9	5.9			-	100.0	87.7	(12.3)
	Paper Insulated Lead Covered Cable - Piece Outs and Leakers	17.3	0.1	(17.2)	5.2	5.4	0.2			-	22.5	5.5	(17.0)
	Handwell Replacement	12.0	13.7	1.6	14.5	16.7	2.2			-	26.5	30.3	3.8
Overhead Infrastructure and Equipment	Overhead Infrastructure	29.4	9.1	(20.4)	53.0	55.9	2.9			-	82.4	64.9	(17.5)
	Box Construction	10.2	0.6	(9.6)	20.5	23.0	2.5			-	30.7	23.6	(7.1)
	Rear Lot Construction	34.4	16.4	(18.0)	20.7	29.4	8.7			-	55.1	45.8	(9.3)
	Polymer SMD-20 Switches	3.1	-	(3.1)	2.9	1.5	(1.4)			-	6.0	1.5	(4.5)
	Scadamate R1 Switches	2.9	-	(2.9)	2.8	1.4	(1.4)			-	5.7	1.4	(4.2)
Network Infrastructure and Equipment	Network Vault and Roofs	13.6	2.8	(10.7)	12.3	18.8	6.5			-	25.9	21.6	(4.3)
	Fibertop Network Units	8.6	1.5	(7.1)	8.8	7.7	(1.1)			-	17.4	9.2	(8.2)
	Automatic Transfer Switches and Reverse Power Breakers	3.3	-	(3.3)	3.3	3.3	(0.0)			-	6.6	3.3	(3.3)
Station Infrastructure and Equipment	Stations Power Transformers	1.3	0.4	(0.9)	2.6	3.5	0.9			-	3.9	3.9	-
	Stations Switchgear - Municipal and Transformer Stations	19.3	1.7	(17.6)	18.8	21.8	3.1			-	38.1	23.5	(14.6)
	Stations Circuit Breakers	1.4	0.8	(0.6)	1.1	0.6	(0.5)			-	2.4	1.3	(1.1)
	Stations Control and Communication Systems	1.1	0.1	(1.0)	2.2	1.0	(1.2)			-	3.3	1.1	(2.2)
	Downtown Station Load Transfers	1.8	0.7	(1.1)	1.6	2.1	0.6			-	3.3	2.8	(0.5)
Bremner Transformer Station	Bremner Transformer Station	31.7	8.5	(23.2)	69.4	81.0	11.6	23.0	34.6	11.6	124.1	124.1	(0.0)
Hydro One Capital Contributions	Hydro One Capital Contributions	25.3	23.0	(2.3)	52.1	48.1	(4.0)	27.0	37.0	10.0	104.4	108.1	3.7
Feeder Automation	Feeder Automation	7.8	2.3	(5.5)	16.3	20.7	4.4			-	24.1	23.0	(1.2)
Metering	Wholesale and Smart Metering	5.6	4.7	(0.9)	7.2	8.4	1.2			-	12.8	13.1	0.3
Plant Relocations	Externally-Initiated Plant Relocations and Expansions	24.3	10.2	(14.1)	17.7	24.8	7.2			-	41.9	35.0	(6.9)
Grid Solutions	Grid Solutions	2.4	-	(2.4)	3.6	-	(3.6)			-	6.0	-	(6.0)
Total ICM		303.6	125.2	(178.5)	389.5	434.1	44.6	50.0	71.6	21.6	743.1	630.8	(112.3)

Note: Hydro One Capital Contribution figures for 2014 reflect Bremner-related amounts only. Updated amount for 2012 Hydro One Capital Contributions reflects a credit amount from a prior period, unrelated to proposed ICM projects.

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

INTERROGATORY 15:

REFERENCE(S): Exhibit 2, Tab 14, Schedule 1

With respect to the Power System Engineering Inc. (PSE) report, *Toronto Hydro ICM Variance Evaluation*:

a) Please provide a copy of retainer between PSE and the Applicant. Please also provide a copy of any project work plan.

b) Please provide all information, including but not limited to documents, memorandums, notes of meetings with the Applicant's employees, not already included in this application or the record in EB-2012-0064 that PSE used for the purpose of drafting its report.

c) [p.19] PSE provides in table 3-2, the Applicant's budgeting estimation/budgeting process, with definition, estimate type, expected accordance. Please provide a copy of the source of this information.

d) [p.15] Please provide PSE's opinion on what amount of contingency should be budgeted at each stage (class) of the capital planning process.

RESPONSE:

a) Please see attachment (Appendix A) to interrogatory 1-CCC-1 for the Retainer Letter Agreement between Torys and PSE. PSE did not develop a documented project work. Its scope of work is reflected in the PSE Report.

b) Please find attached the requested documents (Appendix A to this response).

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

c) PSE developed Table 3-2 based on interviews with, and inquiry responses from, Toronto Hydro. This information is provided in the "High-Level Estimating Description" (provided on page 170 in response to part (b) above).

d) PSE is not aware of an industry standard that applies a specific contingency amount to the five classes described in Table 3-1. Contingency amounts often vary according to a number of factors (such as type, size and complexity) based on insight, experience, or analysis, for which there is uncertainty in the final dollar amount.

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DATE: May 23, 2016

SUBJECT: List of Documents for 2-SEC-15(b)

Manager's Summary

2015-09-25 – Manager's Summary (draft)

Excel Tables

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B02_PILC_All Jobs_DRAFT_2015-10-26

B04_Overhead Infrastructure_All Jobs_DRAFT_2015-09-18

B05_Box Construction_All Jobs_DRAFT_2015-09-23

B06_Rear Lot_All Jobs_DRAFT_2015-09-11

B09_Network Vaults & Roofs_Analogous Jobs_DRAFT_2015-09-10

B09_Network Vaults & Roofs_Filed (Forecast) Jobs_DRAFT_2015-09-25

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B11_ATS & RPB_All Jobs_DRAFT_2015-09-10

B12_Stations Power Transformers_All Jobs_DRAFT_2015-09-23

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E2_T02_S13_B20_Metering_v00_DRAFT_2015-09-08

High-Level Description of Estimating Process (from THESL)

High Level Estimates_Toronto Hydro_DRAFT_2015-10-27

Emails saved to file


FW PSE Request.msg


FW PSE Request-2.msg


FW THESL 10-28-2015 #2.msg


FW THESL 10-28-2015.msg

Requests & Rationale

True-up of the 2012-2014 Incremental Capital Module Application

1. INTRODUCTION

In EB-2012-0064 (the "ICM Application"), Toronto Hydro-Electric System Limited ("Toronto Hydro") applied to the Ontario Energy Board (the "OEB") for funding under the OEB's Incremental Capital Module ("ICM") for a number of different capital project segments (the "ICM Segments") that Toronto Hydro intended to carry out in the 2012 to 2014 period (the "ICM period").

The OEB approved initial funding for 13[1] of the ICM Segments through a single rate rider (the "Initial ICM Rate Rider"). The Initial ICM Rate Rider was determined by calculating the revenue requirement associated with Toronto Hydro's forecast of certain in-service additions ("ISAs") that were above the ICM materiality threshold.

The OEB directed that a true-up process take place at the end of the ICM period to reconcile any differences between revenue collected through the Initial ICM Rate Rider, which was based on forecast numbers, and the revenue requirement associated with the cost of actual ISAs above the ICM materiality threshold in each approved ICM Segment from 2012 to 2014.[2] The OEB held that any variances would be refunded to or collected from customers through a rate rider.[3] The OEB directed Toronto Hydro to track: (i) the revenue it collected through the Initial ICM Rate Rider; and (ii) the cost of actual ISAs in

[1] This number does not include Copeland Transformer Station (referred to as the Bremner Transformer Station at the time of the ICM Application) or ICM understatement of capitalized labour, even though these were approved as part of the ICM Application. Further explanation of the treatment of Copeland Transformer Station is included at footnote 12 below. Further explanation of the treatment of the ICM understatement of capitalized labour is included at footnote 32 below

[2] EB-2012-0064, Accounting Order (May 9, 2013) at pp. 2-3

[3] EB-2012-0064, Accounting Order (May 9, 2013) at pp. 2-3

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each approved ICM Segment. This application is the means by which the OEB-prescribed true-up will take place.

The following is a summary of the OEB-prescribed true-up calculations:

a) $41.2 Million in Forecast Revenue Requirement was Collected through the Initial ICM Rate Rider – Toronto Hydro collected $41.2 million through the Initial ICM Rate Rider. The Initial ICM Rate Rider was based on the cost of forecast ISAs in approved ICM Segments that were above the materiality threshold.

b) Variances Between Forecast ISAs and Actual ISAs – During the ICM period, differences arose between the cost of ISAs that were forecast at the ICM Application and the cost of actual ISAs, as follows:

   i. actual ISAs exceeded forecast ISAs in 6 of the 13 ICM Segments in the amount of $70.8 million; and

   ii. actual ISAs were less than forecast ISAs in 7 of the 13 ICM segments in the amount of $32.5 million.

   Overall, Toronto Hydro's actual ISAs exceeded the forecast ISAs collected through the Initial ICM Rate Rider. Spending in each ICM Segment was prudent.

c) The Revenue Requirement Associated with Actual ISAs is $52.3 Million – The revenue requirement associated with actual ISA expenditures is calculated in Exhibit 3[4] as $52.3 million. The calculation may be summarized as follows:

   i. The cost of actual ISAs in approved ICM Segments was calculated;

   ii. The portion of actual ISAs that exceed the ICM materiality threshold in each ICM year was calculated. Actual ISAs exceeded the ICM materiality threshold in each of 2012, 2013 and 2014; and

[4] In calculating the revenue requirement associated with actual ISAs in each ICM year, Toronto Hydro followed the OEB's direction in the Phase I Decisions and used the same inputs provided in the ICM Workforms used to calculate the Initial ICM Rate Rider, with changes only to the actual ISA amounts and associated depreciation and capital cost allowance amounts

iii. The revenue requirement associated with actual ISAs that exceeded the ICM materiality threshold in each of 2012, 2013 and 2014 was calculated as $52.3 million in total.[6]

d) The Difference between Forecast and Actual Revenue Requirement is $11.1 Million: The difference between the $41.2 million in forecast revenue requirement collected through the Initial ICM Rate Rider and the $52.3 million in revenue requirement associated with actual ISAs is $11.1 million, which Toronto Hydro proposes to recover through a new rate rider (the "ICM True-up Rate Rider") to be established in this proceeding, further to the OEB's direction in the ICM Application.[7]

The balance of this document describes the salient points from the ICM Application including the framework set out by the OEB for the true-up process and provides a high level overview and explanation of the variances between forecast and actual ISAs. In particular, Section 2 of this document provides the background of the OEB's approval of ICM funding for Toronto Hydro. Section 3 describes the OEB-approved true-up process that is the basis for this Application. Section 4 addresses the variance analysis between forecast and actual ISAs.

2. THE ICM APPLICATION – KEY FINDINGS FROM EB-2012-0064

2.1. PURPOSE OF THE INCREMENTAL CAPITAL MODULE

The Incentive Regulation Mechanism ("IRM") framework is composed of a first year of rates based on a cost of service application followed by three years of rates set using a formula. It is designed to allow for a relatively mechanistic update to rates without the necessity of a full cost of service record. The purpose of the ICM is to enhance the formulaic nature of the IRM by providing an interim funding process for extraordinary

[6] This was calculated using the OEB's annual ICM Workforms
[7] EB-2012-0064, Accounting Order (May 9, 2013) at pp. 2-3

spending requirements that arise during the IRM term. The parameters of the ICM are set out in reports issued by the OEB[8] but in brief, the ICM provides:

(a) A process for the determination of capital work eligible for ICM funding and the approval of initial rate riders to fund forecast spending; and

(b) A subsequent process for the review of actual spending relative to forecast spending and the approval of true-up rate riders to address any variances.[9]

This application relates specifically to (b), the review of actual spending and the calculation of true-up rate riders.

2.2. PROCEDURAL HISTORY

On May 10, 2012, Toronto Hydro applied to the OEB under section 78 of the *Ontario Energy Board Act, 1998*, for approval of proposed distribution rates and charges under the OEB's IRM framework for the 2012-2014 period. As part of its application, Toronto Hydro requested ICM funding for critical capital projects that were expected to be carried out during the ICM period.

The ICM Application was heard in two parts. Phase I addressed the 2012 and 2013 rate years. Following the Phase I hearing, the OEB rendered a Partial Decision and Order (issued on April 2, 2013)[10] and Decision and Rate Order including an Accounting Order (issued on May 9, 2013)[11] (collectively, the "Phase I Decisions").[12]

[8] See the Report of the Board on 3rd Generation Incentive Regulation for Ontario's Electricity Distributors (the "IR Report"), issued on July 14, 2008, Supplemental Report of the Board on 3rd Generation Incentive Regulation for Ontario's Electricity Distributors issued on September 17, 2008 (the "Supplemental Report"), and Addendum to the Supplemental Report issued on January 28, 2009

[9] IR Report at pp. 33-34

[10] EB-2012-0064, Partial Decision and Order (April 2, 2013)

[11] EB-2012-0064, Decision and Rate Order (May 9, 2013)

[12] Issues related to Copeland Transformer Station ("Copeland TS", referred to as "Bremner Station" during the ICM Application) were heard separately during Phase I of the ICM Application and the OEB approved funding for Copeland TS in the Partial Decision and Order. Ultimately, Copeland TS did not come into service during the ICM period and does not form part of this true-up exercise: Toronto Hydro has not collected any revenues for Copeland TS through the Initial ICM Rate Rider. Revenue requirements associated with Copeland TS were addressed instead as part of Toronto Hydro's Custom Incentive Rate-setting Application for 2015 – 2019 (See EB-2014-0116)

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Phase II of the ICM Application addressed the 2014 rate year. The project segments for 2014 were consistent with the ICM Segments approved by the OEB in the Phase I Decisions.[13] Phase II was resolved by way of a settlement agreement which was accepted by the OEB on December 18, 2013 (the "Phase II Decision").[14]

Toronto Hydro's application for ICM funding was unique among other ICM applications. Unlike most other applications for ICM relief, Toronto Hydro's extraordinary capital needs did not arise as a result of one or two large projects. Rather, Toronto Hydro had a widespread need to renew its aging infrastructure through multiple project segments, each comprising hundreds of discrete jobs spanning the three-year ICM period.[16]

2.3. Application of ICM Criteria in EB-2012-0064

In the Phase I Decisions, the OEB approved 13 project segments[17] for ICM funding based on the following eligibility criteria:

a) Materiality: ISAs in excess of the materiality threshold were eligible for ICM funding provided the criteria below was met. The OEB calculated Toronto Hydro's materiality thresholds as follows: $173.0 million in 2012; $163.8 million in 2013; and $211.1 million in 2014. Pre 2012 construction work in progress was included in the calculation of the materiality threshold.[18] Toronto Hydro has exceeded the applicable materiality threshold in each of the three ICM years.

b) Prudence: The approved work was prudent. The OEB held that prudent capital work is: work necessary to maintain the reliability and adequacy of the distribution system; work required to comply with applicable standards and public

[13] EB-2012-0064, Phase 2 Decision, Settlement Agreement, December 18, 2012, p. 8
[14] EB-2012-0064, Transcript Vol. 11, December 19, 2013 at p. 5
[16] EB-2012-0064, Partial Decision and Order (April 2, 2013) at p. 18
[17] Not including Copeland TS or Understated Capital Labour
[18] EB-2012-0064, Partial Decision and Order (April 2, 2013) at pp. 14-15

acceptability; and work performed in conjunction with other prudent capital work so as to achieve the lowest reasonable life cycle cost for customers.[19]

c) Need: The approved work was non-discretionary. The OEB held that non-discretionary capital work is work that must be performed in order to: comply with applicable laws or external requirements; keep the public and workers safe; address existing or imminent reliability degradations or capacity shortages; and avoid a material increase in costs that might arise if the project was delayed.[20]

d) In-service Additions: In-service additions, not capital expenditures in each year, were used to determine Toronto Hydro's eligibility for ICM funding.[21] An asset is considered "in-service" or "used or useful" if the necessary work has been completed for the asset to be put into service.[22]

Based on these criteria, the OEB held that 13 of Toronto Hydro's proposed project segments were prudent, non-discretionary and were therefore eligible for ICM funding in 2012 and 2013. The OEB approved interim funding through an Initial ICM Rate Rider which was calculated using the OEB Workforms and inputting ISA expenditures as forecast for 2012 and 2013. While the calculation of forecast revenue requirement for 2012 determined that none of the ISAs in the approved ICM Segments would be above the materiality threshold, actual 2012 actual ISAs completed in approved ICM Segments were above the materiality threshold. The revenue requirement associated with the 2012 actual ISAs above the materiality threshold form part of the amounts to be recovered through the ICM True-up Rate Rider.

[20] EB-2012-0064, Partial Decision and Order (April 2, 2013) at pp. 16 – 17
[21] EB-2012-0064, Partial Decision and Order (April 2, 2013) at pp. 12-13
[22] EB-2012-0064, Partial Decision and Order (April 2, 2013) at p. 14

Pursuant to the OEB's Phase II Decision accepting the terms of the settlement agreement, the 2014 rate rider was set at zero with the expectation that any 2014 revenue requirement associated with the 2014 ISAs would be addressed through this application.[23]

2.4. ICM True-Up Framework

2.4.1. Introduction

As part of the Phase I Decisions, the OEB directed that a true-up process take place at the end of the ICM period to address any variances between revenue collected through the Initial ICM Rate Rider and the revenue requirement associated with actual ISA expenditures. Variances were contemplated by the OEB in the Phase I Decisions and are to be expected when high level forecasts are used to estimate expenditures for a large, complex capital program being executed in a dense urban environment.

This section presents the framework used to compare Toronto Hydro's actual ISAs with the forecast ISAs used in developing the Initial ICM Rate Rider. In accordance with OEB direction, this comparison has been completed for each segment approved for ICM funding.[24]

For each of the 13 ICM Segments, the total amount of actual ISAs attributable to work in that segment during the ICM period has been compared to the forecast ISAs. To the extent that the actual ISAs deviate from the forecast ISAs, the revenue requirement associated with the difference is included in the calculation of the amount to be collected from or returned to ratepayers in this proceeding.

[23] EB-2012-0064, Phase 2 Decision, Settlement Agreement, December 18, 2012, pages 8-9
[24] EB-2012-0064, Partial Decision and Order (April 2, 2013), p. 75

2.4.2. THE PURPOSE OF TRUE-UP

As the OEB noted in the Phase I Decisions, the OEB's policy documents do not specifically discuss "true-up".[25] Rather, the policy contemplates a simple comparison between the estimated capital investment for ICM work (and the initial rate rider to fund it) and the actual investment required to complete that work (potentially resulting in a true-up rate rider). The purpose of this comparison is to hold both ratepayers and utilities harmless for differences between forecast and actual ISAs.

This forecast-versus-actual segment comparison is done year by year for ease of ratemaking and true-up purposes: in particular, to determine the difference between the revenue requirement collected in each ICM year and the revenue requirement associated with actual ISAs. However, in accordance with the direction of the OEB, true-up is a segment-level exercise performed over the entire ICM period. The determination of whether overspending or underspending occurred in an ICM Segment can only be assessed over the entire ICM period because the OEB permitted Toronto Hydro to move funds between years within each ICM Segment.[26] In other words, even if Toronto Hydro invested more than the amount forecast for a particular ICM Segment in a given year, no overspending would have occurred until the total amount invested exceeded the total investment forecast in a segment over the entire ICM period.

2.4.3. THE TRUE-UP PROCESS FOLLOWED IN THIS APPLICATION

The OEB established the true-up process for this proceeding in the Phase I Decisions, directing Toronto Hydro to:

a) track the total revenue collected from the Initial ICM Rate Rider;[27]

[25] EB-2012-0064, Partial Decision and Order (April 2, 2013), page 75
[26] EB-2012-0064, Partial Decision and Order (April 2, 2013), pages 75-76
[27] EB-2012-0064, Partial Decision and Order (April 2, 2013), page 76 and Accounting Order (May 9, 2013) at p. 2

b) track actual ISA expenditures for each ICM Segment;[28]

c) calculate the revenue requirement associated with actual ISA expenditures above the materiality threshold;[29] and

d) compare the revenue collected from the Initial ICM Rate Rider with the revenue requirement associated with actual ISA expenditures above the materiality threshold so that any variances may be refunded or collected, as the case may be, from customers through a rate rider.[30]

In particular, the OEB delineated the process by which the revenue requirement associated with actual ISA expenditures was to be calculated:

> At the time of the true-up, THESL will recalculate the revenue requirement impacts (using the ICM workform) based on the actual in-service assets (used and useful) in Board-approved ICM segments in the sub-accounts of Account 1508, as described in Appendix E Schedule 2 of THESL's EB-2012-0064 *Draft Rate Order* filing of April 12, 2013, to determine the revenue requirement on an actual basis for each applicable period (e.g. 2013 and 2014). All other input information in the ICM Workform will remain unchanged other than changes to the incremental capital CAPEX and the depreciation/amortization expense.[31]

As is set out in the sections below and in Exhibit 3, Toronto Hydro has tracked this information and has used it to perform the revenue requirement true-up calculation.

3. REVENUE REQUIREMENT TRUE-UP CALCULATION

3.1.1. REVENUE COLLECTED THROUGH THE INITIAL ICM RATE RIDER

Toronto Hydro collected $41.2 million in revenue from the Initial ICM Rate Rider through to the end of April 2015 when the Initial ICM Rate Rider was discontinued.

[28] EB-2012-0064, Partial Decision and Order (April 2, 2013), page 76 and Accounting Order (May 9, 2013) at p. 2
[29] EB-2012-0064, Accounting Order (May 9, 2013) at pp. 2-3
[30] EB-2012-0064, Partial Decision and Order (April 2, 2013), p. 75, EB-2012-0064, Accounting Order (May 9, 2013) at pp. 2-3
[31] EB-2012-0064, Decision and Rate Order (May 9, 2013), Appendix B

3.1.2. ACTUAL ISAS VERSUS FORECAST ISAS

As indicated in Table 2, below, variances between the forecast ISAs and actual ISAs occurred in all ICM Segments. As fully explained in section 4 below, variances occurred for 2 p reasons: 1) differences between forecast and actual ISA costs; and 2) differences between the number of jobs forecast and the number completed. Variances were contemplated by the OEB in the ICM Decisions and are to be expected as part of a large, complex capital program being executed in a dense urban environment.

Table 2 below describes the variances between forecast and actual ISAs and includes the following information:

a) the 13 approved ICM Segments (excluding Copeland TS);
b) the forecast ISAs for each ICM segment over the 2012-2014 period;
c) the actual ISAs for each ICM segment over the 2012-2014 period; and
d) a calculation of the variance between the forecast and actual ISAs for each ICM Segment over the 2012-2014 period in dollars and percentage.

Table 2 does not include ISAs approved for Copeland TS or forecast amounts for the ICM Understatement of Capitalized Labour.[32]

[32] As part of Toronto Hydro's Phase I evidentiary update in October 2012, a number of jobs were deferred from the 2012-2013 period to 2014, resulting in a lower overall amount of forecast work for the 2012-2013 period. Toronto Hydro did not update the allocation of Capitalized Labour (i.e. Engineering Capital) across the re-forecast list of jobs at that time, but instead showed the surplus Engineering Capital costs as a separate line item called "ICM Understatement of Capitalized Labour". The OEB authorized $8.3 million in ISA funding for the ICM Understatement of Capitalized Labour and this amount has been fully allocated across the final population of completed jobs in each year on an actuals basis

Table 2: Forecast ISAs vs. Actual ISAs

ICM Segment	Forecast ISAs ($ millions)	Actual ISAs ($ millions)	Variance ($ millions)	Variance (%)
Underground Infrastructure	124.4	180.0	55.6	44.7
PILC Piece Outs and Leakers	6.9	2.8	(4.1)	(59.9)
Handwell Replacement	37.5	36.4	(1.1)	(3.0)
Overhead Infrastructure	79.7	83.7	4.0	5.0
Box Construction	29.3	23.0	(6.4)	(21.7)
Rear Lot Construction	50.8	58.0	7.3	14.3
Network Vaults & Roofs	22.5	17.3	(5.2)	(23.2)
Fibertop Network Units	12.0	13.6	1.6	13.3
Automatic Transfer Switches & Remote Power Breakers	3.4	1.9	(1.5)	(43.1)
Stations Power Transformers	3.9	5.0	1.1	29.5
Stations Switchgear	16.7	5.0	(11.7)	(70.2)
Metering	17.0	18.2	1.2	7.0
Externally Initiated Plant Relocations & Expansions	36.9	34.4	(2.5)	(6.7)

As indicated in Table 2, in 6 ICM Segments actual ISAs exceeded forecast ISAs by $70.8 million in the aggregate. Spending in excess of the forecast amounts was prudent and non-discretionary. Evidence in respect of the prudence of these expenditures is included at Exhibit 2.

As indicated in Table 2, in 7 ICM Segments actual ISAs were $32.5 million less than forecast ISAs. The revenue requirement related to this amount should be credited to ratepayers in accordance with the direction set out in the Phase I Decisions.[35]

Taking the net result of the ISAs in all 13 ICM Segments, Toronto Hydro's actual ISAs exceeded the forecast ISAs that formed the basis of the Initial ICM Rate Rider. Toronto Hydro proposes to recover the associated revenue requirement through the ICM True-up Rate Rider, pursuant to the Phase I Decisions.[36]

3.1.3. REVENUE REQUIREMENT ASSOCIATED WITH ACTUAL ISAS

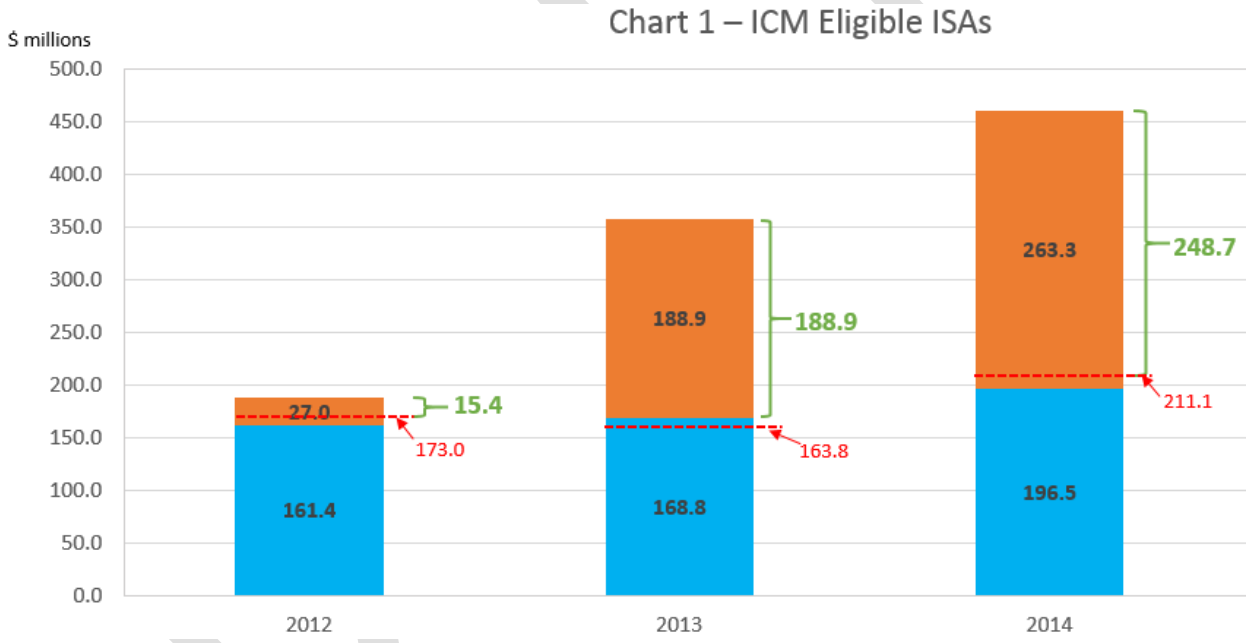
The revenue requirement associated with actual ISA expenditures is calculated in Exhibit 3 as $52.3 million. In calculating the revenue requirement associated with actual ISAs in each ICM year, Toronto Hydro followed the OEB's direction in the Phase I Decisions and used the same inputs provided in the ICM Workforms used to calculate the Initial ICM Rate Rider, with changes only to the actual ISA amounts and associated depreciation and capital cost allowance amounts. The calculation of the revenue requirement associated with actual ISA expenditures is summarized as follows:

i. The cost of actual ISAs in approved ICM Segments was calculated;
ii. The portion of actual ISAs that exceed the ICM materiality threshold in each ICM year was calculated. Actual ISAs exceeded the ICM materiality threshold in each of 2012, 2013 and 2014; and
iii. The revenue requirement associated with actual ISAs that exceeded the ICM materiality threshold in each of 2012, 2013 and 2014 was calculated as $52.3 million in total.[38]

[35] EB-2012-0064, Decision and Rate Order (May 9, 2013), Appendix B – Accounting Order, p. 3
[36] EB-2012-0064, Decision and Rate Order (May 9, 2013), Appendix B – Accounting Order, p. 3
[38] This was calculated using the OEB's annual ICM Workforms

Chart 1, below, provides a visual summary of ISAs in each year that are eligible for ICM funding and which were used to calculate the revenue requirement associated with actual ISAs in approved ICM Segments, where:

- the *blue bars* are actual ISAs that are funded through base rates or borrowing;
- the *orange bars* are actual ISAs in approved ICM Segments;
- the *red dashed lines* are the annual ICM materiality thresholds; and
- the *green brackets* indicate actual ISAs in approved ICM Segments that are above the ICM materiality threshold and qualify for ICM funding.



In 2012, Toronto Hydro generated $27.0 million in actual ISAs in approved ICM Segments (orange bar). Of these ISAs only $15.4 million (green bracket) were above the ICM materiality threshold (red dashed line) and qualified for ICM funding. Toronto Hydro used $15.4 million to calculate the actual revenue requirement and ICM True-up Rate Rider.

In 2013, Toronto Hydro generated $188.9 million in actual ISAs in approved ICM Segments (orange bar). All of these ISAs were above the ICM materiality threshold (red dashed line) and qualified for ICM funding. Toronto Hydro used $188.9 million to calculate the actual revenue requirement and True-up Rate Rider. An additional $5.0 million in ISAs were also above the materiality threshold but these ISAs were part of segments or projects that the OEB expected would be funded through base rates or borrowing. Toronto Hydro has not included this additional $5.0 million in its calculation of the actual revenue requirement and True-up Rate Rider even though this amount is above the ICM materiality threshold.

In 2014, Toronto Hydro generated $263.3 million in actual ISAs in approved ICM Segments (orange bar). Of these ISAs only $248.7 million (green bracket) were above the ICM materiality threshold (red dashed line) and qualified for ICM funding. Toronto Hydro used $248.7 million to calculate the actual revenue requirement and True-up Rate Rider.

Put simply, to the extent that the orange bars exceed the ICM materiality threshold in each year, Toronto Hydro has used these amounts to calculate the revenue requirement for actual ISAs in approved ICM Segments.

In total, $453.0 million in actual ISAs qualify for ICM funding. Applying this number to the OEB's revenue requirement equation results in an actual revenue requirement over the ICM period of $52.3 million, as calculated in Exhibit 3.

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3.2. Incremental Revenue Requirement

In the Phase I Decisions, the OEB held that the revenue requirement associated with variances between forecast and actual ISAs would be refunded to or collected from customers through a rate rider.[39]

The difference between the $41.2 million of revenue collected from the Initial ICM Rate Rider and the $52.3 million revenue requirement associated with actual ISAs in approved ICM Segments is $11.1 million, which Toronto Hydro proposes to recover through the ICM True-up Rate Rider as calculated in Exhibit 3.

3.3. True-up Process Interaction with the Toronto Hydro 2015 Custom Incentive Rate-setting Application

Toronto Hydro filed a custom incentive rate-setting application for 2015-2019 on July 31, 2014.[40] In its CIR application, Toronto Hydro proposed a deferral of the ICM true-up, noting that as of the CIR application filing date the 2012-2014 ICM work program was still in progress.[41]

Later in the proceeding, Toronto Hydro proposed that a variance account be established to capture differences between (a) amounts approved in the CIR Decision for inclusion in 2015 rate base related to ICM work during the 2012-2014 period, and (b) any disallowance based on prudence that may result from the ICM true-up process in this proceeding.[42]

As part of its Decision and Reasons in Toronto Hydro's CIR application, the OEB accepted Toronto Hydro's proposals. **[NTD: Update based on CIR Decision]**

[39] EB-2012-0064, Accounting Order (May 9, 2013) at pp. 2-3
[40] EB-2014-0116, Toronto Hydro-Electric System Limited Application (July 31, 2014)
[41] EB-2014-0116, Toronto Hydro-Electric System Limited Interrogatory Responses (November 5, 2014) at page 4
[42] EB-2014-0116, Toronto Hydro-Electric System Limited Reply Argument (April 20, 2015) at page 225

4. VARIANCE EXPLANATIONS

4.1. INTRODUCTION

In the Phase I Decisions, the OEB directed that reconciliation for any variances be performed on a segment level basis over the three year ICM period.[43] Accordingly, Exhibit 2 to this application contains a section for each ICM Segment which include a detailed variance analysis for each segment over the course of the ICM period. This section provides an overview of the reasons for variances within the ICM Segments.

Variances arose in each of the 13 ICM Segments for two main reasons. First, variances occurred where the actual cost of a job was more or less than the forecast cost or in other words, where actual ISAs were more or less than forecast ISAs. Second, variances occurred where jobs were added, deferred or cancelled in an ICM Segment.

Actual ISA amounts varied from forecast ISA amounts for 5 primary reasons, as described in the sections below. Exhibit 2 to this application includes a comparison of forecast ISAs against actual ISAs for each ICM Segment and explains the primary reasons for variances within the segment. Exhibit 2 does not include a variance analysis for each job in Toronto Hydro's ICM program. Given the number of jobs in the ICM program, this approach would not be practical or helpful. Instead, Toronto Hydro has explained the primary reasons for variances on a segment-by-segment basis. For ICM Segments where actual ISAs exceed the forecast ISAs over the ICM period, Toronto Hydro has explained the prudence of the additional work and why the associated revenue requirement should be recovered.

Variances also occurred in ICM Segments as a result of jobs being added, deferred or cancelled. In some ICM Segments, circumstances required that additional work be undertaken. In other ICM Segments, circumstances occurred that eliminated the need for planned jobs or the ability to undertake them during the ICM period. Each section in Exhibit 2 provides a breakdown of the status of jobs in the segment including whether they were completed, in progress, added, deferred, or cancelled during the ICM period. Job level detail is included in Exhibit 2 for added jobs to demonstrate that these jobs were prudent, non-discretionary and analogous to other jobs in the ICM Segment. These jobs are referred to as "analogous jobs".

4.2. Variances Between Forecast and Actual ISAs

Actual ISAs varied from forecast ISAs for 5 primary reasons. First, variances occurred as the result of the ordinary refinement of cost estimates as a job moved from a high level to a detailed design. For example, variances occurred where one job was expanded or merged into another single job in order to address emerging system needs and/or gain operational efficiency associated with the particular work.

Second, variances occurred during the construction phase of a job due to specific site conditions, for example, where field inspections revealed that the equipment or environmental conditions presented different challenges (or opportunities) than anticipated, or that practical constraints required different asset configurations.

Third, variances occurred where Toronto Hydro had to accommodate third party constraints or requirements. For example, if the City of Toronto introduces a moratorium on road cuts, Toronto Hydro may have to re-define the scope or timing of certain jobs.

Fourth, variances occurred at the project close-out phase of a job, where actual overhead costs were reconciled with the average overhead costs allocated to the job during the design phase. For example, variances occurred where actual road cut costs for a job were

more or less than the average road cut costs that were allocated to the job during the design phase.

Finally, in a small number of cases, variances were attributable to errors in the original estimates that were filed in the ICM Application.

These 5 primary drivers of cost variance are referred to in Exhibit 2 to explain instances where actual ISAs varied from forecast ISAs over the ICM period. They are summarized in Table 3 and are described in further detail in the sections below.

Table 3: Common Drivers of Variance – Table of Variance Codes

Variance Type	Explanation
High Level to Detailed Design Variance	Variances attributable to the move from the high level planning estimates that formed the basis of the ICM application to the detailed designs contained in the final Execution Work Plan. They are due to changes in: operational elements requested by Toronto Hydro's control room such as additional SCADA switches; job scope; design elements; and applicable standards.
Field Conditions & Execution Requirements	Variances that arise due to site conditions encountered during the construction phase. These include site conditions, operational constraints (e.g. loading and switching restrictions), and labour and equipment costs that arise during construction.
Third-party Requirements & Constraints	Variances due to third party requirements arising from collaborative agreements and coordination issues with the City of Toronto, Hydro One or other utilities.
Variance in Allocated Costs	Variances due to differences between the average overhead costs (e.g. design costs, road cuts) allocated to individual jobs in the high level planning estimates and the actual overhead costs

	incurred for each individual job as calculated at project close out.
Errors	Variances due to errors made in the high level planning estimates or in the ICM filing.

Process issues also contributed to overall variances between forecast and actual ISAs. While Toronto Hydro initially filed its ICM Application using capital expenditure amounts, the OEB ultimately directed Toronto Hydro to file its ICM Application based on ISAs. Toronto Hydro converted its forecast capital expenditures to ISAs using historical percentages.[46] Relying on forecast ISAs estimated in this manner was efficient and necessary given the time constraints inherent in the ICM Application but ultimately contributed to variances in actual ISAs.

4.2.1. HIGH LEVEL TO DETAILED DESIGN VARIANCES

The vast majority of variances occurred as a natural outcome of relying on forecast amounts based on estimates. As was discussed in detail in Toronto Hydro's evidence in the ICM Application, in developing estimated job costs for that application, Toronto Hydro relied primarily on high level planning estimates with the expectation that these estimates would be necessarily refined as the job moved from high level planning to execution and, sometimes, during execution based on the conditions encountered on the ground. These changes are necessary for the prudent planning and execution of a large-scale capital plan, comprised of hundreds of jobs with multiple assets types, and spanning multiple years. As Toronto Hydro explained in its evidence:

[46] In the ICM application each year's spending included the full cost of all of the jobs anticipated to begin in that year irrespective of whether the job would be completed in the year that it started or in a subsequent year (EB-2012-0064, Manger's Summary. (October 31, 2012) at p. 14). When intervenors requested information on ISAs for each year, Toronto Hydro developed forecast ISAs by applying the percentage of 2011 capital spending that was placed into service in 2011 to the forecast spending in each year (EB-2012-0064, Tab 8, Schedule 2-1 (December 11, 2012), Response to Undertaking No. J2.1). This approach was used because Toronto Hydro's forecast budgets in the ICM application were created in advance of a fully scheduled work plan

> For purposes of planning and budgeting, THESL follows a two-stage process for cost estimation. The first stage is the production of a high level estimate that is usually prepared using a cost per unit of work approach. For example, when producing the initial estimate for an underground direct buried job, THESL uses a cost per unit length parameter that reflects the cost of installing civil and electrical infrastructure based on a selected standard of construction. This approach is used for initial screening of jobs and avoids the significant cost involved to produce a detailed estimate for a job that may not go forward.
>
> As accepted jobs proceed toward the construction phase, THESL produces a detailed estimate based on the particular features of a specific job. A number of factors may cause the cost of a specific job to change from the average used for the initial estimate, and these factors are accounted for in the detailed estimate. (Additional factors, such as season, use of overtime labour, system loading, and real-time switching options may also affect actual costs versus detailed estimate costs.)[47]

In short, cost estimates are refined throughout the process that takes a job from high-level design to completion. This approach is standard practice for project cost estimation for construction projects.

What follows is a description of the steps typically taken by Toronto Hydro to progress a job from a high level to a detailed design generally and where necessary, in the context of the ICM program.

4.2.1.1. CREATION OF PROJECT SEGMENTS

Toronto Hydro's ICM capital program is comprised of segments. Each segment contains discrete jobs undertaken for a similar purpose. Each segment uses a common approach to demonstrate the need for the work and explains the process used to prioritize the jobs within it.

[47] EB-2012-0064, Tab 2, Addendum, pages 10-11

For example, all jobs in the Rear Lot Construction segment involved work associated with replacing customers' electrical service, whether overhead or underground, at the rear of their houses with underground service at the front

4.2.1.2. THE INITIAL JOB SCOPING PROCESS

Each job is identified through a scoping process. Jobs are evaluated based on the age and known condition of the assets targeted for replacement, whether they meet modern standards and how they affect the overall operation of Toronto Hydro's distribution system. Large assets such as station switchgear are evaluated individually. Smaller assets are evaluated by area or region, or by electrical circuit configuration, as appropriate.

The scoping process is intended to establish system investment needs at a high-level and the relative priority of jobs using high level estimates. Information produced in the scoping process is used to facilitate the development of preliminary Execution Work Programs (EWPs) and establish budgets at aggregate levels for those EWPs. Not all jobs identified in the scoping process can be included in a given year because of budgetary and other constraints (e.g., switching capacity, resources constraints or scarcity of necessary field skills).

4.2.1.3. DEVELOPMENT OF EXECUTION WORK PROGRAMS

The preliminary EWPs are developed early in the year prior to the year in which the work will take place and do not involve any detailed scheduling of the jobs or the resources necessary to accomplish them. Jobs and resources are not scheduled until the work programs for the coming year are finalized late in the year prior to execution. During the period between development of the preliminary and final EWPs, the list of jobs typically changes due to the emergence of higher priority work or of constraints that impact Toronto Hydro's ability to execute jobs included in the preliminary EWPs.

4.2.1.4. COST OF HIGH LEVEL VS. DETAILED DESIGN ESTIMATES

The majority of job scopes included in the preliminary EWP are costed using high-level estimates. High-level estimates typically cost significantly less than 1% of the total job cost to create. Greater expenditures are not typically justified because many jobs are subsequently refined and in some instances, jobs are deferred or cancelled. It is therefore not cost-efficient to spend more on the estimate at this stage of the process.

High-level estimates do not incorporate area-specific considerations (e.g., the location of other utilities' equipment, trees or other obstacles; soil conditions; landscaping and building set-backs), which can alter the final cost of a job significantly. High-level estimates also do not incorporate input from field staff which can change the final scope of the job by providing more detailed information on asset condition and configuration.

In contrast, detailed estimates created closer to construction require full designs and typically cost up to 10% of a job's overall cost. For this reason, Toronto Hydro does not begin detailed design work until a job is scheduled in the preliminary EWP and strives to have most detailed design work completed by the time the EWP is finalized (late in the year prior to construction). To do otherwise would be wasteful given the modifications and deferrals discussed above.

4.2.1.5. ACCEPTED INDUSTRY STANDARDS

Toronto Hydro's high-level estimates can and do vary from the actual cost of the completed jobs even where the scope of the jobs remains unchanged between the initial planning and execution. This type of variance is an accepted part of project cost estimation generally and has specifically been recognized for cost estimation in the utility industry.[49]

[49] For an example of the variances contained in a cost estimation approach approved for transmission projects, see, Alberta Electricity System Operator, Cost Estimating Framework (ISO Rule 9.1.2) AESO

4.2.2. FIELD CONDITIONS & EXECUTION REQUIREMENTS

Variances occur at the execution stage of a job where field conditions, operational constraints or other factors cause costs to change during construction. For example, in some jobs, material modifications to equipment numbers and configuration must be made to account for the particular conditions at the project site. In some instances, it may be difficult for Toronto Hydro's designers to anticipate potential challenges to the asset positioning and configurations used in the design. As such, a number of job variances are driven by design or construction requirements that only became apparent following the actual commencement of the jobs and after the targeted equipment and its positioning were physically visible to the crews.

4.2.3. THIRD-PARTY REQUIREMENTS & CONSTRAINTS

Variances occurred where Toronto Hydro had to accommodate the requirements or constraints of third parties such as the City of Toronto, Hydro One or Toronto Hydro customers. This was a primary driver of variances in 3 of the 13 ICM Segments.[50]

Third party requirements often arise after high level estimates have been completed. For instance, the City's permitting process requires a detailed design estimate. As a result, modifications required by the permitting process were not included as part of the high-level estimates. City requirements in respect of work in the road allowance also led to a number of jobs being re-scoped or executed at different times, for example, where the City required Toronto Hydro to install switches below-grade instead of above-ground or imposed road cut moratoriums.

Recommendations, October 17, 2014. This document can be accessed at: http://www.aeso.ca/downloads/AESO_CostEstimatingFrameworkRecommendationPaper.pdf

[50] Underground Infrastructure, Rear Lot Construction and Externally-Initiated Plant Relocations

The timing of when work could be done also impacted costs. Coordinating work schedules with third parties like Hydro One could lead to delays and impact work schedules. Where third parties required work to be performed in off-peak hours, Toronto Hydro incurred higher labour costs that had not been accounted for in the estimates filed in the ICM Application.

Work in the Externally-Initiated Plant Relocations segment is driven by the schedules and requirements of third-parties. A number of cost variances experienced at the job level in this segment were the result of third-party decisions that were outside of Toronto Hydro's control.

4.2.4. VARIANCE IN ALLOCATED COSTS

A number of costs are compiled centrally by Toronto Hydro and then attributed to individual jobs at project closeout. Examples include costs for road cut repairs billed by the City of Toronto and centralized costs for design and engineering services. These costs are then attributed to specific jobs based on the cost and nature of the completed work. Toronto Hydro's approach to accounting for allocated costs in the ICM Application was to apply a consistent percentage-based adder to a job's forecast costs. Variances sometimes occurred when the amount of these allocated costs at close out were greater or less than the average amounts assumed in the high level estimates.

4.2.5. ERRORS

In a small number of cases, variances are attributable to errors in the original estimates that were filed in the ICM Application, for example where a job was filed with an estimated cost of $1. Generally, these are clerical or computational errors that failed to accurately capture the costs of the high level design or that were made in preparing the list of estimates for the ICM Application.

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4.3. VARIANCES DUE TO ADDED, CANCELLED OR DEFERRED JOBS

In addition to variances stemming from changes to the cost of individual jobs, the total ISAs in a segment can vary due to the addition, deletion or deferral of jobs beyond the ICM period as noted above. These types of changes to the forecast work in each segment were fully anticipated in the evidence in the ICM Application. For example:

> By way of a real-world example, while THESL has provided a list of specific Fibertop network unit replacements that it has proposed to complete in 2014, operational realities may require it to reprioritize this list of replacements, such that Fibertop units not currently scheduled to be replaced in 2014 may be advanced to be replaced during the ICM cycle, displacing previously scheduled jobs – in other words, circumstances may require that certain fibertop replacement jobs be moved-up in the queue. Accordingly, it may be the case that THESL is driven to substitute some of the approved Fibertop replacement jobs with other Fibertop jobs that were not contemplated for replacement in 2014 at the time of the application. These jobs would not be materially distinguishable in scope from those already approved. THESL understands that the principles underlying the ICM framework, and in particular the Phase 1 Decisions, contemplate such additions and substitutions (as long as the new jobs fit the ICM criteria and are essentially the same as approved jobs).[51]

In the ICM Decisions, the OEB acknowledged Toronto Hydro's operational need to add, delete or adjust the timing of particular work within the ICM Segments, recognizing that ICM-eligible spending on the specific jobs within a segment may vary.[52]

The segment sections in Exhibit 2 identify the jobs that were added, deleted or deferred and explain why these changes occurred. In particular, Exhibit 2 includes job level detail for analogous jobs to demonstrate that they are similar in nature to other jobs in the same ICM Segment and that they were required to be carried out for similar purposes. In short, the evidence in Exhibit 2 shows that analogous jobs were prudent and non-discretionary and the work was required during the ICM period to address urgent issues, because it was

[51] EB-2012-0064, Tab 9, Schedule 1, page 10
[52] EB-2012-0064, Partial Decision and Order (April 2, 2013), page 75; EB-2012-0064, Decision and Rate Order (May 9, 2013), Appendix B, page 3

most efficient to complete it in conjunction with other ICM jobs, or because external factors prevented the completion of a filed job so another urgent job was substituted in order to use available resources efficiently.

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B1 Underground Infrastructure	EST20380_001	20380_001 W11614 Ladyshot and Eldorado Crt Direct Buried Cable Replacement	Construction attained and ISA'd	$688,981.37	$1,941,960.92	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. This variance accounted for approximately $600K of the overall variance and included incremental civil and electrical costs.	
B1 Underground Infrastructure	EST20438_009	20438_009 PCI-EII472 INGLETON REHAB PHASE A CIVIL DPE Planned - 3110	Construction attained and ISA'd	$28,328.77	$591,319.63	Variance in Allocated Costs	The filed estimate of $28K was intended to capture the small amount of remaining expenditures in 2012 for a much larger job that was substantially complete in 2011. The significant variance in this instance was due to the allocation of road cut repairs, design costs, engineering capital and AFUDC, all of which are finalized at the job close-out and are generally proportional to the full cost of the job.	
B1 Underground Infrastructure	EST20902_002	20902_002 W12449 UG Lat Cbl & Tx Rehab - Bathurst FESI 80M2	Construction attained and ISA'd	$796,854.20	$554,039.30	Field Conditions & Execution Requirements	A portion of the original scope of work was removed due to collapsed ducts discovered on a customer's property. The customer, who owned the duct structure, was unwilling to rectify the issue in time for project completion and was therefore removed from the project scope.	
B1 Underground Infrastructure	EST21262_001	21262_001 W12464 Antibes/Torresdale UG Rebuild Creation Date: October 1, 2010	Construction attained and ISA'd	$1,316,846.51	$1,070,868.24	High Level to Detailed Design Variance	For efficiency of scheduling and execution, Toronto Hydro elected to split this job into separate civil and electrical phases during the design stage, effectively reducing the scope of work of this job to the civil portion only. The civil phase was completed in 2014 and the electrical portion is in the design phase and is expected to be completed in early 2016.	
B1 Underground Infrastructure	EST21731_001	21731_001 W13162 Starview - Rockbank UG Rehab 55M21	Construction attained and ISA'd	$1,616,536.11	$2,171,549.49	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. In accordance with the revised standard, Toronto Hydro rebuilt the secondary cables in concrete-encased ducts up to the lot-line, and replaced the end-of-life and direct-buried secondary services serving 102 customers.	
B1 Underground Infrastructure	EST22984_001	22984_001 W14134 85M7 UG DB PHI1 rebuild Hidden Tr	Construction attained and ISA'd	$3,951,572.14	$4,929,477.05	High Level to Detailed Design Variance	Field inspections performed during the detailed design phase revealed the need to reroute the proposed duct banks under the sidewalk, rather than the boulevard as originally planned, to account for tree roots and other underground assets. This increased the cost relative to the forecast by approximately $1.38M. This cost was partially offset by contributions from third-party utilites for sharing the newly constructed underground infrastructure.	
B1 Underground Infrastructure	EST23947_001	23947_001 W14284 Pellatt Ave UG BD Rebuild	Construction attained and ISA'd	$1,129,261.15	$832,871.85	High Level to Detailed Design Variance	Detailed site inspections by the designer determined that fewer asset installations were required than originally anticipated in the high-level estimate. The original estimate included the replacement of three poles, but only two were required. In addition, the original estimate included the replacement of three underground transformers, but only two were required. Other associated costs (cable, restoration, etc.) were all reduced as a result of the reduced scope.	
B1 Underground Infrastructure	EST24386_001	24386_001 W14350 P01 - Gordon Mackay UG Re. OH Reh HIGH LEVEL FROM Amar/ Christi	Construction attained and ISA'd	$1,253,762.24	$609,953.54	High Level to Detailed Design Variance	Detailed design inspections determined that a shorter duct route than anticipated in the high-level estimate was available. Inspections also revealed that one fewer underground transformer required replacement than originally planned.	
B1 Underground Infrastructure	EST27941_001	27941_001 W14540 Robert Hicks_Torresdale Civil Ph1 80M8	Construction attained and ISA'd	$1,563,099.62	$1,260,811.99	High Level to Detailed Design Variance	The electrical portion of this job was deferred to the winter months in order to better utilize available resources, resulting in a reduced job scope. The electrical phase was in progress as of 2014 and continued in 2015.	
B1 Underground Infrastructure	EST20812_003	20812_003 W12435 Astral / Paul David UG DB Rebuild 85M9 - - copied from version 002	Construction attained and ISA'd	$563,530.00	$412,751.28	High Level to Detailed Design Variance	Toronto Hydro determined that it was necessary to replace a portion of the overhead assets associated with this job on a reactive basis in response to field information that demonstrated need for urgent repair. The job was then redesigned to exclude these assets.	
B1 Underground Infrastructure	EST21291_001	21291_001 E13075 UG Rehab of NY51M7 - Civil	Construction attained and ISA'd	$1,131,850.01	$1,246,650.96	High Level to Detailed Design Variance	Toronto Hydro designers determined that the cost of restoring interlocking brick on public property along the duct route would have been prohibitively expensive. As an alternative, Toronto Hydro chose the more cost-effective option of microtunnelling under the brick, which increased the cost of the job by a lesser amount.	
B1 Underground Infrastructure	EST21298_001	21298_001 E13078 UG Rehab of NY51M8 - Civil E13078 btn Leslie and Bayview	Construction attained and ISA'd	$1,260,887.58	$684,957.91	High Level to Detailed Design Variance	The high level estimate anticipated significantly higher restoration costs due to trenching on public property. However, the designer later determined that a portion of the job was on private property and was therefore amenable to full restoration on site, in coordination with the ongoing activities. This significantly reduced the restoration costs.	
B1 Underground Infrastructure	EST24846_009	24846_009 PCI E10112 Purple Sageway 51M3 UG DO NOT PACKAGE - Civil	Construction attained and ISA'd	$337,331.46	$491,284.67	Variance in Allocated Costs	Design and road cut/resurfacing costs were higher than forecasted.	
B1 Underground Infrastructure	EST24664_009	24664_009 ICM - E11087 47M1 Grand Marshall UG Repl DO NOT PACKAGE	Construction attained and ISA'd	$570,429.05	$1,468,214.03	High Level to Detailed Design Variance	The cost variances for this project were due to several factors encountered during the detailed design phase of project development: - System operations personnel requested certain modifications to the construction design in order to improve system reliability. Additional assets included load interrupter switches, two additional risers on poles, and SCADA operable switches. Circuit transfers were also performed to improve operating efficiency. Toronto Hydro determined that it was prudent to execute the necessary enhancements in coordination with the ongoing job in order to minimize the overall cost of work. - Detailed field inspections found that five three-phase transformers and a non-standard padmounted switchgear were in poor condition and would require replacement. This information was unknown to the engineer at the time of high-level job planning. - The City of Toronto would not allow an above grade switchgear at a particular intersection and requested that Toronto Hydro leave a corridor for a possible future sidewalk. To compensate, the designer needed to include a cable chamber and associated ductwork.	Field Conditions & Execution Requirements
B1 Underground Infrastructure	EST25279_001	25279_001 E11139 Cassandra UG Cable Replace Civil for 2012 Budget	Construction attained and ISA'd	$2,398,000.00	$4,498,933.52	High Level to Detailed Design Variance	- The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. In accordance with the revised standard, Toronto Hydro rebuilt the secondary cables in concrete-encased ducts up to the lot-line, and replaced the end-of-life and direct-buried secondary services serving 595 customers. - The designer also discovered the need to relocate water services in order to execute the job, which would not have been known to the engineer at the time of high-level of planning.	Variance in Allocated Costs
B1 Underground Infrastructure	EST19001_009	19001_009 ICM - E11483 - INGLETON REHAB PHASE 1 DPE PLANNED - 3110	Construction attained and ISA'd	$2,674,297.21	$2,946,436.13	High Level to Detailed Design Variance	The cost of this job increased during detailed design due to required changes in the planned civil construction route. This change was required to address tree protection zones.	
B1 Underground Infrastructure	EST19005_009	19005_009 PCI-E11484 Rebuild Ingleton Ph 2 Civil Created October 2010	Construction attained and ISA'd	$17,849.51	$694,090.38	Variance in Allocated Costs	The filed estimate of $18K was intended to capture the small amount of remaining expenditures in 2012 for a much larger job that was substantially complete in 2011. The significant variance in this instance was due to the allocation of road cut repairs, design costs, engineering capital and AFUDC, all of which are finalized at the job close-out and are generally proportional to the full cost of the job.	
B1 Underground Infrastructure	EST24850_009	24850_009 ICM E1544 Blackwell Coxworth Rebuild-Civ DO NOT PACKAGE (from WT12121 Ver 009)	Construction attained and ISA'd	$1,384,261.09	$1,809,510.42	High Level to Detailed Design Variance	During the detailed design phase, Toronto Hydro identified the need for additional costs related to a tree protection zone in the area. The added costs were related to additional conduit, construction of a tree tunnel (required when working in tree protection zones), and extra depth of civil construction	Field Conditions & Execution Requirements
B1 Underground Infrastructure	EST22215_009	22215_009 PCI-E11618 Ingleton Feeder Main Phase B UPCMS #TP-2011-8054	Construction attained and ISA'd	$6,375.08	$319,469.21	Variance in Allocated Costs	The filed estimate of $6K was intended to capture the small amount of remaining expenditures in 2012 for a much larger job that was substantially complete in 2011. The significant variance in this instance was due to the allocation of road cut repairs, design costs, engineering capital and AFUDC, all of which are finalized at the job close-out and are generally proportional to the full cost of the job.	Scope Change
B1 Underground Infrastructure	EST24658_009 EST19449_X03	24658_009 E12096 Ingleton Rebuild UG Ph3 (Elec) for 2012 Budget	Construction attained and ISA'd	$1,182,837.48	$916,433.75	High Level to Detailed Design Variance	Five of transformers that were identified for replacement in the high-level plan were found by the designer to be in good condition and of a newer switchable type, and were therefore left in service.	Field Conditions & Execution Requirements

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B1 Underground Infrastructure	EST20058_009	20058_009 E12212 VENTURE Drive UG Rebuild Civil SC DO NOT PACKAGE for budget	Construction attained and ISA'd	$1,318,900.00	$1,791,612.79	High Level to Detailed Design Variance	The variance was due to site conditions discovered during detailed design inspections. An additional $230K was required for duct construction, as the necessary ruct route was generall y more complex and required tunnelling around protected trees, extra depth to avoid obstacles in certain areas and incremental costs related to removal and repair of a commercial/industrial driveway. Road cut repairs and design costs also came in higher than anticipated.	Variance in Allocated Costs
B1 Underground Infrastructure	EST24843_009	24843_009 PCI E12275 Muirbank UG Rebuild Ph 2 DO NOT PACKAGE - Civil	Construction attained and ISA'd	$839,300.00	$1,696,431.23	High Level to Detailed Design Variance	The job scope was expanded to install civil infrastructure along Lavery Tr. and small sections on Bluenose Cr. and Muirbank Blvd. This included approx. 1600m of concrete encased ducts with the installation of tap boxes and splice vaults. These requirements were identified during detailed design. The re-routing of the duct route was required to avoid congestion due to other utilities occupying the proposed alignment in the high-level plan. The engineer would not have know the extent of utility congestion and its interaction with design standards and road allowances at the time of high-level planning.	
B1 Underground Infrastructure	EST24578_009	24578_009 Bluffwood Saddletree UG Rebuild Civil for 2012 Budget	Construction attained and ISA'd	$1,391,294.40	$1,899,086.59	High Level to Detailed Design Variance	During field inspections, the designer determined that the presence of non-standard meterbase assemblies and transformer foundations in a townhouse complex would necessitate replacement, including associated ducts, in order to align the new plant with Toronto Hydro standard design practices. These requirements, which were relatively unique to the area, would not have been known to the engineer at the time of high-level planning.	Detailed design and execution requirements
B1 Underground Infrastructure	EST20645_001	20645_001 E12377 Goldenwood Road UG Rehab NY51M3	Construction attained and ISA'd	$335,926.02	$480,694.69	Field Conditions & Execution Requirements	The cost increase was due to the job being transferred from internal resources to contractor resources for the purposes of execution. The increase is the difference between the internal Toronto Hydro estimate, which does not capitalize administrative costs and other overhead, and the contractor estimate, which is fully burdened with capitalized operating expenses.	
B1 Underground Infrastructure	EST20648_001	20648_001 E12379 Pineway Craigmont UG Rehab NY51M3 Electrical	Construction attained and ISA'd	$139,029.98	$264,134.44	Field Conditions & Execution Requirements	The cost increase was due to the job being transferred from internal resources to contractor resources for the purposes of execution. The increase is the difference between the internal Toronto Hydro estimate, which does not capitalize administrative costs and other overhead, and the contractor estimate, which is fully burdened with capitalized operating expenses.	
B1 Underground Infrastructure	EST20978_009	20978_009 ICM E12494 Revlis Ph2 Civil Updated: Feb 7, 2012	Construction attained and ISA'd	$1,582,680.00	$2,022,394.36	Variance in Allocated Costs	The variance was primarily due to road cut repair costs and design costs being higher than predicted by the historical averages used to predict these costs for filed estimates. These costs are not fully known until project close-out.	High Level to Detailed Design Variance
B1 Underground Infrastructure	EST20979_009	20979_009 E12595 Revlis U/G Rebuild, Ph. 3 Cvl DO NOT PACKAGE for PCI	Construction attained and ISA'd	$1,771,654.39	$2,714,342.36	High Level to Detailed Design Variance	-The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. In accordance with the revised standard, Toronto Hydro rebuilt the secondary cables in concrete-encased ducts up to the lot-line, and replaced the end-of-life and direct-buried secondary services serving 514 customers. -In addition, tree protection zones did not permit the installation of new transformer vaults in certain areas. Consequently, the transformers had to be installed in different locations and the sites of the existing units converted to tap boxes.	
B1 Underground Infrastructure	EST21287_009	21287_009 E12520 FESI Conlins Milner NT47M1 - Elec DO NOT PACKAGE for budget only	Construction attained and ISA'd	$1,300,849.37	$1,443,398.22	Variance in Allocated Costs	Inspection and cut repair costs were higher than foreacsted.	
B1 Underground Infrastructure	EST24856_009	24856_009 ICM E12529 Braymore UG Rehab Ph2 Civil DO NOT PACKAGE	Construction attained and ISA'd	$2,690,846.04	$2,240,726.97	Field Conditions & Execution Requirements	The cost associated with the anticipated tree tunnel (used when excavating in a tree protection zone) was overestimated. Occasionally, contractors are able to perform more conventional excavation when they assess the site conditions themselves, in which case tree tunnel can be avoided or the total tree tunnel units can be reduced. This can vary for different locations, and may be difficult to estimate at the design stage.	
B1 Underground Infrastructure	EST24859_009	24859_009 ICM E12530 BRAYMORE W PH2 - ELECT DO NOT PACKAGE	Construction attained and ISA'd	$675,550.17	$873,380.68	High Level to Detailed Design Variance	Several requirements were identified during the detailed design phase. - Congestion of underground utilities and tree roots discovered during detailed inspections required the relocation of cable ducts, increasing the cable length requirements. - The high-level estimate anticipated 20 transformer replacements based on high-level assumptions regarding loading in the area; the detailed design ultimately called for 22 transformers based on a more detailed loading analysis. - Field inspections during detailed design revealed the need to replace a poor condition PMH switch. - Costs related to secondary rebuilds were underestimated in the high-level plan.	Filed Conditions & Execution Requirements
B1 Underground Infrastructure	EST20637_001 EST24798_X03	20637_001 E13014 Holmcrest 47M13 UG Rebuild- Civil	Construction attained and ISA'd	$1,410,970.01	$2,234,038.55	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. In accordance with the revised standard, Toronto Hydro rebuilt the secondary cables in concrete-encased ducts up to the lot-line, and replaced the end-of-life and direct-buried secondary services serving 241 customers.	Variance in Allocated Costs; Field Conditions & Execution Requirements
B1 Underground Infrastructure	EST21500_001	21500_001 ICM NY51M24 UG Rebld on Don Mills E13099 btn Sheppard and Graydon-Electrical	Construction attained and ISA'd	$194,978.98	$329,653.92	High Level to Detailed Design Variance	During the detailed design phase, Toronto Hydro's system operators requested that a portion of cable be replaced with copper instead of aluminum in order to alleviate capacity constraints in the area that could restrict restoration capabilities and operational flexibility. This increased the cost of materials for this portion of cable. In addition, field inspections revealed the need to replace a greater distance of cable than originally estimated.	
B1 Underground Infrastructure	EST21433_001	21433_001 E13104 NY51M24 DB Cable Replacement Don Mills & Sheppard (Part 1 Civil)	Construction attained and ISA'd	$1,124,245.95	$3,379,480.46	High Level to Detailed Design Variance	The confluence of several site-specific factors encountered during detailed design inspections caused the complexity and cost of this job to increase substantially compared to the high-level job plan: - Toronto Hydro determined that the existing design of secondary services was obsolete, with secondary services for a number of houses that extended from house to house across private properties. Toronto Hydro's current standard design practice is to service each house from an individual secondary tap at the lot line. This design is more reliable and cost-effective over the life of the assets. - The costs associated with the need to modify the design of the secondary services were compounded by severe congestion of existing underground utilities (including third-party utilities) and the narrowness of the existing sidewalk. - Together, these factors materially increased the civil costs associated with renewing the assets in this neighbourhood. Toronto Hydro reviewed the project in light of the material cost increases and determined that the project remained cost-effective and necessary due to poor feeder reliability contributed by unreliable assets from the proposed rebuild area. The supply feeder suffered a total of 30 outages from January 1, 2010 to December 31, 2014. Thus, it would have been deemed a high priority to rebuild/replace the aging and failing assets on this feeder.	
B1 Underground Infrastructure	EST21585_001	21585_001 E13123 Rebuild Trunk 502M1M22 Birchmount Civil	Construction attained and ISA'd	$914,007.51	$1,663,958.21	Field Conditions & Execution Requirements	For improved execution efficiency, Toronto Hydro advanced part of the electric phase of this project into the civil project that was ongoing. The contractor on site had available resource capacity to pull cables during and following duct construction.	High Level to Detailed Design Variance
B1 Underground Infrastructure	EST22591_001	22591_001 E13267 UG Rebuild 63M8 Silver star Midla nd - Civil	Construction attained and ISA'd	$432,376.19	$293,390.51	High Level to Detailed Design Variance	The project's lower cost was largely owing to a reduced length of required concrete duct identified in the detailed design phase relative to the high-level design (a reduction of approximately 200 metres). Additional efficiencies were attained due to the re-positioning of the riser in a more optimal way than suggested by original plan.	
B1 Underground Infrastructure	EST24149_001	24149_001 E14321 Establish Neilson Tapscott R26M34 Feeder Main -Civil	Construction attained and ISA'd	$853,814.29	$1,021,077.09	High Level to Detailed Design Variance	Toronto Hydro elected to advance the electrical portion of the work, namely cable installation, due the availability of additional resources.	Variance in Allocated Costs

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B1 Underground Infrastructure	EST18652_002 EST26536_001	18652_002 E11421 Dundalk NAE5-1M29 UG Reb (Civil) Deferred from 2011	Construction attained and ISA'd	$2,276,806.28	$4,592,618.27	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. Rebuilding these ducts cost an additional $591K. (The additional civil work increased associated costs that are generally proportional to the size of the job, including design cost ($331K) and various road and sidewalk restoration costs ($789K) . Restoration was required on a number of large commerical properties, which is typically more expensive than residential restoration.) · Cable chamber construction was also underestimated in the high-level plan and resulted in an increase of about $274K.	Variance in Allocated Costs; Field Conditions & Execution Requirements
B1 Underground Infrastructure	EST18653_002	18653_002 E11421 Dundalk NAE5-1M29 UG Reb (Elec) Deferred from 2011	Construction attained and ISA'd	$1,694,055.84	$2,455,570.81	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. The addition of secondary services increased the complexity of design and other allocated overhead costs (approximately $440K). The remaining variance was related to the additional materials required to construct the electrical plant to the new standard, including underground cable/racking/terminations, underground transformers, underground secondary services, and underground switching and electrical support.	Variance in Allocated Costs
B1 Underground Infrastructure	EST18675_002	18675_002 ICM X11444 Tichester civil & elec UG-DB 35M9 Created Oct 2010	Construction attained and ISA'd	$2,320,045.82	$2,709,515.95	Field Conditions & Execution Requirements	The discovery of abandoned utilities as well as a watermain in the area required additional depth for civil construction, as well as a change in the trench line. Additional paid duty police costs were also required.	
B1 Underground Infrastructure	EST18719_001	18719_001 E11438 Old Finch 47M3 UG Reb Ph 1-Civil Civil portion of Old Finch/Littles	Construction attained and ISA'd	$1,950,375.58	$3,028,049.17	High Level to Detailed Design Variance	The designer determined that an additional cable chamber was required, with associated incremental cable length. This addition was necessary to facilitate relocation of a pad-mounted switchgear in the new design. This work resulted directly in an increase of $205K compared to the high-level plan. Indirectly, this change in design was in part responsible for an increase in design and inspection costs ($234K) as well as an additoinal $538K for additional cut repairs and a paid duty police offer to manage traffic during a crane operation.	Variance in Allocated Costs; Field Conditions & Execution Requirements
B1 Underground Infrastructure	EST18720_001	18720_001 E11439 Old Finch 47M3 UG Reb Ph 1 (Elec) Electrical portion of Old Finch/Littles	Construction attained and ISA'd	$1,246,960.00	$1,930,540.68	High Level to Detailed Design Variance	The following were not anticipated in the high-level estimate and were identified as necessary in the detailed design stage: - $635,000 for additional materials and labour resulting from the need to relocate a pad-mounted switchgear (due to space restrictions), as well as the need to replace a leaking transformer and associated switch discovered in a customer's vault during field inspections. - $21,000 in additional duct construction required. - $33,000 for additional pole installations and tree-trimming costs.	
B1 Underground Infrastructure	EST19464_001	19464_001 E12226 Yorkminster 80M27/M29 Tie (Elec) Electrical portion of the project	Construction attained and ISA'd	$535,546.54	$1,234,603.70	High Level to Detailed Design Variance	The following execution conditions were discovered during the detailed design and execution stage and led to the increase in cost: - An increase to the amount of cable duct construction was required due to relocation of existing cable routes and depths as a result of congested existing underground utilities and tree roots ($270k) - field inspections determined that the cable chamber and vault needed modifications, which were not part of the original estimate ($188k) - overhead and underground electrical costs were underestimated in the high level estimate ($69k) - road cut repair costs were underestimated in the high level estimate ($66k) - the original high level estimate did not include design and inspection costs ($147k)	Scope Change
B1 Underground Infrastructure	EST19622_001	19622_001 E12126 Morningview 47M3 UG Ph 1 - Civil Civil portion of Phase 1	Construction attained and ISA'd	$1,814,027.11	$2,597,923.96	High Level to Detailed Design Variance	The original high level estimate did not include design costs ($167K) and the cost of constructing a cable duct ($772k). The duct length was underestimated in the high level estimate.	
B1 Underground Infrastructure	EST19626_001	19626_001 E12127 Morningview 47M3 UG Ph 2 - Civil Civil portion of Phase 2	Construction attained and ISA'd	$1,586,540.33	$2,411,969.42	High Level to Detailed Design Variance	The $744K variance was a result of duct construction, chamber and cut repair. At the time, the high level estimate had underestimated the amount of civil work required for this job. The high level estimate only had a lump sum for duct work. Field inspections later determined the need for a cable chamber.	Field Conditions & Execution Requirements; Variance in Allocated Costs
B1 Underground Infrastructure	EST20001_001	20001_001 E12188 435 Markham Road H9M30 UG Rebuild Replacing cables and transformers	Construction attained and ISA'd	$362,080.98	$240,020.51	High Level to Detailed Design Variance	A vault rebuild, originally planned as part of this job, was determined to be unnecesary following detailed field inspections which revealed the vault to be in good condition.	
B1 Underground Infrastructure	EST20043_001	20043_001 E12206 Fenn/Foursome/Danville 80M29 UG Civil portion of project	Construction attained and ISA'd	$1,283,902.39	$1,621,156.82	High Level to Detailed Design Variance	The duct length to be constructed was underestimated during high level design. The specific duct route in the final detailed design required an additional 300 meters of duct.	Variance in Allocated Costs
B1 Underground Infrastructure	EST20044_001	20044_001 E12227 Fenn/Foursome/Danville 80M29 UG Electrical portion of project	Construction attained and ISA'd	$432,264.68	$1,089,206.46	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This impacted approximately 160 customers. In addition, the original high level estimate called for replacement of 12 submersible transformers but field inspections revealed that 18 needed to be replaced to comply with the new design standard. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning.	Variance in Allocated Costs
B1 Underground Infrastructure	EST20066_001	20066_001 E12209 Dalmatian/Choiceland 47M13 UG Reb Civil portion of project	Construction attained and ISA'd	$1,198,167.89	$1,474,535.16	High Level to Detailed Design Variance	The designer determined that additional duct length would be required, increaseing the cost of the job by approximately $300K relative to the high-level plan.	Variance in Allocated Costs
B1 Underground Infrastructure	EST20067_001 EST20067_010	20067_001 E12228 Dalmatian/Choiceland 47M13 UG Reb Electrical portion of project	Construction attained and ISA'd	$705,184.41	$926,672.80	High Level to Detailed Design Variance	The labour and material costs were underestimated in the high-level estimate.	
B1 Underground Infrastructure	EST20136_001	20136_001 E12230 52M3 McCowan and Kingston Civil Works for Cable Replacement	Construction attained and ISA'd	$1,088,534.93	$1,309,664.60	High Level to Detailed Design Variance	The designer determined that a portion of the duct needed to be constructed on the roadway (rather than the boulevard as originally planned), increasing subsequent road cut repair costs by $118K. The job also required the construction of an additional cable chamber and additional submersible vaults as the existing infrastrucure was not appropriately sized for the new assets ($86K).	Variance in Allocated Costs
B1 Underground Infrastructure	EST20200_001 EST20209_001	20200_001 E12240 Durnford-Rylander-Tideswell-Shepp Civil	Construction attained and ISA'd	$2,411,139.30	$2,998,541.87	High Level to Detailed Design Variance	The duct route planned in the final detailed design ultimately needed to be significantly longer than contemplated in the high-level plan due to site-specific consierations. The duct length was increased by 685m.	
B1 Underground Infrastructure	EST20261_001	20261_001 E12256 Bridletowne Area 502M22Electrical Cable Replacement	Construction attained and ISA'd	$337,026.86	$1,306,150.43	High Level to Detailed Design Variance	The designer determined that to complete the underground rebuild, two existing, obsolete, single-phase pad-mount switches needed to be replaced with a PMH-9 switch. Detailed design inspections revealed poor condition of customer vaults. This work involved seven vault switchgear replacements, one vault transformer replacement, and one new padmounted switchgear, increasing material costs by $546k.	Variance in Allocated Costs
B1 Underground Infrastructure	EST20263_001	20263_001 E12259 Bridletowne Circle 502M22 Civil Civil Works for Cable Replacement	Construction attained and ISA'd	$1,090,095.86	$1,456,930.16	Variance in Allocated Costs	The variance was primarily due to road cut repairs and design costs being higher than predicted by historical averages. These costs came in higher in part due to the need to replace two existing obsolete, single-phase pad mounted switches with PMH-9 switches. The need for this work was now known until the design stage.	High Level to Detailed Design Variance
B1 Underground Infrastructure	EST20430_001	20430_001 E12157 New Feeder H9M23 - Civil	Construction attained and ISA'd	$1,146,782.73	$1,270,600.40	Variance in Allocated Costs	The variance was primarily due to road cut repairs, inspection and design costs, engineering capital and AFUDC being higher for this job than predicted by historical averages.	
B1 Underground Infrastructure	EST20432_001 EST25413_X01	20432_001 E12319 New Feeder H9M23 - Electrical	Construction attained and ISA'd	$424,291.33	$897,132.30	High Level to Detailed Design Variance	A detailed review of design requirements in the job area revealed that a significantly greater amount of copper cable (as opposed to cheaper aluminum) was required than originally anticipated in the high-level design in order to alleviate operational constraints. (Copper cable can accomodate greater loads.) The additional cost of the copper was $458K.	Variance in Allocated Costs
B1 Underground Infrastructure	EST20674_001 EST20674_002	20674_001 E12394 James Gray Dr UG Rebuild NYS1M3 Civil	Construction attained and ISA'd	$425,677.90	$877,850.26	Variance in Allocated Costs	The design costs and cut repair costs were substantially higher than averages predicted for this job, due in part to the increase in design requirements as the job moved from high-level plan to detailed design. Design and inspection costs caused a variance of $273K, while road cuts were responsible for $52K.	High Level to Detailed Design Variance
B1 Underground Infrastructure	EST21551_008	21551_008 E11592 FESI Leslie Nymark Repl Sw Pt. 1 Switchgear and Cable Replacement (Ph 1)	Construction attained and ISA'd	$1,408,997.68	$786,148.45	High Level to Detailed Design Variance	The high-level plan assumed that two pad-mounted switchgears needed to be replaced in coordination with this job. However, upon detailed site inspection it was determined that the switchgear could remain in-service.	

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B1 Underground Infrastructure	EST21853_009	21853_009 ICM E11301 FESI-12 HUPFIELD UG REBD PH1 RC3110 2011 CapEx WBS Rev Nov 22_10	Construction attained and ISA'd	$1,670,932.08	$1,976,403.49	High Level to Detailed Design Variance	During the detailed design stage, system operators identified the need for extension of the main primary loop to accommodate loading in the area. Other minor costs were also added in design.	
B1 Underground Infrastructure	EST22356_009	22356_009 ICM E11356 FESI 47M3 PENNYHILL UG RBLD RC3110 2011 CapEx WBS Rev Nov 22_10	Construction attained and ISA'd	$996,620.55	$1,332,986.46	High Level to Detailed Design Variance	Additional underground secondary work was identified during the detailed design phase. The designer also determined that two PMH switches that were not contemplated in the high-level plan would be needed to complete the new design.	Variance in Allocated Costs
B1 Underground Infrastructure	EST22424_009	22424_009 ICM E11592 FESI Leslie & Nymark Ph2-51M6 UG Cable & Switchgear Replacement	Construction attained and ISA'd	$1,497,236.01	$1,290,742.05	High Level to Detailed Design Variance	Tunnelling costs were overestimated in the high-level estimate.	
B1 Underground Infrastructure	EST24500_009	24500_009 ICM-E12153 Melford Transfer 26M34 to M22	Construction attained and ISA'd	$465,846.27	$643,500.93	High Level to Detailed Design Variance	Modifications to the proposed design were required as a result of another job that was ongoing in an adjacent project area. The relocation of a pole in the adjacent job necessitated additional cable length. The designer also determined that a different concrete pad design was required to accomodate replacement of an existing switchgear in the job area. The pad design needed to be stronger and needed two openings for cables as opposed to one opening as was assumed in the high-level plan.	
B1 Underground Infrastructure	EST18320_001	18320_001 E11223 Clappison 47M17 UG Rebuild- Civil	Construction attained and ISA'd	$1,207,324.52	$2,047,529.88	High Level to Detailed Design Variance	Through detailed inspections, the designer determined that the existing transformer vaults needed to be replaced as they were not deep enough and lacked the safe clearance to the top of the transformer elbows ($157K). The detailed design also included additional duct construction costs related to the specific duct alignment along the sidewalk, additional depth of cover required and deep shafts for drain connection for vaults ($209K). This work was necessary as there was a lack of space in the boulevard so the duct needed to be constructed deeper than normal.	Variance in Allocated Costs
B1 Underground Infrastructure	EST18628_010	18628_010 PCI-E11401 Finchdene UG Rbld - Elect. DUPLICATION OF VERSION 3 FOR ICM	Construction attained and ISA'd	$3,101,453.26	$6,519,595.22	Field Conditions & Execution Requirements	As shown in EB-2012-0064, Tab 9, Schedule B1, Page 83, Table 7, the full cost of this 2014 job was forecast at $6.85 million. However, to avoid overestimating the ISA forecasts on which the Initial ICM Rate Rider was based, Toronto Hydro excluded from the financial calculations the portion of the job's cost that was expected to be spent in 2015 according to Execution Work Porgram scheduling. At the time of filing, the amount that the utility anticipated spending on this job in the ICM period was forecast as $3.1M. Ultimately, Toronto Hydro was able to execute the entire job in the ICM period, meaning that the entire cost of the job was placed into service, resulting in a significant positive variance that was unrelated to the fundamental cost of the job.	
B1 Underground Infrastructure	EST20207_001	20207_001 E12239 Royal Rouge Trail - Civil Civil	Construction attained and ISA'd	$1,156,167.13	$1,531,329.44	High Level to Detailed Design Variance	Due to the presence of congested utilities in the job area, the number of duct installations increased relative to the original forecast ($384K).	
B1 Underground Infrastructure	EST20233_001	20233_001 E12250 Scenic Millway UG Rebuild 51M21 53M24 -Civil	Construction attained and ISA'd	$1,250,243.81	$6,856,116.52	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. In accordance with the revised standard, Toronto Hydro rebuilt the secondary cables in concrete-encased ducts up to the lot-line, and replaced the end-of-life and direct-buried secondary services serving 350 customers. Furthermore, the length of primary concrete-encased duct required in the detailed design was approximately 5,830 metres compared to about 3,700 meters anticipated in the high-level estimate. The job costs were amplified substantially by unusually prevalent tree protection zones in the area that required vaccum tunnelling under the tree roots. Restoration costs related to secondary service trenching an primary duct construction were also high due to the maturity of the neighbourhood and the variety surfaces encountered. In light of the poor reliability performance in the area, owing in part to the presence of 40-year-old direct-buried cable, the job remained necessary and prudent.	Variance in Allocated Costs
B1 Underground Infrastructure	EST20298_001	20298_001 E12266 Country Lane NYS1M21 Civil Portion of Project	Construction attained and ISA'd	$405,738.82	$260,018.75	Third-party Constraints and Requirements	The original scope called for underground rebuild work on Country Lane and Hyde Park Circle. When the project design was completed and the road cut permit was submitted to the City, Toronto Hydro was informed that Country Lane was under moratorium due to unscheduled road paving that was performed by the City. Approximately 35% of the civil work could not be performed due to the unscheduled moratorium.	
B1 Underground Infrastructure	EST20313_001	20313_001 E12281 Meadowvale/Heatherbank 47M17 Cabl Electrical portion of project	Construction attained and ISA'd	$532,386.56	$1,268,143.85	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. The material costs associated with this work were approxiamtely $460K. Labour costs were also understated in the high-level plan by apprximately $276K.	
B1 Underground Infrastructure	EST20335_001	20335_001 E12277 Nashdene Tiffield UG Rebuild Civil Portion of Project SCNAR26M2	Construction attained and ISA'd	$1,222,025.88	$3,125,928.17	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. In accordance with the revised standard, Toronto Hydro rebuilt the secondary cables in concrete-encased ducts up to the lot-line, and replaced the end-of-life and direct-buried secondary services. Costs related to cable chamber construction were also underestimated in the high-level plan. Overall, the variance on civil construction, including secondary related construction, was approximately $1.85 million.	Variance in Allocated Costs
B1 Underground Infrastructure	EST20345_001	20345_001 E11616 Meadowvale/Heatherbank 47M17 Civi	Construction attained and ISA'd	$435,838.41	$256,998.12	High Level to Detailed Design Variance	Detailed inspection of the existing plant during the design stage determined that some of the existing ducts remained useful and could be incorpated into the new plant design, resulting in a reduction of duct construction costs.	
B1 Underground Infrastructure	EST20388_001	20388_001 E12300 47M1 Hutcherson and Berner Trail Civil Works for Cable Replacem	Construction attained and ISA'd	$192,887.76	$753,065.55	High Level to Detailed Design Variance	After detailed inspections in the field, the designer determined that an inrease in duct volume would be required due to relocation of the cable duct routes and depths dictated by the congestion of existing underground utilities, tree roots and driveway locations. The added cost was approximately $320K.	Variance in Allocated Costs; Field Conditions & Execution Requirements
B1 Underground Infrastructure	EST20447_002	20447_002 E12323 Dynamic Drive SCNAR25M32-Civil Markham,Dynamic,Passmore,McNicol	Construction attained and ISA'd	$929,341.56	$1,264,015.33	High Level to Detailed Design Variance	Field inspections during the detailed design phase determined that additional costs would be required to construct assets in a tree protection zone. Approximately $300K was required for a change in route and added depth related to duct construction.	Variance in Allocated Costs
B1 Underground Infrastructure	EST20697_001	20697_001 E12408 Thimble Berryway Aspenwood UGRbld Civil NYS1M3 NYS1M27	Construction attained and ISA'd	$464,413.46	$848,604.59	High Level to Detailed Design Variance	After completing a thorough field inspection, the designer determined that construction of five additional submersible vaults was required, along with associated ducts. These additoinal rebuilds were needed due to the poor condition of the existing vaults. This added approximately $375K to the job.	Field Conditions & Execution Requirements; Variance in Allocated Costs
B1 Underground Infrastructure	EST20722_001	20722_001 E12418 Artisan Place UG Rebuild NYS1M27 Civil	Construction attained and ISA'd	$82,024.03	$301,307.91	High Level to Detailed Design Variance	The primary source of variance was a change in Toronto Hydro's underground residential rebuild design standards to include secondary service rebuilds up to each customer's meterbase. This change occured between production of the high-level and detailed estimates and would not have been known by the engineer at the time of initial job planning. The increased duct construction cost approximately $170K and there was a requirement for an additional vault in the final job design, costing $33K.	Variance in Allocated Costs
B1 Underground Infrastructure	EST20737_001	20737_001 E12425 Spire Hillway UG Rebuild NYS1M27 Civil	Construction attained and ISA'd	$163,222.17	$347,377.92	High Level to Detailed Design Variance	During detailed design, Toronto Hydro determined that two elements of the high-level job plan were underestimated. An additional $51K was required for duct installation and $67K was required for vault drain connection installations. Drain connections are usually determined only during the field inspection or detailed design stage.	Variance in Allocated Costs
B1 Underground Infrastructure	EST22135_001	22135_001 E13203 UG Rebuild Scenic Hill SD XJF1 - Civil	Construction attained and ISA'd	$75,998.15	$210,686.61	High Level to Detailed Design Variance	Upon detailed inspection of the job site by the designer, Toronto Hydro determined that an additional 200m of ducts would be required, costing an additoinal $115K. (Design costs increased in proportion to the these additional job requirements.)	Variance in Allocated Costs
B1 Underground Infrastructure	EST28599_001	28599_001 W14667 - P01 Jane/Gosford UG Rebuild IFRS compliant	Construction attained and ISA'd	$283,456.14	$911,085.34	High Level to Detailed Design Variance	The high-level estimate did not fully account for the costs associated with rebuilding the secondary services in accordance with Toronto Hydro's standard design practices. Only primary civil was estimated in the high level estimate. An additional $359K was required to build the necessary civil intrastructure, including concrete encased ducts for secondary services to the lot line, direct buried ducts from the lot line to the meter base and associated restoration costs. The cost to replace the secondary cables themsleves was also underestimated in the high-level plan by approximately $137K. (The expansion of the design also caused associated design and inspection costs to increase.)	Variance in Allocated Costs

$82,720,974.89

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B1 Underground Infrastructure	EST20558_001	20558_001 E12357 Morningview SCNAR26M23 RC3620 2011 CapEx WBS Rev Nov 22_10	Cancelled	$23,271.35	$0.00
B1 Underground Infrastructure	EST23556_001	23556_001 E12666 Phase 1 Reconfigure 80M29 -Harris on Garden	Complete	$161,865.00	$218,665.56
B1 Underground Infrastructure	EST21139_001 EST21141_001	21139_001 E13060 Galloway UG Rebuild Civil SCNA47M14	Complete	$431,228.74	$451,852.29
B1 Underground Infrastructure	EST23241_002	23241_002 Harrison Garden-UG Primary Rehab-Phase 2 2012 costs FESI- E12656	Complete	$520,030.28	$533,507.15
B1 Underground Infrastructure	EST24683_009	24683_009 ICM - E13037 Bridletowne UG Rebuild Electrical - Do Not Package	Complete	$164,307.36	$205,479.86
B1 Underground Infrastructure	EST20948_009	20948_009 E11072 Bridletowne U/GRebuild Elect Created November 2009	Complete	$156,045.75	$236,947.68
B1 Underground Infrastructure	EST19437_009	19437_009 ICM - E12081 INGLETON REBUILD PHASE A ELECT ONLY - PLANNED 3110	Complete	$1,260,017.11	$1,305,761.73
B1 Underground Infrastructure	EST19442_009	19442_009 ICM - E12094 - INGLETON REBUILD PHASE 1 ELECT ONLY - 3110	Complete	$1,215,673.29	$1,239,636.76
B1 Underground Infrastructure	EST19448_009 EST26550_001	19448_009 E12095 Rebuild Ingleton PH 2 UG Elect DO NOT PACKAGE	Complete	$676,044.16	$655,092.74
B1 Underground Infrastructure	EST24852_009	24852_009 ICM E12121 Blackwell Coxworth Rebuild-El DO NOT PACKAGE (from Ver001 from AM19590	Complete	$480,372.16	$563,994.09
B1 Underground Infrastructure	EST27210_001	27210_001 E13605 P02 50 Aurora Crt Civ Rebld Canavagh TS	Complete	$356,029.74	$278,978.85
B1 Underground Infrastructure	EST19999_009	19999_009 E12195 Mammoth Hall 47M1 UG Rebuild DO NOT PACKAGE for budgeting only -CIVIL	Complete	$3,421,254.18	$3,104,083.93
B1 Underground Infrastructure	EST20179_001	20179_001 E12237 Cassandra UG Cable Replace (Elec) UG Cble replacement of 53M25	Complete	$1,131,747.75	$742,656.83
B1 Underground Infrastructure	EST20424_001	20424_001 E12316 Mammoth Hall 47M1 UG Rebuild Ph1 Electrical	Complete	$391,336.39	$433,232.27
B1 Underground Infrastructure	EST24717_009	24717_009 E12317 Ingleton/Middleton Main (Elect.) for 2012 Budget	Complete	$562,432.92	$594,028.33
B1 Underground Infrastructure	EST20520_009	20520_009 ICM E12348 Muir Dr./Scar G.C. civil DO NOT PACKAGE	Complete	$478,980.12	$445,359.48
B1 Underground Infrastructure	EST20973_009	20973_009 E12493 REVLIS PART 1 CIVIL do not package	Complete	$619,626.41	$693,549.67
B1 Underground Infrastructure	EST20638_001	20638_001 ICM E13015 Holmcrest Rebuild-Elec WBS/IFRS Compliant	Complete	$469,233.58	$448,246.45
B1 Underground Infrastructure	EST21188_001	21188_001 UG Rebuild of SCNAE5-1M25 for E13066 by Brimley Rd and Skagway Avenue	Complete	$652,821.78	$696,585.33
B1 Underground Infrastructure	EST21447_001	21447_001 NY51M24 UG Rebuild-Sheppard & Don Mills E13108 Buchan Crt by Sheppard-Civil	Complete	$241,974.99	$253,903.31
B1 Underground Infrastructure	EST21565_001	21565_001 E13121 McGriskin UG Rebuild SCNAH9M23 Civil	Complete	$284,878.02	$295,038.09
B1 Underground Infrastructure	EST21589_001	21589_001 E13124 Rebuild Orange File SD 502M22 UG Civil	Complete	$1,009,019.65	$1,027,039.37
B1 Underground Infrastructure	EST18845_004	18845_004 W11455 Yonge Trunk Cable Rehab RC3620 2011 CapEx WBS Rev Nov 22_10	Complete	$392,427.90	$318,744.62
B1 Underground Infrastructure	EST19032_001	19032_001 W11456 NY80M30 trunk & Lateral Cable Enh S/O HWY 401	Complete	$1,597,121.96	$1,722,564.00
B1 Underground Infrastructure	EST19399_004	19399_004 W11460 YONGE & JOHNSTON LATERAL CABLE R Yonge & Johnston	Complete	$29,951.21	$28,609.97
B1 Underground Infrastructure	EST20169_001	20169_001 E12234 Rebuild 3-Phase Neilson Civil portion of project	Complete	$767,266.01	$855,384.21
B1 Underground Infrastructure	EST20477_001	20477_001 E12335 Blue Anchor UG Rebuild Elec	Complete	$142,857.38	$150,476.11
B1 Underground Infrastructure	EST20478_001	20478_001 E12336 Blue Anchor UG Rebuild Civil	Complete	$413,749.60	$430,552.32
B1 Underground Infrastructure	EST20989_001	20989_001 W12490 UG DB Cable Rehab - Bombardier 85M1	Complete	$974,918.89	$1,035,900.01
B1 Underground Infrastructure	EST21506_009	21506_009 ICM E11191 FESI-12 MCLEVIN/ALFORD UG REB RC3110 2011 CapEx WBS Rev Nov 22_10	Complete	$884,149.79	$858,988.81

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B1 Underground Infrastructure	EST21854_009	21854_009 ICM E11372 FESI-12 HUPFIELD UG RBLD P2 RC3110 2011 CapEx WBS Rev Nov 22_10	Complete	$1,331,575.35	$1,403,412.03
B1 Underground Infrastructure	EST22073_002 EST26551_001	22073_002 Keegan Cresc UG Rebuild W11615 W11615 11-E639	Complete	$485,935.84	$466,638.19
B1 Underground Infrastructure	EST22928_009	22928_009 ICM E11380 FES-12 EMPRINGHAM/MCLEVIN RC3110 2011 CapEx WBS Rev Nov 22_10	Complete	$1,835,306.18	$1,765,780.96
B1 Underground Infrastructure	EST20300_001	20300_001 E12268 Country Lane UG Rebuild NY51M21 - Electrical portion of project	Complete	$130,466.98	$186,306.71
B1 Underground Infrastructure	EST21334_001	21334_001 NY51M30 UG Rehab along Leslie north Bond E13093 - Electrical Project	Complete	$1,051,542.13	$930,765.50
B1 Underground Infrastructure	EST22137_001	22137_001 E14031 UG Rebuild Scenic Hill SD XJF1 - Electrical	Complete	$76,346.52	$89,840.96
B1 Underground Infrastructure	EST23043_001	23043_001 W14133 85M7 UG DBFestival & Carnival	Deferred	$1,898,675.79	$0.00
B1 Underground Infrastructure	EST21290_001	21290_001 E13074 UG Rehab of NY51M7 - Electrical btn Leslie and Bayview	Deferred	$285,683.86	$0.00
B1 Underground Infrastructure	EST21297_001	21297_001 E13077 UG Rehab of NY51M8 - Elec E13077 btn Leslie and Bayview	Deferred	$341,400.55	$0.00
B1 Underground Infrastructure	EST20059_009	20059_009 E12210 VENTURE DR UG SCNT47M1 - Civ/Elec DO NOT PACKAGE for budget Civ	Deferred	$993,420.50	$0.00
B1 Underground Infrastructure	EST20746_001	20746_001 E12430 Cherrystone Aspenwood NY51M27 UG Rebuild Electrical	Deferred	$188,169.64	$0.00
B1 Underground Infrastructure	EST21449_001	21449_001 ICM NY51M24 UG Rebuild- E of Don Mills E13102 Forest Manor-Electrical	Deferred	$79,100.43	$0.00
B1 Underground Infrastructure	EST21663_001	21663_001 E13147 Nugget Avenue UG Rebuild SCNAH9M23 Civil	Deferred	$890,176.11	$0.00
B1 Underground Infrastructure	EST18585_001	18585_001 W11385 Northwoods Subdivision - UG DB Rebuild	Deferred	$2,497,560.16	$0.00
B1 Underground Infrastructure	EST20664_001	20664_001 E12385 Don Mills/Egltn UG Rebuild (Civ) NY53M1	Deferred	$786,849.76	$0.00
B1 Underground Infrastructure	EST20744_001	20744_001 E12429 Cherrystone Aspenwood NY51M27 UG Rebuild Civil	Deferred	$479,982.97	$0.00
B1 Underground Infrastructure	EST27221_001	27221_001 E15023 P01 Sheppard Underground DB Cable Civ Ellesmere TS SCNAH9M23, S	Deferred	$960,706.83	$0.00
B1 Underground Infrastructure	EST20665_001	20665_001 ICM E12386 Don Mills/Eglinton - ELEC NY53M1 UG Rebuild	Deferred	$416,935.38	$0.00
B1 Underground Infrastructure	EST22716_001	22716_001 W13239 - Northview Heights Elec Rebuild	In Progress	$1,664,411.92	$0.00
B1 Underground Infrastructure	EST27942_001	27942_001 W14541 Robert Hicks_Torresdale Civil Ph2 80M8	In Progress	$2,176,609.41	$0.00
B1 Underground Infrastructure	EST27943_001	27943_001 W14542 Robert Hicks_Torresdale Civil Ph3 80M8	In Progress	$2,422,794.77	$0.00
B1 Underground Infrastructure	EST11197_001	11197_001 Leeward 53M9 UG Cable & Tx repl.	In Progress	$731,833.27	$0.00
B1 Underground Infrastructure	EST19788_003	19788_003 E11582 NY51M24 SCADA Installation Don Mills Road at Van Horne Avenue	In Progress	$419,061.20	$0.00
B1 Underground Infrastructure	EST21446_001	21446_001 NY51M24 UG Rebuild- Sheppard & Don Mills E13103 Buchan Crt by Sheppard-	In Progress	$323,688.53	$0.00
B1 Underground Infrastructure	EST20051_009	20051_009 E12213 MORNINGSIDE ELECTRICAL DO NOT PACKAGE for budget	In Progress	$1,069,112.36	$0.00
B1 Underground Infrastructure	EST27565_001	27565_001 E12225 Mammoth Hall 47M1 UG Rebuild Ph2 -Electrical	In Progress	$1,421,012.06	$0.00
B1 Underground Infrastructure	EST20525_001	20525_001 E13011 H9M30 Muir Dr-Golf Club UG Rebuild - ELectrical	In Progress	$382,380.58	$0.00
B1 Underground Infrastructure	EST21357_009	21357_009 ICM E13043 Revlis 2 U/G Rebuild - Elec Updated: Feb 7, 2012	In Progress	$429,020.78	$0.00
B1 Underground Infrastructure	EST21288_009	21288_009 E13079 FESI Conlins Milner NT47M1 - Elec DO NOT PACKAGE	In Progress	$1,044,052.20	$0.00
B1 Underground Infrastructure	EST21450_001	21450_001 ICM NY51M24 UG Rebuild- E of Don Mills E13108 Forest Manor-Civil	In Progress	$232,868.58	$0.00

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B1 Underground Infrastructure	EST21868_001	21868_001 E13152 Rebuild UG Trunk NT63M12 M8 Briml y -Civil	In Progress	$1,719,974.39	$0.00
B1 Underground Infrastructure	EST27358_001	27358_001 E13616-P27 1090 Don Mills Load Balancing NY53M27	In Progress	$372,979.18	$0.00
B1 Underground Infrastructure	EST24224_001	24224_001 E14327-P01 Port Royal N UG Reconfigure NT63M4 - Civil	In Progress	$1,901,269.69	$0.00
B1 Underground Infrastructure	EST19623_001	19623_001 E12126 Morningview 47M3 UG Ph 1 - Elec Electrical portion of Phase 1	In Progress	$379,268.12	$0.00
B1 Underground Infrastructure	EST19627_001	19627_001 E12127 Morningview 47M3 UG Ph 2 - Elec Electrical portion of Phase 2	In Progress	$469,264.05	$0.00
B1 Underground Infrastructure	EST19628_001	19628_001 E12128 Morningview 47M3 UG Ph 3 - Civil Civil portion of Phase 3	In Progress	$1,963,664.65	$0.00
B1 Underground Infrastructure	EST20106_001	20106_001 E12202 3100 Kingston 52M3 UG Reb - Elec Direct Buried Cable Replacement - Elec	In Progress	$423,535.96	$0.00
B1 Underground Infrastructure	EST20170_001	20170_001 E12235 Rebuild 3-Ph Neilson Industrial Electrical portion of project	In Progress	$317,278.45	$0.00
B1 Underground Infrastructure	EST20206_001	20206_001 E12243 Durnford-Rylander/Tidewell- Cable Electrical	In Progress	$311,467.14	$0.00
B1 Underground Infrastructure	EST20208_001	20208_001 E12242 Royal Rouge Trail - Electrical Electrical	In Progress	$221,231.33	$0.00
B1 Underground Infrastructure	EST20210_001	20210_001 E12244 Tideswell/Rylander/Durness -Cable Electrical	In Progress	$369,148.24	$0.00
B1 Underground Infrastructure	EST20672_001 EST20672_002	20672_001 E12393 James Gray Dr UG Rebuild NY51M3 Electrical	In Progress	$199,373.48	$0.00
B1 Underground Infrastructure	EST21166_001	21166_001 E13063 Rodda UG Rebuild Civil SCNA47M14	In Progress	$177,864.46	$0.00
B1 Underground Infrastructure	EST21167_001	21167_001 E13064 Rodda UG Rebuild Electrical SCNA47M14	In Progress	$451,247.25	$0.00
B1 Underground Infrastructure	EST21864_001	21864_001 E13129 Rebuild UG Trunk NT63M8 M11 McCow an - Civil	In Progress	$646,503.20	$0.00
B1 Underground Infrastructure	EST22319_001	W13193 - UG Primary Rehab - Arrow Rd 55M21 (EST21664_001)	In Progress	$1,512,766.31	$0.00
B1 Underground Infrastructure	EST26034_X01	UG Cable Replacement on 85M31 at Lodestar Road, Toronto (Electrical) NY85M31 (EST21664_001)	In Progress	$135,352.71	$0.00
B1 Underground Infrastructure	EST26035_X01	UG Cable Replacement on 85M31 at Lodestar Road, Toronto (Civil) NY85M31 (EST21663_001)	In Progress	$197,860.18	$0.00
B1 Underground Infrastructure	EST18319_001	18319_001 E12267 Clappison 47M17 UG Rebuild (Elec) Centennial Park III Subdivisi	In Progress	$356,037.32	$0.00
B1 Underground Infrastructure	EST20239_001	20239_001 E12251 Scenic Millway UG Rebuild 51M21 Electrical	In Progress	$408,523.53	$0.00
B1 Underground Infrastructure	EST20260_001	20260_001 E12217Rebuild Windfield MS Area with VC OH 51M21	In Progress	$568,651.36	$0.00
B1 Underground Infrastructure	EST20725_001	20725_001 E12419 Artisan Place UG Rebuild NY51M27 Electrical	In Progress	$64,776.28	$0.00
B1 Underground Infrastructure	EST20738_001	20738_001 E12426 Spire Hillway UG Rebuild NY51M27 Electrical	In Progress	$113,377.05	$0.00
B1 Underground Infrastructure	EST21865_001	21865_001 E14010 Rebuild UG Trunk NT63M8 M11 McCow an - Electrical	In Progress	$357,035.10	$0.00
B1 Underground Infrastructure	EST22049_001	22049_001 E13194 UG Rehab of NY51M29 Don Mills and Duncan Mills area	In Progress	$2,501,791.35	$0.00
B1 Underground Infrastructure	EST22715_001 EST28318_001	22715_001 W13278 - Northview heights Civil Rebuild	Partially Complete	$3,293,761.13	$4,070,571.36
B1 Underground Infrastructure	EST20333_001	20333_001 E11116 Cougar Crt - Civil Created November 2009	Partially Complete	$251,412.18	$362,933.94
B1 Underground Infrastructure	EST21202_001 EST21110_001	21202_001 E13069 NY51M24 UG Rebuild North of Finch Off Don Mills Road - Civil	Partially Complete	$706,461.48	$339,076.31
B1 Underground Infrastructure	EST21933_001	21933_001 E13184 Rebuild UG Trunk 502M21M28 Warden -Civil	Partially Complete	$1,295,619.03	$986,836.43
B1 Underground Infrastructure	EST21356_009	21356_009 E13042 FESI UG Rebuild NT63M8 Revlis sub DO NOT PACKAGE for budget	Partially Complete	$552,077.34	$771,352.72
B1 Underground Infrastructure	EST21434_001	21434_001 E13106 NY51M24 DB Cable Replacement Don Mills & Sheppard (Part 2 Civil)	Partially Complete	$1,347,510.54	$2,559,206.34

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B1 Underground Infrastructure	EST24636_009	24636_009 ICM E12276 MUIRBANK 47M13 UG REB PHASE 1 MUIRBANK PHASE 1 - ELECTRICAL	Partially Complete	$231,604.32	$240,292.05
B1 Underground Infrastructure	EST23297_001	23297_001 E14190 UG Rebuild H9M30 Kingston Mason - CivilCreated Aug 2011	Partially Complete	$1,535,741.71	$929,309.03
B1 Underground Infrastructure	EST19522_001 EST22814_X03	W12077 Hoggs Hollow UG Rebuild	Partially Complete	$2,099,306.24	$3,446,639.28
B1 Underground Infrastructure	EST20383_001	20383_001 E12288 NT47M1 UG Rebuild - Electrical Hutcherson Sq. and Hatchet Pl	Partially Complete	$233,589.43	$375,354.24
B1 Underground Infrastructure	EST28590_001 EST28591_001	28590_001 W12077 Hoggs Hollow Phase 4 28591_001 W12077 Hoggs Hollow Phase 5	Partially Complete	$8,192,956.23	$2,604,348.88

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ICM Segment	Estimate	Description	Actual ISA	Rationale/Driver for Inclusion
B1 Underground Infrastructure	EST16873_002EST25422_001	W10335 BLAKETON MS PCI -W10335 Blaketon MS F2/F4	$211,486.14	The project involved replacing outdated air-insulated PMH switchgears with modern SCADA technology. The project began in 2011 and was completed in December 2012, with the estimate for this job being limited to installation of communication devices such as antennas. This project was necessary as the older switches presented significant reliability and safety risks. Air-insulated PMH switchgears are one of the assets targetted by Segment B1 due to the likelyhood of contamination over time which can lead to flashover, which can pose a serious safety risk to crews and can affect supply to approximately 1,400 customers on average. This cost represents the remaining ICM period expenditures for a job that was substantially complete prior to 2012. The full cost of the job was $843K, with the remainder captured separately as pre-2012 CWIP coming into service in the ICM period. (As established in the ICM Application, pre-2012 CWIP contributes to the non-ICM eligibile amounts below the ICM Materiality Threshold).
B1 Underground Infrastructure	EST18275_003	E11217 Celeste Drive Rebuild NA47M15	$311,283.11	This project was required to replace the single phase distribution for the Celeste Drive townhome complex. The distribution was built in 1977 with direct buried cables which had failed a number of times in the past. This single phase distribution was established off the supplying feeder through approximately 430 meters of TRXLPE cable. The supplying feeder NA47M14 was the second worst performing feeder in 2010 and continued to be a poor performer.
B1 Underground Infrastructure	EST20728_002	E11640-FESI SubmTxmr Replmt NYSS68-F9	$626,026.66	This job was necessary to replace non-standard submersible transformers on feeder NYSS68-F9. This feeder had experienced 10 outages in the previous year and was 26th on the worst performing feeder list. The non-switchable submersible transformers were deemed to be a significant risk to future reliability performance and were replaced in order to reduce restoration time in the event of future failures on this poor performing feeder. This feeder had experienced 730,718 customer minutes interrupted and 7,075 customer interruptions the year prior to job initiation.
B1 Underground Infrastructure	EST20473_002	PCI W12293 Finch TS Sub Loop cable Rplmt	$133,665.93	This job was part of mitigation efforts related to a feeder experiencing multiple sustained interruptions. The specific underground direct-buried cable loop that this job addressed had experienced three failures. Toronto Hydro replaced 100m of single phase primary failing cable with new tree-retardant XLPE cable in concrete encased ducts and replaced end-of-life transformers on the loop.
B1 Underground Infrastructure	EST22941_003	PCI - E14118 Ugrade Lawrence Pharmacy	$557,344.45	This job addressed a feeder that had experienced an average of four outages per year for 10 years. Toronto Hydro replaced old and failing direct-buried cable on Lawrence Ave. and Pharmacy Ave. with cable in concrete-encased duct. Some sections of the cable were also undersized, which restricted Toronto Hydro's ability to maintain service to customers under contingency situations. Overal, the assets replaced included 150 3-phase 1000 kcmil cable, 150 meters concrete ducts, 2 SCADA pad switches, 2 overhead SCADA switches and 2 poles.
B1 Underground Infrastructure	EST24035_003	PCI - E12726 Agincourt Mall Rebuild	$557,166.36	This was an urgent job to repair a leaking transformer and end-of-life switchgear feeding the Agincourt Mall. The work was required to avoid extended service interruptions and potential safety hazards due to catastrophic failure.
B1 Underground Infrastructure	EST22503_001	PCI E11371 FINCHDENE SUBD UG RBLD CIVIL	$5,154,091.29	This job was the civil construction phase to the job "E11401 & E11426 Finchdene UG Electrical Ph1/2 (SC26M31)" which was filed in Segment B1 in the Phase 2 filing as a job intended to commence in 2014. The 2014 job could not have proceeded without the civil portion being complete. The civil job had already started at the time of the Phase 1 filing and its omissions was an oversight. The objective of this job was to proactively replace underground assets on 27.6 kV feeder SCNAR26M31 in order to improve reliability of service and mitigate potential safety risks. As demonstrated in the Phase 2 evidence for the electrical phase, the job area had experienced deteriorating reliability from 2010 through 2012, with a total of 1,847 customer interruptions and 844 customer hours interrupted in that period. The area serves primarily industrial and commercial customers who experienced direct financial consequences as a result of poor reliability. The work performed included replacement of a concrete pad PMH switch and 2.5KM concrete encased ducts.
B1 Underground Infrastructure	EST20496_003	PCI W12307 FESI Downsview Dells Rebuild	$67,425.55	This job was necessary to address a section of obsolete underground XLPE cable that had experienced multiple failures and was a source of deteriorating reliability on feeder 55M25. This job replaced 400 meters of cable and two underground transformers.
B1 Underground Infrastructure	EST26148_003	PCI E13286 SALINGER SANWIN SUBM. TRANSF.	$589,475.85	This job was necessary to replace two non-standard submersible transformers with switchable transformers. The non-standard transformers were found to be defective during inspections and presented a significant risk of failure. The poor condition and inadequate height of the existing vaults necessitated construction of two new vaults for the replacement transformer units. This in turn required additoinal civil and electric construction related to primary and secondary cabling. - This job relates to feeder NYSS68-F9, which was a FESI-10 feeder when the job was initiated and ranked 26th on the worst performing feeder list.
B1 Underground Infrastructure	EST18723_002	PCI E11445 - Tineta-Kimroy UG Rebuild	$1,560,413.11	The concerned project area distribution was built in 1969 with direct buried cables which were failing repeatedly. The voltage conversion rebuild project was critical for the improvement of reliability. At the time that the project was issued, the area had experienced 60 customer interruptions and 385 customer hours interrupted in the previous year. The civil installation work performed included 1,269m of new trench and duct and 9 new submersible transformer vaults.

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ICM Segment	Estimate	Description	Actual ISA	Rationale/Driver for Inclusion
B1 Underground Infrastructure	EST20402_003	PCI W12298 FINCH TS STN EGRESS	$2,869,922.47	The scope of work for this project was to replace the critical egress cables from XLPE 1000 kcmil AL to TRXLPE 1000 kcmil Cu on multiple 27.6kV feeders.The job replaced the egress cable of the feeders 55M25, 55M30, 55M28 and 55M3 to improve operational flexibility and mitigate cable de-rating. Failure of egress cables can cause widespread outages at the station level. The egress cable at this stations was direct buried from the station to the first chamber. Toronto Hydro determined that it was vital to replace the direct-buried cable with a new duct structure in order to mitigate the exceptionally high risk of failure should the direct buried cable fail. In total, 18,264m of 1000kcmil feeder cable and 48m of duct was installed.
B1 Underground Infrastructure	EST26751_001EST26064_003	PCI-E13045_Wilfred UG Rebuild_ELECTRICAL	$646,951.63	This underground rebuild job was assigned urgent priorty after repeated cable faults occurred in the area of Gypsy Roseway (Scarborough) in late 2012 and 2013. Planned units based on high level estimates are as follows: 10 poles, 4 underground transformers, 7,500 meters of underground cable, 20 overhead switches and 1355 meters of civil infrastructure.
B1 Underground Infrastructure	EST18781_003EST26830_003	E12082 BAYLAWN/ PETWORTH UG REPL. ELECT	$347,406.63	The concerned project area distribution was built in 1971 with direct buried cables which were failing repeatedly. The voltage conversion rebuild project was critical for the improvement of reliability. At the time the job was created, the project area had experienced 228 customer interruptions and 292 customer hours interrupted in the previous year. Non-switchable, submersible transformers and 1/0 vintage XLPE cables were replaced with switchable submersible transformers and new TR-XLPE cables in concrete encased ducts. 1,465m of direct buried primary cable was replaced. In addition, 2 new poles were installed for the riser, each with a single overhead fused switch.
B1 Underground Infrastructure	EST26936_002	PCI - W12860 JANE MS EGRESS CIVIL	$796,885.81	To support the urgent and non-discretionary switchgear replacement at Jane MS (completed in 2014), egress cable replacement was required to remove old vintage XLPE cable, which is unreliable and was undersized, and to install standard 500 MCM, 15 kV stranded copper between the circuit breaker and the primary riser pole.This specific job built the civil infrastructure to replace the existing direct buried egress cable of all five feeders out of Jane MS from the circuit breaker to the riser pole. The Jane MS project was required because the non-standard, legacy configuration of the existing bus bars had caused a circuit breaker to fail, with risk of additional failures remaining. The civil infrastructure work performed included: 4 cable chambers, 7 poles and 580m of civil infrastructure.
B1 Underground Infrastructure	EST27119_001EST27162_001	E13500 - FESI - 27.6kV Sub TX Replace E13500 - FESI - 4.16 kV Sub TX Replace	$77,440.68	The project replaced eight transformers which were identified to be in poor condition (leaking oil) by the maintenance group and posed high risk for catastrophic failure and long outages. The transformers were on multiple 27.6 kV feeders covered by Ellesmere TS or Scarborough TS.
B1 Underground Infrastructure	EST27253_001	PCI W12367 FESI-Lat Cable Repl Jane Ph 2	$855,489.25	This job proactively replaced the underground cable on the laterals of 55M8 to improve reliability and mitigate outages due to underground cable failure. The feeder had experienced multiple cable failures within the job area. These underground loops were affected by nine underground failures between 2010 and 2013. The loops were direct buried and were replaced with cable in concrete-encased ducts. The following assets were installed as part of this job: 1330m duct structure, 10 tap boxes and 1 foundation for padmount transformer.
B1 Underground Infrastructure	EST25111_003	PCI E12845 155 Morningside PT171226	$92,381.45	Field inspections determined that the padmount transformer at 155 Morningside was heavily rusted. The base needed to be replaced and the cabinet was beyond repair. The padmount was relocated 8.5m north on customer's property. A new pole was installed to provide a primary service riser and required 99m of TRXLPE-CN-PEJ cable and 3 loadbreak elbows.
B1 Underground Infrastructure	EST29036_002	PCI E11570 Sheppard-Neilson Swgr repl	$442,563.53	This job was requested by system operations to address the high failure risk posed by an obsolete air-insulated PMH switchgear on feeder NT47M3. These switches are vulnerable to contamination leading to faults. This switch connected three feeders and operations was particularly concerned about the risk of flashover that could cause a significant outage on all three feeders. The three-feeder configuration was a non-standard design and could not be replaced with a like-for-like solution. The new design involved two SCADA enabled SF6 PMH-11 switches. - At the time the job was originally scoped, feeder NT47M3 had been the worst performing for six consecutive years. The feeder had experienced 22 outages resulting in 47,353 customer interruptions and 1,467,345 customer minutes interrupted in the previous year.

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B2 Paper Insulated Lead Covered Cables	EST21216_001	21216_001 X12512 Carlaw Piece Out and Leakers 2012 budget estimate	Partially Complete	$503,044.05	$370,078.54
B2 Paper Insulated Lead Covered Cables	EST21217_003	21217_003 X12513 Leaside Pieceout and Leakers Created Oct 2010	Complete	$181,203.67	$109,312.52
B2 Paper Insulated Lead Covered Cables	EST21218_003	21218_003 X12514-esplande_piece out & leakers Created Oct 2010	Complete	$109,948.30	$147,274.25
B2 Paper Insulated Lead Covered Cables	EST21219_001	21219_001 X12515 Glengrove Piece Out and Leakers 2012 budget estimate	Complete	$296,145.16	$347,265.62
B2 Paper Insulated Lead Covered Cables	EST21220_001	21220_001 X12516 Cecil Piece Out and Leakers 2012 budget estimate	In Progress	$204,906.24	$0.00
B2 Paper Insulated Lead Covered Cables	EST21221_001	21221_001 X12517 Duplex Piece Out and Leakers 2012 budget estimate	In Progress	$621,383.83	$0.00
B2 Paper Insulated Lead Covered Cables	EST19554_001	19554_001 X11532 Terauley Piece Out and Leakers 2011 budget estimate	In Progress	$758,508.98	$0.00
B2 Paper Insulated Lead Covered Cables	EST19798_001	19798_001 X12160 Loc 6294 piece out/PILC rep. IFRS compliant	In Progress	$2,236,383.19	$0.00
B2 Paper Insulated Lead Covered Cables	EST21222_001	21222_001 X12518 Main Piece Out and Leakers 2012 budget estimate	In Progress	$588,450.00	$0.00
B2 Paper Insulated Lead Covered Cables	EST24703_001	24703_001 X14364 Gerrard & Basin South PO & Leaker 2014 budget estimate	In Progress	$106,646.82	$0.00
B2 Paper Insulated Lead Covered Cables	EST28461_001	28461_001 X14533 PILC Rep- BH CIVIL Phase 3	In Progress	$1,340,499.30	$0.00
B2 Paper Insulated Lead Covered Cables	EST28460_001	28460_001 X14532 PILC Rep BH CIVIL Phase 2	Partially Complete	$1,340,499.30	$1,803,588.79
B2 Paper Insulated Lead Covered Cables	EST24682_001	24682_001 X13396 Downtown Piece Out and Leakers 2013 budget estimate	Cancelled	$365,670.26	$0.00
B2 Paper Insulated Lead Covered Cables	EST28037_001	28037_001 X14362 Bridgman TS Piece Outs & Leakers 2013 budget estimate	Deferred	$392,694.85	$0.00

ICM Segment	Estimate	Description	Actual ISA	Rationale/Driver for Inclusion
B2 Paper Insulated Lead Covered Cables	EST27177_003	ICM X12779 PH1 B to HL PILC Repl Civil Civil phase #1	$0.00	

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B4 Overhead Infrastructure	EST16616_005	16616_005 W10275 Manby TS-Horner TS Load Transfer FEB 08,2012 Electrical for approval	Construction attained and IS	$953,275.74	$773,478.93	High Level to Detailed Design Variance	The variance is primarily due to the actual cable installation costs being materially lower than initially budgeted.	
B4 Overhead Infrastructure	EST22245_001	22245_001 W13211 Goulding MS F1&F2 VC PH#1	Construction attained and IS	$1,204,619.71	$1,746,941.29	High Level to Detailed Design Variance	The high-level plans for this job and the associated job W13216 each included both overhead and underground aspects. For execution efficiency, the designer broke the jobs apart and reassembled them as one purely overhead job (W13211) and one purely underground job (W13216). The aggregate forecast cost for these jobs was $2.19M and the aggregate final cost was $2.92M. Variances occured in both the overhead and underground portions of the work. The high-level estimate assumed that 65 poles in the job area needed to be replaced. Following detailed field inspections, the designer determined that 94 poles in the job area needed to be replaced on the basis of condition and pole height requirements. On the underground portion of the job, a greater number of meterbases needed to be replaced than anticiapted in the detailed design.	Filed Conditions & Execution Requirements
B4 Overhead Infrastructure	EST22248_001	22248_001 W13216 Goulding MS F1 and F4 VC Ph#2	Construction attained and IS	$988,559.91	$1,174,772.35	High Level to Detailed Design Variance	The high-level plans for this job and the associated job W13211 each included both overhead and underground aspects. For execution efficiency, the designer broke the jobs apart and reassembled them as one purely overhead job (W13211) and one purely underground job (W13216). The aggregate forecast cost for these jobs was $2.19M and the aggregate final cost was $2.92M. Variances occured in both the overhead and underground portions of the work. The high-level estimate assumed that 65 poles in the job area needed to be replaced. Following detailed field inspections, the designer determined that 94 poles in the job area needed to be replaced on the basis of condition and pole height requirements. On the underground portion of the job, a greater number of meterbases needed to be replaced than anticiapted in the detailed design.	Filed Conditions & Execution Requirements
B4 Overhead Infrastructure	EST24052_001	24052_001 W14306 - 85M5 Mcallister Rd. OH rebuild W14306 - 85M5-Mcallister Rd. O	Construction attained and IS	$330,024.16	$204,760.20	High Level to Detailed Design Variance	Upon review at the detailed design phase, it was determined that a portion of this job would be more efficiently executed in coordination with another Overhead Infrastructure job, W13351 (which was yet to be placed into service as of the end of 2014). W14306 was reduced in scope to address only the proposed rebuilds on McAllister Road.	
B4 Overhead Infrastructure	EST28075_001	28075_001 W14125 38M27 North Queen conductor upgra	Construction attained and IS	$396,792.04	$515,857.80	High Level to Detailed Design Variance	As the poles in this job area were in good condition, Toronto Hydro did not need to replace them as a part of the conductor upgrade job. However, maintaining the existing pole line was more complex than anticipated in the high-level estimate, as the existing lines needed to be dropped down in order to properly frame the new lines. This doubled the labour time for the conductor upgrade compared to if the same work was performed as part of a full rebuild. This remained the most prudent option as the cost of a full rebuild would have also included the material cost of new poles, the cost of installing the poles, the costs of removals, etc.	
B4 Overhead Infrastructure	EST19965_009 EST20391_009	19965_009 ICM - E11088 NY Panacomm Repl "D" Replacing North York Panacomm RTUs 20391_009 ICM - E11088 NY OH SCADA INSTALL "A"	Construction attained and IS	$309,641.43	$801,892.06	High Level to Detailed Design Variance	During the design phase, Toronto Hydro's system operators determined that it would be economical to convert three padmounted switches and four overhead switches to SCADA operable switches in order to optimize system reliability and efficiency. This added approximately $250K to the original estimate. Also, significant extra work was required at a specific location in the job area due to access restrictions. The location of an existing switch required access from an on-ramp to highway 404 at Finch Ave. E. To ensure safe and efficient access to this switch location in the future, relocation was required.This invloved a new riser switch, a new 60-ft pole, additional civil work to extend the primary feeder cable to the new pole location and to connect to the existing duct, and the cost of the associated cable and terminations. This also increased the cost of the job by approximately $250K.	
B4 Overhead Infrastructure	EST24668_009 EST24669_009 EST24851_009 EST24881_009	Rebuild Broadlands MS Area with VC	Construction attained and IS	$3,462,379.88	$2,776,278.99	High Level to Detailed Design Variance	The variance was due to the confluence of several job changes at the design stage. - Overall labour costs were overstated in the original high-level estimate. - A separate customer connections job emerged, which ended up covering part of the anticipated scope of this job. This led to savings in line extension, transformer, and service wiring costs.	Third Party Constraints & Requirements
B4 Overhead Infrastructure	EST23928_001	23928_001 E13359 Remove YH feeder loads after VC Created in 27 Oct 2011	Construction attained and IS	$1.27	$447,749.30	Error	This job appeared in the body of the Phase 2 filing with an estimate of approximately $350,000. Due to administrative error, the estimate was essentially omitted from the overall in-service addition forecasts for this segment, meaning that $0 was filed for this job. (This explains the extreme job-level variance.) The actual variance was approximately $100,000 above the job estimate and was due primarily to the transfer of traffic and streetlights to the new supply, which was not anticipated in the high-level estimate.	

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B4 Overhead Infrastructure	(EST24598_009) EST22850_009 EST26533_001 EST26534_001 EST26842_X01	22850_009 E12436_Repl Failing OH Assets_PH3 POLES FOR 2012 BUDGET 24598_009 E12436_Repl Fail OH Assets_Ph 3_ELECT (FOR 2012 BUDGET)	Construction attained and IS	$1,766,944.72	$1,354,362.32	High Level to Detailed Design Variance	Project labour costs were lower than anticipated, as it was possible to station crews closer to the job site, resulting in significantly less travel time, thereby increasing the daily "wrench time". Moreover, a number of anticipated pole removals included in the initial cost estimate were determined to be unnecessary on the basis of field assessment.	
B4 Overhead Infrastructure	EST18456_004 EST26546_001	18456_004 E11374 - OH SCADAMATE 51M7_30, 53M25_28 SCADAMATE INSTALLATION NY34M6	Construction attained and IS	$788,916.82	$156,761.39	Error	Due to an administrative oversight, the entirety of the project's scope was included in the ICM application, whereas a major portion of work was in fact completed prior to the ICM filing and is incuded in the pre-2012 CWIP amounts that came into service during the ICM period (as a part of below threshold spending). The $157K of in-service additions for this job represents the remaining portion of work that was completed during the ICM period. The total actual cost of this job, including pre-2012 CWIP, was $672K.	
B4 Overhead Infrastructure	EST19581_001	19581_001 X12124 Replacement of non standard CSP 2012 Estimate	Construction attained and IS	$531,346.44	$411,139.25	High Level to Detailed Design Variance	Detailed field inspections determined that only 15 poles in the immediate project area needed to be replaced compared to the 33 poles anticipated by the high-level estimate. The reduction in pole replacements allowed for a similar reduction in the number of transformer replacements involved in the rebuild. The negative variance was partially offset by the cost of replacing other defective poles discovered adjacent to the project area, which posed safety hazards. Toronto Hydro determined that it would be prudent to replace these poles in coordination with the ongoing project in the area.	
B4 Overhead Infrastructure	EST19792_001	19792_001 X12158 Replacement of 3 ph switch IFRS compliant	Construction attained and IS	$530,770.46	$370,397.49	High Level to Detailed Design Variance	System operations reviewed the detailed design prior to the construction stage and determined that two of the planned SCADA switches would not provide sufficient benefits. These switches were removed from the project.	
B4 Overhead Infrastructure	EST19871_001	19871_001 X12175 Replacement of CSP TX 2012 budget estimate	Construction attained and IS	$1,417,803.21	$834,435.57	Error	A clerical error in the creation of the filed estimate resulted in the costs associated with overhead transformer replacement being overstated by a factor of four. The high-level estimate should have specified nine single phase transformers for three three-phase transformer bank replacements, but instead specificed 36 units. The actual detailed design for the new plant only required six transformers, further reducing the final costs.	
B4 Overhead Infrastructure	EST19892_001	19892_001 X12176 Replacement of 3 ph switch IFRS compliant	Construction attained and IS	$375,933.26	$500,325.48	Field Conditions and Execution Requirements	To accommodate complex switching requirements for the work near O'Connor Drive and Northline Road and to mitigate interruptions to a seniors home, part of the work needed to be performed on weekends, resulting in increased cost of labour and costs related to the rental of a generator.	
B4 Overhead Infrastructure	EST20023_001	20023_001 X12204Replacement of CSP TXMR 2012 budget estimate	Construction attained and IS	$94,232.99	$1,191,852.05	Error	Due to a clerical error, an incorrect estimate was filed for this job. The actual estimated cost for this job was $1.19M, meaning that there was no variance between forecasts and actuals.	
B4 Overhead Infrastructure	EST20296_001	20296_001 OH rebuild Spenvalley and Sorroundings	Construction attained and IS	$689,662.40	$1,005,338.73	High Level to Detailed Design Variance	Field inspections during the detailed design phase determined that an additional 11 poles and 12 transformers needed to be replaced due to poor condition and non-standard equipment. Additional design, inspection and material handling costs were required on the basis of the detailed design relative to the high-level estimate, in part due to the additional asset replacements.	Variance in Allocated Costs
B4 Overhead Infrastructure	EST20565_002	20565_002 ICM-W12351 Lawrence- Keele- CSP/Pri Rep Creation Date: October 1, 2010	Construction attained and IS	$4,413,402.70	$7,026,236.70	High Level to Detailed Design Variance	This job as originally scoped included CSP and conductor replacements at 170 locations on a worst performing feeder, and was one of the largest single jobs in the forecast ICM work program. The confluence of a number of complex site-specific conditions encountered during the detailed design stage increased the cost of this job relative to the high-level estimate by about 69%, including: - an additional $584K (plus $149K for pole removals) was required to replace poles that were found to be in poor condition during detailed inspections or were determined to be an incorrect height for the new overhead plant design; - $361K for conductor stringing (plus $104K for conductor removal) was required as the existing primary conductor was determined to be undersized for the growing load in the area; - $112K was required to replace additional non-standard CSP transformers that were identified in field inspections; - the designer determined that, without the rearrangement of secondary services to suit the new design (i.e. "secondary transfers") then a large number of services would have become "mid-span", resulting in excess tension on the secondary bus; the addition of secondary transfers resulted in additional costs	Variance in Allocated Costs

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B4 Overhead Infrastructure	EST20578_001	20578_001 E12358 51M21 Rebuild OH Sections Part 1	Construction attained and IS	$1,578,973.89	$5,926,484.80	High Level to Detailed Design Variance	The initial project cost estimate was based on a preliminary feeder patrol intended to verify a list of components in the areas that were believed to be defective and in need of replacement. The project cost increased following a more detailed field inspection by the project designer and construction field crew members. In addition to identifying a greater number of units for replacement based on condition, thorough inspection of design conditions in the field determined that from construction and standards perspective, an additional number of poles and transformers needed to be replaced so that the project could be properly constructed with sustainable long-term improvement in the area. The major material unit increases were as follows: - The high-level design assumed that only 150 of 439 poles in the project area would need to be replaced. Due to pole condition as well as specific design requirements, 372 poles were ultimately deemed necessary for replacement. - As a result of the pole replacements, 79 additional transformers needed to be replaced. - Some areas required tree-proof conductor due to the density of tree canopy. The expansion of the scope of work in the final design caused allocated costs such as design	Variance in Allocated Costs
B4 Overhead Infrastructure	EST20595_001	20595_001 E12361 51M21 Rebuild OH Sections Part 2	Construction attained and IS	$827,320.79	$3,297,813.78	High Level to Detailed Design Variance	This job was the second part of a two phase job. As with the first phase (EST20578), the initial project cost estimate was based on a preliminary feeder patrol intended to verify a list of components in the areas that were believed to be defective and in need of replacement as part of a potential overhead infrastructure project. The project cost increased following a more detailed field inspection by the project designer and construction field crew members. In addition to identifying a greater number of poles and transformers for replacement based on condition, additional poles needed to be replaced in order accomodate height requirements for standard equipment configurations and design practices. The original projection identified 50 poles and 10 overhead transformers; subsequent field inspections determined that a total of 184 poles and 68 transformers needed replacement. The extensiveness of the rebuild in this area reflected the poor reliability experienced by the customers. Feeder 51M21 had experienced more than 30 outages in the three years prior to job execution.	
B4 Overhead Infrastructure	EST20684_004 EST26499_001	20684_004 W12397-SMD 20 Switch Replacement RC3620 2011 CapEx WBS Rev Nov 22_10	Construction attained and IS	$526,062.45	$644,073.11	High Level to Detailed Design Variance	Field inspections during the detailed design phase identified a greater number of required SMD-20 switch replacements than estimated in the high-level estimate In addition, switch installation involved higher labour costs to conduct extensive feeder switching in order to avoid prolonged planned outages that were assumed in the initial scope, but were subsequently determined to be unacceptable from the customer impact standpoint.	
B4 Overhead Infrastructure	EST20773_002	20773_002 WBS/IFRS Compliant Creation Date: October 1, 2010	Construction attained and IS	$1,018,515.73	$1,625,810.02	High Level to Detailed Design Variance	The original design for this job, which was completed in 2010, was driven by the need to address end-of-life 4 kV assets on feeder NYSS60F2, but did not contemplate converting the 4 kV to 27.6 kV at that time. However, the project was later shelved while a plan for conversion of the aging 4 kV in the area was assessed. When the project was revived during the ICM period, Toronto Hydro redesigned the job for conversion to 27.6 kV in order to improve service quality and to enable the eventual decommissioning of related 4 kV stations. The additoinal costs were related to	
B4 Overhead Infrastructure	EST20848_001	20848_001 E12459 Banbury/Post Rd OH Rehab NY34M6, NY53M24, NY51M21	Construction attained and IS	$263,649.31	$566,806.22	High Level to Detailed Design Variance	The original job required construction on a route that was later deemed infeasible by the designer. The high-level plan called for feeder construction down Post Rd. and across a ravine, which aligned to the existing route of 51M21. However, the designer determined that the poles installed in the ravine were extremely difficult to access for repair or replacement under contemporary work rules and procedures, and therefore needed to be eliminated by adopting a new feeder configuration.To achieve the desired operational benefits, the planning engineer submitted a revised scope that proposed constructing a feeder tie between 34M7 and 51M21. This work accounts for about half of	
B4 Overhead Infrastructure	EST20875_001	20875_001 X12453-35M12-OH Rebuild-Geo Anderson IFRS compliant	Construction attained and IS	$1,627,291.19	$1,799,324.32	High Level to Detailed Design Variance	Field inspections during detailed design determined that, due to condition and design requirements for the new plant, 15 additional poles and five additional transformers were required relative to the high-level estimate, increasing the cost of the job.	
B4 Overhead Infrastructure	EST20881_001	20881_001 E12457 Pole and CSP Transformers NY80M5 OH Rebuild	Construction attained and IS	$444,019.68	$768,828.25	High Level to Detailed Design Variance	During the detailed design phase, Toronto Hydro determined that several cost requirements had been underestimated in the high-level plan. The largest of these were additional pole and framing costs, which were	Variance in Allocated Costs
B4 Overhead Infrastructure	EST20892_001	20892_001 X12460 - 35M12-O/H Rebuild-- Arrowsmith IFRS compliant	Construction attained and IS	$761,553.24	$1,028,092.95	High Level to Detailed Design Variance	The designer determined that five additional switch installations were required to complete the new plant design. Furthermore, due to scheduling restrictions encountered during the construction phase, Toronto Hydro determined that it was necessary to execute 31 pole installations and 15 anchor installations on a weekend, which incurred approximately $135K in additional labour costs.	Filed Conditions & Execution Requirements

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B4 Overhead Infrastructure	EST20939_001	20939_001 W12442 FESI CSP Replacement NY85M1	Construction attained and IS	$1,391,625.35	$2,227,251.12	High Level to Detailed Design Variance	Review of the job area during detailed design revealed the need to significantly expand the scope of work in order to accommodate standard design practices for the proposed new overhead plant. Due to pole height requirements and the positioning of secondary services in the new design, an additional $680K in pole replacement and framing, $67K for secondary transfers, and other proportionate costs related to design, inspection and switching were required.	Variance in Allocated Costs
B4 Overhead Infrastructure	EST21531_001	21531_001 E13111 OH Rebuild R43M28 SCNAR43M28	Construction attained and IS	$804,980.13	$1,323,794.52	High Level to Detailed Design Variance	The high-level estimate for this job was based on available feeder patrol information from 2010, prior to the identification of porcelain SMD-20 switches manufacture between 2004 and 2011 as a significant pontential safety hazard to crews and the public. During the detailed design phase in 2012, the designer determined that 200 porcelain switches on the feeder needed to be replaced, along witha portion of overhead line, at the combined cost of approximately $470K. The remaining variance is a function of project design and	Variance in Allocated Costs
B4 Overhead Infrastructure	EST21998_001	21998_001 W13187 80M1 Clarkhill_Glenborough Park 80M1 OH rebuid	Construction attained and IS	$642,258.74	$1,043,487.66	High Level to Detailed Design Variance	The high-level scope for this job assumed that all existing 4 kV lines in the project area would be removed as a result of conversion. The designer later determined that existing 4 kV lines in one part of the project would have to be maintained or rebuilt to continue supplying some underground 4 kV load that could not be converted. Taller poles were required to accomodate both the 4 kV circuit and the higher voltage circuits, driving the variance. Other costs related to 4 kV removals were also understated in the high-level plan.	
B4 Overhead Infrastructure	EST22041_001	22041_001 W13189 80M1 Stafford Rd & Cloebury Crt 80M1 OH rebuild	Construction attained and IS	$185,976.89	$336,517.11	High Level to Detailed Design Variance	Several equirements were identified during the detailed design stage as a result of detailed field inspections, including: - Replacement for secondary poles was not included in the high level estimate. Field inspection determined these poles were defective, and needed to be replaced, which cost approximately $42K. - The original scope anticipated transfer of existing conductor to new poles. However, existing conductors were determined to be at the end of their life and undersized. They were replaced with primary conductors meeting the current standard for approximately $46K. - The cost for the installation of fuses was higher in the detailed estimate based on the specific contractor unit prices $15K. - One underground radial supply had to be replaced as part of the design This included underground cable, transformers and civil infrastructure to bring existing ducts to the new pole. The transfomers in customers building vault were leaking and did not meet today's standard; cable was at end of life; a decision was made to replace at time of the design. This work cost approximately $35K. - Design costs rose as a percentage of the overall work.	Variance in Allocated Costs
B4 Overhead Infrastructure	EST22184_001	22184_001 W13198 Refurbish Trunk Feeder 85M10 Regent - Wilson	Construction attained and IS	$1,235,533.53	$1,027,578.09	High Level to Detailed Design Variance	It was determined during the detailed design phase that the costs associated with the minor underground portion of this job were oversestimated in the high-level plan.	
B4 Overhead Infrastructure	EST22208_001	22208_001 W13205 Refurbish 85M10 Laterals Ph1 of 2	Construction attained and IS	$1,212,953.96	$1,666,575.49	High Level to Detailed Design Variance	Several cost elements were underestimated in the high-level estimate, in part due to the specific contractor unit costs that were ultimately used for this particular job. - Approximately $209K was required for primary/secondary framing and stringing. The difference in cost was due to labour. Contractor-specific unit prices were used in the detailed estimate as well as cost of removal. - Approximately $117K more was required for poles and anchors. This consisted of $29K in materials. An additional 37 poles were required due to condition and design consideratoins, and the contractor-specific unit price for labour was higher than anticipated in the high-level estimate.	
B4 Overhead Infrastructure	EST23696_001	23696_001 ICM W12669 Martin Ross rebuild	Construction attained and IS	$411,790.56	$745,574.74	High Level to Detailed Design Variance	Several factors contributed to the increased cost of ths job: - Detailed design work and inspections revealed the need to replace additional poles identified as being in poor condition at the time of site visit. - Additional secondary wires were also required because existing service wires were inadequately configured to facilitate conductor transfer to new poles, increasing material and labour costs. - Additional duct work was also required to accomodate a three-phase underground section of the feeder. The underground work also revealed a vault in poor condition, which was rebuilt as a part of the job.	
B4 Overhead Infrastructure	EST24161_001	24161_001 W13376 VOLTAGE CONVERSION (B-1RK) 2013	Construction attained and IS	$1,589,640.20	$2,854,304.16	High Level to Detailed Design Variance	Review of the job area during detailed design revealed the need to significantly expand the scope of work to include additional poor condition poles and to accommodate standard design practices for the proposed new overhead plant. An additional 49 poles and nine transformers required replacement based on condition and design requirements, adding approximately $800K to the job cost. The designer also determined that non-standard open bus secondary lines needed to be replaced with standard multiplexed secondary lines for reasons of service quality, adding another $170K in cost. The remaining variance was due to contractor inspection and material handling costs, which are typicall not included in the high-level estimate, as well as a small	
B4 Overhead Infrastructure	EST19735_001	19735_001 X12148 Replacement of CSP.34M7 2012 Estimate	Construction attained and IS	$647,903.23	$166,771.65	High Level to Detailed Design Variance	Toronto Hydro determined that 11 overhead transformers originally planned for replacement and included in the estimate for this job could be more efficiently executed as part of another job.	

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B4 Overhead Infrastructure	EST19861_001	19861_001 X12172 Replacement of CSP TX 2012 budget estimate	Construction attained and IS	$1,097,257.26	$935,144.24	High Level to Detailed Design Variance	The number of polemounted 100 kVA and 50kVA transformers in need of replacemeent was overestimated in the high-level estimate.	
B4 Overhead Infrastructure	EST19862_001	19862_001 X12173 Replacement of CSP TX, 35M1 2012 budget estimate	Construction attained and IS	$1,040,302.96	$906,240.00	High Level to Detailed Design Variance	The high-level estimate included a greater amount of materials than was determined necessary during the detailed design process.	
B4 Overhead Infrastructure	EST22205_001	22205_001 E11765Pole Replacement Deanvar Ave CE-F1	Construction attained and IS	$355,542.83	$554,168.38	High Level to Detailed Design Variance	During the detailed design stage, the designer determined that replacement of the existing open bus seoncdary lines with multiplex secondary lines was required in order to bring the new plant to current design standards.	
B4 Overhead Infrastructure	EST23089_001	23089_001 W14150 - OH Feeder Rehab 55M9 Milvan / Penn	Construction attained and IS	$538,125.47	$1,463,143.08	Field Conditions and Execution Requirements	The reason for variance was related to the scheduling of the job. In the Phase 2 ICM Appliciation, Toronto Hydro showed the the full forecast cost of the job in the segment narrative as $1.13M. However, in the financial calculations used to determine ISAs, Toronto Hydro relied on the calendarized cost of the job for 2014 as reflected in the utility's execution work program. As this job was expected to continue into 2015, Toronto Hydro only included the $538K that it anticipated spending during the ICM period. However, this job was ultimately finished by the end of 2014, resulting in the full cost of the job being placed into service. The remainder of the variance was due to the fact that 13 additional overheard transformers and the primary conductor needed to be replaced based on condition.	High Level to Detailed Design Variance
B4 Overhead Infrastructure	EST23093_001	23093_001 W14149 - OH Feeder Rehab 55M9 Finch / Weston / Toryork	Construction attained and IS	$687,762.54	$791,853.85	High Level to Detailed Design Variance	The high-level estimate contemplated transferring existing conductors to new poles, while the detailed design and site visits determined that conductor replacement was necessary due to the condition of existing assets.	Variance in Allocated Costs
B4 Overhead Infrastructure	EST23323_001	23323_001 W14181 Kingsway MS VC	Construction attained and IS	$730,772.90	$872,486.19	Variance in Allocated Costs	Both design and road cut repair costs were ultimately higher than forecasted in the filed estimate.	
B4 Overhead Infrastructure	EST24089_001	24089_001 W14315 Carmichael OH rebuild & Upgrade	Construction attained and IS	$763,888.12	$893,859.78	High Level to Detailed Design Variance	Costs for materials and labour associated with installation of poles and transformers, along with the primary and secondary service framing, were higher in the detailed design compared to the original high-level estimate.	
B4 Overhead Infrastructure	EST24320_001	24320_001 W14343 Voltage Conversion PH-2 2014	Construction attained and IS	$486,147.69	$606,132.19	High Level to Detailed Design Variance	The original high-level estimate assumed that eight transformers and 24 poles required replacement. Following field inspections it was determined that, due to condition and design consideratoins (e.g. height requirements), 11 transformers and 31 poles needed replacement. These increases were partially offset by lower planning and design costs than originally estimated.	Variance in Allocated Costs
B4 Overhead Infrastructure	EST26151_001	26151_001 W13482 Install/Redegn Guying Var Loc Ph3	Construction attained and IS	$810,481.63	$189,558.37	High Level to Detailed Design Variance	Detailed design and inspection revealed significantly more complex work requirements than contemplated under the orignal scope, largely due to the location-based challenges of securing the poles with adequate guying infrastructure. Given these challenges, the project scope was changed by transferring the more complex work to a dedicated scope in order to properly consider the design alternatives.	
B4 Overhead Infrastructure	EST27810_001	27810_001 W13364 Kingsway voltage conversion rev 2 2013	Construction attained and IS	$382,850.28	$1,378,726.17	High Level to Detailed Design Variance	Secondary service configurations that were relatively unique to the job area and not accounted for by the engineer during the high-level planning phase caused a material increase in cost for this job during the detailed design phase. Specifically, nine customers had previously been fed through delta configurations and needed to be converted to wye configurations in order to be supplied from the wye type transformers that were installed as part of this job in accordance with design standards. This required that Toronto Hydro replace the entire secondary along the pole line as well as the service drops to the customers. As part of the conversion of the secondary services to the customers, some underground work was added to the job. Hence new ducts had to be installed and new secondary service drops were to be installed to feed these customers. This involved revamping the entire three-wire three-phase services and installation of a fourth wire between Toronto Hydro's transformer and the customer's service entrance switch to meet Electrical Safety Authority requirements. All existing meters had to be upgraded to three-phase, four-wire metering systems. Finally, the contractor unit costs related to poles, pole anchoring, pole framing, etc. were higher than anticipated in	

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B4 Overhead Infrastructure	EST27813_010	27813_010 PCI W10487 NY85M3 Downsview Airport Ph 2 DUPLICATION OF VERSION 2 FOR	Construction attained and IS	$396,371.97	$1,927,004.60	Error	Due to a clerical error, Toronto Hydro included an incorrect estimate for this job in the financial calculations for the Phase 2 filing. The correct estimate should have been for $1.90M. (While the estimate in the financial data was incorrect, the B4 segment evidence did in fact display a $1.90M estimate for this job.)	
B4 Overhead Infrastructure	EST28603_001	28603_001 W14605 Manby-Richview Load Cascades	Construction attained and IS	$290,252.22	$570,348.48	High Level to Detailed Design Variance	The scope of this job was expanded to take on additional load shifting elements between Manby TS and Richview TS from another job that was behind scehdule. These additional elements needed to be completed on an accelerated basis to prepare the system for the summer loading levels. The requisite project streamlining resulting in higher labour requirements than budgeted for under the original high-level design.	

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B4 Overhead Infrastructure	EST19806_001	19806_001 Remote Switch Install - Finch 85M31 & M2	Cancelled	$88,584.52	$0.00
B4 Overhead Infrastructure	EST20412_003	20412_003 WBS7/IFRS Compliant Creation Date: October 01, 2010	In Progress	$905,950.01	$0.00
B4 Overhead Infrastructure	EST20456_002	20456_002 W12309 Spenvalley 55M25 Overhead Rebuild Arleta/Spenvalley/Yatescastle/Sheppard	Complete	$1,118,174.21	$1,034,324.15
B4 Overhead Infrastructure	EST20499_001	20499_001 WBS/IFRS Compliant Creation Date: October 01, 2010	Complete	$849,142.59	$853,096.36
B4 Overhead Infrastructure	EST22173_001	22173_001 W13197 80M1 Ellerslie Betty Ann Park Hom OH Rehab	Complete	$580,533.02	$535,836.53
B4 Overhead Infrastructure	EST22180_001	22180_001 W13204 80M1 Elynhill_Ellerslie_Betty Ann Park Home OH Rehab	Complete	$799,085.54	$779,255.36
B4 Overhead Infrastructure	EST23430_001	23430_001 W13329- ETR30M12 along Evans/Royal York P03_New Feeder Construction	Cancelled	$804,965.44	$0.00
B4 Overhead Infrastructure	EST26540_001	W12284 CSP TX and Conductor Repl YK11M5 PHASE 1 (EST20379_004)	In Progress	$1,023,299.74	$0.00
B4 Overhead Infrastructure	EST18523_001	18523_001 W11289 FESI NY55M22 - Rowntree Conting Phase 6 of 6	In Progress	$665,159.77	$0.00
B4 Overhead Infrastructure	EST24007_001	24007_001 W14289 OH Rebuild off Gary Ave	Partially Complete	$1,028,999.11	$238,802.37
B4 Overhead Infrastructure	EST25898_003	25898_003 W13454 VC Hollywood MS The Queensway/Kipling	Complete	$435,566.51	$453,888.59
B4 Overhead Infrastructure	EST21518_003	21518_003 WBS/IFRS Compliant- W13115 FESI Creation Date: October 1, 2010	In Progress	$496,058.67	$0.00
B4 Overhead Infrastructure	EST22037_001	22037_001 W13188 80M1 Finchhurst Dr & Fleetwell Cr 80M1 OH rebuid	Complete	$153,175.85	$165,942.30
B4 Overhead Infrastructure	EST17801_009 EST26547_001	17801_009 ICM- E10387 Bermondsey TS SCADA OH & UG SCADA Switch Installations	Complete	$293,721.43	$320,087.79
B4 Overhead Infrastructure	EST24698_009 EST25263_009	24698_009 E11333 Brimley Anson VC PEF1 DO NOT PACKAGE for budget purposes	Partially Complete	$171,543.04	$351,340.88
B4 Overhead Infrastructure	EST24666_009	24666_009 E11645_Repl Failing OH Assets_PH 2A for 2012 Budget	Complete	$525,863.42	$514,797.71
B4 Overhead Infrastructure	EST21578_001	21578_001 ICM E11742 SCNA47M13 OH Rehab	In Progress	$420,614.00	$0.00
B4 Overhead Infrastructure	EST23677_009	23677_009 ICM E12104 CHIPPING CROSSBURN OH REBUILD POLE & ELECTRICAL INSTALLATION	Complete	$276,905.64	$334,935.30
B4 Overhead Infrastructure	EST22203_001	22203_001 ICM E12570 53M25 OH Rehab	Partially Complete	$1,195,825.05	$1,624,799.35
B4 Overhead Infrastructure	EST24060_001	24060_001 E12744 Bell Line Conversion	Complete	$84,750.12	$113,746.65
B4 Overhead Infrastructure	EST21785_001	21785_001 E13153 OH Rebuild 51M8	Partially Complete	$1,690,749.47	$1,876,634.62
B4 Overhead Infrastructure	EST24139_001	24139_001 E14318 New SCADA Switches on NY51M3	Deferred	$242,944.84	$0.00
B4 Overhead Infrastructure	EST19775_001	19775_001 X12154 Replacement of non-standard, 34M6 2012 Estimate	Complete	$965,481.56	$804,970.06
B4 Overhead Infrastructure	EST19785_003	19785_003 X12156 New SCADA Sw NY53-M8 Created Oct 2010	In Progress	$302,500.51	$0.00
B4 Overhead Infrastructure	EST19970_010	19970_010 X12196-Bathurst-Lawrence CSP Phase 3 DUPLICATION OF VERSION 2 FOR ICM	In Progress	$2,792,887.74	$0.00
B4 Overhead Infrastructure	EST19452_001	19452_001 X10449 Replacement of 3 phase switch 2010 estimate	Complete	$74,271.67	$156,614.65
B4 Overhead Infrastructure	EST19453_001	19453_001 X11525 Replacement of 3 phase switch 2012 estimate	Complete	$74,155.83	$121,125.83
B4 Overhead Infrastructure	EST19454_001	19454_001 X111524 Replacement of 3 phase switch 2012 Estimate	Complete	$74,155.83	$118,775.00
B4 Overhead Infrastructure	EST19455_001	19455_001 X11526 Replacement of 3 phase switch 2012 Estimate	Complete	$85,494.21	$101,727.66
B4 Overhead Infrastructure	EST19837_003	19837_003 X12163 SCADA SWITCH REPLACEMENT WBS7/PW-DPC	Complete	$524,169.23	$567,168.35

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B4 Overhead Infrastructure	EST23979_001	23979_001 W14285 OH & UG lateral Rebuild	Complete	$298,770.84	$361,725.96
B4 Overhead Infrastructure	EST20416_002	20416_002 ICM X12318 Repl Manu SW&Inst SCADA SW 34M1	In Progress	$170,971.41	$0.00
B4 Overhead Infrastructure	EST20572_002	20572_002 W12291 FESI - Magellan OH Rebuild 55M25 To be reviewed prior to authorization	Complete	$1,624,395.61	$1,744,908.33
B4 Overhead Infrastructure	EST20659_001	20659_001 W12383 OH SCADA Switch Replacements NY80M30	Complete	$212,766.15	$167,507.20
B4 Overhead Infrastructure	EST20774_001	20774_001 E12433 Voltage Conversion KHF2	Partially Complete	$901,497.93	$1,171,592.77
B4 Overhead Infrastructure	EST20873_008 EST26538_001	20873_008 W12199 Riverside Dr Voltage Conv. part 2 Creation Date: October 1, 2010	Complete	$1,341,833.27	$1,338,274.21
B4 Overhead Infrastructure	EST19894_003 EST26545_001	19894_003 X12182 NY34 Feeder Scada Inst RC3620 2011 CapEx WBS Rev Nov 22_10	Complete	$211,093.54	$218,748.44
B4 Overhead Infrastructure	EST21280_X03	E11243 Repl Failing OH Assets PH 2A (EST24666_009)	Partially Complete	$463,328.30	$118,634.41
B4 Overhead Infrastructure	EST21190_001	21190_001 E12508 NY80M4 Rebuild Phase 1 Replace wires,Tr, Insulator Nov 12, 2010	In Progress	$1,790,035.06	$0.00
B4 Overhead Infrastructure	EST21193_001	21193_001 E12509 NY80M4 Rebuild Phase 2 Updated on Nov 12, 2010	In Progress	$1,076,441.82	$0.00
B4 Overhead Infrastructure	EST21457_001	21457_001 E13110 SS68-F9 OH Rebuild Pleasant View	In Progress	$540,355.73	$0.00
B4 Overhead Infrastructure	EST21517_001	21517_001 W13113 FESI Feeder Rehab_CSP PH#1	Complete	$711,238.41	$782,788.39
B4 Overhead Infrastructure	EST21569_001	21569_001 FESI - Refurbish OH Feeder R30M10	In Progress	$497,004.68	$0.00
B4 Overhead Infrastructure	EST21639_001	21639_001 W13130 - Refurbish OH Feeder 55M28 Epsom Downs Area	In Progress	$1,352,326.47	$0.00
B4 Overhead Infrastructure	EST21690_001	21690_001 W13131 - Refurbish OH Feeder 55M28 Falstaff Area	In Progress	$1,397,651.52	$0.00
B4 Overhead Infrastructure	EST21876_001	21876_001 W13182 OH Rehab 80M1.	Complete	$132,123.81	$194,215.13
B4 Overhead Infrastructure	EST21920_001	21920_001 W13185 80M1 Carney Rd Distribution Rehab	In Progress	$701,383.83	$0.00
B4 Overhead Infrastructure	EST21999_001	21999_001 W13167 Feeder Reconfigure & Rebuild Clayson - Bartor , 55M21	Partially Complete	$1,102,144.78	$433,164.81
B4 Overhead Infrastructure	EST22229_001	22229_001 ICM E12574 - SCREF3 OH REHAB	Partially Complete	$831,538.87	$1,142,288.70
B4 Overhead Infrastructure	EST22598_001	22598_001 Feeder Riser SCADA Installations 88M13, 88M15, 88M46	In Progress	$294,956.40	$0.00
B4 Overhead Infrastructure	EST23567_001	23567_001 ICM W13351 FESI Rebuild & CSP Repl #2 NY85M1	In Progress	$2,005,774.73	$0.00
B4 Overhead Infrastructure	EST24951_001	24951_001 Danger and Caution Pole Replacement	Partially Complete	$1,856,192.04	$1,963,593.39
B4 Overhead Infrastructure	EST20946_008 (EST26553_001 EST26790_X02)	W12462 Rockford Road - 3 Phase Extension W12462 - FESI (EST20946_008)	Complete	$273,976.30	$288,131.58
B4 Overhead Infrastructure	EST19886_001	19886_001 X12179 Replacement of CSP TX 2012 budget estimate	In Progress	$1,636,821.10	$0.00
B4 Overhead Infrastructure	EST21025_010	21025_010 ICM-X12501 OH Rebuild NY35M12 DUPLICATION OF VERSION 3 FOR ICM FILING	In Progress	$1,068,668.27	$0.00
B4 Overhead Infrastructure	EST22211_001	22211_001 W13206 Refurbish 85M10 Laterals Ph2 of 2	In Progress	$739,233.18	$0.00
B4 Overhead Infrastructure	EST23354_002	23354_002 W12253 Repl OSL3310 with Scada sw YK11M7 W12253 Repl OSL3310 with Scad	In Progress	$135,902.36	$0.00
B4 Overhead Infrastructure	EST23878_001	23878_001 W14276 - OH Feeder Rehab - Signet/Weston 55M1	In Progress	$2,511,430.69	$0.00
B4 Overhead Infrastructure	EST24169_001	24169_001 ICM E14319 New SCADA Switches NAR43M24	Complete	$258,257.48	$171,420.08
B4 Overhead Infrastructure	EST24333_001	24333_001 ICM W14345 Voltage Conversion RBF2 Ph#1 2014	In Progress	$515,254.87	$0.00

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B4 Overhead Infrastructure	EST27668_001	27668_001 W13634 Evans -Royal York Reconfiguration R30M1, R30M8, 30M12	Deferred	$767,556.32	$0.00
B4 Overhead Infrastructure	EST28560_001	28560_001 W14658 VC of West Islington feeder AF1 IFRS compliant	Deferred	$749,995.58	$0.00
B4 Overhead Infrastructure	EST28570_001	28570_001 W14661 VC of West Islington feeder AF6 IFRS compliant	In Progress	$512,020.21	$0.00
B4 Overhead Infrastructure	EST28571_001	28571_001 W14659 VC of West Islington feeder AF2 Electrical Project	In Progress	$683,888.60	$0.00
B4 Overhead Infrastructure	EST28605_001	28605_001 W14677 P05-Manby Richview Load Cascades IFRS compliant	In Progress	$634,191.57	$0.00
B4 Overhead Infrastructure	EST23978_001	23978_001 E14286 OH Rebuild 64F2 Ruddington MS VC Created 3 Nov 2011	In Progress	$1,211,380.78	$0.00

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ICM Segment	Estimate	Description	Actual ISA	Rationale/Driver for Inclusion
B4 Overhead Infrastructure	EST17186_003	W10365-RICHVIEW TS 88M1-16 Stdzn	$208,946.91	The scope of work addressed in this project was to install primary fusing on feeders being supplied by Richview TS in Etobicoke. Three of these feeders had very poor reliability and each had over 10 outages each affecting between 6,000 to 22,000 customers. Proper fusing was required to localize the outage to a few customers and reduce patrol time to locate the outage source. Prior to this scope there was a lack of primary fusing to isolate lateral circuits in the event of a fault. Without the additional fusing the interrupting device would be the station breaker causing the entire feeder to experience the fault. The feeders from Richview TS are on average quite large and outages at the breaker can affect thousands of customers. Furthermore, installation of these fuses shortens fault location time and as a result shortens outage duration. This job replaced 71 fuse locations on eight feeders.
B4 Overhead Infrastructure	EST20956_003	W12463-FESI-Insulator Replacement	$225,127.22	Objective of the project was to replace glass insulators along the route of 80M2, specifically along Bathurst and Cactus.Feeder NY80M2 was a FESI 7 feeder when this scope was issued to replace glass insulators with polymer type. Glass insulators are prone to tracking and flashover when dirty. This is identified as one of the causes of power outages on overhead feeders.
B4 Overhead Infrastructure	EST24137_002	W12750 Emergency Pole & TX Replacement	$228,674.43	This job was initiated to replace 17 poles that were identified through inspections as suffering from irreversible damage and loss of strength, posing the risk of catastrophic failure. The job also remedied poles that were found to have insufficient guying support and therefore presented a failure risk.
B4 Overhead Infrastructure	EST20893_003	ICM X12461 O/H Flamborough Drive	$741,161.90	This job was filed in the original Phase 1 filing for 2013 execution but was flagged for deferral to 2014 in the Phase 1 Oct 2012 update. However, the job was ultimately completed in 2013, and was therefore not filed in the Phase 2 2014 application, meaning that it was not included in the overall CAPEX forecast for Segment B4 in 2014. The purpose of this job was to rebuild the existing overhead distribution system in the Flamborough area with standardized equipment. This project was necsssary as outages in this portion of the distribution system were directly attributable to overhead equipment failures and animal contact. The primary overhead distribution plant required rehabilitation in order to address reliability concerns. The following work was performed: 49 poles, 9 switches, 819m cable, and 5 transformers.
B4 Overhead Infrastructure	EST25755_003	PCI W12902 - POLE REPLACEMENT	$204,538.96	This job was initiated to replace 12 poles that were identified as suffering from irreversible damage and loss of strength, which posed a risk of collapsing and other safety risks. Replacement of these poles was necessary for maintaining reliable service.

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ICM Segment	Estimate	Description	Actual ISA	Rationale/Driver for Inclusion
B4 Overhead Infrastructure	EST26827_002	ICM W12992 FESI - Lomar Dr OH Reb 55M-25	$610,633.03	- This job was identified as deferred to 2014 in the Phase 1 ICM filing update (October 2012). However, the job was ultimately completed in 2013 and therefore did not appear in the total CAPEX amounts filed in the Phase 2 ICM filing for 2014. Therefore, this job, while appearing in the original filing, did not form part of the funding request. - The purpose of this job was to rebuild sections of the distribution feeder 55M25 in the Lomar area. The primary overhead distribution plant on 55M25 required short-term targeted rehabilitation in order to address reliability concerns. 55M25 experienced nine sustained interruptions in 2011.
B4 Overhead Infrastructure	EST26014_004	ICM W12921 CAUTION POLE SPOT REPLACEMENT	$101,995.46	This project was initiated to replace 3 poles that were identified as suffering from irreversible damage and loss of strength, which posed a risk of collapsing and other safety risks. Replacement of these poles were necessary for maintaining reliable service.
B4 Overhead Infrastructure	EST28229_001	PCI-E13479 P03 Batch Pole Replacement	$168,708.99	This project was initiated to replace 18 poles that were identified as suffering from irreversible damage and loss of strength, which posed a risk of collapsing and other safety risks. Replacement of these poles were necessary for maintaining reliable service.

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ICM Segment	Estimate	Description	Actual ISA	Rationale/Driver for Inclusion
B4 Overhead Infrastructure	EST27986_002	ICM E14547 OWEN BLVD OH RBLD	$344,045.64	This additional work was identified and proposed by field crew after construction of E12227 has started. The additional work would improve the switching and restoration flexibility of the distribution in the event of outage in the future. Since work was already taking place in the area and poles in the additional proposed work area were also in poor condition, it was determined that it would be prudent to do the additional work to minimize disruption to the residents and maximize resource efficiency Work involved replacement of: - 22 poles; - 4 OH transformers; - 660m 3 phase 3/0 27.6kV OH line; and - 8 single phase disconnect switches.
B4 Overhead Infrastructure	EST27665_002	PCI E13633-Switch Automation SCNAH9M30	$298,300.46	An investigation following prolonged outages on feeder H9M30 in December 2012 revealed deficiencies with respect to feeder switching capabilities. To mitigate the short-term risk of additional prolonged outages on this part of the overhead system, Toronto Hydro elected to install three fully automated SCADA-Mate switches.

ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B5 Box Construction	EST20476_001	20476_001 X13178 Convert 4kV B9J to 13.8kV IFRS compliant	Construction attained and	$733,363.55	$912,469.99	Field Conditions and Execution Requirements	Increased costs were related to difficult working conditions, including inclemental weather and other site specific challenges. This job was being performed shortly after the winter ice storm and the weather resulted in a longer than expected execution time. The incremental weather also contributed to higher labour costs as it was difficult to receive hold offs as a result of other competing demands on the control room.	High Level to Detailed Design Variance
B5 Box Construction	EST26567_001	26567_001 PCI-S11488 WiltshireTS: A5-6W, 2 new 2013 Budget - DO NOT PACKAGE	Construction attained and	$28,128.28	$164,432.32	Error	A clerical error in the creation of the filed estimate resulted in labour costs being underestimated for this job by approximately $50,000. This error was amplified by the fact that the standard overhead adder, which was used in the filing to estimate overhead costs such as design and engineering capital for all filed jobs, was applied as a percentage of this lower, erroneous amount.	Variance in Allocated Costs
B5 Box Construction	EST18761_001	18761_001 X12352 Voltage Conversion from B7CD 2011 budget estimate	Construction attained and	$1,329,175.43	$2,561,377.08	Field Conditions and Execution Requirements	A number of complex site-specific conditions encountered during detailed design and construction increased the labour cost of this job, including: - Working in a congested area with high pedestrian traffic, requiring significant paid duty police presence. - Working on narrow streets. - Setting-up trucks where vehicles were parked and having those vehicles moved - Working in close proximity to TTC tracks and overhead lines, and working close to existing buildings that are built at streetline.	
B5 Box Construction	EST20919_002	20919_002 X12445- Greenwood Felstead OH Conversion Creation Date: October 01, 2010	Construction attained and	$1,707,893.97	$2,503,087.45	High Level to Detailed Design Variance	The original cost estimate for this job only covered half the total cost, as the second phase of this project was expected to be undertaken in a subsequent year. However, due to efficiency of operations, the entire project was completed in a single year. The variance represents the additional costs required to complete the second phase of the job.	
B5 Box Construction	EST18738_X01	18738_001 X11452 Millwood MS B2MD,B1MR Partial V/C 2011 Budget Estimate	Construction attained and	$2,726,725.03	$3,507,820.64	High Level to Detailed Design Variance	- The amount of infrastructure required to properly and safely convert the 4.16KV overhead was underestimated. In particular, during the detailed design stage, the designer found that an additional $229k was required for poles and anchors, an additional $220k was required for primary and secondary frame/string/transfer, an additional $82k was required for transformer costs and an additional $100k was required for switching. - In addition, the transfer of the estimate to external resources resulted in a higher unit price due to the fully burdened contractor costs being used as opposed to Toronto Hydro's internal costs, which are less aggressively capitalized.	

ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B5 Box Construction	EST21935_001	21935_001 X13186 Load Transfer A200E to AxxxE 2013 budget estimate	Deferred	$1,182,796.71	$0.00
B5 Box Construction	EST19736_002	19736_002 X12097 Cov 4KV Wilts B6W to 27.6KV TOB6W	Partially Complete	$3,328,189.85	$361,391.05
B5 Box Construction	EST19966_001	19966_001 X13176 Convert Dupont 4kV B4DU to 13.8kV	Complete	$1,760,167.36	$1,612,798.81
B5 Box Construction	EST18740_001	18740_001 X11369 KS MS Voltage Conversion 4-13.8KV Box Construction	Partially Complete	$3,448,762.83	$3,510,352.20
B5 Box Construction	EST21101_001	21101_001 Voltage Conv 4kV to 13.8kV loc#2553 B4DN IFRS compliant	In Progress	$167,093.84	$0.00
B5 Box Construction	EST19984_001	19984_001 X13003 Con Dup 4KV B6DU to 13.8KV TOB6DU 2013 Budget Estimate	Deferred	$1,479,990.45	$0.00
B5 Box Construction	EST22022_001	22022_001 X13158 Carlaw 4kV conversion B1E & B13E 2013 budget estimate	In Progress	$3,566,617.91	$0.00
B5 Box Construction	EST22151_001	22151_001 X13159 Carlaw 4kV conversion B5E 2013 budget estimate	Deferred	$2,081,917.15	$0.00
B5 Box Construction	EST20548_001	20548_001 X13177 Convert 4kV B8J to 13.8kV IFRS compliant	Cancelled	$212,724.18	$0.00
B5 Box Construction	EST18629_001	18629_001 X11422 Hazelwood B7HW Conversion OH	In Progress	$1,879,775.22	$0.00
B5 Box Construction	EST18758_001	18758_001 X12054 Voltage conversion from 4KV 2011 budget estimate	Partially Complete	$1,813,591.81	$2,001,946.66
B5 Box Construction	EST20365_001	20365_001 X12325 Convert Junction 4kV B15J IFRS compliant	In Progress	$3,638,944.62	$0.00
B5 Box Construction	EST20368_001	20368_001 X12193 Convert 4kV B5J to 13.8kV IFRS compliant	Partially Complete	$1,441,346.68	$1,495,027.72
B5 Box Construction	EST20567_003	20567_003 X12353 B-4-CD Voltage V.C to 13.8kV As of Nov 23/2011	Complete	$1,630,074.07	$1,585,354.52
B5 Box Construction	EST20992_001	20992_001 X12055 Voltage Conv 4kV to 13.8kV B2DU IFRS compliant	In Progress	$232,423.75	$0.00
B5 Box Construction	EST19632_001	19632_001 X12129 Merton & Millwood MS Con PH#2 2011 Budget Estimate	Partially Complete	$3,042,561.97	$894,800.24
B5 Box Construction	EST19706_001	19706_001 X12143 Merton MS Feeder B1MR,B2MR 2012 Estimate	In Progress	$464,898.34	$0.00

ICM Segment	Estimate	Description	Actual ISA	Rationale/Driver for Inclusion
B5 Box Construction	EST16466_005	W10246_EGLINTON MS 4KV OH STAGE#2 PH#1	$230,417.55	The 4 kV box construction feeders associated with Eglinton MS were prioritized for conversion in order to facilitate the timely decommissioning of the station, which was approaching end-of-life. Both feeders were beyond end-of-life and were of box construction. The station assets were over 60 years old. The work performed included the following: replacement of 125 poles, 39 overhead transformers, and 12 primary switches. The costs incurred during the ICM period represent a small remaining portion of a larger job that was substantially complete prior to 2012. The total cost of the job was $2.62M. Amounts that were invested prior to 2012 had already been placed into service and are therefore omitted from pre-2012 CWIP coming into service during the ICM period.
B5 Box Construction	EST16470_003	W10247 Eglinton MS VC Stage 2 B71EG	$77,606.37	The 4 kV box construction feeders associated with Eglinton MS were prioritized for conversion in order to facilitate the timely decommissioning of the station, which was approaching end-of-life. Both feeders were beyond end-of-life and were of box construction. The station assets were over 60 years old. The following work was performed: 93 wood poles, 57 concrete poles, 45 overhead transformers, 14,374m overhead primary conductor and 24 overhead switches. The costs incurred during the ICM period represent a small remaining portion of a larger job that was substantially complete prior to 2012. The total cost of the job was $2.60M. The majority of amounts that were invested prior to 2012 had already been placed into service and are therefore omitted from pre-2012 CWIP coming into service during the ICM period. Approximately $64,000 of pre-2012 spending did not come into srevice prior to 2012 and is therefore captured as pre-2012 CWIP coming into service in the ICM period.
B5 Box Construction	EST20027_001EST19157_003	X12056 B2CD VC ADVANCE POLE INSTALL	$1,257,783.75	It was determined that the outdated box construction needed to be replaced with 13.8KV feeders as it will improve safety, reliability and system efficiency. The job was a high-priority box construction conversion project that was necessary to improve reliability and avoid future maintenance costs associated with College MS, which was nearing decommissioning. This replacement enabled the conversion of the feeder allowing obsolete assets to be removed from the system. The following assets were addressed: 175 poles, 293 pole hardware, 689 overhead conductors, 49 overhead transformers, 25 overhead switches, and 1 gang operated switch. The costs incurred during the ICM period represent the remaining portion of a larger job that was partially complete prior to 2012. The total cost of the job was about $3M. $1.2M of the pre-2012 expenditures are recognized as pre-2012 CWIP coming into service in the ICM period. Remaining amounts had already been placed into service prior to 2012.
B5 Box Construction	EST19412_002	PCI- X11513 B3DA Conversion	$287,840.58	As described in the original pre-filed evidence, prudent investment in conversion of the existing Box Construction system involves converting 4 kV feeders in a planned and staged manner in order to facilitate decommissioning of existing 4 kV municipal stations in time to avoid future maintenance and refurbishment costs. This job was required to convert a small amount of remaining customer load supplied by feeder B3DA to allow for timely decommisioning of the associated station.
B5 Box Construction	EST30261_002	111 BATHURST ST.(O/H CONVERSION) WBS-CCM RC4330 CAPEX for IFRS	$0.00	In Progress
B5 Box Construction	EST27656_003	X13173 conversion B1-2V	$0.00	In Progress

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B6 Rear Lot Construction	EST20012_002	20012_002 X12114 Forest Hill Electrical Ph#5 UG ELECTRICAL - BUDGET	Construction attained and ISA'd	$3,045,760.95	$1,981,824.52	Error	Due to a clerical error, an incorrect estimate was filed for this job. The actual estimated cost for this job was $1,686,187. The $300K increase in cost was due to higher than anticipated costs for cable pulling, primary and secondary framing and transformer installation.	
B6 Rear Lot Construction	EST20662_001	20662_001 W12381 Thorncrest (#11) RL VC Ph#1 Civil IFRS compliant	Construction attained and ISA'd	$3,243,458.06	$2,917,962.45	High Level to Detailed Design Variance	The cost of this job decreased relative to the high-level plan due to a reduction in the amount of ducts required versus the filed estimate. There was also a reduction in the estimated amount of restoration costs on private properties.	
B6 Rear Lot Construction	EST20714_001	20714_001 W12401 Thorncrest (#11) RL VC Ph#2 Civil IFRS compliant	Construction attained and ISA'd	$2,224,907.56	$3,221,974.45	Third-party Constraints and Requirements	Toronto Hydro was required to complete this job on an accelerated schedule to account for the City of Toronto's scheduled road repairs in the same area. This required additional contractor costs (for extended work days and weekends) to ensure that the work was completed prior to the City road repairs and subsequent road moratorium. Due to the urgency of the job, Toronto Hydro could not prudently defer rear lot conversion till after the road moratorium (which expires at the end of 2018).	High Level to Detailed Design Variance
B6 Rear Lot Construction	EST20808_001	20808_001 ICM W13019 RL#011 Electrical PH#2 IFRS compliant	Construction attained and ISA'd	$1,290,642.26	$307,929.95	High Level to Detailed Design Variance	To improve the efficiency of job execution in this rear lot area, the asset removal activities associated with this job were reallocated to jobs W13017 and W13020. These jobs are ongoing.	
B6 Rear Lot Construction	EST21250_001	21250_001 W12562 Rexdale-Colony RL VC (Elec) Ph#2	Construction attained and ISA'd	$211,601.28	$97,864.64	High Level to Detailed Design Variance	Toronto Hydro planners had anticipated replacing secondary services running to a townhome complex fed from the same feeder as the rear lot services being converted in this job. Toronto Hydro determined that secondary cables servicing the residences were in good condition and did not need to be replaced. This resulted in a reduction of the scope of work.	
B6 Rear Lot Construction	EST21251_001	21251_001 W12563 Rexdale-Colony RL VC (Elec) Ph#3	Construction attained and ISA'd	$472,089.84	$642,456.63	High Level to Detailed Design Variance	The cost increase was primarily due to unanticipated work to address a leaking transformer serving a townhouse complex prior to beginning the actual rear lot conversion project. The townhouse complex was part of the 4 kV conversion area that included the rear lot plant and therefore needed to be addressed in conjunction with the rear lot assets to facilitate conversion of all customers in the area to 27.6 kV supply.	
B6 Rear Lot Construction	EST24342_002	24342_002 X11293 Forest Hill Phase 5 - Civil Marlee/Fairleigh/Allen/Eglinton	Construction attained and ISA'd	$3,316,400.33	$3,704,120.81	High Level to Detailed Design Variance	Rear lot jobs typically involve converting 4 kV circuits to 27.6 kV. Rear lot customers often share a 4 kV lateral supply with customers who are fed from the front lot. In order to complete these rear lot jobs, it is usually the case that all customers in the job area must be converted to the higher-voltage supply at the same time. In this case, the designer determined that to resupply apartment buildings on Marlee Avenue, a new route for the 27.6 kV supply would be required, resulting in additional infrastructure requirements.	

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B6 Rear Lot Construction	EST21484_001	21484_001 W11726 Markland RL VC PH#1 Civil HL Estimate -- DO NOT PACKAGE	Construction attained and ISA'd	$5,846,378.38	$3,520,414.21	High Level to Detailed Design Variance	The scope of work was reduced as the change in design allowed a more efficient design. Instead of routing a main trunk circuit through Mill Rd. and Toledo Rd. the designer was able to route the curcuit exclusively along Mill Rd. This reduced the amount of padmounted switches and removed the main loop construction that was supposed to be routed on Toledo Rd. Toronto Hydro made this change in order to limit the amount of major equipment that would have to be placed on customer property. This was done by using longer lateral loops connected on fewer PMH switchgear units. Furthermore, the southern lateral loops were supplied by dips from overhead poles off Bloor St. This eliminated the need of routing the main loop along Toledo Rd. and the need to supply lateals off of additional PMH switchgear units.	
B6 Rear Lot Construction	EST28608_001	28608_001 W14674-P07 Markland Woods RL Ph4 Civil IFRS compliant	Construction attained and ISA'd	$3,004,198.85	$5,187,728.30	High Level to Detailed Design Variance	The cost of constructing underground secondary services was not fully estimated until the detailed design stage. In this particular instance, the construction requirements for each specific private property accumulated into a signficant positive variance compared to the high level estimate. Due to the deficiencies and risks associated with the rear lot plant, the work remained prudent and non-discretionary despite these cost increases.	
B6 Rear Lot Construction	EST24854_009 EST26867_X03	24854_009 ICM E11383 Living Guild OH VC DO NOT PACKAGE from Ver001 from AM 18656 E11383 Livingston Guildwood OH VC Ph 2 Poles Only (EST24854_009)	Construction attained and ISA'd	$745,461.46	$1,926,938.28	High Level to Detailed Design Variance	As detailed in the Phase 1 evidence, this job required pole installations along major streets in order to accommodate the proposed 27.6kV conductors supplying this rear lot area. Costs increased due to the need to replace a larger number of poor condition and/or non-standard height poles than originally estimated. Some areas with an extensive tree canopy also required the use of tree proof wires, which were not included in the original estimate. In addition, the supply to St. Ursula's Catholic School was redesigned to move the transformer further away from the playground area. This requiried additional secondary services that were not included in the original high-level plan.	
B6 Rear Lot Construction	EST19757_001	19757_001 X12185 RearLot (RL025) ConNYSS37_ElPh2 S/E Lawrence/Leslie (LTP_2011_19_002)	Construction attained and ISA'd	$968,308.80	$1,952,685.18	High Level to Detailed Design Variance	The cost of constructing underground secondary services was not fully estimated until the detailed design stage. In this particular instance, the construction requirements for each specific private property accumulated into a signficant positive variance compared to the high level estimate. Due to the deficiencies and risks associated with the rear lot plant, the work remained prudent and non-discretionary despite these cost increases. The work involved constructing new front lot secondary services to the existing meterbase at the rear of each property for approximately 161 customers.	
B6 Rear Lot Construction	EST21155_001	21155_001 W12564 Rexdale-Colony RL VC (Elec) Ph#4	Construction attained and ISA'd	$1,184,060.46	$1,015,893.82	High Level to Detailed Design Variance	The pole removals that were originally part of the high-level plan for this job were ultimately completed in a separate job for efficiency purposes.	

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B6 Rear Lot Construction	EST21211_001	21211_001 W13067 Rathburn Rd OH/UG Conversion IFRS compliant	Construction attained and ISA'd	$915,610.36	$1,861,101.45	High Level to Detailed Design Variance	The cost of rebuilding the secondary service lines from the front lot were higher than expected due to site-specific conditions. Associated cut repair costs were higher than forecasted as well. The total increase related to secondary services was approximately $615K.	Field Conditions & Execution Requirements; Variance in Allocated Costs
B6 Rear Lot Construction	EST21213_001	21213_001 W13068 Thorncrest (#011RL) VC Ph#4 IFRS compliant	Construction attained and ISA'd	$636,973.55	$1,154,916.43	High Level to Detailed Design Variance	When converting load from 4kV - as is generally the case in rear lot conversion projects - Toronto Hydro maintains feeder ties between 4kV stations to provide load relief until the stations can be decommissioned. Rear lot jobs also often involve extending or rerouting existing 27.6kV feeders that will supply the converted rear lot customers. In this instance, the designer determined that the 4kV tie would need to be maintained over the medium-term until the relevant 4kV stations could be fully decommissioned, and that the 4kV circuit would need to be supported by the newly rebuilt pole line accomodating the 27.6kV circuit. To remain ESA compliant, the designer determined that the 4kV equipment would need to be upgraded. Toronto Hydro determined that this was the most prudent option as, for reliability and safety reasons	
B6 Rear Lot Construction	EST21248_001	21248_001 W12565 Rexdale-Colony RL VC (Elec) Ph#5	Construction attained and ISA'd	$1,030,399.02	$773,776.93	High Level to Detailed Design Variance	Field inspections during the detailed design phase determined that fewer materials would be required for the underground distribution loop than originally estimated. The number of underground transformers to be replaced was reduced from 11 to 6 based on asset condition as determined through detialed inspections. Less primary cable and secondary cable was required as well.	
B6 Rear Lot Construction	EST21252_001	21252_001 W12566 Rexdale-Colony RL VC (Elec) Ph#6	Construction attained and ISA'd	$90,824.25	$1,420,792.39	High Level to Detailed Design Variance	Rear lot customers often share a primary 4kV feeder or lateral with customers fed from the front lot (e.g. apartment buildings and townhomes embedded in the neighbourhood). Because rear lot conversion jobs are also voltage conversoin jobs (usually from 4kV to 27.6kV), the front lot customers that share a supply must be also be converted in rear lot areas. This job was originally intended to be a minor electrical phase of the larger Rexdale Colony rear lot conversion initiative. The original scope was for the replacement of padmount transformers supplying 77 townhomes fed from the same 4kV feeder that supplied the rear lot in the area (therefore requiring conversion). After performing detailed design inspections, Toronto Hydro determined that the secondary services feeding these townhomes were beyond end-	
B6 Rear Lot Construction	EST21315_001	21315_001 W13195 Rexdale-Colony RL VC (Elec) Ph#8	Construction attained and ISA'd	$1,237,653.36	$2,688,521.61	High Level to Detailed Design Variance	When estimating phases two through seven of this job area, the removal costs associated with each phase were included in the individual estimates associated with each phase respectively. However, to maximize execution efficiency, all removals in the rear lot area were ultimately done upon completion of phase eight. This means that the work from the other phases was shifted to this job, resulting in the positive variance.	

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B6 Rear Lot Construction	EST21320_001	21320_001 W12567 Rexdale-Colony RL VC (Elec) Ph#7	Construction attained and ISA'd	$167,972.71	$1,714,457.81	High Level to Detailed Design Variance	Rear lot customers often share a primary 4kV feeder or lateral with customers fed from the front lot (e.g. apartment buildings and townhomes embedded in the neighbourhood). Because rear lot conversion jobs are also voltage conversoin jobs (usually from 4kV to 27.6kV), the front lot customers that share a supply must be also be converted in rear lot areas. Similar to W12566, this job was originally intended to be a minor electrical phase of the larger Rexdale Colony rear lot conversion initiative. The original scope was for the replacement of padmount transformers supplying a community housing complex fed from the same 4kV feeder that supplied the rear lot in the area (therefore requiring conversion). After performing detailed design inspections, Toronto Hydro determined that the secondary services feeding	

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B6 Rear Lot Construction	EST20677_008	20677_008 W11219 Rathburn SAF1 VC Pt3 UG Elec UG electrical	Partially Complete	$2,848,645.11	$3,785,633.30
B6 Rear Lot Construction	EST21034_001	21034_001 W12561 REXDALE / COLONY PHASE I INSTALL IFRS compliant	Complete	$997,198.71	$1,044,349.82
B6 Rear Lot Construction	EST21138_002	21138_002 X12113 Forest Hill VC Phase 4 Electrial Bathurst/Eglinton/Old Park/Shallmar	Complete	$3,920,430.42	$3,677,210.78
B6 Rear Lot Construction	EST21185_001	21185_001 W13142 Thorncrest (#11) RL VC Ph#5 Civil IFRS compliant	Complete	$4,820,257.69	$5,174,032.75
B6 Rear Lot Construction	EST21321_002	21321_002 W11168 ALBION MG-F1 SILVERSTONE VC REAR FEB 09,2012 LOT ETMGF1 IFRS compliant	Complete	$2,048,885.74	$1,851,537.14
B6 Rear Lot Construction	EST20701_001	20701_001 W13017 RL#011 Electrical Ph#1	In Progress	$1,443,776.51	$0.00
B6 Rear Lot Construction	EST24944_001	24944_001 W13020 RL#011 Electrical PH#5 IFRS compliant	In Progress	$639,919.64	$0.00
B6 Rear Lot Construction	EST25424_001	25424_001 WBS/IFRS Compliant Creation Date: October 1, 2010	Deferred	$1,577,291.27	$0.00
B6 Rear Lot Construction	EST26532_001	X12184 P1RearLot (RL025) ConNYSS37 S/E Lawrence/Leslie (LTP_2011_19_002) (EST19755_003)	Complete	$191,097.82	$160,278.87
B6 Rear Lot Construction	EST19501_009 EST26541_001	19501_009 E12076 PH 1 BANBURY ELECT REAR LOT For 2012 budget	Complete	$2,553,265.70	$2,600,544.44
B6 Rear Lot Construction	EST22607_009 EST26539_001	E12615 BANBURY ELEC PHASE 2 PROJECT#E12615 UPCMS#TP-2011-9255 (EST22607_009)	Complete	$1,513,600.81	$1,385,529.80
B6 Rear Lot Construction	EST18580_001	18580_001 E11382 Livingston VC Trans rear ug front see E11383 OH vc Livingston	In Progress	$5,330,325.96	$0.00
B6 Rear Lot Construction	EST19759_001	19759_001 X12186 RearLot (RL025) ConNYSS37_ElPh3 S/E Lawrence/Leslie (LTP_2011_19_002)	Complete	$579,326.83	$634,698.16

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ICM Segment	Estimate	Description	Actual ISA	Rationale/Driver for Inclusion
B6 Rear Lot Construction	EST23111_003	E11778 BANBURY / LARKFIELD RL PH.2	$260,044.86	After the irreparable failure inside the Lesmill M.S., the customers were transferred to supply by the following neighbouring stations: Northdale, Winfield and Don Mills West. This project was needed to convert aged and unreliable overhead rear lot distribution to the underground front yard distribution. The following assets were installed: 8 fused switches, 1 overhead transformer, 15 padmount transformers (single phase), 1 padmount transformer (three phase), 2846m of underground conductor cable (single phase) and 681m of underground conductor cable (three phase). This job has an additional $1.9M in spending that was completed prior to 2012 and is included in pre-2012 CWIP amounts coming into service in 2012-2014.
B6 Rear Lot Construction	EST18240_003	E12437 LesMill MS F2 Rear Lot V. C. Elec	$1,367,634.45	After an irreparable failure inside Lesmill MS in the mid 2000s, the customers were transferred to the neighboring municipal stations: Northdale, Winfield and Don Mills West. Due to age and condition these stations are now in the process of planned conversion and decommissioning. The added load from Lesmill MS limited the ability to decommission these stations without raising the risk of lengthy outages during contingency situations. Therefore, to prudently decommission the obsolete stations, it was necessary to convert the Lesmill MS 4 kV rear lot distribution to front lot, 27.6 kV distribution on a priority basis.

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ICM Segment	Estimate	Description	Actual ISAs	Rationale/Driver for Inclusion
B9 Network Vaults and Roofs	EST18912_003	X11390 Vault Loc 4407 Rebd-Yonge-Delisle	$690,908.82	Field inspection of this 60 year old vault revealed concrete spalling on the walls. The vault also contained a 40 year old network unit with fibretop protector, an asset type with a high risk of catastrophic failure resulting in vault fires. Due to the high risk of failure, the vault and network unit were prioritized for replacement.
B9 Network Vaults and Roofs	EST24715_003	PCI-X11581.V.#4588.Cumberland & Bellair	$163,383.29	Field inspections identified potential safety and structural issues with the network vault. The roof and wall were cracked and the electrical equipment was rusted from water and salt ingress. The vault was over 40 years old and required replacement.
B9 Network Vaults and Roofs	EST18913_003	PCI-X06394 Network Replacement, Loc#4792	$1,458,516.76	The original scope of work was to replace an obsolete fibretop network unit at risk of catastrophic failure. Inspections showed that the vault which housed the protector was beginning to crack and for safety and reliability purposes needed to be rebuilt.
B9 Network Vaults and Roofs	EST20406_003	PCI X12314 LOC 4557 VAULT REBUILD	$492,693.87	The vault roof and wall sustained significant structural damage (cracks) following a fire, and required timely remediation to ensure public safety (e.g. elimination of trip hazards) and prevent further damage to equipment and support structures (e.g. through corrosion caused by water leakage).
B9 Network Vaults and Roofs	EST24000_003	PCI W11874 REBUILD VAULT ROOF #00001	$84,522.24	Asset inspection identified severely corroded steel I-beams that provide structural support for the vault. The vault roof was considered to be in very poor condition. This was a potential safety hazard for the public as well as crews working in the cable chamber. Remediation (installation of steel plates to stabilize the civil structure) was required to prevent further damage and prevent a complete collapse of the roof. The vault roof was then rebuilt.
B9 Network Vaults and Roofs	EST19687_003E ST27251_001	PCI X11560 Loc#4313 Reb Vault Eglin Ph1	$1,318,979.57	Asset inspection identified structural damage to the roof and wall of the vault (cracking) that required timely remediation to prevent vault collapse, prevent further equipment/support structure corrosion due to water and salt ingress and eliminate a public safety hazard. The following work was performed: rebuild of vault in front of 150 Eglinton Avenue, rebuild of two cable chambers, installation of 28.5m of conduit, installation of two transformers and protectors, installation of 450m of primary cables and installation of 636m of secondary cable.
B9 Network Vaults and Roofs	EST25128_003	PCI - X11747 URGENT REBUILD 3441 A71CS	$231,511.44	The vault roof at the job location failed and was supported by a temporary roof with wooden beams. This job was necessary to rebuild the vault.
B9 Network Vaults and Roofs	EST28429_003	X14589 Vlt Roof Rlbd Loc #4443 Bay_Irwin	$90,755.80	While executing a network transformer changeout, the vault roof cracked while lifting the roof slab, posing a significant public safety and structural integrity hazard. A temporary solution (steel plates) was implemented immediately. The permanent ramediation work was ultimately completed in 2014 as soon as resources could be made available.

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ICM Segment	Estimate	Description	Actual ISAs	Rationale/Driver for Inclusion
B9 Network Vaults and Roofs	EST30717_003	X14754 LOC 4481 ROOF REHAB A51DX	$139,824.72	Immediate remediation was required due to a roof collapse on a vault that was not included into the ICM filing. Project completion addressed public safety and structural integrity risks.

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B9 Network Vaults and Roofs	EST19372_001	19372_001 X11504 Overlea Blvd/William Morgan	Construction attained and ISA'd	$860,673.37	$199,122.01	HIgh Level to Detailed Design Variance	The engineer designing the estimate had looked at the reports of the vault and determined that a full rebuild was necessary. However, detailed inspection revealed that a less costly option to repair the vault roof and walls would be sufficient to address the deficiencies (the original scope called for the conversion of the vault into a cable chamber, and the construction of a new vault).	
B9 Network Vaults and Roofs	EST20047_001	20047_001 X12208 Loc 4485, 105 Adelaide St. West 2012	Construction attained and ISA'd	$412,180.23	$157,995.89	High Level to Detailed Design Variance	The original cost estimate included a provision for securing and protecting an adjacent customer owned building during the vault rebuild. However, during construction it was determined that the adjacent building did not require any extensive reinforcement, resulting in lower job cost.	
B9 Network Vaults and Roofs	EST20472_001	20472_001 X12334 Rebuild Vault Peter and Adelaide Loc #4299	Construction attained and ISA'd	$1,584,953.30	$495,042.14	High Level to Detailed Design Variance	This job scope originally included the completion of both civil and electrical work involved with the rebuild of network vault #4299. However, Toronto Hydro subsequently split this work into two separate phases (civil and electrical) as the job was too large to complete in one year. The electrical work is scheduled for completion in 2015.	
B9 Network Vaults and Roofs	EST18892_002	18892_001 X11362 Network Replacement, Loc#4111	Construction attained and ISA'd	$35,970.00	$1,019,064.21	Error	The estimate was incorrectly filed as approximately $0.04M. The correct estimate should have been approximately $700K. Therefore, the actual variance for this job is $320K. The variance was a result of the need for a second vault as there was no backup power supply to vault # 4111 at that time. The stand alone vault was susceptible to very long power interruptions in case of an emergency power outage. The work performed included: breakout of existing vault ($175k), construction of new vault ($77k) and the associated labour required to equip and rebuild the vault ($46k).	High Level to Detailed Design Variance
B9 Network Vaults and Roofs	EST20530_001	20530_001 X12350 Rebuild Vault Roof 60 Gloucester Loc #4510	Construction attained and ISA'd	$640,029.46	$265,273.18	High Level to Detailed Design Variance	It was discovered that, due to their age and condition, the two network transformers that were intended for replacement as part of the high-level plan had been replaced reactively during the period between the high-level estimate and the detailed design stage. Inspections by the designer revealed that the transformers no longer needed to be replaced, leaving only the roof rebuild for this project.	
B9 Network Vaults and Roofs	EST20623_001	20623_001 X12371 Rebuild Vault Peter and King St.	Construction attained and ISA'd	$993,550.15	$105,552.20	High Level to Detailed Design Variance	The original job envisioned a complete rebuild of an existing vault. However, an analysis indicated that the cost to do so would have been significantly over the original estimate, due to previously unidentified space constraints. As a result, detailed tests were performed on the wall structure and it was determined that only the roof rebuild would be performed in the short-term, while a longer-term plan would be developed to permanently address the vault. The cost variance is a result of only rebuilding the vault roof, rather than the entire vault as originally planned.	

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B9 Network Vaults and Roofs	EST18837_001	18837 X11441 Eglinton Ave. East/Holly St. Location #4512	Partially Complete	$111,507.00	$382,464.32
B9 Network Vaults and Roofs	EST19033_004	19033_004 X11487 King St West/Yonge St IFRS compliant	Complete	$1,617,990.67	$1,717,195.99
B9 Network Vaults and Roofs	EST19502_001	19502_001 X11529 WellingtonStW/Emily Vault Rebuild Vault Loc#4790	Complete	$2,779,645.30	$2,823,284.17
B9 Network Vaults and Roofs	EST19537_005 EST26537_001	19537_005 ICM X11533Loc#4818 Rebuild Vault at 390 IFRS compliant (copy of 19537_003)	Complete	$1,575,262.99	$1,589,773.25
B9 Network Vaults and Roofs	EST20382_001	20382_001 X12289 New Vault - Adelaide St. West Loc #4412	Deferred	$1,883,931.15	$0.00
B9 Network Vaults and Roofs	EST20510_003	20510_003 X12345 Loc#4562 King/Jordan Creation Date: October 01, 2010	Complete	$724,772.72	$702,419.92
B9 Network Vaults and Roofs	EST23295_001	23295_001 X13323 Vault Rebuild TD-21 York & King 2013	Complete	$292,280.23	$302,314.98
B9 Network Vaults and Roofs	EST24997_001	24997_001 X12830 Single vault rebuild-Toronto 2012	Deferred	$1,287,166.07	$0.00
B9 Network Vaults and Roofs	EST24999_001	24999_001 X12834 Single Vault Rebuild Toronto 2012	Complete	$2,280,222.23	$2,442,433.89
B9 Network Vaults and Roofs	EST25324_001	25324_001 X12858 Abandon 2 network vaults 2012	In Progress	$79,988.89	$0.00
B9 Network Vaults and Roofs	EST28365_001	28365_001 X14592 Vault Rebuild Loc 4210 Creation Date: October 1, 2010	Deferred	$545,558.81	$0.00
B9 Network Vaults and Roofs	EST18834_003	18834_003 X11234 EGLINTON VAULT #4481 REBUILD WBS7 Created Oct 2010	In Progress	$2,061,585.78	$0.00
B9 Network Vaults and Roofs	EST18836_002	18836_002 X11440 St Clair Av W / Yonge Loc.# 4642 2011 budget estimate	Deferred	$982,628.46	$0.00
B9 Network Vaults and Roofs	EST20269_001	20269_001 X12263 Loc#Z0005 Rebuild Vault Roof Danforth and Coxwell	Deferred	$196,291.25	$0.00
B9 Network Vaults and Roofs	EST23501_001	23501_001 X13347 Loc#4795 Vault Rebuild 2012	Deferred	$231,056.89	$0.00
B9 Network Vaults and Roofs	EST28290_001	28290_001 X13692 Loc#4731 Rebuild Vault Roof Overlea and William Morgan	In Progress	$196,291.24	$0.00
B9 Network Vaults and Roofs	EST28430_001	28430_001 X14591 Roof Rebuild - LOC 4830 Created Oct 2010	Deferred	$184,532.23	$0.00
B9 Network Vaults and Roofs	EST28439_001	28439_001 X14597 Vault Rebuild loc 4258 IFRS compliant	Deferred	$1,130,202.62	$0.00
B9 Network Vaults and Roofs	EST18826_X01	18826_001 X11351 Bay St/South of Front St. West Location #4174	Deferred	$124,793.12	$0.00
B9 Network Vaults and Roofs	EST20030_001	20030_001 X12207 Loc 4287, 60 Simcoe St. Abandon	Complete	$22,067.73	$26,593.60
B9 Network Vaults and Roofs	EST20429_001	20429_001 X12321 Loc 4931, Front and Jarvis 2012	Deferred	$292,280.23	$0.00
B9 Network Vaults and Roofs	EST20449_001	20449_001 X12327 Loc 4262, Yorkville and Yonge St 2012	Complete	$325,372.63	$374,403.73
B9 Network Vaults and Roofs	EST23243_001 EST26552_001	23243_001 X12652 Abandon Loc 4252 and 4308 2012 Budget estimate	In Progress	$399,006.23	$0.00

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B10 Fibretop Network Units	EST24094_002 EST26527_001	20873_008 W12199 Riverside Dr Voltage Conv. Part 2	Construction attained and IS.	$243,961.73	$110,613.63	Error	Both estimates were created for the same job and the variance was due to an administrative error. EST26527_001 was not meant to be filed. EST24094_002's approved forecast was $120,000 and its actual expenditure was $111,000.	
B10 Fibretop Network Units	EST24534_001	24534_001 X12789 4651_A53H fibertop replacement 2012 Fibretop changeout	Construction attained and IS.	$365,492.37	$975,991.42	High Level to Detailed Design Variance	Prior to the design stage, one of the two existing Fibertops in the vault location failed, resulting in a vault fire. This compromised the structural integrity of the existing vault, making it necessary to construct new civil infrastructure to house the replacement submersible network units. Toronto Hydro constructed two spearate vaults - one for each replacement unit - in order to mitigate the failure risk associated with catastrophic failure of either unit in the future.	

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B10 Fibretop Network Units	EST21583_003EST26525_001	21583_003 X11743 - LOC 4561- A55H-NW CHANGEOUT	Complete	$124,405.84	$110,927.75
B10 Fibretop Network Units	EST23638_003	X11840 LOC4540 - N/W CHANGEOUTS 2011 Changeouts (EST24053_002)	Complete	$287,021.42	$330,224.40
B10 Fibretop Network Units	EST23958_002EST26529_001	23958_002 X12684 LOC N1044 fibertop changeout 2012 Fibretop Changeout	Complete	$125,442.98	$121,080.80
B10 Fibretop Network Units	EST23960_003	23960_003 X12685-LOC #4517 N/W CHANGEOUT TO A91A EDWARD/CENTRE	Complete	$159,791.93	$162,673.35
B10 Fibretop Network Units	EST23961_003	23961_003 X12686 LOC.4517 A-92-A 2012 Changeouts	Complete	$163,375.74	$164,625.53
B10 Fibretop Network Units	EST24086_003	24086_003 X12736 - LOC 4286 - A53WR - NW CHANGEOUT	Complete	$118,788.53	$123,127.69
B10 Fibretop Network Units	EST24091_X03	4219EV_A54WR (EST24146_003)	Complete	$147,617.28	$147,856.66
B10 Fibretop Network Units	EST24092_003	24092_003 X12741 - N1034 - A65H - NW CHANGEOUT	Complete	$124,984.96	$107,386.80
B10 Fibretop Network Units	EST24093_003	24093_003 X12743 Loc.N1107 Jarvis & Calton FT REP IFRS compliant	Complete	$148,590.87	$123,981.07
B10 Fibretop Network Units	EST24096_002EST26523_001	24096_002 X12688 LOC 4491 fibertop changeout 2012 Fibretop Changeout	Complete	$125,859.03	$119,542.38
B10 Fibretop Network Units	EST24098_004EST26526_001	24098_004 X12690 LOC 4643 fibertop changeout 2012 Fibretop Changeout	Complete	$123,989.79	$117,511.04
B10 Fibretop Network Units	EST24146_003	24146_003 X12751 LOC 4219W-N/W changeout 2012 Changeouts	Complete	$147,617.28	$143,890.45
B10 Fibretop Network Units	EST24391_X03	X11798 LOCN1125 - N/W CHANGEOUT (EST22690_002)	Complete	$116,542.80	$139,356.87
B10 Fibretop Network Units	EST24392_X03	X11799 LOCN1125 A64WR - N/W CHANGEOUT (EST24913_001)	Complete	$118,268.16	$140,972.28
B10 Fibretop Network Units	EST24397_X03	X11797 LOC4768SV A13DX-N/W CHANGEOUT (EST24912_001)	Complete	$97,246.09	$114,227.75
B10 Fibretop Network Units	EST24518_001	24518_001 X12786 4523_A20T- N/W CHANGEOUTS 2012 Changeouts	Complete	$183,448.20	$195,310.40
B10 Fibretop Network Units	EST24519_001	24519_001 X12791 4745_A55H - N/W CHANGEOUTS 2012 Changeouts	Complete	$143,589.84	$109,602.20
B10 Fibretop Network Units	EST24521_001	24521_001 X12783 4160_A69WR Fibertop Change Out 2012 Changeouts	Complete	$190,130.23	$184,645.27
B10 Fibretop Network Units	EST24523_001	24523_001 X12785 4336_A48GD Fibertop Change Out 2012 Changeouts	Complete	$141,372.89	$131,575.02
B10 Fibretop Network Units	EST24525_001	24525_001 X12787 4553_A56H Fibertop Change Out 2012 Changeouts	Complete	$186,372.56	$210,936.23
B10 Fibretop Network Units	EST24526_001	24526_001 X12788 4625_A50DX Fibertop Change Out 2012 Changeouts	Complete	$129,382.89	$113,487.59
B10 Fibretop Network Units	EST24527_001EST24528_001EST24529_001	24527_001 X12793 N1010_A41CE Fibertop Change Out 2012 Changeouts 24528_001 X12794 N1102_A71CE Fibertop Change Out 2012 Changeouts 24529_001 X12795 N1102_A72CE Fibertop Change Out 2012 Changeouts	Complete	$388,148.67	$324,372.99
B10 Fibretop Network Units	EST24530_001	24530_001 X12781 4131_A67WR fibertop replacement 2012 Fibretop Changeout	Complete	$182,746.78	$152,644.18
B10 Fibretop Network Units	EST24533_001	24533_001 X12782 4131_A68WR fibertop replacement 2012 Fibretop Changeout	Complete	$352,417.27	$318,846.29
B10 Fibretop Network Units	EST26528_001	X12733 - LOC 4794 - A48CE- NW CHANGEOUT (EST24028_004)	Complete	$120,784.86	$121,420.84
B10 Fibretop Network Units	EST28195_001	28195_001 X14459 Fibertop Changeout Loc 4317	Complete	$137,147.09	$132,346.29
B10 Fibretop Network Units	EST28200_001	28200_001 X14460 Fibertop Changeout Loc N1115 Not for projects	Complete	$163,372.67	$200,615.64

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B10 Fibretop Network Units	EST28201_001	28201_001 X14465 Fibertop Changeout A10MN-LOC4760	Complete	$140,530.90	$188,535.01
B10 Fibretop Network Units	EST28205_001	28205_001 X14466 Fibertop Changeout A11E-LOC4885	Complete	$140,530.90	$154,130.53
B10 Fibretop Network Units	EST28207_001	28207_001 X14467 Fibertop Changeout A12E-LOC4885	Complete	$140,530.90	$160,211.73
B10 Fibretop Network Units	EST28219_001	28219_001 X14481 Fibertop Changeout Loc 4539 Not for projects	Complete	$137,147.09	$166,500.00
B10 Fibretop Network Units	EST28232_001	28232_001 X14472 Fibertop Changeout A36MN LOCN1196 Not for projects	Complete	$163,373.25	$190,419.76
B10 Fibretop Network Units	EST28233_001	28233_001 X14474 Fibertop Changeout A38MN LOCN1196 Not for projects	Complete	$163,373.25	$187,912.22
B10 Fibretop Network Units	EST28239_001	28239_001 X14478 Fibertop Changeout - A49H LOC4753 (1 unit)	Complete	$215,547.24	$192,622.51
B10 Fibretop Network Units	EST28272_001	28272_001 X14468 Fibertop Changeout - A18T LOC4564	Complete	$136,871.58	$162,345.56
B10 Fibretop Network Units	EST28280_001	28280_001 X14473 Fibertop Changeout A37X LOC N1090 2014	Complete	$163,372.36	$197,701.61
B10 Fibretop Network Units	EST28399_001	28399_001 X14475 - Fibertop Changeout A3K LOC 4826	Complete	$140,531.35	$157,513.19
B10 Fibretop Network Units	EST28419_001	28419_001 X14479 - Fibertop Changeout A4K LOC 4542	Complete	$140,531.35	$176,176.64
B10 Fibretop Network Units	EST28420_001	28420_001 X14464 Fibertop Change Out Loc 4035 1 unit	Complete	$137,147.17	$153,056.30
B10 Fibretop Network Units	EST28501_001	28501_001 Fibertop Changeout - A5GL LOC4851 (1 unit)	Complete	$136,872.10	$157,032.97
B10 Fibretop Network Units	EST28217_001	28217_001 X14482 Fibertop Changeout - A56H LOC4553, LOC4770 (2 units)	In Progress	$283,555.82	$0.00
B10 Fibretop Network Units	EST28238_001	28238_001 X14477 Fibertop Changeout - A48H LOC4753 (1 unit)	In Progress	$215,547.24	$0.00
B10 Fibretop Network Units	EST28291_001	28291_001 X14476 FibertopChangeout A40GD LOC4230EV 2014	In Progress	$215,546.45	$0.00
B10 Fibretop Network Units	EST28426_001	28426_001 X14501 2 units	In Progress	$269,834.20	$0.00
B10 Fibretop Network Units	EST25078_001	25078_001 X12843 Fibertop replacement at Mult. LOC 2012	Partially Complete	$3,602,309.17	$2,739,018.26
B10 Fibretop Network Units	EST28220_001	28220_001 X14486 Fibertop Changeout - A63H LOC4774 (1 unit)	Deferred	$163,372.67	$0.00
B10 Fibretop Network Units	EST28222_001	28222_001 X14487 Fibertop Changeout - A65H LOC4499EV (1 unit)	Deferred	$163,097.81	$0.00
B10 Fibretop Network Units	EST28277_001	28277_001 X14498 Fibertop Changeout - A92B LOC4769 (1 unit)	Deferred	$190,633.96	$0.00
B10 Fibretop Network Units	EST28289_001	28289_001 X14452 Fibertop Changeout A30DN LOC4667 2014	Deferred	$215,270.02	$0.00
B10 Fibretop Network Units	EST28351_001	28351_001 X14462 - Fibertop Changeout - A69WR LOC4917 & N1114	Deferred	$292,333.64	$0.00
B10 Fibretop Network Units	EST28359_001	28359_001 X14488 - N1114	Deferred	$136,871.88	$0.00
B10 Fibretop Network Units	EST28363_001	28363_001 X14492 - N1102	Deferred	$136,871.88	$0.00
B10 Fibretop Network Units	EST28366_001	28366_001 X14470 Fibertop Change Out Loc 4210 Creation Date: October 1, 2010	Deferred	$276,380.36	$0.00
B10 Fibretop Network Units	EST28422_001	28422_001 X14494 Fibertop C/O Loc 4254WV, 4752 2 units	Deferred	$296,060.64	$0.00
B10 Fibretop Network Units	EST24090_003	24090_003 X12738 P04 N/W CHANGE OUT LOC #4499WV 2012 CHANGEOUTS	Cancelled	$143,040.70	$0.00
B10 Fibretop Network Units	EST24520_001	24520_001 X12780 4099_A66H Fibertop Change Out 2012 Changeouts	Cancelled	$129,382.89	$0.00
B10 Fibretop Network Units	EST24522_001	24522_001 X12784 4336_A44GD Fibertop Change Out 2012 Changeouts	Cancelled	$190,167.40	$0.00
B10 Fibretop Network Units	EST24535_001	24535_001 X12790 4651_A54H fibertop replacement 2012 Fibretop Changeout	Cancelled	$182,746.78	$0.00

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B10 Fibretop Network Units	EST24536_001	24536_001 X12792 4897NV_A43CE fibertop replacement 2012 Fibretop Changeout	Cancelled	$182,746.78	$0.00
B10 Fibretop Network Units	EST28194_001	28194_001 X14450 fibertop changeout A16L - Loc4476	Deferred	$163,372.67	$0.00
B10 Fibretop Network Units	EST28204_001	28204_001 X14457 Fibertop C/O 4653, 4654, 4696	Deferred	$584,174.52	$0.00
B10 Fibretop Network Units	EST28208_001	28208_001 X14461 Fibertop Changeout 4654WV, N1109	Deferred	$347,686.82	$0.00
B10 Fibretop Network Units	EST28432_001	28432_001 X14484 - Fibertop Changeout A5K LOC 4176	Deferred	$190,909.33	$0.00
B10 Fibretop Network Units	EST28221_001	28221_001 X14485 Fibertop Changeout Loc 4696 NV	Deferred	$215,547.51	$0.00
B10 Fibretop Network Units	EST28275_001	28275_001 X14493 Fibertop Changeout - A72CS LOC4400NV (1 units)	Deferred	$163,372.36	$0.00
B10 Fibretop Network Units	EST28505_001	28505_001 X14495 Fibertop Changeout - A7GL LOC4543EV (1 units)	Deferred	$312,954.76	$0.00

Analogous job details are summarized in the segment narrative.

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B11 Automatic Transfer Switches and Reverse Power Breakers	EST24544_001	24544_001 X12798 Loc 4862 ATS Replacement 2012	Construction attained and ISA'd	$143,881.20	$298,936.19	High Level to Detailed Design Variance	Field inspection during detailed design determined that both network transformers were in poor condition an required replacement in coordination with the ATS replacement. Additional restoration costs were also required as the vault roof was paved with decorative stones.	Variance in Allocated Costs
B11 Automatic Transfer Switches and Reverse Power Breakers	EST24634_001	24634_001 X12822 ATS Replacement 2012	Construction attained and ISA'd	$865,181.61	$594,871.49	High Level to Detailed Design Variance	During the design phase of the planned project, it was discovered that recent reactive or emergency work had been performed on this vault location which resulted in a partial change-out of the equipment. This led to lower cost requirements for the job.	

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B11 Automatic Transfer Switches and Reverse Power Breakers	EST23252_001	23252_003 X12658 - ATS Replacement Loc.#D3031	Complete	$214,610.21	$139,181.44
B11 Automatic Transfer Switches and Reverse Power Breakers	EST24546_001	24546_001 X12799 Loc 4023 ATS Replacement 2012	Complete	$356,080.22	$408,296.67
B11 Automatic Transfer Switches and Reverse Power Breakers	EST24549_001	24549_001 X12801 Loc D3022 ATS Replacement 2012	Complete	$143,878.80	$91,781.24
B11 Automatic Transfer Switches and Reverse Power Breakers	EST24550_001	24550_001 X12802 Loc 4064 ATS Replacement 2012	Complete	$365,263.36	$293,573.45
B11 Automatic Transfer Switches and Reverse Power Breakers	EST19381_001	19381_001 X11505 Castlefield Ave Adj#645 Location #D9012	Cancelled	$324,776.73	$0.00
B11 Automatic Transfer Switches and Reverse Power Breakers	EST24548_001	24548_001 X12800 Loc D9010 ATS Replacement 2012	Cancelled	$143,878.80	$0.00
B11 Automatic Transfer Switches and Reverse Power Breakers	EST24905_001	24905_001 X12829 RBP replacement at two Locations 2012	Cancelled	$705,681.04	$0.00
B11 Automatic Transfer Switches and Reverse Power Breakers	EST28500_001	28500_001 X14522 - Loc D3008 ATS Replacement	Cancelled	$189,866.64	$0.00
B11 Automatic Transfer Switches and Reverse Power Breakers	EST28499_001	28499_001 X14523 - Loc D3028 ATS Replacement	Cancelled	$60,109.06	$0.00

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ICM Segment	Estimate	Description	Actual ISA	Rationale/Driver for Inclusion
B11 Automatic Transfer Switches and Reverse Power E	EST18831_003	X11414 ATS Rplmt. Locn #D9010 Richmond	$86,350.68	Two modular ATS switches at the job location had failed in the past and required replacement. These ATS switches are considered obsolete and are prone to failure due to their obsolete design. An additional $22.5K was spent on this job prior to 2012 and is captured in pre-2012 CWIP amounts coming into service in 2012-2014.

ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B12 Stations Power Transformers	EST18419_001	18419_001 12062 Ellesmere White Abbey MS Repl TR1 5/6.7 MVA 2012	Complete	$362,839.92	$358,456.47
B12 Stations Power Transformers	EST20647_001	20647_001 S12376 Thistletown MS Repl TR1 3/4 MVA 2012	Complete	$292,296.44	$278,716.17
B12 Stations Power Transformers	EST20675_001	20675_001 S12389 Scarborough Golf Club Repl TR1 3/4 MVA 2012	Complete	$352,504.60	$386,838.53
B12 Stations Power Transformers	EST20685_001	20685_001 S12391 Thistletown MS - Replace TR2 2012	Complete	$291,937.97	$278,624.95
B12 Stations Power Transformers	EST21651_001	21651_001 S13144 Edenbridge MS Replace TR1 2012	Complete	$366,839.99	$413,059.60
B12 Stations Power Transformers	EST21852_001	21852_001 S13170 Albion MS Replace TR2 Transformer 2012	Complete	$386,115.43	$403,780.68
B12 Stations Power Transformers	EST21573_001	21573_001 S13127Kingston Morningside MS:Replace TR 2012	In Progress	$332,767.13	$0.00
B12 Stations Power Transformers	EST21722_001	21722_001 S13154 High Level MS Replace TR1 TX 2012	In Progress	$462,388.75	$0.00
B12 Stations Power Transformers	EST21723_001	21723_001 S13155 High Level MS Replace TR2 TX 2012	In Progress	$536,373.54	$0.00
B12 Stations Power Transformers	EST21802_001	21802_001 S13168 Blaketon MS Replace TR1 Transform 2012	In Progress	$473,766.47	$0.00

ICM Segment	Estimate	Description	Actual ISA	Rationale/Driver for Inclusion
B12 Stations Power Transform	EST14189_003	S10109 University MS: Replace 4 Trans.	$499,445.85	- Independent transformer oil tests indicated paper insulation deterioration in all four of University MS's transformers. Toronto Hydro determined that near-term replacement was required to avoid transformer failure. The transformers were each 55 years old when this job was originally planned in 2010. Due to scheduling constraints, this job was not completed until 2012.
B12 Stations Power Transform	EST20904_003	S11656 Sherbourne MS: Replace TR3	$604,537.61	- Dissolved gas and fluid analysis reports indicated that TR3 at Sherbourne MS, which serves 2,629 customers, exhibited high acetylene and carbon monoxide levels, which demonstrated frequent arcing activities inside the transformer. The transformer (54 years old in 2011) was also beyond the end of service life. Toronto Hydro determined that it was necessary to replace this transformer on an urgent basis in order to avoid significant customer interruptions.
B12 Stations Power Transform	EST20537_003	S11099 Centennial D'arcy MS: Replace TR	$660,225.34	- Centenial D'Arcy Magee MS was 42 years old in 2011 and had reached its end-of-life. Testing had revealed that it was in poor condition. Therefore, the transformer had to be replacred to avoid catastrophic failure that would directly impact the 1,628 customers it supplied.
B12 Stations Power Transform	EST17686_002	S11029 Highlevel MS - Replace TR#4	$602,122.49	- The TR4 transformer at High Level MS was 54 years old in 2011, and dissolved gas analysis oil test results accumulated from 1997 to 2008 indicated deterioration requiring replacement in the near-term. Failure of this transformer would have had a direct impact to 7,008 customers connected to the 4 kV bus, and may have caused further collateral damage-related outages to 5633 customers on 13.8 kV buses.
B12 Stations Power Transform	EST17920_002	S11150 Highlevel MS - Replace TR#3	$509,373.98	- TR3 transformer was 40 years old and oil testing revealed that it was in deteriorated condition and needed to be replaced in order to avoid catastrophic failure. High Level TR3 failure will have a direct impact to 7,008 customers connected to 4kV bus, and could cause further collateral damage outage to 5,633 customers on 13.8kV buses. This transformer is indoor and is sharing the same building space with 3 other 4kV transformers, 1 of 4 kV bus, and 3 of 13.8 kV buses.

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B13 Stations Switchgear	EST23116_001	23116_001 W12651 Porterfield MS UG DB Replacement	Complete	$253,627.20	$757,326.11	High Level to Detailed Design Variance	During work execution, Toronto Hydro determined that it would be unable to complete the stations switchgear project in conjunction with this supporting distribution project. As a result, a new cable chamber was built and during construction a Bell duct bank appeared which necessitated relocation and realignment of Toronto Hydro poles. The following work was done in order to complete the job: additional overhead infrastructure including three poles, additional cable, inline disconnect switches, additional service riser and fuses, additional underground infrastructure including deadfront padmounted switchgear, additional 300kcmil cable and associated design costs.	Field Conditions and Execution Requirements

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B13 Stations Switchgear	EST21625_002	21625_002 W12537 YORK MS 4kV UG DB Replacement Creation Date: October 1, 2010	Complete	$133,242.73	$159,197.79
B13 Stations Switchgear	EST18591_001	18591_001 S12048 Strachan TS: Replace A7-8T SWGR 2012	In Progress	$341,893.89	$0.00
B13 Stations Switchgear	EST20750_002	20750_002 S12416 Porterfield MS Replace 4kV SWGR Planned Capital	In Progress	$974,373.81	$0.00
B13 Stations Switchgear	EST20877_001	20877_001 S12045 Wiltshire TS Replace A3-4W 2012	In Progress	$6,435,390.00	$0.00
B13 Stations Switchgear	EST21581_001	21581_001 S13126 Neilson Dr MS Replace 4kV SWGR 2014	In Progress	$1,061,075.05	$0.00
B13 Stations Switchgear	EST22620_XXX	22620_XXX S11642 York MS replace swgr (continue remaining work)	In Progress	$1,252,504.42	$0.00
B13 Stations Switchgear	EST22805_001	22805_001 S14070 Thornton MS Replace Switchgear 2014	In Progress	$898,023.87	$0.00
B13 Stations Switchgear	EST25425_XXX	25425_XXX S13433 Strachan TS A7-8 Switchgear replacement	In Progress	$3,414,000.00	$0.00
B13 Stations Switchgear	EST24975_XXX	24975_XXX W14--- Thornton MS Replace PILC cable	Not Yet Started	$113,800.00	$0.00
B13 Stations Switchgear	EST22025_001	22025_001 S12557 Carlaw TS: Commission A10-11E SWG	Not Yet Started	$1,400,181.54	$0.00
B13 Stations Switchgear	EST20706_001	20706_001 S13199 Carlaw TS: Prepare 3 New Feeder Positions	Not Yet Started	$49,364.16	$0.00
B13 Stations Switchgear	EST22474_001	22474_001 S13248 WiltshireTS A13-14W Feeder Tran	Not Yet Started	$273,163.24	$0.00
B13 Stations Switchgear	EST20492_001	20492_001 S13275 Duplex TS: Replace A5-6X SWG 2012	Not Yet Started	$227,600.00	$0.00
B13 Stations Switchgear	EST22804_001	22804_001 S14068 Islington MS Replace Switchgear 2014	Not Yet Started	$1,137,320.12	$0.00
B13 Stations Switchgear	EST24976_001	24976_001 Islington MS: Replace PILC cables Co-ordinate with swgr replacement	Not Yet Started	$439,136.24	$0.00
B13 Stations Switchgear	EST22315_001	22315_001 W13233 Neilson MS DB cable Replacement	Not Yet Started	$302,532.75	$0.00

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ICM Segment	Estimate	Description	Actual ISA	Rationale/Driver for Inclusion
B13 Stations Switchgear	EST14232_003	S09346 Commission New A5-6GD SWGR (2009)	$240,260.77	- This job was the final commissioning phase for a new switchgear that had been installed in a separate job. The old A5-6GD switchgear was 59 years old in 2009 and past end-of-ife. The new switchgear has a larger capacity to meet increasing customer load demands in the region. - This job invloved verifing proper functioning of the equipment after installation, verifing that performance of the installed equipment meets the specified design intent, and capturing and recording performance data of the whole installation as the baseline for future operation and maintenance. Commissioning of a switchgear ensures that all components and systems installed are in a satisfactory and safe condition before start up.
B13 Stations Switchgear	EST15450_005	S10157 GlengroveTS:Repl A5-A6 with A7-A8	$172,554.03	The A5-6GL switchgear at Glengrove TS was 53 years old and beyond its useful life, necessitating replacement to mitigate risk of failure. Replacement parts for the obsolete switchgear and circuit breakers were no longer manufactured. The switchgear was also non-arc resistant and limited to 2000A, which constrained the capacity for growth in the area. The $173K of ISAs for this job represented a small remaining portion of the total job cost and was related to the final efforts of switchgear commissioning.The total cost for this job was closer to $5M, with the vast majority of those expenditures coming into service prior to 2012.
B13 Stations Switchgear	EST18244_003	W11203 A3-4T STRACHAN FEEDER TRANS- IFRS	$332,999.85	The purpose of this job was to transfer the load from A3-4T Switchgear to the newly installed A9-10T Switchgear at Strachan TS. This job enabled the removal of de-energized A3-4T Switchgear to make space available for future Switchgear installations.
B13 Stations Switchgear	EST18745_003	S11446 Strachan A9-10T Feeder Transfer	$98,878.52	- The objective of this job was to make the necessary load transfers to facilitate the replacement of the A3-4T switchgear at Strachan TS. The job transfered load from A3-4T to the newly installed A9-10T switchgear. This enabled the removal of the A3-4T Switchgear to make space available for future projects. The stations work involved in this job included: 1. Terminate the new feeder cables at the A9-10T bus. 2. Commission new feeders and protection. 3. Update Strachan TS bus drawings. - The non-arc resistant A3-4T Switchgear at Strachan TS was 56 years old and beyond its useful life, necessitating replacement to mitigate risk of failure. This switchgear housed air-blast type circuit breakers, which were 56 years old and past their useful lives of 42 years. The original manufacturer no longer produced this device, and spare parts were difficult to obtain and in many cases needed to be custom manufactured. This made the maintenance cost high and unsustainable over the long term. Since the switchgear was of non-arc resistant design, it was vulnerable to internal arc faults. This increased the risk of collateral damage and personnel injury during a catastrophic failure.

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ICM Segment	Estimate	Description	Actual ISA	Rationale/Driver for Inclusion
B13 Stations Switchgear	EST19121_003	S11458 Jane MS: Replace 13.8kV SWGR	$3,211,067.13	Jane MS and Sentinel MS were sister stations constructed in the late 1960s. The non-arc resistant Switchgear at Jane MS was manufactured in 1968 and was 45 years old during its replacement. This Switchgear housed obsolete air-magnetic circuit breaker, which were past their useful lives of 40 years. The switchgear was made up of two housing sections, the north section contained the F1, F2 and F3 feeders, and the south section contained the F4 and F5 feeders. After a major failure that occurred at Sentinel MS in early 1970's, a modification of the switchgear was made at Jane MS to separate the incoming cell of each section by creating two separate compartments, one for each housing section. During the modification of the Switchgear to separate the incoming cell and install differential voltage protection, the bus bars were cut to install current transformers, creating unintended sharp points which later generated corona. This corona caused a circuit breaker to fail in late 2008. The Jane MS and Sentinel MS supply the North West pocket of 13.8kV system area in North York. As only two stations supply this 13.8kV area, the reliability of each station is essential for customer services. Replacement of the old switchgear with an arc resistant design and vacuum circuit breakers protects the equipment from arc faults and address all reliability and safety issues concerning legacy air-magnetic circuit breakers. Moreover, installation of a SCADA communication system along with the Switchgear replacement allowed Toronto Hydro control operators to monitor the equipment conditions, correct faults remotely, provide automated switching and feeder re-routing in both planned outages and unplanned emergency work. This has improved system reliability and efficiency of the substation.

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ICM Segment	Estimate	Description	Job Status	Forecasted Cost ($)	Actual ISA ($)	Primary Variance Code	Primary Variance Explanation	Secondary Variance Code
B21 Externally Initiated Plant Relocations	EST20129_004	20129_004 X11605 Relocate A25T/A27T/A29T/A31T 2011 budget estimate	Construction attained and ISA	$461,036.45	$640,389.03	Error	The estimate for this job was incorrectly filed as $460K. The correct estimate was $921,954. Therefore, the job actually came in 44% under forecast. The underspend was a result of an investigation that occurred during the detailed design stage that led to the number of feeders that needed to be relocated from four to two.	High Level to Detailed Design Variance
B21 Externally Initiated Plant Relocations	EST24079_002	24079_002 W12763 - GTS Hwy27 Bridge Expansion	Construction attained and ISA	$193,849.60	-$9,299.50	Third-party Constraints and Requirements	This project was to relocate Toronto Hydro's distribution system from the construction site for a bridge expansion to accomocate the GO Georgetown route. Since Toronto Hydro is on a rail authorities land, all relocation costs must be paid for by Toronto Hydro. However, following the 2012 decision, this project was placed on hold due to lack of funding. Metrolinx, in a one time exception, offered to pay for the project to ensure that the work continued.	
B21 Externally Initiated Plant Relocations	EST24615_001	24615_001 ICM NW PATH Relocation Phase 1	Construction attained and ISA	$846,949.62	$3,750,475.09	High Level to Detailed Design Variance	Toronto Hydro had forecasted a cost of approximately $847,000 to do this work. This was the best estimate available at the time of filing. However, the City of Toronto, which was responsible for hiring the contractors who would execute the job, ultimately accepted a bid that, due to the complexities of work, specific field conditions, asbestos removal, and the City's specific scheduling considerations and other requirements, was significantly higher.	
B21 Externally Initiated Plant Relocations	EST24729_001	24729_001 ICM 2013 IQQuay PIceholder 2013 DO NOT PACKAGE	Construction attained and ISA	$9,726,919.87	$4,379,422.89	High Level to Detailed Design Variance	The civil infrastructure requirements were of a lesser scope than originally anticipated. This is because the job ended up only being from Parliament to Richardson instead of Parliament to Yonge as originally estimated. The remainder of work was captured in customer expansion jobs not filed under ICM. This information was not available during the high level design. For a customer job at 25 Queens Quay East civil infrastructure was built along Queens Quay from Richardson to the customer site (approx. Freeland St just before Yonge). This civil work was captured under the expansion charges as a part of the Offer To Connect signed by the customer.	
B21 Externally Initiated Plant Relocations	EST20132_X02	X11606 GO Strachan Crossing Feeder Relocate - Civil (EST24929_001)	Construction attained and ISA	$152,233.48	$394,247.83	Variance in Allocated Costs	The filed estimate was intended to capture the amount of remaining expenditures in 2012 for a much larger job that was substantially complete in 2011. The significant variance in this instance was due to the allocation of road cut repairs, design costs, engineering capital and AFUDC, all of which are finalized at the job close-out and are generally proportional to the full cost of the job.	
B21 Externally Initiated Plant Relocations	EST21862_002	21862_002 W12545-MTO KEELE HWY401 RELOC PH#2 RC3620 2012 CapEx WBS Rev Nov 22_10	Construction attained and ISA	$617,899.54	$1,142,953.03	Third-party Constraints and Requirements	Higher labour rates were incurred to accomodate the Ministry of Transportation's requirement to undertake this work during off-hours. In addition, the original estimate did not include costs related to design, third party inspection fees and Ministry of Transportation's required engineering reports.	
B21 Externally Initiated Plant Relocations	EST23196_003	23196_003 W11826 OH Plant Reloaction Metrolink Construction 2012	Construction attained and ISA	$236,110.68	$438,153.14	High Level to Detailed Design Variance	In the detailed design stage, it was determined that additional underground infrastructure assets (both civil and electrical) needed to be relocated, which were not included in the original project scope. Additional civil work was required as Toronto Hydro was not provided an easement for overhead installation. This discovery resulted in a corresponding cost increase. In addition, several other cost elements (overhead conductor for neutral and secondary lines, contract design and inspection fees, etc) were slightly higher than originally estimated.	
B21 Externally Initiated Plant Relocations	EST24037_002	24037_002 X11380 Front St. E,Heritage lighting_OH replaces est 24037 version 003	Construction attained and ISA	$543,449.15	$69,315.90	Third-party Constraints and Requirements	At the time of the filing, this project was considered to be a relocation project requested by a Road Authority, the City of Toronto. However, during detailed design stage, Toronto Hydro was notified that this was not a relocation request by the City but rather a beautification request. Legislation does not require Toronto Hydro to pay for beautification projects so the City of Toronto was asked to pay for the full amount of the project. The City requested and received a cost adjustment for the depreciated value of Toronto Hydro's assets that would be replaced as part of the project.	High Level to Detailed Design Variance
B21 Externally Initiated Plant Relocations	EST26821_X01	W12909 Road Widening - North Side of Lawrence (east of Allen) (EST24963_002)	Construction attained and ISA	$119,023.53	$360,689.68	High Level to Detailed Design Variance	During the detailed design stage, it was determined that that the labour and material costs for this job had been underestimated.	
B21 Externally Initiated Plant Relocations	EST23759_004	23759_004 ICM X11602 Relocate feeders serving Created Oct 2010 (copy of 23759v3)	Construction attained and ISA	$1,667,562.31	$1,468,289.63	High Level to Detailed Design Variance	The high-level estimate included allocations for telecom asset relocation and the possibility of running into PILC leakers. These allocations were included to account for contingencies that might arise once the job began. These contingencies never materialized so neither of the two items mentioned above were required.	

ICM Segment	Estimate	Description	Job Status	Forecasted Cost	Actual ISA
B21 Externally Initiated Plant Relocations	EST20124_004	20124_004 X11603 Relocate B11T/B9T/B2T/B3T/B6T Created Oct 2010	Complete	$1,116,268.31	$1,104,348.10
B21 Externally Initiated Plant Relocations	EST20125_004	20125_004 X11604 Relocate A22T/A49T/A53T Created Oct 2010	Complete	$1,012,773.32	$1,001,210.30
B21 Externally Initiated Plant Relocations	EST23527_009	23527_009 W12663 - Beecroft Ext. - City Conflicts	Complete	$744,610.17	$697,278.42
B21 Externally Initiated Plant Relocations	EST28665_001	28665_001 X12580 Eglinton Crosstown LRT - Part 5 Duplex & Edith (2014 Resource H	Cancelled	$36,039.06	$0.00
B21 Externally Initiated Plant Relocations	EST28882_001	28882_001 X14694 Strachan PH2 Grade Seperation Civil Works	In Progress	$1,295,233.94	$0.00
B21 Externally Initiated Plant Relocations	EST22851_001 EST22853_001 EST22854_001	22851_001 X12635 QQ Rebuild Ph1 - yoyo to peter 2012 budget estimate	Partially Complet	$11,208,252.00	$16,344,863.73
B21 Externally Initiated Plant Relocations	EST28007_001	28007_001 E13677 P07 Redlea Road Expansion Civ/Ele SCNA502M23 Cavanagh TS	Deferred	$670,450.09	$0.00
B21 Externally Initiated Plant Relocations	EST28187_003	28187_003 PCI E13705 P23 Chine Dr. Pole Relocation Created Oct 2010	Cancelled	$16,961.00	$0.00
B21 Externally Initiated Plant Relocations	EST24967_001	24967_001 ICM NW PATH Relocation Phase 2	Deferred	$1,078,966.01	$0.00
B21 Externally Initiated Plant Relocations	EST25927_003	25927_003 X13620 Sherbourne realign & streetscape HIGH-LEVEL ESTIMATE FOR CITY	In Progress	$305,308.80	$0.00
B21 Externally Initiated Plant Relocations	EST28962_001 EST27624_001	28962_001 X14695 New civil infrastructure Queen St	In Progress	$2,227,149.79	$0.00
B21 Externally Initiated Plant Relocations	EST22170_002	22170_002 X11763 Directional Drilling Gardiner Estimate 2011	In Progress	$749,076.45	$0.00
B21 Externally Initiated Plant Relocations	EST23018_002	23018_002 Western Battery to Duoro Rail Crossing RC3620 2011 CapEx WBS Rev Nov 22_10	Complete	$254,602.47	$335,655.45
B21 Externally Initiated Plant Relocations	EST23329_002	23329_002 W10508 HWY427/Eglinton Road Mod RC3620 2011 CapEx WBS Rev Nov 22_10	Complete	$188,980.44	$200,994.06
B21 Externally Initiated Plant Relocations	EST23606_X01	W10498 Weston Tunnel GO Xing Relocn ET88M12 (EST24895_001)	Complete	$277,851.02	$292,270.95
B21 Externally Initiated Plant Relocations	EST25280_001	25280_001 ICM Dundas OH to UG 2013 Bathurst to University	Deferred	$3,020,581.97	$0.00
B21 Externally Initiated Plant Relocations	EST25276_001	25276_001 ICM Dundas OH to UG 2012 Bathurst to University 2012	Deferred	$629,475.00	$0.00

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ICM Segment	Estimate	Description	Actual ISA	Rationale/Driver for Inclusion
B21 Externally Initiated Plant Relocations	EST20651_002	X11633 Roncesvalles Dundas St W TTC	$237,783.99	The TTC requested attachment of streetcar strands to Toronto Hydro poles on the west side of Roncesvalles and Dundas streets. The existing poles were unable to support the attachment, so three new steel poles were installed. The total cost of this job was $526K, with part of the expenditures occuring prior to 2012. These amounts did not come into service before the ICM period are therefore captured in the pre-2012 CWIP amounts coming into service in the ICM period.
B21 Externally Initiated Plant Relocations	EST20975_003EST21411_003	E11664 Duncan Mills Bridge	$96,358.30	To facilitate rehabilitation of the Duncan Mills bridge by the road authority, Toronto was obligated to relocate ducts located under the bridge. The total cost of this job was $403K, with part of the expenditures occuring prior to 2012. These amounts did not come into service before the ICM period are therefore captured in the pre-2012 CWIP amounts coming into service in the ICM period.
B21 Externally Initiated Plant Relocations	EST20587_003	X11627 Tra A10T-12T to A54-57-58T	$298,248.07	As part of Metrolinx's Strachan Ave. grade separation project, Toronto Hydro was obligated to relocate all feeders crossing CN rail tracks along Strachan Ave. This job started prior to 2012. The total cost of this job was $300K, with a small portion of the expenditures occuring prior to 2012. These amounts did not come into service before the ICM period are therefore captured in the pre-2012 CWIP amounts coming into service in the ICM period.
B21 Externally Initiated Plant Relocations	ESTAS12016_001	E12667 Reconfig distrib R2634 Tapscott	$83,488.08	Toronto Hydro was obligated to reconfigure single-phase distribution to accomodate City of Toronto rehabilitation work associated with the Tapscott Road Underpass.
B21 Externally Initiated Plant Relocations	EST24212_003	PCI - W12756 EDENBRIDGE DR EXPANSION/ PO	$64,308.42	To facilitate City of Toronto roadwork, water main and sewer replacement near Bearwood Drive, Toronto Hydro was obligated to relocate three poles and one guy wire.
B21 Externally Initiated Plant Relocations	EST21468_003	PCI W11825 CARLINGVIEW OH PLANT RELOC	$220,443.04	This job involved relocating 15 poles carrying primary feeders in order to accomodate work on the Metrolinx GO expansion at Carlingview Drive in near the Pearson Airport.
B21 Externally Initiated Plant Relocations	EST26317_003	PCI-X13514 FRONT AND JARVIS RELOCATION	$91,855.99	This job involved relocating distribution assets to accomodate City of Toronto watermain repairs at Front St and Jarvis Rd.
B21 Externally Initiated Plant Relocations	EST27658_001	ICM-W13629 Ext Init Knightwood UG Relc	$148,808.40	This job relocated underground road crossings in three locations on Knightswood Road to allow for City of Toronto storm sewer construction.
B21 Externally Initiated Plant Relocations	EST29920_003	X14725-VAULT LOC.4761 ROOF REB.	$77,789.43	This job involved raising a vault roof in order to match a proposed city sidewalk elevation.
B21 Externally Initiated Plant Relocations	EST31038_001	W13501 Park Lawn StLt Pole Relocation	$93,127.20	The City of Toronto proposed a road widening of Park Lawn Rd. north of Lakeshore Blvd W. on the west side. To facilitate this project, Toronto Hydro was obligated to relocate five poles and associated underground ducts.

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ICM Segment	Estimate	Description	Actual ISA	Rationale/Driver for Inclusion
B21 Externally Initiated Plant Relocations	EST29748_003	X13750 York ST cable p/o	$143,858.04	This project was intitiated when the TTC came across Toronto Hydro's cable chambers while replacing their trackbeds. Toronto Hydro's cable chambers included large holes were identified for repair. Toronto Hydro was called to investigate and remediate the situation. This project had to be completed as soon as possible as it involved closing York street from Front street to Queen street.
B21 Externally Initiated Plant Relocations	EST30437_003	W14765 - GO Transit Expansion Creation Date: October 1, 2010	$160,624.85	GO Transit is expanding their service to Milton and west of Toronto in a project called Georgetown expansion. There were numerous Toronto Hydro poles and underground structures along the way that required modification. Failure to relocate poles in a timely manner could have delayed the completion of GO service upgrade. This could have delayed the opening of Union Pearson Express line.
B21 Externally Initiated Plant Relocations	EST27118_001	PCI Queens Quay Ph 1_2_3 ELECTRICAL WBS-CCM RC4330 CAPEX for IFRS	$0.00	In Progress
B21 Externally Initiated Plant Relocations	EST28276_003	ICM W12851 Eglinton Crosstown Part 1 - 5 Eglinton Ave W and Blackthorn	$0.00	In Progress
B21 Externally Initiated Plant Relocations	EST28283_003	ICM W12854 EGLINTON CROSSTOWN Part 4-5 Eglinton Between Park Hill and Flanders	$0.00	In Progress
B21 Externally Initiated Plant Relocations	EST28320_003	ICM W12852 EGLINTON CROSSTOWN Part 2 - 5 Eglinton and Little	$0.00	In Progress
B21 Externally Initiated Plant Relocations	EST28547_003	ICM W12853 EGLINTON CROSSTOWN Part 3 - 5 Eglinton and Dufferin	$0.00	In Progress
B21 Externally Initiated Plant Relocations	EST30541_003	S14748 EsplanadeTS Cable Suprt "Dis Sup" Terminate Two Neutral Cables 2014	$0.00	In Progress
B21 Externally Initiated Plant Relocations	EST29932_003	X12998 TTC Leslie St. Connection Track Created Oct 2010	$0.00	In Progress
B21 Externally Initiated Plant Relocations	EST31635_003	W14818 Metrolinx Weston Underpass OH Restoration	$0.00	In Progress
B21 Externally Initiated Plant Relocations	EST32087_003	W14850 TTC Bakersfield poles relocation Creation Date: February 18,2014	$0.00	In Progress
B21 Externally Initiated Plant Relocations	EST33647_001	X13750 York ST cable p/o - Electrical Transfer from DPC to DCW	$0.00	In Progress
B21 Externally Initiated Plant Relocations	EST33163_003	E14904 #2740 Lawrence HONI Interference E5 1M23	$0.00	In Progress
B21 Externally Initiated Plant Relocations	P0091683	O/H Sec Bus Upgrds & Reloc To Ttc Poles	$0.00	In Progress

Segment Number	Segments	2012-2014 Approved ISA ($M)	2012-2014 Actual ISA ($M)	Variance ($M)	Percent Variance
B1	Underground Infrastructure	124.39	180.01	55.62	44.7%
B2	Paper Insulated Lead Covered Cable - Piece Outs and Leakers	6.92	2.78	(4.14)	-59.9%
B3	Handwell Replacement	37.53	36.40	(1.13)	-3.0%
B4	Overhead Infrastructure	79.73	83.73	4.00	5.0%
B5	Box Construction	29.34	22.96	(6.38)	-21.7%
B6	Rear Lot Construction	50.79	58.03	7.25	14.3%
B9	Network Vault & Roofs	22.50	17.27	(5.23)	-23.2%
B10	Fibertop Network Units	12.02	13.62	1.60	13.3%
B11	Automatic Transfer Switches (ATS) & Reverse Power Breakers (RPB)	3.36	1.91	(1.45)	-43.1%
B12	Stations Power Transformers	3.86	5.00	1.14	29.5%
B13	Stations Switchgear - Municipal and Transformer Stations	16.71	4.97	(11.73)	-70.2%
B20	Metering	16.96	18.15	1.19	7.0%
B21	Externally-Initiated Plant Relocations and Expansions	36.87	34.42	(2.45)	-6.7%

I INTRODUCTION

1. Segment Description

Toronto Hydro proposed the Box Construction segment to proactively replace an obsolete type of 4 kV overhead feeder design with 13.8 kV feeders built to contemporary design specifications. A majority of the box construction assets identified for replacement were beyond end-of-life and could support less than a third of a standard 13.8 kV feeder's loading capacity, constraining the utility's ability to accommodate concentrated load growth in areas with significant new developments. Furthermore, the configuration of box construction feeders, whereby a number of circuits were located within a concentrated space, created a potential safety hazard for crews working on the assets, limited bucket truck access and limited the utility's ability to maintain clearance standards from nearby buildings. Finally, circuits with box construction configuration have generally experienced worse reliability and do not support the use of automated switches, necessitating manual switching efforts and further complicating system operation and outage restoration efforts.

2. Board Decision

The OEB found that the nature of the work in the Box Construction segment, as filed, qualified for ICM treatment. Having found that the work was both necessary and prudent, the OEB made no reduction to Toronto Hydro's funding request. Pending the revenue reconciliation process, the OEB provided for interim funding of this work through an Initial ICM Rate Rider in the Phase I Decisions, which was based on Toronto Hydro's forecast of approximately $14.6 million of in-service additions (ISAs) in 2012 and 2013. Toronto Hydro forecasted an additional $9.0 million in 2014 ISAs related to work proposed in Phase I of EB-2012-0064 (i.e., jobs that were forecasted to commence in 2012 or 2013), but these amounts did not inform the Initial ICM Rate Rider. The OEB also approved an additional $5.7 million in ISAs that Toronto Hydro forecasted in Phase II for jobs commencing in 2014, but these were not funded through the Initial ICM Rate Rider or any rate adder.

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As detailed below, Toronto Hydro's actual ISAs in this segment total about $23.0 million, which is $6.4 million less than the overall forecasted amounts in this segment but $8.4 million more than the amounts on which the Initial ICM Rate Rider was based. Revenue requirement associated with the ISAs that were not sufficiently funded through the Initial ICM Rate Rider remain to be recovered through the ICM True-Up Rate Rider.[1]

II SEGMENT OVERVIEW

The primary driver for the proposed work in the Box Construction segment was safety. The high concentration of multiple circuits in the legacy box construction design presented three potential safety risk to field crews. Firstly, some circuits were inaccessible with bucket trucks due to the physical arrangement of the feeders running through a single box pole, which forced line crews to climb the poles. Secondly, the position and configuration of box construction equipment created situations where field crews would have difficulty conforming to the electrical clearance standards requiring a 15 cm gap between people/tools and energized conductors as defined in the Electrical Utility Safety Rules (EUSR). Lastly, box construction feeders utilized certain obsolete equipment that was installed prior to the adoption of current safe work practices, such as the 'Positect' switches that were operable by hand, and consequently exposed field crews to the flash zone of the switch.

A secondary driver for the segment was reliability. Box construction infrastructure, which was predominantly constructed in the 1950s and 1960s, included a significant number of assets that were either approaching or had already passed the end of their useful lives, thereby increasing the likelihood of outages driven by asset failure. Moreover, in addition to safety concerns addressed above, the manually operated switching equipment installed on the box construction feeders prolonged restoration timelines. In general, 4 kV box construction feeders had historically demonstrated worse reliability compared to standard 13.8 kV overhead feeders.

[1] See [cite] for a detailed calculation of the ICM True-Up Rate Rider, which accounts for the timing of ISAs and the amount of ICM-eligible ISAs that were dropped below the ICM Materiality Threshold.

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The jobs selected for conversion over the 2012-2014 timeframe were a part of the utility's longer-term plan to convert all box construction feeders to standard 13.8 kV configuration. Toronto Hydro forecasted 22 discrete jobs to convert legacy 4 kV box construction feeders to standard 13.8 kV overhead feeders to address anticipated reliability, safety and operational efficiency concerns in the segment during the 2012-2014 period. Toronto Hydro anticipated that these jobs would be completed or in progress by the end of the ICM period.

III 2012-2014 ACCOMPLISHMENTS

Table 1 summarizes the variance between the forecast ISAs and the actual ISAs in this segment over the ICM period. Toronto Hydro placed into service $6.4 million less than forecast. ISAs in 2012 and 2013 were lower than forecasted, partially offset by higher than forecasted additions in 2014. Segment variance is a function of both job-specific variances and broader factors that affected Toronto Hydro's work program, including timing adjustments driven by external factors, such as the dependency on the timing of upstream capital projects undertaken by Hydro One Networks Inc. (HONI).

Table 1: Forecast In-service Additions vs. Actual In-service Additions

	Forecast ISAs				Actual ISAs				Variance
	2012	2013	2014	Total	2012	2013	2014	Total	Total
ISAs ($M)	0.3	14.4	14.7	**29.3**	0.1	5.7	17.2	**23.0**	**(6.4)**

Table 2 summarizes the job-level accomplishments for this segment during the ICM period. Of the 22 originally forecasted jobs in this segment, 18 were completed or in progress by the end of 2014. Toronto Hydro deferred three forecasted jobs in order to align with the anticipated timing of upstream HONI projects. A fourth job was cancelled following efforts to address scheduling conflicts and streamline the overall conversion and station decommissioning efforts in the Junction MS area.

Toronto Hydro made investments in six analogous jobs that were identified as critical during the course of the ICM period. Four of these additional jobs were completed in the ICM period, with the remaining two being in progress as of the end of 2014.

Table 2: Job-level Accomplishments

Segment Jobs Breakdown	Number of Jobs
Total Forecasted Jobs	**22**
Less: Deferred or Cancelled Jobs	(4)
Add: Analogous Jobs	6
Total Segment Jobs	**24**
Less: In Progress Jobs	(8)
Total Jobs with ISAs	**16**
Breakdown of Total Jobs with ISAs	**Number of Jobs**
Completed Jobs	11
Partially Completed Jobs	5
Total Jobs with ISAs	**16**

Toronto Hydro's decision to complete the analogous jobs was driven by safety and reliability concerns associated with equipment age and conditions, along with deteriorating performance of the affected feeders, and system efficiency considerations associated with other planned and ongoing work in the vicinity of project areas.

Complete information regarding the investment drivers, scope of work and final costs for all analogous jobs can be found [cite].

IV REVIEW OF VARIANCES

Differences between the cost estimates filed in the ICM application and the actual costs of the completed jobs were generally due to three variance causes. The most common reasons for variance were changes between the high level estimates filed in the application and the detailed design work for the job as discussed in Section 1 below, and changes that emerged during job

execution due to field conditions and execution requirements discussed in Section 2. One job had a variance caused by an error in the estimate as discussed in Section 3.

1. High Level to Detailed Design Variance

The estimates underlying the ICM filing materials were primarily high level planning estimates. As jobs advanced from the high level design stage towards more detailed design work that better reflected site-specific considerations, changes were made to the labour and materials required to complete the underlying work. These changes were largely dictated by the actual conditions and equipment configurations at the project site, or amendments to the scope of the project, driven by efficiency considerations or further findings in the field.

For example, one job experienced a cost variance of about $800,000 or 47%. This variance was was the result of Toronto Hydro's decision to complete the second phase of work in the job area ahead of schedule and in coordination with the ongoing first phase. The original high level estimate filed in the ICM application only included the cost of the first phase of the project, with the second phase, driven by the same considerations, forecasted for completion after 2014. However, having efficiently completed the first phase of the project, Toronto Hydro leveraged available resources and suitable work conditions to advance the second phase of the project. Doing so facilitated service improvements in the adjacent areas, facilitated system operation efficiency, and reduced the need to disrupt work in the general area in the future. Given that more assets were replaced than originally forecasted, this variance does not reflect a cost overrun, but is instead a function of higher work accomplishments.

Other variances in this category were a function of the need for additional infrastructure that was discovered during the detailed design stage and the use of external contractors versus internal crews to complete the job. Unlike the internal construction cost estimates that are based on unburdened work execution rates, the contractor costs charged to the projects are fully burdened, as they are intended to recover all costs incurred by the third-party contractor, including the administrative overhead costs, costs of contractor vehicles and equipment and

other related drivers, which are typically accounted for separately at Toronto Hydro (e.g., through OM&A costs).[2] In a similar manner, cost variances between projects assumed to be constructed "in house", which are delivered by third-party contractors also attract the incremental costs of mandatory construction audit performed by an independent assessor, which cannot be reliably predicted at the high-level scope estimation.

2. Field Conditions and Execution Requirements

Some variances occurred at the execution stage because site conditions, operational constraints or other factors caused costs to change during construction. In one such instance, inclement winter weather throughout the project's execution led to a variance of about $175,000 or 24%. Specifically, the aftermath of the 2013 winter ice storm increased workload for system operators, which led to longer than expected execution times and higher labour costs associated with delays in obtaining hold-offs from the control centre (i.e. permission to proceed with work on safely de-energized assets).

In another instance, a cost variance of 93% or $1.2 million was the result of site-specific considerations, unforeseeable at the time of the high level estimate, that were required to facilitate the safe completion of the jobs for Toronto Hydro's field crews and general public within the vicinity. Working in an area with high pedestrian and vehicle traffic resulted in the need to adjust the high level estimate to factor in the presence of paid-duty police officers to manage the traffic around the work site. In addition, increased labour costs were incurred to account for the fact that the assets were located on a narrow street and in close proximity to TTC tracks and overhead lines. Completing the requisite work safely and efficiently in these conditions required additional time and effort on the part of the field crews and was ultimately reflected in the cost variance.

[2] The issue of cost comparisons between Toronto Hydro's internal and 3rd party construction costs was explored in depth during the 2015-2019 CIR application. For an adjusted "like-for-like" comparison of contractor costs to fully burdened internal Toronto Hydro cost please see Interrogatory Response 2B-CUPE-02.

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3. Errors

One variance was caused by an omission that resulted in the cost for this job being underestimated by about $50,000. The error was further compounded by the fact that the erroneous estimate was subsequently used as the base amount to calculate the forecasts for standard allocated costs such as design and engineering capital, which are typically proportional to the full cost of the job.

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I INTRODUCTION

1. Segment Overview

Toronto Hydro proposed the Stations Power Transformers segment to address municipal station (MS) power transformers that are beyond the end of their useful lives, have exhibited incidences of oil leakage, or where the risk of transformer failure was high due to deteriorating insulating materials. The units selected for replacement in this segment exhibited significant symptoms of degradation, as determined by the asset condition and dissolved gas analysis (DGA) oil tests that were used to prioritize unit replacement.

2. OEB Decision.

The OEB found that the nature of the work in the Stations Power Transformers segment, as filed, qualified for ICM treatment. Having found that the work was both necessary and prudent, the OEB made no reduction to Toronto Hydro's funding request. Pending the revenue reconciliation process, the OEB provided for interim funding of this work through an Initial ICM Rate Rider in the Phase I Decisions, which was based on Toronto Hydro's forecast of approximately $2.5 million of in-service additions (ISAs) in 2012 and 2013. Toronto Hydro forecasted an additional $1.4 million in 2014 ISAs related to work proposed in Phase I of EB-2012-0064 (i.e., jobs that were forecasted to commence in 2012 or 2013), but these amounts did not inform the Initial ICM Rate Rider. Toronto Hydro did not propose additional jobs for this segment in the Phase II application.

As detailed below, Toronto Hydro's actual ISAs in this segment total about $5.0 million. In addition to the forecasted ISAs of $3.9 million from Phase 1, this includes about $1.1 million in additional prudent and non-discretionary ISAs associated with both forecasted and analogous jobs as described in sections III and IV below.

The revenue recovered through the Initial ICM Rate Rider for this segment did not sufficiently cover the revenue requirement of all necessary and prudent work performed as part of this

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project segment. Revenue requirement associated with the ISAs that were not sufficiently funded through the Initial ICM Rate Rider remain to be recovered through the ICM True-Up Rate Rider.[1]

II SEGMENT OVERVIEW

The primary driver for this segment was reliability. Power transformers are critical municipal station assets from the perspective of both financial and operational risk. A significant portion of these assets were installed in the 1950s to 1970s and had surpassed their typical useful life of 43 years.[2] As transformers aged, the pressboard and paper insulation of the energized components deteriorated, increasing the likelihood of insulation failure and electrical faults.

Transformer failures carried the risk of causing long duration outages for thousands of customers. Catastrophic failures could also have resulted in collateral damage to other transformers and station equipment. Moreover, in addition to the direct impact on the customers connected to a specific transformer, failure of a single station transformer could have increased the risk of further outages in the surrounding area, as the adjacent transformers absorbed the load of the failed unit, thereby increasing the risk of their own failure due to increased loading. Leaking transformers also presented an environmental risk, as the mineral oil could have entered the area surrounding the station.

The secondary driver for the Station Power Transformers segment was safety, as catastrophic damage sustained by failed transformers could have endangered Toronto Hydro personnel working in the vicinity of the assets.

Toronto Hydro filed 10 discrete jobs to replace power transformers during the ICM period. These jobs were forecasted to be completed or in progress by the end of the ICM period.

[1] See [cite] for a detailed calculation of the ICM True-Up Rate Rider, which accounts for the timing of ISAs and the amount of ICM-eligible ISAs that were dropped below the ICM Materiality Threshold.
[2] Kinectrics Inc. Asset Depreciation Study for Use by Electricity Distributors, EB-2010-0178, July 8, 2010.

III 2012-2014 ACCOMPLISHMENTS

Table 1 summarizes the forecast ISAs and the actual ISAs in this segment over the ICM period. Toronto Hydro put into service $1.1 million more than forecasted in this segment. ISAs in 2012 and 2014 were higher than forecasted, partially offset by lower than forecasted additions in 2013. Higher than forecast ISAs in this segment were a result of both job-level variances and the addition of five analogous jobs that Toronto Hydro determined to be urgent in light of the equipment's performance, condition, and other considerations as described below.

Table 1: Forecast vs. Actual In-service Additions

	Forecast ISAs				Actual ISAs				Variance
	2012	2013	2014	Total	2012	2013	2014	Total	Total
ISAs ($M)	0.2	2.3	1.4	**3.9**	2.3	0.9	1.8	**5.0**	**1.1**

Table 2 summarizes the job-level accomplishments for this segment during the ICM period. All of the originally forecasted jobs in this segment were completed or in progress by the end of 2014. As shown below, Toronto Hydro also added five analogous priority jobs, all of which were completed during the ICM period.

Table 2: 2012-2014 Job-level Accomplishments

Segment Jobs Breakdown	Number of Jobs
Total Forecasted Jobs	**10**
Less: Deferred or Canceled Jobs	(0)
Add: Analogous Jobs	5
Total Segment Jobs	**15**
Less: In Progress Jobs	(4)
Total Jobs with ISAs	**11**
Breakdown of Total Jobs with ISAs	**Number of Jobs**
Completed Jobs	11
Partially Completed Jobs	0
Total Jobs with ISAs	**11**

The utility's decision to complete the five analogous jobs during the ICM period was driven primarily by:

- irreversible deterioration of the assets, as confirmed through field inspection, particularly the dissolved gas analysis of the transformer oil; and
- advanced age and the resultant increased risk of failure of the equipment (all transformers were between 40 and 55 years old).

Complete information regarding the investment drivers, scope of work and final costs for all analogous jobs can be found [cite].

IV REVIEW OF VARIANCES

All six of the forecasted and completed jobs in this segment were within approximately 10% of their forecast cost.

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I INTRODUCTION

1. Segment Description

Toronto Hydro proposed the Externally-Initiated Plant Relocations segment to account for projects that were required as a direct result of, or were uniquely enabled by, work undertaken by governments or their agencies. Because these projects are linked to third-party activities, no single type or class of assets was specifically targeted through this program. The timing of the work in this segment was beyond Toronto Hydro's control and its completion could not be deferred.

2. OEB Decision

The OEB found that the nature of the work in the Externally-Initiated Plant Relocations segment, as filed, qualified for ICM treatment. Having found that the work was both necessary and prudent, the OEB made no reduction to Toronto Hydro's funding request. Pending the revenue reconciliation process, the OEB provided for interim funding of this work through an Initial ICM Rate Rider in the Phase I Decisions, which was based on Toronto Hydro's forecast of approximately $25.3 million of in-service additions (ISAs) in 2012 and 2013. Toronto Hydro forecasted an additional $9.7 million in 2014 ISAs related to work proposed in Phase I of EB-2012-0064 (i.e., jobs that were forecasted to commence in 2012 or 2013), but these amounts did not inform the Initial ICM Rate Rider. The OEB also approved an additional $1.9 million in ISAs that Toronto Hydro forecasted in Phase II for jobs commencing in 2014, but these were not funded through the initial ICM Rate Rider or any rate adder.

As detailed below, Toronto Hydro's actual ISAs in this segment total about $34.4 million, which is $2.5 million less than the overall forecasted amount for this segment but $9.1 million more than the amounts on which the initial ICM Rate Rider was based. Revenue requirement

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associated with the ISAs that were not sufficiently funded through the Initial ICM Rate Rider for this segment remain to be recovered through the ICM True-Up Rate Rider.[1]

II SEGMENT OVERVIEW

Third-party agencies, such as the City of Toronto, GO Metrolinx and the Ontario Ministry of Transportation, regularly maintain, upgrade, expand or otherwise improve public infrastructure such as roads, bridges, highways and rail crossings. This work is usually undertaken in close proximity to Toronto Hydro's infrastructure, requiring relocation of its existing plant. These construction projects often provide an opportunity for Toronto Hydro to expand its infrastructure for future needs in conjunction with a relocation project.

Under the *Public Service Works on Highways Act* (PSWHA), Toronto Hydro is obligated to relocate its facilities that are located within a public road right-of-way in a cooperative fashion with the Road Authority, for either the City of Toronto or the Ontario Ministry of Transportation. The PSWHA includes a cost sharing mechanism and the right to appeal cost allocations to the Ontario Municipal Board.

Toronto Hydro facilities located on private property are not subject to the PSWHA and are typically governed by individual agreements, such as with railway authorities for rail right-of-way crossings or GO Transit for their right-of-way crossings. Toronto Hydro aims to retain existing distribution system capacity, so relocation projects are often executed on a "like-for-like" basis.

In some instances, "like-for-like" relocations are not the appropriate or prudent course of action. For example, projects initiated as a result of Waterfront Toronto's Central Revitalization Project called for system expansion to accommodate future development opportunities that

[1] See [cite] for a detailed calculation of the ICM True-Up Rate Rider, which accounts for the timing of ISAs and the amount of ICM-eligible ISAs that were dropped below the ICM Materiality Threshold.

emerge out of the renewal of that part of the city. Performing this expansion work at the time of Waterfront Toronto's project work was the most cost effective and least disruptive approach, rather than re-excavating in the same area when developments occur. Moreover, road cutting/trenching moratoria limited the prospects of performing future Toronto Hydro construction activity following the completion of the Waterfront Toronto work.

Toronto Hydro's forecast included 27 jobs to address externally-initiated plant relocation requests during the 2012 to 2014 ICM period. These jobs were forecast to be complete or in progress by the end of the ICM period.

III 2012-2014 ACCOMPLISHMENTS

Table 1 summarizes the variance between the forecast ISAs and the actual ISAs in this segment during the ICM period. Toronto Hydro put into service $34.4 million, which was $2.5 million or 7% less than forecast. Less than forecast ISAs at the segment level was the result of job-level cost variances, many of which were outside of the utility's control, and the deferral or cancellation of certain jobs by third-parties.

Table 1: Forecast vs. Actual In-service Additions

	Forecast ISAs				Actual ISAs				Variance
	2012	2013	2014	Total	2012	2013	2014	Total	Total
ISAs ($M)	4.5	20.8	11.6	**36.9**	2.6	7.4	24.4	**34.4**	**(2.5)**

Table 2 summarizes the job-level accomplishments for this segment during the ICM period. Out of the 27 originally forecasted jobs, the vast majority (22 of 27, or 81%) were complete or in progress by the end of 2014. Toronto Hydro cancelled or deferred six of the forecasted jobs in the ICM application as a result of third party delays or requests that were outside of the utility's control. As shown in Table 2, 24 analogous jobs were added to this segment at the request of third-parties. Twelve of the analogous jobs were completed in the ICM period while the remaining 12 were in progress as of the end of 2014.

Table 2: 2012-2014 Job-level Accomplishments

Segment Jobs Breakdown	Number of Jobs
Total Forecasted Jobs	**27**
Less: Deferred or Canceled Jobs	(6)
Add: Analogous Jobs	24
Total Segment Jobs	**45**
Less: In Progress Jobs	(16)
Total Jobs with ISAs	**29**
Breakdown of Total Jobs with ISAs	**Number of Jobs**
Completed Jobs	28
Partially Completed Jobs	1
Total Jobs with ISAs	**29**

A majority of the analogous jobs were initiated by the City of Toronto, with several jobs initiated by Metrolinx and the remainder by the provincial Road Authority and the TTC. All of the jobs involved non-discretionary or mandatory relocation work in response to initiatives such as road alignment changes, sidewalk elevation changes, bridge rehabilitation, transit corridor expansion, and Toronto Water projects.

Complete information regarding the drivers, scope of work and final costs for all analogous jobs in this segment can be found [cite].

IV REVIEW OF VARIANCES

Within the Externally-Initiated Plant Relocations segment, four types of variance causes account for the cost differences between the forecasted job estimates in the ICM application and the actual cost of the completed jobs. As Toronto Hydro's ability to undertake work within this segment is constrained by the work being done by other agencies, one of the main causes of variance in this segment was third party requirements and constraints (see Section 1 below). Variances within this segment were also the result of changes that occurred between the high

level estimates filed in the ICM period and the detailed design work for the jobs, as discussed in Section 2 below. Less common reasons for variance included cost changes due to differences between the actual amount of cost for road cuts and other centrally accumulated costs and the averages used in preparing high level estimates, as explained in Section 3 below, and, in one case, an error in the filed estimate itself, as discussed in Section 4 below.

1. Third Party Requirements and Constraints

As the work in this segment is driven by the schedules and requirements of third-parties, a number of cost variances experienced at the job level were the result of third-party decisions that were outside of Toronto Hydro's control. For example, Toronto Hydro saw two significant negative variances due to deviations from the anticipated cost-sharing agreements. In one instance, it was necessary for Toronto Hydro to defer a Metrolinx initiated job as part of the general ramp-down of work following the OEB's decision on Toronto Hydro's 2012-2014 Cost of Service application. To ensure that the project moved forward in a timely manner, Metrolinx elected to make a one-time exception to the cost-sharing agreement and pay the full cost of the job, which brought Toronto Hydro's costs from a forecasted $193,000 to effectively $0. In another instance, at the time of the filing a project was considered to be a relocation project requested by a Road Authority, the City of Toronto. However, during the detailed design stage, Toronto Hydro was notified that this was not a relocation request by the City but rather a beautification request. Legislation does not require Toronto Hydro to pay for beautification projects so the City of Toronto was asked to pay for the full amount of the project. The cost of the project was reduced accordingly.

Third part requirements also resulted in positive variances. For example, Toronto Hydro's costs for a highway relocation project increased from a forecasted $617,899 to $1,142,953. This was primarily due to the Ontario Ministry of Transportation's (MTO) requirement to complete the work during off-peak hours, which led to higher labour costs. In addition, MTO required engineering reports, which had not been considered in the high level estimates.

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2. High Level to Detailed Design Variance

The estimates that underpinned the ICM filing were largely high level planning estimates. The most significant driver of job-level variances were changes that occurred as jobs moved from high level planning estimates to detailed designs. As the detailed design work was completed on jobs, changes were made to the labour and materials required to execute them. The changes between the high level estimate and project design usually involved changes in the design configuration required by the actual conditions at the project site or changes in project scope.

In some instances, the variances were the result of Toronto Hydro gaining a more complete knowledge of construction requirements for a job during the detailed design or construction phase. For instance, in one of the jobs, Toronto Hydro planners had anticipated the need to relocate telecom related assets and the possibility of incurring costs related to leaking paper-insulated lead-covered cables. Neither of these costs materialized, which saved about $200,000 on a $1.7 million job. In another instance, the designer determined that a greater amount of underground assets would need to be relocated than anticipated in the high-level estimate as Toronto Hydro was unable to obtain an easement for its overhead installation. This resulted in an approximately 90% variance on a $236,000 job.

Another example was the City of Toronto's north-west PATH relocation project. Toronto Hydro had forecasted a cost of approximately $847,000 and this was the best estimate available at the time of filing; however, the City of Toronto, which was responsible for hiring the contractors who would execute the job, ultimately accepted a bid that, due to the complexities of work, specific field conditions, and the City's specific scheduling considerations and other requirements, was significantly higher. The final cost of the job was $3.8 million, with significant costs incurred due to shift premiums for night work, complexity of work and congestion of utilities, and asbestos removal.

3. Variance in Allocated Costs

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One job experienced a significant variance related to design, engineering capital and road cut repair costs, which are typically allocated to a job after it is complete and are proportional to the overall job cost. The filed estimate was intended to capture the amount of remaining expenditures in 2012 for a much larger job that was substantially complete in 2011. The significant variance in this instance was due to the allocation of road cut repairs, design costs and engineering capital, all of which are finalized at the job close-out and are generally proportional to the full cost of the job.

4. Errors

A clerical error in the ICM filing produced a material variance for one job. The estimate for this job was incorrectly filed as $460,000. The correct estimate was $921,954. Therefore, the job, which had a final cost of about $640,000, actually came in 44% under forecast. The less than forecast cost was a result of an investigation that occurred during the detailed design stage that led to a reduction in the number of feeders that needed to be relocated from four to two.

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I INTRODUCTION

1. Segment Description

Toronto Hydro proposed the Underground Infrastructure segment to replace direct-buried Cross-Linked Polyethylene (XLPE) cable and air-insulated pad-mounted switchgear units with Tree-Retardant (TR) XLPE cable in concrete-encased ducts and SF_6-insulated pad-mounted switchgear. The specific assets identified for replacement were beyond end-of-life and had shown increasing failure trends in recent years, contributing significantly to the aggregate outage statistics on the utility's underground system. Moreover, the switchgear identified for replacement presented a potential safety risk for Toronto Hydro field crews. Where economical, Toronto Hydro also proposed to replace non-standard submersible transformers with switchable submersible transformers.

2. OEB Decision

The OEB found that the nature of the work in the Underground Infrastructure segment, as filed, qualified for ICM treatment. Having found that the work was both necessary and prudent, the OEB made no reduction to Toronto Hydro's funding request. Pending the revenue reconciliation process, the OEB provided for interim funding of this work through an Initial ICM Rate Rider in the Phase I Decisions, which was based on Toronto Hydro's forecast of approximately $64.6 million of in-service additions (ISAs) in 2012 and 2013. Toronto Hydro forecasted an additional $23.1 million in 2014 ISAs related to work proposed in Phase I of EB-2012-0064 (i.e. jobs that were forecasted to commence in 2012 or 2013), but these amounts did not inform the Initial ICM Rate Rider.

As detailed below, Toronto Hydro's actual ISAs in this segment total about $180 million. In addition to the forecasted ISAs of $87.7 million from Phase 1, this includes:

- approximately $36.7 million in ISAs that Toronto Hydro forecasted in Phase II for jobs commencing in 2014, which were approved in the Phase II Decision but not funded through the Initial ICM Rate Rider or any rate adder; and

- about $55.6 million in additional prudent and non-discretionary ISAs associated with both filed and analogous jobs as described in sections III and IV below.

The revenue recovered through the Initial ICM Rate Rider for this segment did not sufficiently cover the revenue requirement of all necessary and prudent work performed as part of this project segment. Revenue requirement associated with the ISAs that were not sufficiently funded through the Initial ICM Rate Rider remain to be recovered through the ICM True-Up Rate Rider.[1]

II SEGMENT OVERVIEW

The primary driver for the proposed work in the Underground Infrastructure Segment was reliability, as the direct-buried cables represented about half of all underground system outages, and showed an increasing trend in sustained interruptions per kilometer of the installed asset. In a similar manner, the air-insulated pad-mounted switches had exhibited a rising trend in failures over the past decade. The impact of switch failures was further amplified by the fact that they were usually connected to several feeder trunk circuits, with a typical outage affecting as many as 1,400 customers for an average duration of 50 minutes.

Toronto Hydro proposed to replace the existing assets with new standard assets that would mitigate the specific failure characteristics of the legacy direct-buried circuits. In the case of direct-buried XLPE, the moisture from the surrounding soil had contributed to accelerated hydrothermal aging, leading to a deterioration of the insulation and eventual failure as contaminants interacted with the energized cable. Toronto Hydro proposed to replace these legacy cables with concrete-encased TR-XLPE cables, which offer superior protection from environmental degradation over the asset lifecycle compared to the alternatives of cable

[1] See [cite] for a detailed calculation of the ICM True-Up Rate Rider, which accounts for the timing of ISAs and the amount of ICM-eligible ISAs that were dropped below the ICM Materiality Threshold.

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rejuvenation/splicing or direct-buried TR-XLPE cables, both of which would leave the cable exposed to moisture contained in the soil. Concrete-encased cable conduits are also preferable for outage restoration, as the cost and time to rectify a failed cable housed in a protective duct are considerably lower than those of the other alternatives.

A secondary driver for this segment was safety. Legacy air-insulated pad-mounted switches had an open-air design that allowed for easy accumulation of external contaminants and moisture in the switching compartment, leading to corrosion and instances of premature failure. Their live-front design created a risk of flashovers as assets failed, which presented a significant safety risk for Toronto Hydro staff during outage restoration efforts and regular maintenance. To replace these switches, Toronto Hydro proposed to install SF_6-insulated switches where all electrical components are completely sealed within a dielectric medium, offering optimal protection against the ingress of foreign substances and enhanced safety.

This segment was geographically based, with jobs targeting replacement of all assets addressed by this segment in a particular area. The majority of jobs filed within the Underground Infrastructure segment targeted the assets of a single feeder, identified on the basis of analysis of reliability statistics, failure modes, safety incidents and asset performance. In all cases, the direct buried cable and the air-insulated pad-mounted switches were proposed to be replaced concurrently to maximize the efficiency of intervention efforts and provide a comprehensive solution to all equipment performance issues. A number of jobs also proposed to replace non-standard, non-switchable submersible transformers with the current standard design models used by the utility. The proposed transformer replacements were developed based on asset condition and significant contribution to outage frequency due to the multi-taps installed on these units.

Toronto Hydro filed 172 discrete jobs to address anticipated reliability, safety and operational efficiency concerns in this segment during the 2012-2014 ICM period. The utility anticipated that these jobs would complete or in progress by the end of the ICM period.

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III 2012-2014 ACCOMPLISHMENTS

Table 1 summarizes the variance between the forecast ISAs and the actual ISAs over the ICM period. Toronto Hydro put into service $55.6 million more than forecasted. While ISAs in 2012 were lower than forecast, higher than forecast additions in both 2013 and 2014 produced the additional in-service amount. Higher than forecast ISAs in this segment are the result of both job-level variances and the addition of a number of analogous jobs that Toronto Hydro determined to be necessary in light of the equipment's performance, condition, and other considerations described below.

Table 1: Forecast vs. Actual In-service Additions

	Forecast ISAs				Actual ISAs				Variance
	2012	2013	2014	Total	2012	2013	2014	Total	Total
ISAs ($M)	12.7	51.9	59.8	**124.4**	9.7	66.8	103.5	**180.0**	**55.6**

Table 2 summarizes the job-level accomplishments for this segment during the ICM period. The vast majority of the originally forecasted jobs (159, or 92%) were completed or in progress by the end of 2014. The utility cancelled one job due to a conflict with the Eglinton LRT project. Twelve other jobs were deferred to the 2015-2019 period either in light of scheduling conflicts with third-parties (e.g. unforeseen road moratoriums or coordination with major transit projects) or to enable the attainment of other analogous jobs that were identified as more critical during the course of the ICM period. As shown in Table 2, Toronto Hydro added 18 of these priority jobs, all of which were completed in the period.

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Table 2: 2012-2014 Job-level Accomplishments

Segment Jobs Breakdown	Number of Jobs
Total Forecasted Jobs	**172**
Less: Deferred or Canceled Jobs	(13)
Add: Analogous Jobs	18
Total Segment Jobs	**177**
Less: In Progress Jobs	(37)
Total Jobs with ISAs	**140**
Breakdown of Total Jobs with ISAs	**Number of Jobs**
Completed Jobs	129
Partially Completed Jobs	11
Total Jobs with ISAs	**140**

The primary considerations driving Toronto Hydro's decision to complete the analogous jobs were:

- reliability performance of aging equipment (with most affected feeders experiencing multiple equipment-related interruptions for a number of consecutive years);
- irreversible damage or deterioration of assets identified through field inspection; and
- need to expand the capacity of the underground assets and/or install SCADA-operated switches to sustain increasing loading levels and facilitate operational flexibility.

Complete information regarding the investment drivers, scope of work and final costs for all analogous jobs can be found [cite].

IV REVIEW OF VARIANCES

Within the Underground Infrastructure segment, four types of variance causes explain the cost differences between the estimates filed in the ICM Application and the actual cost of the completed jobs. Most variances are due to changes that occurred between the high level estimates filed in the ICM and the detailed design work for the job as discussed in Section 1. Changes that emerged during job execution due to field conditions encountered or construction

requirements were another prominent variance cause as discussed in Section 2. On occasion, jobs changed because of requirements or constraints imposed by third parties such as Hydro One, the City of Toronto, and other utilities as discussed in Section 3. Finally, certain jobs saw cost changes due to differences between the actual amount of cost for road cuts and other centrally accumulated costs and the averages used in preparing high level estimates as explained in Section 4.

1. High Level to Detailed Design Variance

The estimates that underpinned the ICM filing were largely high level planning estimates. The most significant driver of job-level variances in the Underground Infrastructure segment were changes that occurred as jobs moved from these high level planning estimates to detailed designs. As the detailed design work was completed on jobs, changes were made to the labour and materials required to execute them. The changes between the high level estimate and project design usually involved changes in the design configuration required by the actual conditions at the project site or changes in project scope.

The most frequent source of scope change leading to material cost variances was a change in Toronto Hydro's technical design standards with respect to the secondary cables and secondary services that connect customers to the distribution system in neighbourhoods with underground distribution configurations. Prior to the ICM application, Toronto Hydro's technical standard was to reuse the existing directly buried service connection from the customer lot demarcation line to the meter base. As Toronto Hydro ramped up the replacement of direct buried primary underground cables with equipment housed in concrete-encased ducts, the existing service connections, which were typically nearing or beyond end-of-life, often were disturbed and sustained damage that was an unavoidable part of working with the existing legacy direct-buried infrastructure. Toronto Hydro found that even after replacing the direct buried primary cable, faults in the direct buried service connection would continue to require reactive repair and remediation. In light of these developments, and consistent with the 2009 revision of the standard for placing new primary underground cables into concrete-encased

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ducts, Toronto Hydro revised its standard for the manner of construction of secondary cables and services in underground residential rebuilds, requiring that the secondary bus be placed in concrete-encased ducts up to the lot demarcation line and that service cables be placed in direct-buried ducts from the lot line to the meter base. Apart from addressing the emerging issue of service cables being damaged in the process of primary civil work, the utility's decision to adopt a new technical standard was driven by the following considerations:

- enhancing service reliability by replacing the aged infrastructure and placing it in a protective duct;
- execution efficiency by completing all requisite work in the area concurrently;
- reduced intervention timelines for future outage restoration and replacement activities.

Given that the new design standard was not released until late in 2011, some of the earlier cost estimates presented in the Phase 1 filing, which would have been created in the years prior to and including 2011, would not have included the additional costs of labour and material associated with replacing the service connections. The reasoning behind Toronto Hydro's decision to revise the standard and incur these costs was consistent with the rationale for placing the primary circuits into concrete-encased ducts, which the Board found to be the most effective way of replacing the direct-buried cables in the Phase 1 ICM decision. Accordingly, implementing the revised technical standard for the replacement of service wires was a prudent decision that was necessary to achieve the sustainable reliability benefits that are the goal of this infrastructure renewal segment.

By way of example, one job in the area of Starview Drive and Rockbank Crescent was forecast to cost $1.6 million, but due to the change in standard design practice became a $2.2 million job. The additional work identified by the designer involved rebuilding the secondary cables in concrete-encased ducts up to the lot-line, and replacing the end-of-life and direct-buried secondary services serving 102 customers in a high-density neighbourhood.

The extent to which the addition of secondary service rebuilds increased the cost of a given job in this segment was largely dependent on site-specific conditions. For example, in some

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instances the presence of mature trees may have necessitated tunnelling as an alternative to open trenching in order to leave root systems undisturbed, and the need to dig trenches where customers had installed decorative finishes such as interlocking brick significantly increased restoration costs in a number of jobs.

These field conditions, which affect underground construction in particular and are difficult to fully anticipate at the high-level estimating stage, were also a source of variance when constructing primary duct banks. Generally, restoration costs following road cuts and trenching, whether on private property or in the public road allowance, can vary substantially between neighbourhoods and properties and can be difficult to estimate in the absence of detailed field inspections by design and construction personnel.

Other changes in job scope occurred as designers conducted prospective site visits, identifying that additional assets or fewer assets were required to execute the job based on asset condition and configuration. This type of change in project scope as it moves from high level planning estimates to detailed design is typically based on differences between the data available to the engineer at the time of high-level planning and the information gathered through site inspections that occur in conjunction with detailed design preparation. Once such variance occurred as part of a rebuild job near Ingleton Boulevard in Scarborough. The job had been estimated as a $1.2 million job but was reduced to a $0.9 million job when the designer determined that five of the transformers identified for replacement were in good condition and were not of the obsolete non-switchable design. Another example of negative project cost variance driven by scope changes are instances where some replacement work was undertaken on a reactive basis following asset failure, thereby reducing the work requirements for the project.

It should be noted that in the scenarios above, the job as originally scoped has not gone over or under cost, but has in fact expanded to address more assets in need of replacement, in accordance with the core drivers of work in the segment.

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Other instances of scope changes occurred as the control room operators requested certain modifications to project scopes to improve system reliability and operability. These typically entailed requests to install SCADA equipment or load interrupter switches, performing circuit transfers to balance the system loading in particular areas, and/or expanding capacity ratings of specific assets to improve operational flexibility of the system and minimize the impact of future contingencies. Since system controllers review the project scopes at the advanced stages of the design process (where their review can provide the most value), these modifications were not included in the high-level estimates underlying the ICM application. However, given that these modifications are implemented in the course of the work that was found necessary and prudent on its own merit, Toronto Hydro submits that the costs of these modifications are themselves prudent in light of the system operation benefits produced, and the efficiency gained from performing this work concurrently with the core project activities.

Another source of scope changes was the advancement of the latter phases of a job that were originally planned for construction after the ICM timeframe. This typically occurred where contractors performing civil work on site had additional capabilities and resources to complete the electrical work as well. Advancing the electrical work allowed Toronto Hydro to realize execution efficiencies and avoid future disruptions in the area by completing all requisite work at once. Similar to the replacement of additional assets not originally identified in the high-level estimates, the advancement of latter stages of the required work does not strictly represent a cost overrun relative to the original estimate, as the final costs reflect the additional work that would have been required to complete the project in the future less any efficiency gains by having the work done be crews already on-site.[2]

2. Field Conditions and Execution Requirements

Some variances occurred at the execution stage because site conditions, operational constraints or other factors caused costs to change during construction. The most common scenario

[2] While much less typical, on occasion the electrical phases of a job were deferred, rather than advanced, to make better use of available resources during periods when the weather is suitable for concrete work.

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involved material modifications to account for the particular conditions of each project site and/or equipment targeted for replacement. Given that the segment largely consists of below-grade work, it is often difficult for Toronto Hydro's designers to anticipate potential challenges to the asset positioning and configurations used in the design based on available asset records. As such, a number of job variances, involving both cost increases and decreases, are driven by the modifications to the original designs that only became apparent following the actual commencement of the jobs, after the targeted equipment and its positioning were physically visible to the crews.

The typical modifications involved partial or complete relocation of the ductwork based on the specific location of the existing assets relative to the sidewalk/roadway, non-standard equipment configurations, presence of other utilities' infrastructure, or the design requirements that could not be accommodated within the confines of the existing asset locations. In one such case, the discovery during construction of abandoned utilities and an unforeseen water main made it necessary to increase the depth at which the duct bank would be constructed, raising the cost of the job from $2.3 million to $2.7 million.

Project variances also occur at the execution stage due to the fact that the work was originally costed on the assumption that it would be completed by Toronto Hydro's internal crews, but the projects were ultimately assigned to the external contractors for execution. Unlike the internal construction cost estimates that are based on unburdened work execution rates, the contractor costs charged to the projects are fully burdened, as they are intended to recover all costs incurred by the third-party contractor, including the administrative overhead costs, costs of contractor vehicles and equipment and other related drivers, which are typically accounted for separately at Toronto Hydro (e.g. through OM&A costs).[3] In a similar manner, cost variances between projects assumed to be constructed "in house", which are delivered by third-party

[3] The issue of cost comparisons between Toronto Hydro's internal and 3rd party construction costs was explored in depth during the 2015-2019 CIR application. For an adjusted "like-for-like" comparison of contractor costs to fully burdened internal Toronto Hydro cost please see Interrogatory Response 2B-CUPE-02.

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contractors also attract the incremental costs of mandatory construction audit performed by an independent assessor, which cannot be reliably predicted at the high-level scope estimation.

3. Third Party Requirements and Constraints

Toronto Hydro's ability to work in road ways and on customer premises is often constrained by the City of Toronto or customers' requirements. Restrictions placed on construction activities by the City in certain areas required scope changes for Underground Infrastructure jobs. Examples include road cut moratoria that forced Toronto Hydro to re-define job scopes, and specific instructions from the City's planners, such as a denial of request to install above-ground switches, resulting in the need to amend job scopes by including additional cable chambers and ductwork to accommodate below-grade equipment installation. As the municipal permitting process is based on detailed estimates, the specific modifications required by the permitting process were not included as part of the high-level estimates.

4. Variance in Allocated Costs

A number of costs are compiled centrally by Toronto Hydro and then attributed to individual jobs at project closeout. Examples include costs for road cut repairs billed by the City of Toronto and centralized costs for design and engineering services. These costs are then attributed to specific jobs based on the cost and nature of the completed work. Variances can occur when the amount of these allocated costs at close out are greater or less than the average amounts assumed in the high level estimates. Road cut costs exemplify this type of cost in the Underground Infrastructure segment. The actual number of road cuts required and their associated cost can vary significantly from the averages used in the high level estimate and the even from the amounts included in the detailed design depending on actual conditions encountered.

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In several instances allocated costs were the source of some of the most significant percentage variances in the Underground Infrastructure segment. For example, in two jobs the work was largely completed prior to the ICM filing, with only minor remaining portions (less than $20,000) included in the application. Since Toronto Hydro's approach to accounting for allocated costs was to apply a consistent adder based on percentage of the project's costs, the amounts included in the filing for these activities was based only on the small amount of remaining cost included in the application. At project closeout, however, the amounts actually allocated to each of these two jobs were based on the jobs' entire scope of work. These amounts were far more than those that had been previously included, creating a major cost variance. It should be noted that these variances do not reflect major changes to job costs but are merely a consequence of the manner in which Toronto Hydro's allocated costs interacted with several jobs that spanned the 2011 to 2012 timeframe.

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I INTRODUCTION

1. Segment Description

Toronto Hydro uses Paper Insulated Lead Covered (PILC) cables extensively in the downtown core to connect commercial and industrial customers to either 13.8 kV terminal stations or 4.16 kV substations. Historically, Toronto Hydro's normal operating procedure had been to work around energized and leaking PILC cables. Safety considerations led Toronto Hydro to revise its work practices and it now considers leaking PILC cables defective, posing safety hazards to workers and the environment. Leaking PILC cables have a high likelihood of failure, including electrical flashovers that are a significant safety risks to personnel working in the chamber. Leaks occur along the cable itself or on the lead sleeves encapsulating cable splices. Work in this segment included repairing leaking cables that presented significant potential safety and reliability risks. Cables that had deteriorated beyond repair were replaced with a new section running to the adjacent cable chamber. Work in this segment also included remedying unsafe cable chamber congestion by placing and racking cables in such a way that the center of the cable chamber remained clear of cable for safe access and egress.

2. OEB Decision

The OEB found that the nature of the work in the PILC Piece Outs and Leakers segment, as filed, qualified for ICM treatment. Having found that the work was both necessary and prudent, the OEB made no reduction to Toronto Hydro's funding request. Pending the revenue reconciliation process, the OEB provided for interim funding of this work through an Initial ICM Rate Rider in the Phase I Decisions, which was based on Toronto Hydro's forecast of approximately $3.4 million of in-service additions (ISAs) in 2012 and 2013. Toronto Hydro forecasted an additional $2.1 million in 2014 ISAs related to work proposed in Phase I of EB-2012-0064 (i.e. jobs that were forecasted to commence in 2012 or 2013), but these amounts did not inform the Initial ICM Rate Rider. The OEB also approved an additional $1.4 million in ISAs that Toronto

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Hydro forecasted in Phase II for jobs commencing in 2014, but these were not funded through the Initial ICM Rate Rider or any rate adder.

As detailed below, Toronto Hydro's actual ISAs in this segment total about $2.8 million, which is $4.1 million less than the overall forecasted amounts in this segment and $0.6 million less than the amounts on which the Initial ICM Rate Rider was based. To the extent that the Initial Rate Rider for this segment recovered revenue in excess of the actual three-year revenue requirement, that surplus amount is offset against any additional recoveries in the ICM True-up Rate Rider calculation.[1]

II SEGMENT OVERVIEW

Toronto Hydro included this segment in the ICM filing to address the potential safety and reliability risks associated with damaged equipment. With age and load cycling, the lead covering on aged PILC equipment had become cracked and developed multiple oil leaks, which created the risk of electrical contact hazards, faults and arc flashes.

Furthermore, the system had grown and additional circuits had been added on the existing rights of way, resulting in multiple cable chambers becoming congested beyond the point where proper clearances from energized equipment could be maintained to ensure safe working conditions. To address the congested cable chambers, Toronto Hydro crews extended the length of cables within the chambers by splicing additional cable segments to allow for proper racking along the walls of the chamber. At times, this work also required addressing the size and/or structural integrity of the cable chamber itself. Where feasible from the system operation perspective, this work required that all cables in the chamber be de-energized as the splicing and racking took place. This significantly limited the available times of the day and year where such work could be performed without causing extensive customer outages, and underscored

[1] See [cite] for a detailed calculation of the ICM True-Up Rate Rider, which accounts for the timing of ISAs and the amount of ICM-eligible ISAs that were dropped below the ICM Materiality Threshold.

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the importance of doing the work proactively, rather than on a reactive or an emergency basis where extensive customer outages may be unavoidable and reactive labour costs could substantially increase the cost of completing the work.

Toronto Hydro filed 14 discrete jobs to repair and replace PILC cables during the ICM period, with an estimated ISAs of $6.9 million. These jobs were forecasted to be completed or in progress by the end of the ICM period.

III 2012-2014 ACCOMPLISHMENTS

Table 1 summarizes the variance between forecast ISAs and the actual ISAs over the ICM period. Toronto Hydro put into service $4.1 million less than forecasted. As described further below, this was largely due to project postponement as a result of limited crew resources due to competing projects deemed higher priority, system operation restrictions that significantly reduced the available intervention opportunities, and delays associated with the involvement of third parties.

Table 1: Forecast vs. Actual In-service Additions

	Forecast ISAs				Actual ISAs				Variance
	2012	2013	2014	Total	2012	2013	2014	Total	Total
ISAs ($M)	0.0	3.3	3.5	**6.9**	-	0.13	2.7	**2.8**	**(4.1)**

Table 2 summarizes the job-level accomplishments for this segment during the ICM period. Twelve of the 14 filed jobs were completed or in progress by the end of 2014. Of the remaining two forecasted jobs, one of the jobs was completed reactively due to equipment failure, resulting in cancellation of the redundant planned work. The remaining job was deferred to 2016 due to resource constraints. Toronto Hydro also initiated the civil phase one analogous job in this segment. This job remained in progress, with no ISAs, as of the beginning of 2015.

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Table 2: 2012-2014 Job-level Accomplishments

Segment Jobs Breakdown	Number of Jobs
Total Forecasted Jobs	**14**
Less: Deferred or Canceled Jobs	(2)
Add: Analogous Jobs	1
Total Segment Jobs	**13**
Less: In Progress Jobs	(8)
Total Jobs with ISAs	**5**
Breakdown of Total Jobs with ISAs	**Number of Jobs**
Completed Jobs	3
Partially Completed Jobs	2
Total Jobs with ISAs	**5**

As explained in the ICM Phase 1 Application, Toronto Hydro must address substantial constraints when scheduling and executing PILC jobs. These constraints are generally related to feeder availability and the difficulty in working on the underground system in the city's dense urban core. For example, work must be scheduled for evenings or weekends during shoulder seasons when loading is lower in order to accommodate switching customers onto alternate feeders, and is subject to postponements when forecast system loading conditions do not materialize. Moreover, jobs were affected by Toronto Hydro's prioritization across the work program, where other jobs targeting the same feeders or requiring the crews with the same skillsets (e.g. Copeland TS, stations support, customer-initiated work) were deemed more urgent.

Toronto Hydro also notes that two "In Progress" jobs were in fact completed by the end of the 2014, but had not been placed in service by the end of 2014 due to the timing of Toronto Hydro's financial closeout processes.

IV REVIEW OF VARIANCES

ICM Project True-up | B2 – PILC Piece Outs and Leakers

All three of the forecasted and completed jobs were within approximately $70,000 of the forecast cost. In general, Toronto Hydro expects its final costs to vary to some extent from its high-level estimates, which are based on high-level information and are intended for program budgeting purposes only.

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I INTRODUCTION

1. Segment Description

Toronto Hydro proposed the Handwell Replacement segment to protect the public from the potential safety risk posed by electric shocks from contact voltage. Handwells are electrical junction boxes embedded in sidewalks or other pavement in which the connection is made between the secondary distribution system and street lighting or unmetered scattered loads. Owing to their location, which exposes them to corrosion from salt and water and construction damage, the handwells themselves may become a source of contact voltage and damage to the wires and connections within them may allow other equipment, such as streetlight poles to become energized. Toronto Hydro proposed to replace existing handwells with non-conductive handwells and lids.

2. OEB Decision

The OEB found that the nature of the work in the Handwell Replacement segment, as filed, qualified for ICM treatment.[1] Having found that the work was both necessary and prudent, the Board made no reductions to Toronto Hydro's funding request.[2] Pending the revenue reconciliation process, the OEB provided for interim funding of this work through an ICM rate rider in the Phase I Decisions, which was based on Toronto Hydro's forecasts of approximately $23.8 million of in-service additions (ISAs) in 2012 and 2013. Toronto Hydro forecasted an additional $6.5 million in 2014 ISAs related to work proposed in Phase I of EB-2012-0064 (i.e. jobs that were forecasted to commence in 2012 or 2013), but these amounts did not inform the initial ICM Rate Rider. The OEB also approved an additional $7.2 million in ISAs that Toronto Hydro forecasted in Phase II for jobs commencing in 2014, but these were not funded through the initial ICM Rate Rider or any rate adder.

[1] EB-2012-0064, Ontario Energy Board, Partial Decision and Order (April 2, 2013), page 27.
[2] Ibid.

As detailed below, Toronto Hydro's actual ISAs in this segment total about $36.4 million, which is $1.1 million less than the overall forecasted amount for this segment but $12.6 million more than the amounts on which the initial ICM Rate Rider was based. Revenue requirement associated with the ISAs that were not sufficiently funded through the Initial ICM Rate Rider for this segment remain to be recovered through the ICM True-Up Rate Rider.[3]

II SEGMENT OVERVIEW

Handwells are among the top three structures with the highest number of contact voltage hits as assessed by mobile scanning inspections. This poses a potential safety risk of electric shock to the public. Common causes include damage from the elements, as handwells are exposed to harsh environmental conditions, third party damage whenever the sidewalk is rebuilt or repaired, degradation of cable insulation, and substandard installation of connections.

The Handwell Replacement program was originally proposed following the Level III emergency declared in 2009 after members of the public and household pets received shocks from energized equipment. Existing handwells were replaced with new non-conductive handwells and lids.

By the end of 2011, Toronto Hydro had replaced almost 5,600 existing handwells with new, non-conducting composite handwells. In Phase 1 of the ICM application, Toronto Hydro proposed to replace approximately 4,665 units in 2012 and 2013. In Phase 2 of the ICM application, Toronto Hydro proposed an additional 2,500 units for replacement. Toronto Hydro estimated these replacement projects, taken together, would result in replacement of approximately 90% of the total population of handwells.

[3] See [cite] for a detailed calculation of the ICM True-Up Rate Rider, which accounts for the timing of ISAs and the amount of ICM-eligible ISAs that were dropped below the ICM Materiality Threshold.

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Toronto Hydro forecasted approximately $37.5 million of in-service additions for this program during the three-year ICM period.

III 2012-2014 ACCOMPLISHMENTS

Table 1 summarizes the variance between the forecast in-service additions and the actual in-service additions that took place over the ICM period. Toronto Hydro replaced, remediated or abandoned 7,264 handwells with associated in-service amounts of $36.4 million.

Table 1: Forecast In-service Additions vs. Actual In-service Additions

	Forecast ISAs				Actual ISAs				Variance
	2012	2013	2014	Total	2012	2013	2014	Total	Total
ISAs ($M)	6.1	17.7	13.7	**37.5**	5.4	16.6	14.4	**36.4**	**(1.1)**

Actual in-service additions were $1.1 million lower than forecasted. The reasons for variance are discussed in the following section.

The small number of jobs that Toronto Hydro filed in this segment were intended as 'bucket' estimates to capture high volumes of identical discrete units forecasted for replacement. As this is a units-based segment, Toronto Hydro has provided a discussion of accomplishments at the segment level as opposed to the jobs level.

IV REVIEW OF VARIANCES

Toronto Hydro addressed a greater number of units than forecasted while spending $1.1 million less than forecasted on an in-service additions basis. The primary reason for this variance in unit cost was due to requirements discovered during the detailed design phase that could not have been known until on-site inspections were conducted. For example, at the high-level budgeting phase, Toronto Hydro planners assume that all handwells will require full replacement. However, as explained in Phase 2 of the ICM application, if the designer discovers that the

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handwell has been abandoned (i.e. no street lighting assets are connected), Toronto Hydro will remove the handwell instead of implementing the more expensive replacement option.[4] On average, over the 2012-2014 timeframe the handwell removals accounted for about 10% of all handwells addressed through this segment.

Toronto Hydro also discovered a number of additional handwells during field inspections that were not reflected in asset records. In many instances these handwells were in areas under a City road moratorium and could not be replaced in the short-term. In these instances, Toronto Hydro performed a less expensive partial remediation by replacing the internal connections and handwell lids only. For clarity, it is Toronto Hydro's intent to return to the areas where preliminary work took place and complete the remaining elements of replacement work, once necessary intervention activities are permissible.

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[4] EB-2012-0064, Tab 10G, Schedule 2-9

I. INTRODUCTION

1. Segment Description

Toronto Hydro proposed the Overhead Infrastructure segment to replace aged, deteriorated and non-standard equipment including wood poles, overhead conductor, Completely Self-Protected (CSP) transformers, porcelain switches and hardware and open bus secondary lines. This work was necessary to address safety, reliability and system efficiency issues. The aged, poor condition and non-standard equipment addressed in this segment posed safety risks to Toronto Hydro crews and the public, significantly contributed to decreasing reliability in the overhead system and limited Toronto Hydro's ability to operate the system.

2. OEB Decision

The OEB found that the nature of the work in the Overhead Infrastructure segment, as filed, qualified for ICM treatment. Having found that the work was both necessary and prudent, the OEB made no reduction to Toronto Hydro's funding request. Pending the revenue reconciliation process, the OEB provided for interim funding of this work through an Initial ICM Rate Rider in the Phase I Decisions, which was based on Toronto Hydro's forecast of approximately $43.1 million of in-service additions (ISAs) in 2012 and 2013. Toronto Hydro forecasted an additional $21.9 million in 2014 ISAs related to work proposed in Phase I of EB-2012-0064 (i.e. jobs that were forecasted to commence in 2012 or 2013, but not come into service until 2014), but these amounts did not inform the Initial ICM Rate Rider.

As detailed below, Toronto Hydro's actual ISAs in this segment total about $83.7 million. In addition to the forecasted ISAs of approximately $65.0 million from Phase 1, this total includes:

- approximately $14.8 million in ISAs that Toronto Hydro forecasted in Phase II for jobs commencing in 2014, which were approved in the Phase II Decision but not funded through the Initial ICM Rate Rider (or any other rate adder); and

- about $4.0 million in additional prudent and non-discretionary ISAs associated with both filed and analogous jobs as described below in sections III and IV.

The revenue recovered through the Initial ICM Rate Rider for this segment did not sufficiently cover the revenue requirement of all necessary and prudent work performed as part of this project segment. Revenue requirement associated with the ISAs that were not sufficiently funded through the Initial ICM Rate Rider remain to be recovered through the ICM True-Up Rate Rider.[1]

II. SEGMENT OVERVIEW

The primary drivers for the proposed work in the Overhead Infrastructure segment were safety and reliability. Wood poles in poor condition, CSP transformers and legacy porcelain switches and hardware all presented documented safety hazards to Toronto Hydro crews and the public. These hazards included the risk of falling wood poles, CSP transformers placing workers at risk due to their lacking external fuses and broken porcelain equipment sending shards to the ground.[2]

In terms of reliability, Defective Overhead Equipment accounted for about 15 percent of system-wide System Average Interruption Frequency Index (SAIFI) and about 14 percent of system wide System Average Interruption Duration Index (SAIDI) in 2011. “From a SAIFI perspective, overhead outages account for 46 percent, 56 percent and 39 percent of the Defective Equipment-related outages in 2009, 2010 and 2011, respectively. In terms of SAIDI, overhead outages account for 41 percent, 44 percent and 34 percent of the Defective Equipment-related outages for 2008, 2009 and 2010, respectively.”[3]

[1] See [cite] for a detailed calculation of the ICM True-Up Rate Rider, which accounts for the timing of ISAs and the amount of ICM-eligible ISAs that were dropped below the ICM Materiality Threshold.
[2] For further details of these hazards and pictures see EB-2012-0064, Tab 4, Schedule B4, pages 1-9.
[3] EB-2012-0064, Tab 4, Schedule B4, pages 12-13.

To address these safety and reliability issues, Toronto Hydro undertook area-based jobs that replaced aged and obsolete overhead equipment in locations throughout Toronto. The areas were selected because they contained significant numbers of the equipment types discussed above requiring replacement due to age, condition and obsolescence. Job areas were also selected to facilitate the retirement of obsolete 4 kV substations by rebuilding the areas they served to permit connection to 13.8 or 27.6 kV substations. In each area, Toronto Hydro addressed all of the overhead equipment types requiring replacement at the same time. This approach allowed Toronto Hydro to use its crews and equipment most productively by addressing the equipment issues in an area in a coordinated fashion. This approach also minimized job set-up time and disruption in the area where the jobs were undertaken.

Toronto Hydro forecasted 112 discrete jobs to address anticipated reliability, safety and reliability concerns in this segment during 2012-2014 ICM period. These jobs were expected to be completed or in progress by the end of the ICM period.

III. 2012-2014 ACCOMPLISHMENTS

Table 1 summarizes the variance between the forecast ISAs and the actual ISAs over the ICM period. Over the three ICM years, Toronto Hydro completed $83.7 million in ISAs, $4.0 million (or 5%) above the forecast amount for this segment. Higher than forecasted ISAs in this segment were a result of both job-level variances and the addition of several analogous jobs to the work program. These analogous jobs were urgent and necessary to address equipment performance, asset condition, and other considerations described below.

Table 1: Forecast vs. Actual In-service Additions

	Forecast ISAs				Actual ISAs				Variance
	2012	2013	2014	Total	2012	2013	2014	Total	Total
ISAs ($M)	4.0	39.1	36.7	**79.7**	0.5	33.1	50.2	**83.7**	**4.0**

Table 2 summarizes the job-level accomplishments for this segment during the ICM period. The vast majority of the originally forecasted jobs (107 out of 112, or almost 96%) were completed or in progress by the end of 2014. Five jobs in this segment were deferred or cancelled because of resource constraints, including crew availability and switching capacity, or due to their being combined with other related jobs. Cancellation of these jobs provided some of the resources that were used to complete other analogous jobs. As shown in Table 2, Toronto Hydro completed 10 analogous jobs in the period.

Table 2: 2012-2014 Job-level Accomplishments

Segment Jobs Breakdown	Number of Jobs
Total Forecasted Jobs	**112**
Less: Deferred or Canceled Jobs	(5)
Add: Analogous Jobs	10
Total Segment Jobs	**117**
Less: In Progress Jobs	(27)
Total Jobs with ISAs	**90**
Breakdown of Total Jobs with ISAs	**Number of Jobs**
Completed Jobs	81
Partially Completed Jobs	9
Total Jobs with ISAs	**90**

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Two of the analogous jobs were, in fact, included in the original Phase 1 ICM application, but were subsequently deferred to Phase 2 of the application at the time of Toronto Hydro's evidentiary update in October 2012. Despite being deferred to 2014 in the October 2012 forecast, these priority projects were ultimately executed during the Phase 1 timeframe (i.e. 2013) to maximize the utilization of available resources. As such, the funding requirements for these projects (i.e. $1.4 million in ISAs) were not captured in either of the ICM application phases.

The remaining eight analogous jobs were completed as urgent capital work given the need to execute them quickly, driven by such considerations as the reliability performance of the affected feeders (e.g. projects on the Worst Performing Feeder (FESI-7) list), voltage conversion of the surrounding electrical areas that necessitated concurrent conversion of the project areas themselves, or identified equipment deficiencies (e.g. irreversible structural damage of the wood poles, insufficient guying, etc.) that posed immediate safety and reliability risks and mandated replacement without delay.

Complete information regarding the investment drivers, scope of work and final costs for all analogous jobs can be found [cite analogous jobs table].

IV. REVIEW OF VARIANCES

Differences between the cost estimates filed in the ICM application and the actual costs of the completed jobs were generally due to four variance causes. The vast majority of variances were due to changes that occurred between the high-level estimates filed in the ICM and the detailed design work for the job as discussed below in Section 1. Another reason for variance was that was less common was changes that emerged during job execution due to filed conditions encountered or construction requirements as covered below in Section 2. Certain jobs saw costs changes due to differences between the actual amounts for design, road cuts and other centrally accumulated costs, and the averages used in preparing high level estimates as

explained below in Section 3. Finally, in a few cases variances were due to errors in the high level estimates or the ICM filing as discussed below in Section 4.

1. High Level to Detailed Design Variance

The estimates that underpinned the ICM filing were largely high level planning estimates. The most significant driver of job-level variances were changes that occurred as jobs moved from these high level planning estimate to detailed designs. As the detailed design work was completed on jobs, changes were made to the labour and materials required to execute them. The changes between the high level estimate and project design usually involved changes in the project scope or the design required by the actual conditions at the project site.

Project scope changes occurred as designers conducted prospective site visits, identifying additional assets in need of replacement based on their condition, physical proximity to and electrical interdependence with the assets within the original scope, and opportunities for prudent reliability improvements through reconfiguration. In a few instances, the scope of a project decreased when some assets were found to be in better condition than anticipated, which led to a decrease in the number of poles and transformers to be replaced.

Scope changes resulting from detailed designs based on field inspections were significant in some cases. For example, one job had a 300% variance because significantly more poles and transformers were identified for replacement as a result of detailed inspections. In this job, the cumulative effect of additional poor condition assets and detailed design requirements significantly increased the number of assets included in the job. This was not a case of the job cost as originally scoped increasing, rather the job was expanded to address significantly more assets in need of replacement and in accordance with the core drivers of work in the segment.

These types of changes are expected as jobs mature. When creating the high-level estimates, engineers rely primarily on existing field patrol and asset condition information and

geographical information system data to approximate the number of assets that require replacement in an overhead area and the cost of building the replacement assets. The information that the engineer uses is a snapshot in time and can evolve significantly between the time when the information was originally gathered and detailed job design. Field personnel who inspect the job site prior to design and construction generally perform a more thorough and detailed assessment of pole and other asset condition, and through on-site inspection and testing will often find that greater or fewer assets need to be addressed in coordination with the already planned work. Furthermore, while the engineer is aware of standard design practices and applies them to every feasible extent in the high-level estimate, it is not until the detailed design stage that these standards are fully implemented in the creation of a new overhead plant design, in consultation with construction field supervisors. For example, it is not until the point where design and construction personnel have determined the exact location for the new poles that they are then be able to assess specific needs related to the tensile forces placed on the overhead equipment. One job in the Lawrence and Keele area experienced a significant variance (about 69%) in part due to this type of design consideration. Based on high-level information, the engineer assumed that the existing secondary lines and services could be maintained and therefore did not include any secondary transfer costs in the job forecast. However, the designer determined that requirements for pole placement for the new overhead plant were such that reusing the existing secondary lines would have resulted in the majority of secondary service drops occurring mid-span (i.e. connected to the secondary bus halfway between two poles instead of connected to the poles themselves). In accordance with standard design practices, this was determined to be unacceptable as it would have resulted in high levels of tension on the secondary bus. It was therefore necessary to replace the secondary service drops to customers for over 170 transformer locations.

Scope changes between the high-level estimate and the design also occurred where planners or designers determined that certain elements of one job would be better addressed as a part of another ICM job, due to work execution efficiency considerations, timing of projects, or additional analysis that was determined to be necessary to address particularly complex asset

installations. As these scope transfers occurred between different ICM jobs, they produced variances in the relevant individual jobs, but did not impact the overall segment variance (subject to other potential variance drivers) as a reduction in the cost of one job, was typically offset by an equivalent increase in another. Where scope was transferred to jobs coming into service outside the ICM period, however, the transfer would contribute to the overall ICM segment variance.

2. **Field Conditions and Execution Requirements**

Some variances occurred at the execution stage because of site conditions, operational constraints or other factors. For example, during execution of a switch replacement job near O'Conner Drive and Northline Road, Toronto Hydro determined that to accommodate complex switching requirements and to mitigate interruptions to a seniors home, part of the work needed to be performed on weekends, resulting in increased cost of labour and costs related to the rental of a generator. The cost of this job increased from approximately $375,000 to about $500,000. In general, whereas high-level estimates may have assumed that scheduled customer outages (which require comparatively small amounts of switching work), would be used, during execution Toronto Hydro may attempt reduce customer impacts by using more labour-intensive switching arrangements.

Some 2014 jobs had variances that were not in fact variances in the overall job cost but were merely the result of changes in scheduling relative to the estimate filed in the Phase II application. To illustrate, one job had a significant variance of 172%, but in its totality was only about 30% over the forecast cost. The major reason for variance was the fact that, in the financial tables that were used to calculate forecasted ISAs for 2014, Toronto Hydro had only filed the portion of the job that was forecast to be spent in 2014, with the remainder to be spent in 2015. The job was eventually rescheduled and completed in its entirety in 2014, which resulted in the full cost of the job being placed into service during the ICM period.

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3. Variance in Allocated Cost

A number of costs are compiled centrally by Toronto Hydro and then attributed to individual jobs at project closeout. Examples include costs for road cut repairs billed by the City of Toronto and centralized costs for design and engineering services. These costs are then attributed to specific jobs based on the cost and nature of the completed work. Variances can occur when the amount of these allocated costs at close out are greater or less than the average amounts assumed in the high level estimates.

In a few jobs in the Overhead Infrastructure segment allocated costs were materially higher than the assumed amounts. Design costs incurred to prepare the final design can vary from averages due to the need for redesign following site visits, or the need for greater design work if the scope of the job expands. Road cut costs associated with pole and riser work can also be higher than the averages used in the high level estimate depending on actual conditions encountered.

4. Errors

In several instances, variances are attributable to errors in the original estimates or in the ICM filing. Two notable extreme variances were the result of these administrative errors. For example, one estimate shows a job as being millions of percent overspent. Toronto Hydro identified that a clerical error had resulted in the inclusion of a $1 estimate for this job when calculating the forecasted ISAs by segment in the Phase 2 filing.

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I. INTRODUCTION

1. Segment Description

Toronto Hydro proposed the Rear Lot Construction segment to address the critical need to move distribution service currently located in customers' backyards to the street, for reasons of safety, reliability and cost. This work involved constructing front lot underground service to current standards, connecting customers to it, and removing the electrical distribution equipment located in the rear lots. Toronto Hydro determined to replace rear lot equipment because of its age, condition and the difficulty and cost of accessing it for repairs, which leads to longer outages for customers and higher repair costs. Typical outage restoration times for rear lot plant outages are more than twice those of front lot outages.

2. OEB Decision

The OEB found that the nature of the work in the Rear Lot Construction segment, as filed, qualified for ICM treatment. Having found that the work was both necessary and prudent, the OEB made no reduction to Toronto Hydro's funding request. Pending the revenue reconciliation process, the OEB provided for interim funding of this work through an Initial ICM Rate Rider in the Phase I Decisions, which was based on Toronto Hydro's forecast of approximately $34.3 million of in-service additions (ISAs) in 2012 and 2013. Toronto Hydro forecasted an additional $11.5 million in 2014 ISAs related to work proposed in Phase I of EB-2012-0064 (i.e. jobs that were forecasted to commence in 2012 or 2013), but these amounts did not inform the Initial ICM Rate Rider

As detailed below, Toronto Hydro's actual ISAs in this segment total about $58.0 million. In addition to the forecasted ISAs of $45.8 million from Phase I, this amount includes:

- $5.0 million in ISAs that Toronto Hydro forecasted in Phase II for jobs commencing in 2014, which were approved in the Phase II Decision but not funded through the Initial ICM Rate Rider (or any other rate adder); and

- about $7.2 million in additional prudent and non-discretionary ISAs associated with both forecasted and analogous jobs as described in sections III and IV below.

The revenue recovered through the Initial ICM Rate Rider for this segment did not sufficiently cover the revenue requirement of all necessary and prudent work performed as part of this project segment. The revenue requirement associated with the ISAs that were not sufficiently funded through the Initial ICM Rate Rider remains to be recovered through the ICM True-Up Rate Rider.[1]

II. SEGMENET OVERVIEW

The primary drivers for the proposed work in the Rear Lot Construction segment were safety and reliability. There are many rear lot distribution assets which are past their useful service lives, in very poor condition and surrounded by heavy vegetation which is challenging and expensive to manage.[2] Toronto Hydro crews at times are required to work on poles that have rotted at the bases. These poles can be unstable and may impose safety risks. Securing these poles, to the extent possible, prior to beginning restoration work extends outages. Also, the typically limited access to rear lots precludes the use of mechanical equipment to make repairs, requiring crews to carry replacement poles, transformers and conductor into the rear lot, all of which increases safety risks, extends restoration time and leads to higher repair costs.

Energized conductors and poles with associated equipment are often in close proximity to residential structures and backyard activities, imposing potential safety risks to the public. These risks have worsened over time, as customers have constructed pools, sheds and other structures near the legacy distribution infrastructure.

[1] See [cite] for a detailed calculation of the ICM True-Up Rate Rider, which accounts for the timing of ISAs and the amount of ICM-eligible ISAs that were dropped below the ICM Materiality Threshold.
[2] For further details of these hazards and pictures see EB-2012-0064, Tab 4, Schedule B6, pages 16-28.

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To address these safety and reliability issues, Toronto Hydro proposed constructing new underground service to current standards at the street, connecting customers to it and removing the existing equipment from rear lots. Toronto Hydro forecasted 31 discrete jobs to accomplish the work in this segment during 2012-2014 ICM period. These jobs were expected to be completed or in progress by the end of the ICM period.

III. 2012-2014 ACCOMPLISHMENTS

Table 1 summarizes the variance between the forecast ISAs and the actual ISAs over the ICM period. Toronto Hydro put into service $7.2 million more than forecasted. While ISAs in 2012 were lower than forecasted, higher than forecast additions in both 2013 and 2014 produced the additional in-service amount. Higher than forecast ISAs in this segment are the result of both job-level variances and the addition of two analogous jobs that Toronto Hydro determined to be necessary in light of the equipment's performance, condition, and other considerations described below.

Table 1: Forecast vs. Actual Segment In-service Additions

	Forecast				Actuals				Variance
	2012	2013	2014	Total	2012	2013	2014	Total	Total
ISAs ($M)	7.3	27.0	16.5	**50.8**	3.0	28.6	26.4	**58.0**	**7.2**

Table 2 summarizes the job-level accomplishments for this segment during the ICM period. All but one of the forecasted jobs in this segment were completed or in progress by the end of 2014, with 26 jobs fully attained. One job was deferred to 2015 in order to better utilize available resources.

Table 2: 2012-2014 Job-level Accomplishments

Segment Jobs Breakdown	Number of Jobs
Total Forecasted Jobs	**31**
Less: Deferred or Cancelled Jobs	(1)
Add: Analogous Jobs	2
Total Segment Jobs	**32**
Less: In Progress Jobs	(3)
Total Jobs with ISAs	**29**
Breakdown of Total Jobs with ISAs	**Number of Jobs**
Completed Jobs	28
Partially Completed Jobs	1
Total Jobs with ISAs	**29**

The primary consideration driving Toronto Hydro's decision to complete the two analogous jobs was the urgent need to convert rear lot customers that were supplied from three aging and obsolete 4 kV stations. Toronto Hydro prioritized these stations for decommissioning in order to avoid anticipated maintenance and refurbishment costs. Conversion of the rear lot load addressed by these two jobs enabled decommissioning by ensuring that the stations would have enough spare capacity to avoid lengthy outages during contingency situations. These jobs addressed aging and obsolete rear lot plant and were therefore categorically identical to other jobs in the Rear Lot Construction segment. Complete information regarding the investment drivers, scope of work and final costs for all analogous jobs can be found [cite analogous jobs table].

IV. REVIEW OF VARIANCES

Of the 26 forecasted and competed jobs in the Rear Lot Construction segment, 11 had negative variances while the remainder had positive variances. Three types of variance causes explain the cost differences between the estimates filed in the ICM application and the actual cost of the completed jobs for those jobs with significant differences. Nearly all variances were due to changes that occurred between the high level estimates filed in the ICM and the detailed design work for the job as discussed in Section 1 below. In one instance, a job changed because of

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requirements or constraints imposed by City of Toronto, as described in Section 2. Finally, in one case a variance was due to an error the ICM as discussed in Section 3.

1. High Level to Detailed Design Variance

The estimates that underpinned the ICM filing were largely high level planning estimates. The most significant driver of job-level variances were changes that occurred as jobs moved from these high level planning estimates to detailed designs. As the detailed design work was completed on jobs, changes were made to the labour and materials required to execute them. The changes between the high level estimate and project design usually involved changes in the design configuration required by the actual conditions at the project site or project scope. Project scope changes occurred as designers conducted prospective site visits, identifying that additional assets or fewer assets were required to execute the job based on asset condition and configuration.

A number of rear lot areas were inclusive of a minority of front lot customers supplied from the same 4 kV lateral supplies that were the subject of rear lot conversion. Since rear lot conversion involves converting the lateral to a higher voltage – typically 27.6 kV – Toronto Hydro included forecasted jobs in the rear lot segment to convert these front lot service customers in coordination with the implementation of the broader rear lot plan. These jobs were necessary in order to continue supplying the existing front lot customers without inefficiently maintaining a separate 4 kV lateral and/or a 4 kV under-build circuit along the 27.6 kV trunk circuit. Several of these smaller jobs addressing front-lot customers experienced significant scope changes as they moved through the detailed design stage. In two instances, jobs that the high-level plan assumed would address only the primary electrical equipment were necessarily revised to include direct-buried secondary services that were found to be in poor condition. For example, one job that was assumed to replace only the padmount transformers supplying 77 townhomes was expanded when the designer determined that all direct-buried secondary services were in poor condition, beyond end-of-life and in need of immediate replacement. The civil and

restoration costs involved caused the job to increase in cost from approximately $90,000 to $1.4 million.

These are not cases of cost increasing to complete the work within the original scope; rather the job was expanded to address significantly more assets in need of replacement and in accordance with the reliability driver for this segment. The movement from high level estimates to job-specific designs also produced scope changes that resulted in the reduction of project costs, such as where the originally targeted assets were found to be in an adequate condition upon further inspection. This occurred in another job that did in fact anticipate the need to replace secondary services to a small, front-lot supplied townhome complex. The secondary services were found to be in good condition and remained in service, which resulted in a reduction of cost from an estimated $211,000 to $98,000.

Other changes occurred as the designer implemented a more efficient design configuration than that anticipated by the engineer during the less detailed high-level estimating phase. For example, reconfiguration of the design for one job saw a significant reduction from $5.8 million to $3.5 million. In this instance, instead of routing a main trunk circuit through two streets, the designer was able to route the circuit exclusively along a single street and was able to supply some of the new lateral loops from existing nearby overhead poles. This reduced the amount of padmounted switches required and removed a significant amount of the originally anticipated main loop construction.

Changes between the high level estimate and the design also occurred where planners or designers determined that certain elements of one job would be better addressed as a part of another ICM job, due to work execution efficiency considerations, timing of projects, or additional analysis that was determined to be necessary to address particularly complex asset installations. For example, in one phased job all of the rear lot equipment removal work was transferred to the final phase to improve execution efficiency. When these scope transfers occurred between different ICM jobs, they produced variances in the relevant individual jobs,

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but may not impact the overall segment variance (subject to other potential variance drivers) as a reduction in the cost of one job was typically offset by an equivalent increase in another during the ICM period. Where scope was transferred to jobs coming into service outside the ICM period, the transfer does contribute to the overall ICM segment variance.

2. Third Party Requirements and Constraints

Toronto Hydro's work often must be coordinated with Hydro One and other utilities. This coordination imposes additional costs as jobs schedules are impacted by the work schedules of other entities. Similarly, Toronto Hydro's ability to work in road ways and on customer premises is often constrained by the City's or customers' requirements. Work on one rear lot project was accelerated during the ICM period so that the project could be completed before the City undertook unforeseen road repairs in the same area. The City had indicated that once the road work was complete, a road cut moratorium until 2018 would be instituted. As the condition of the assets did not permit waiting until 2018 to replace them, the project was accelerated to complete it before the City started work.

3. Errors

A clerical error led to one forecasted job being included in the ICM filing with a cost estimate that was about 80 percent higher than the actual estimated job cost.

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I INTRODUCTION

1. Segment Description

Toronto Hydro proposed the Network Vaults and Roofs segment to address critical structural issues that posed potential safety risks to the public and Toronto Hydro workers and reliability risks to the distribution system. Network vaults on the secondary network system were constructed in the 1950s and 1960s, mainly beneath the sidewalks in the busy downtown core of Toronto. Toronto Hydro proposed to rebuild vaults and/or vault roofs or decommission vaults that were in "poor" or "very poor" condition during the 2012 to 2014 ICM period.

2. OEB Decision

The OEB found that the nature of the work in the Network Vaults and Roofs segment, as filed, qualified for ICM treatment. Having found that the work was both necessary and prudent, the OEB made no reduction to Toronto Hydro's funding request. Pending the revenue reconciliation process, the OEB provided for interim funding of this work through an Initial ICM Rate Rider in the Phase I Decisions, which was based on Toronto Hydro's forecast of approximately $14.3 million of in-service additions (ISAs) in 2012 and 2013. Toronto Hydro forecasted an additional $7.3 million in 2014 ISAs related to work proposed in Phase I of EB-2012-0064 (i.e., jobs that were forecasted to commence in 2012 or 2013), but these amounts did not inform the Initial ICM Rate Rider. The OEB also approved an additional $0.9 million in ISAs that Toronto Hydro forecasted in Phase II for jobs commencing in 2014, but these were not funded through the Initial ICM Rate Rider or any rate rider at all.

As detailed below, Toronto Hydro's actual ISAs in this segment total about $17.3 million, which is $5.2 million less than the overall forecast amounts in this segment but $3.0 million more than the amounts on which the Initial ICM Rate Rider was based. Revenue requirement associated

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with the ISAs that were not sufficiently funded through the Initial ICM Rate Rider for this segment remain to be recovered through the ICM True-Up Rate Rider.[1]

II SEGMENT OVERVIEW

The primary driver for the proposed work in the Network Vaults and Roofs segment was safety. The condition of the vaults exposed crews to potential safety risks from falling concrete and debris, and exposed the public to potential tripping hazards where vault roofs collapsed leaving sidewalks uneven or caved-in.

The secondary driver for the proposed work in the Network Vaults and Roofs segment was reliability. Leaks and falling debris in vaults and roofs directly and indirectly contributed to damage to vault equipment resulting in reliability risks, including the risk of catastrophic failures from vault fires.

Of the 1,064 vaults that were in service at the time of the ICM Application, Toronto Hydro proposed to repair or replace 50 vaults that were in "poor" or "very poor" condition. The vast majority of these vaults had reached or were approaching the end of their useful lives. Eighty one percent of vault roofs had exceeded their useful life of 25 years and by 2022, 60% of vaults would be past their useful life of 60 years.

Toronto Hydro proposed to undertake the following activities:

- Roof rebuild (15 vaults): install a temporary false room to protect the distribution assets, remove asbestos, install new primary and secondary cable, rebuild the vault roof and the adjoining sidewalk.
- Vault rebuild (27): inspect and test contingency equipment in adjacent vaults, rebuild civil infrastructure in same location or decommission and construct in new location,

[1] See [cite] for a detailed calculation of the ICM True-Up Rate Rider, which accounts for the timing of ISAs and the amount of ICM-eligible ISAs that were dropped below the ICM Materiality Threshold.

install new network units (transformer and protector) and cables, repair the adjoining sidewalk.

- Vault decommissioning (8): remove all distribution assets, backfill space with gravel and rebuild adjoining sidewalk.

Toronto Hydro filed 19 discrete jobs to address 50 vaults in "poor" or "very poor" condition. Each of the 19 filed jobs was forecast to be complete or in progress by the end of 2014, with estimated ISAs of $22.5 million over the 2012 to 2014 ICM period.

III 2012-2014 ACCOMPLISHMENTS

Table 1 summarizes the variance between the forecast ISAs and the actual ISAs over the ICM period. Actual ISAs were $5.2 million less than the forecast amount, and almost all ISAs occurred in 2013. Job-level variances for this segment are further explained in Section III below.

Table 1: Forecast vs. Actual In-service Additions

	Forecast ISAs				Actual ISAs				Variance
	2012	2013	2014	Total	2012	2013	2014	Total	Total
ISAs ($M)	1.3	13.0	8.2	**22.5**	0.1	14.7	2.4	**17.3**	**(5.2)**

Table 2 summarizes the job-level accomplishments for this segment during the ICM period. Of the 29 originally forecasted jobs, 19 were completed or in progress by the end of the ICM period. Toronto Hydro deferred nine forecasted jobs to 2015 and 2016. One of the nine deferred jobs was rescheduled for the 2015-2019 period in order to better address complex design requirements, while the remainder were deferred largely in order to enable the attainment of other analogous jobs that were identified as more critical during the course of the ICM period. As shown in Table 2, Toronto Hydro added nine of these priority jobs, all of which were completed in the period.

One forecasted job was cancelled as Toronto Hydro clarified that the required vault rebuild would be the customer's responsibility.

Table 2: 2012 – 2014 Job-level Accomplishments

Segment Jobs Breakdown	Number of Jobs
Total Forecasted Jobs	**29**
Less: Deferred or Canceled Jobs	(10)
Add: Analogous Jobs	9
Total Segment Jobs	**28**
Less: In Progress Jobs	(4)
Total Jobs with ISAs	**24**
Breakdown of Total Jobs with ISAs	**Number of Jobs**
Completed Jobs	23
Partially Completed Jobs	1
Total Jobs with ISAs	**24**

Toronto Hydro completed the nine analogous jobs in this segment for two primary reasons:

- the vaults or vault roofs had deteriorated to the point that they posed immediate potential safety and reliability risks; or
- the vault experienced a fire from failed electrical equipment which in turn triggered a planned rebuild.

Generally, network vaults are highly sensitive to the level of vehicle and foot traffic experienced in a given location as well as site-specific environmental conditions (e.g., the amount of salt used in that location during the winter). For this reason, all of Toronto Hydro's network vaults are inspected and/or maintained multiple times per year. These inspections can sometimes reveal the rapid deterioration of a vault over a relatively short period, causing that vault location to be prioritized for intervention over other planned vault rebuilds.

Complete information regarding the investment drivers, scope of work and final costs for the analogous jobs can be found at [cite].

IV REVIEW OF VARIANCES

A majority of forecasted and completed jobs in the Network Vaults and Roofs segment had only minor cost variances. For larger variances, two types of variance causes explain the cost differences between the estimates filed in the ICM application and the actual cost of the completed jobs. Most of these variances are due to changes that occurred between the high level estimates filed in the ICM Application and the detailed design work for the job, as discussed in sub-subsection (1) below. In one case a significant variance was due to an error in the ICM filing as discussed in sub-subsection (2).

1. High Level to Detailed Design Variance

The estimates that underpinned the ICM filing were largely high level planning estimates. The most significant driver of job-level variances were changes that occurred as jobs moved from high level planning estimates to detailed designs. As the detailed design work was completed on jobs, changes were made to the labour and materials required to execute them. The changes between the high level estimate and project design usually involved changes in the design configuration required by the actual conditions at the project site or changes in project scope.

In some instances, changes in design or project scope occurred where designers or construction supervisors performed on-site inspections of vaults and vault roofs and determined that more assets or less assets were required to execute the job based on the condition or configuration in the system of the vault or vault roof. In certain cases, scope changes resulted in lower than forecasted project costs, such as when the site inspections revealed that certain assets slated for replacement were in better condition than originally anticipated and did not require replacement (e.g., the electrical equipment within the vault), or configured in such a manner that the job could not be completed in its entirety.

For example, one of the jobs originally contemplated rebuilding an entire vault, but detailed analysis revealed that, due to unforeseen space restrictions, the cost to do so would be

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prohibitively expensive. Following detailed tests of the integrity of the vault, it was determined that only the roof would be rebuilt in the short-term and an alternative permanent solution would be studied for the longer-term. This reduced the cost of the job from about $994,000 to $106,000.

In another instance, the filed estimate anticipated special provisions for securing and protecting an adjacent customer-owned building during the vault roof rebuild. However, during construction it was determined that the adjacent building did not require any extensive reinforcement, resulting in a reduced job cost from about $412,000 to $156,000.

2. Errors

The only notable positive variance in this segment was attributable to an error in the ICM filing. A significant positive variance was caused by an incorrect estimate being filed. The job was filed for $40,000 when it should have been filed for the anticipated high-level estimate of $700,000. The final cost of the job was $1.0 million, with the remainder of the variance resulting from the need for a second vault, as there was no backup power supply to the existing vault at that time and system operations determined that the stand-alone vault was susceptible to very long power interruptions in case of an emergency power outage.

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I INTRODUCTION

1. Segment Description

Toronto Hydro proposed this segment to replace Fibertop Network Units with Submersible Network Units. Due to their obsolete design, Fibertop Network Units were prone to catastrophic failure resulting in vault fires. Toronto Hydro concluded that all Fibertop Network Units presented significant potential reliability and safety risks and needed to be replaced on a planned basis. The equipment replaced in this segment was well beyond its expected useful life and possessed the highest probability of failure based on frequent network vault inspections.

2. OEB Decision

The OEB found that the nature of the work in the Fibertop Network Units segment, as filed, qualified for ICM treatment. Having found that the work was both necessary and prudent, the OEB made no reduction to Toronto Hydro's funding request. Pending the revenue reconciliation process, the OEB provided for interim funding of this work through an Initial ICM Rate Rider in the Phase I Decisions, which was based on Toronto Hydro's forecast of approximately $6.2 million of in-service additions (ISAs) in 2012 and 2013. Toronto Hydro forecasted an additional $3.0 million in 2014 ISAs related to work proposed in Phase I of EB-2012-0064 (i.e. jobs that were forecasted to commence in 2012 or 2013), but these amounts did not inform the Initial ICM Rate Rider.

As detailed below, Toronto Hydro's actual ISAs in this segment total about $13.6 million. In addition to the approved and partially funded ISAs of $9.2 million from Phase 1, this includes:

- approximately $2.8 million in ISAs that Toronto Hydro forecasted in Phase II for jobs commencing in 2014, which were approved in the Phase II Decision but not funded through the Initial ICM Rate Rider or any rate adder; and

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- approximately $1.6 million in additional prudent and non-discretionary ISAs associated with both filed and analogous jobs as described in sections III and IV below.

The revenue recovered through the Initial ICM Rate Rider for this segment did not sufficiently cover the revenue requirement of all necessary and prudent work performed as part of this project segment. Revenue requirement associated with the ISAs that were not sufficiently funded through the Initial ICM Rate Rider remain to be recovered through the ICM True-Up Rate Rider.[1]

II SEGMENT OVERVIEW

The primary driver for the proposed work in the Fibertop Network Units segment was safety. Vault fires caused by the design of the Fibertop Network Units posed safety risks to Toronto Hydro crews, firefighters and the general public as these assets were often located in high traffic pedestrian areas.

Network Units are comprised of a network transformer and protector and are connected together to form a grid. The top of a Fibertop Network Unit's protector, where interconnections were made to a secondary grid, was highly susceptible to moisture and contamination. The interconnections themselves were spaced very close together. This design increased the probability of inter-phase tracking occurring between these connections, potentially igniting a vault fire. Additional hazards were introduced because these assets were often connected to the secondary grid using Asbestos-Insulated Lead-Covered (AILC) secondary cables.

The secondary driver for the proposed work in the Fibertop Network Units segment was reliability. Vault fires caused by malfunctions in the Fibertop Network Units resulted in extensive

[1] See [cite] for a detailed calculation of the ICM True-Up Rate Rider, which accounts for the timing of ISAs and the amount of ICM-eligible ISAs that were dropped below the ICM Materiality Threshold.

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damage, the de-energization of the entire network grid, and outages affecting a large number of customers.

Toronto Hydro filed 68 jobs in this segment. These jobs were expected to be completed or in progress by the end of the ICM period with forecast ISAs of $12.0 million for the segment overall.

III 2012-2014 ACCOMPLISHMENTS

Table 1 summarizes the variance between the forecast ISAs and the actual ISAs over the ICM period. Toronto Hydro put into service $1.6 million more than forecast. Higher than forecast ISAs in this segment resulted from job-level variances and the addition of analogous jobs that Toronto Hydro determined were necessary in light of the equipment's performance, condition, and other considerations as described below.

Table 1: Forecast vs. Actual In-service Additions

	Forecast ISAs				Actual ISAs				Variance
	2012	2013	2014	Total	2012	2013	2014	Total	Total
ISAs ($M)	0.7	5.5	5.9	**12.0**	2.4	6.4	4.9	**13.6**	**1.6**

Table 2 summarizes the job-level accomplishments for this segment during the ICM period. Of the 68 originally forecasted jobs, 43 were completed or in progress by the end of 2014.

The utility cancelled or deferred 21 of the forecast jobs in the ICM application. Two of these jobs were cancelled because the work was completed in coordination with a different planned job, and three jobs were cancelled because the units were replaced reactively, either due to failure or imminent failure as assessed through regular network vault inspections. The remaining sixteen jobs were filed in the Phase 2 application for initiation in 2014 but were deferred to 2015, largely so that Toronto hydro could complete other analogous jobs that were identified as

more critical or more opportune during the course of the ICM period. Toronto Hydro added 17 of these analogous jobs, all of which were completed during the ICM period.

Table 2: 2012-2014 Job-level Accomplishments

Segment Jobs Breakdown	Number of Jobs
Total Forecasted Jobs	**68**
Less: Deferred or Canceled Jobs	(21)
Add: Analogous Jobs	15
Total Segment Jobs	**62**
Less: In Progress Jobs	(4)
Total Jobs with ISAs	**58**
Breakdown of Total Jobs with ISAs	**Number of Jobs**
Completed Jobs	57
Partially Completed Jobs	1
Total Jobs with ISAs	**58**

The analogous jobs completed in this segment were categorically identical to other jobs in the segment. The jobs addressed additional Fibertop Network Units that were deteriorating and past the end of their useful lives. The entire population of Fibertops were considered defective, beyond end-of-life and at high risk of catastrophic failure resulting in possible vault fires and extensive and costly outages to the network system. As previously established in Toronto Hydro's ICM Application, work force and grid operation limitations constrained the utility's ability to replace all Fibertops over the three-year ICM period. Working within these constraints, Toronto Hydro occasionally re-prioritized its Fibertop jobs based on the following three factors.

1. **Condition:** Generally, network vaults and the equipment within them are highly sensitive to the level of vehicle and foot traffic experienced in a given location as well as site-specific environmental conditions (e.g. the amount of salt used in that location during the winter and the amount of debris that accumulates over time). For this reason, all of Toronto Hydro's network vaults are inspected and/or maintained multiple times per year. These inspections sometimes revealed the rapid deterioration of vault

conditions and/or Fibertop asset health (e.g. unit leaking), which often resulted in the reprioritization of Fibertop Network Units for replacement.

2. **Loading:** Some areas of the network system are more heavily loaded and are therefore at greater risk in terms of both the likelihood of failure and the potential customer impact of failure. While relative loading conditions are unlikely to change significantly in the very short-term, loading is nonetheless an overarching criteria for prioritization and was taken into consideration in conjunction with evolving condition information.

3. **Efficiency:** Some analogous jobs were prioritized for replacement over forecasted jobs in order to take advantage of outage coordination opportunities. For example, Toronto Hydro took advantage of pre-scheduled outages on certain feeders to simultaneously replace Fibertops on those feeders, which avoided the need to have a second scheduled outage at a later date.

All of the analogous jobs in this segment were completed in accordance with the prioritization considerations listed above. Table 3 lists all of the analogous jobs that were completed in 2012-2014. The average cost of these jobs during the ICM period was approximately $213,000, which is slightly higher than the average final cost of the forecasted and completed jobs in this segment (i.e. approximately $183,000). This was due to the fact that several analogous jobs replaced more than one Fibertop unit. For example, the most costly analogous job (estimate number 23268 in Table 3 below) replaced four Fibertop units for a total cost of $668,728, or an average of $167,182 per unit, which is within the normal cost range for a Fibertop Network Unit replacement.

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Table 3: List of Analogous Jobs

Estimate Number	Job Title
18794	X11402 NETWORK UNIT REPL LOC#4484 A46GD
22031	X11759 LOC4164 - N/W CHANGEOUTS
22682	X11792 LOC4657 - N/W CHANGEOUTS
22685	X11793 LOC4426 - N/W CHANGEOUTS
22688	X11795 LOC4106 - N/W CHANGEOUTS
22689	X11796 LOC4768SV - N/W CHANGEOUTS
22676	X11787 LOC4198 - N/W CHANGEOUTS
22678	X11790 LOC4709 - N/W CHANGEOUTS
23268	X12262 Bridgeman TS LOCN. #4789 & 4648
23617	X11837 LOC4719 - N/W CHANGEOUTS
19875	X12192 Network Replacement Loc#4177
21842	X12548 Network Replacement - Cecil
28154	ICM-X14453 Loc4529WV/N1083NW
28192	ICM X14458 LOC4736NV - N/W CHANGEOUTS
32885	X11507 NETWORK C/O LOC#4845 A44 & A42CE

IV REVIEW OF VARIANCES

Excluding two larger variances, all forecasted and completed jobs in the Fibertop Network Units segment came within an average of $20,000 of the forecast cost. The two larger variances were as follows:

1. Due to a clerical **Error**, Toronto Hydro filed duplicate estimates for one job. This caused the forecast cost for the job in the ICM Application to be about $244,000 when it should have been $120,000. The result was a significant negative variance. The final cost of the job was $110,614.

2. One job increased in cost from a forecast of about $365,000 to $976,000 dollars due to a **High Level to Detailed Design Variance**. Prior to the detailed design of this job, one of the two existing Fibertops in the vault location failed, resulting in a vault fire. This compromised the structural integrity of the existing vault, making it necessary to

construct new civil infrastructure to house the replacement submersible network units. Toronto Hydro constructed two separate vaults - one for each replacement unit - in order to mitigate the failure risk associated with catastrophic failure of either unit in the future.

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I INTRODUCTION

1. Segment Description

Toronto Hydro uses Automatic Transfer Switches (ATS) to automatically switch a customer to a designated standby feeder in the event that the normal primary feeder fails. Reverse Power Breakers (RPB) are used to automatically open primary feeder supplies to customers in the event of feeder outages to prevent dangerous back feed conditions.

Both ATS and RPB assets degraded rapidly in 2010 and 2011. Toronto Hydro's Asset Condition Assessment (ACA) results indicated that approximately 30 ATS assets would need to be replaced during the 2012-2014 period. In addition, based on physical inspection data, a further six RPB assets were identified as requiring immediate replacement. Jobs in this segment replaced ATS and RPB assets with stand-alone network protectors or standard network equipment.

2. OEB Decision

The OEB found that the nature of the work in the ATS and RPB segment, as filed, qualified for ICM treatment.[1] Having found that the work was both necessary and prudent, the OEB made no reduction to Toronto Hydro's funding request. Pending the revenue reconciliation process, the OEB provided for interim funding of this work through an Initial ICM Rate Rider in the Phase I Decisions, which was based on Toronto Hydro's forecast of approximately $2.0 million of in-service additions (ISAs) for 2013. Toronto Hydro forecasted an additional $1.3 million in 2014 ISAs related to work proposed in Phase I of EB-2012-0064 (i.e. jobs that were forecasted to commence in 2012 or 2013), but these amounts did not inform the Initial ICM Rate Rider. The OEB also approved an additional $0.1 million in ISAs that Toronto Hydro forecasted in Phase II for jobs commencing in 2014, but these were not funded through the Initial ICM Rate Rider or any rate adder.

[1] EB-2012-0064, Partial Decision and Order (April 2, 2013) at page 34.

As detailed below, Toronto Hydro's actual ISAs in this segment total about $1.9 million, which is $1.5 million less than the overall forecasted amounts in this segment and about $100,000 less than the amounts on which the Initial ICM Rate Rider was based. To the extent that the Initial Rate Rider for this segment recovered revenue in excess of the actual three-year revenue requirement, that surplus amount is offset against any additional recoveries in the ICM True-up Rate Rider calculation.[2]

II SEGMENT OVERVIEW

ATS and RPB assets are generally used to supply medium size customers that require a reliable supply, such as schools, supermarkets, seniors' homes, and other mid-sized buildings. ATS and RPB assets were purchased from different manufacturers and each vintage unit is unique. These units have become obsolete and the manufacturer support and spare parts are unavailable. Many ATS and RPB assets are degraded and in poor condition.

The primary drivers of investment in this segment were potential risks to safety and reliability. For instance, an ATS vault fire incident at 33 Princess Street (January 16, 2012) affected a daycare centre, a seniors' home and the St. James Campus of George Brown College. Similarly, an RPB failure at 50 Marlborough (January 10, 2010) resulted in an explosion and damage to equipment in other locations, and an extended interruption to the entire neighbouring grid network.

Toronto Hydro filed 11 discrete jobs to replace ATS and RPB assets with stand-alone network protectors or standard network equipment. These jobs were forecasted to be completed or in progress by the end of the ICM period. The forecasted ISAs associated with this work were approximately $3.4 million over the ICM period.

[2] See [cite] for a detailed calculation of the ICM True-Up Rate Rider, which accounts for the timing of ISAs and the amount of ICM-eligible ISAs that were dropped below the ICM Materiality Threshold.

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III 2012-2014 ACCOMPLISHMENTS

Table 1 summarizes the variance between the forecast ISAs and the actual ISAs during the ICM period. Toronto Hydro spent $1.5 million less than forecasted on an ISAs basis. Underspending at the segment level was due to underspending on completed jobs and the cancellation of planned jobs that were completed reactively.

Table 1: Forecast vs. Actual In-service Additions

	Forecast ISAs				Actual ISAs				Variance
	2012	2013	2014	Total	2012	2013	2014	Total	Total
ISAs ($M)	-	2.0	1.4	**3.4**	0.1	1.5	0.3	**1.9**	**(1.5)**

Table 2 summarizes the job-level accomplishments for this segment during the ICM period. Six of the forecasted jobs in this segment were completed by the end of 2014. Five forecasted jobs were cancelled as the work was ultimately performed on a reactive basis due to deteriorating asset condition as identified via frequent inspections of the vaults.

Table 2: 2012-2014 Job-level Accomplishments

Segment Jobs Breakdown	Number of Jobs
Total Forecasted Jobs	**11**
Less: Deferred or Canceled Jobs	(5)
Add: Analogous Jobs	1
Total Segment Jobs	**7**
Less: In Progress Jobs	0
Total Jobs with ISAs	**7**
Breakdown of Total Jobs with ISAs	**Number of Jobs**
Completed Jobs	7
Partially Completed Jobs	0
Total Jobs with ISAs	**7**

In addition to the six completed forecasted jobs, Toronto Hydro also completed one analogous job that was deemed critical for execution during the ICM period. This job replaced two modular

ATS switches that had failed in the recent past and were considered a significant reliability risk if left in service.

Complete information regarding the investment drivers, scope of work and final costs for all analogous jobs can be found [cite analogous jobs table].

IV REVIEW OF VARIANCES

Of the six forecasted and completed jobs in this segment, all but two came in under the forecast cost. The largest of these negative variances was a -31% variance that was responsible for approximately $270K worth of underspending in the segment. Prior to undertaking this job, some equipment in the vault was replaced on a reactive basis due to failure, thereby reducing the necessary scope of work and cost for the planned part of the project. This is an example a typical **High Level to Detailed Design Variance** that would result from a designer gaining additional information from detailed inspections of underground equipment.

One of the two overspent jobs had a positive variance of approximately $155,000 on a $143,000 job, which was also due to additional information gathered during the detailed design phase. In this case, field inspections concluded that both of the transformers in the vault (as opposed to just the one identified in the original scope of work) needed to be replaced as both were in poor condition. This job also had higher than anticipated restoration costs as the vault roof was paved with decorative stones, which would not have been a consideration in the original high-level estimate used for segment budgeting purposes.

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ICM Project True-up | B13 – Stations Switchgear

I INTRODUCTION

1. Segment Description

Toronto Hydro proposed the Stations Switchgear segment to replace switchgears in municipal substations and transformer stations that are past the end of their useful lives and rely on obsolete technology such as non-arc-resistant designs with oil circuit breakers and mechanical relays. The switchgear selected for replacement in this segment were chosen from 181 switchgear across 170 municipal substations based on advanced equipment age, equipment obsolescence, lack of arc-resistant design and safety related equipment issues.

The proposed Segment B13 included two components:

- Segment 13.1 for the replacement of aging and obsolete switchgear in municipal substations (MSs); and
- Segment 13.2 for the replacement of aging and obsolete switchgear in high-voltage transformer stations (TSs).

2. OEB Decision

The OEB found that the nature of the work in the Stations Switchgear segment, with the exception of MS switchgears that were considered to be in "Fair" condition according to inspection data, qualified for ICM treatment. The Board ultimately approved the renewal of four MS switchgears from the Phase 1 filing (2012-2013) that had specific auto-reclose issues and all proposed work related to the renewal of TS switchgears.[1] Pending the revenue reconciliation process, the OEB provided for interim funding of this work through an Initial ICM Rate Rider in the Phase I Decisions, which was based on Toronto Hydro's forecast of approximately $9.9 million of in-service additions (ISAs) in 2012 and 2013. Toronto Hydro forecasted an additional $5.4 million in 2014 ISAs related to work proposed in Phase I of EB-2012-0064 (i.e.

[1] For additional clarification regarding the final interpretation of this decision as it was applied in the final rate order, please refer to EB-2012-0064, Draft Rate Order (Filed: April 12, 2012), p. 7, lines 1-20.

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jobs that were forecasted to commence in 2012 or 2013), but these amounts did not inform the Initial ICM Rate Rider.

Toronto Hydro included additional MS switchgear jobs in the Phase 2 filing (2014) based on the specific criteria for the Board's Phase 1 approvals. The OEB approved the additional $1.4 million in ISAs associated with these Phase II jobs commencing in 2014, but these were not funded through the Initial ICM Rate Rider or any rate adder.

As detailed below, Toronto Hydro's actual ISAs in this segment total about $5.0 million, which is $11.7 million less than the overall forecasted amounts in this segment and $5.0 million less than the amounts on which the Initial ICM Rate Rider was based. To the extent that the Initial Rate Rider for this segment recovered revenue in excess of the actual three-year revenue requirement, that surplus amount is offset against any additional recoveries in the ICM True-up Rate Rider calculation.

II SEGMENT OVERVIEW

Segment 13.1 – Municipal Substations

The primary driver for the proposed work in the 13.1 Stations Switchgear segment was reliability as many Municipal Substations (MS) located outside of downtown Toronto employed switchgear that were past the end of their useful lives and relied on obsolete technology such as non-arc-resistant designs with oil circuit breakers and mechanical relays. As their asset condition deteriorated and risk of failure increased, maintaining these switchgears became unsustainable.

A secondary driver for this segment was safety. Toronto Hydro experienced two substation fires in the years leading up to the ICM period due to faults in substation equipment that were at the end of useful life. In both cases, the substations were over 50 years old and the fire was

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attributable to faults in the substations switchgears. Switchgears that are beyond useful life (50 years) can fail catastrophically at any time.

There were additional operational constraints that posed potential safety risks to the operating personnel. The circuit breakers in some of these substations had auto re-closure problems, i.e., when a circuit breaker was taken out of service for maintenance and put back, it would auto re-close instead of locking, even though the circuit breaker was on open position and the auto re-closure was blocked by control authority.

Segment 13.2 – Transformer Stations

The primary driver for the proposed work in the 13.2 Stations Switchgear segment was reliability as switchgear operating at 13.8 kV in many downtown Transformer Stations (TS) were past the end of their useful lives and relied on obsolete technology such as brick and mortar enclosures, non-arc-resistant designs with air blast or air magnetic circuit breakers and mechanical relays and were in poor condition. The existing non-arc-resistant switchgear did not channel the energy released during an internal arc fault to minimize potential injury to personnel and damage to surrounding equipment. As a result, this switchgear could cause damage that could have impacted the entire station, interrupting service to thousands of customers. This equipment had been kept in service via increased maintenance, custom fabrication and harvesting parts from spares.

A secondary driver for the proposed work within this segment was safety. Toronto Hydro experienced several incidents of internal arc faults in its non-arc-resistant switchgear. For instance, an internal arc fault at Terauley TS in 2007 resulted in an explosion in the circuit breaker compartment and caused the front door to fly away from its mounts. In addition to the consequences of in-service failures, the existing circuit breakers in all of the switchgear, except Duplex TS, were air blast circuit breakers, which are obsolete.

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Toronto Hydro filed a number of jobs related to the replacement of switchgear at 11 municipal stations and four transformer stations to address anticipated reliability, safety and operational concerns during the 2012-2014 ICM period. The forecasted ISAs associated with this work were $20.4 million over the three-year period. These jobs were selected based on age, equipment obsolescence, lack of arc-resistant design and safety related equipment issues and were forecasted to be completed or in progress by the end of the ICM period. As discussion in Section I above, the OEB ultimately approved forecasted ISAs in the amount of $16.7 million for the 2012-2014 period.

III 2012-2014 ACCOMPLISHMENTS

Table 1 summarizes the variance between the forecast ISAs and the actual ISAs that took place over the ICM period. Toronto Hydro placed into service $11.7 million less than forecasted. For an explanation of the reasons underlying this variance, please see discussion following Table 2 below.

Table 1: Forecast vs. Actual In-service Additions

	Forecast ISAs				Actual ISAs				Variance
	2012	**2013**	**2014**	**Total**	**2012**	**2013**	**2014**	**Total**	**Total**
ISAs ($M)	0.8	9.2	6.8	**16.7**	0.8	0.00	4.1	**5.0**	**(11.7)**

Table 2 summarizes the job-level accomplishments for this segment during the ICM period. Out of the 17 forecasted jobs, about half (9 or 53%) were completed or in progress by the end of 2014. The utility cancelled or deferred eight of the forecasted jobs in the ICM application. Switchgear replacement jobs and associated load transfer jobs are significant undertakings that require long lead times, specialized resources and extensive coordination with Hydro One. During the execution ramp-up following the Phase I ICM decision, Toronto Hydro faced significant challenges securing timely resources to execute the planned switchgear jobs on schedule. These difficulties, combined with some coordination challenges involving Hydro One's station assets, caused many of the filed jobs to be deferred until later in the ICM period or until

the subsequent 2015-2019 CIR period. The significant underspending on an ISAs basis was due to these scheduling delays, and was magnified by the fact that this segment addresses large, discrete assets as opposed to geographical jobs that can be brought into service in stages. The fact that the segment was only underspent by $3.57 million on a capital expenditures basis as opposed to $11.73 million on an ISAs basis, illustrates this point. Unlike an Underground Infrastructure job, no part of a switchgear renewal job can be in-service until the entire job is complete.

Toronto Hydro also invested in five analogous jobs with identical primary drivers as the jobs originally included in this segment. These additional jobs were completed during the ICM period on a priority basis and contributed to the need to defer other, lower-priority forecasted jobs.

Table 2: 2012-2014 Job-level Accomplishments

Segment Jobs Breakdown	Number of Jobs
Total Forecasted Jobs	**17**
Less: Deferred or Canceled Jobs	(8)
Add: Analogous Jobs	5
Total Segment Jobs	**14**
Less: In Progress Jobs	(7)
Total Jobs with ISAs	**7**
Breakdown of Total Jobs with ISAs	**Number of Jobs**
Completed Jobs	7
Partially Completed Jobs	0
Total Jobs with ISAs	**7**

Four of the five analogous jobs completed in this segment included final commissioning and feeder transfer work that was necessary to complete following the replacement of certain switchgear prior to 2012. Feeder transfers are required in order to bring load to the new switchgear and to decommission old switchgear, and commissioning efforts are required in order to ensure safe and efficient operation of the equipment prior to energization.

One other job addressed a non-arc-resistant 45-year-old switchgear at Jane MS that had failed in 2008 and needed to be replaced on a priority basis.

Complete information regarding the investment drivers, scope of work and final costs for all analogous jobs can be found [cite table of analogous jobs].

IV REVIEW OF VARIANCES

Of the two forecasted and completed jobs in the Stations Switchgear segment, one job had a notable variance. This variance related to a stations support job intended to replace direct-buried PILC station egress cables, which were not compatible with the new switchgear that was to be installed at Porterfield MS, with standard primary cables in concrete-encased ducts. Some overhead work was also required in relation to the replacement of the station egress cable. This job experienced an unforeseen **High Level to Detailed Design** variance that resulted in a cost increase from a forecast of approximately $254,000 to $757,000. Specifically, during the execution of this job, Toronto Hydro determined that the actual switchgear replacement could not be completed on time due to resource constraints. The inability to do the stations work in conjunction with the supporting distribution project required the distribution project to be redesigned in order to maintain system operability until the switchgear replacement could be rescheduled. The new design necessitated a new cable chamber. **Field Conditions and Execution Requirements** were a secondary factor for this job, as during construction a Bell duct bank was discovered which required relocation of Toronto Hydro's poles.

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I INTRODUCTION

1. Segment Description

Toronto Hydro proposed the Metering segment to comply with the metering requirements mandated by Measurement Canada and the Independent Electricity System Operator (IESO). Completed and ongoing jobs in this segment have addressed these requirements. Work performed within this segment included the following:

- Wholesale Metering Market Settlement Compliance;
- Seal Expiring Meters; and
- Wireless Collector Upgrade.

2. OEB Decision

The OEB accepted Toronto Hydro's Phase 1 evidence that Wholesale Metering and Seal Expiring Meters replacements were necessary for compliance with IESO and Measurement Canada requirements, and therefore must be undertaken during the ICM application period. Having found that the work was both necessary and prudent, the OEB made no reductions to Toronto Hydro's funding request.

Pending the revenue reconciliation process, the OEB provided for interim funding of this work through an Initial ICM Rate Rider in the Phase I Decisions, which was based on Toronto Hydro's forecast of approximately $9.8 million of in-service additions (ISAs) in 2012 and 2013. Toronto Hydro forecasted an additional $3.3 million in 2014 ISAs related to work proposed in Phase I of EB-2012-0064 (i.e. jobs that were forecasted to commence in 2012 or 2013), but these amounts did not inform the initial ICM Rate Rider.

Toronto Hydro introduced the Wireless Collector Upgrade initiative in its Phase 2 evidence update as an urgent and non-discretionary investment requirement. This work was required to safeguard the utility's ability to collect meter readings from customers who collectively account

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for over $800 million in annual revenue. The OEB approved the associated ISAs as part of its Phase 2 Decision.

As detailed below, Toronto Hydro's actual ISAs in this segment total about $18.2 million. In addition to the forecasted ISAs of $13.1 million from Phase 1, this includes:

- approximately $3.8 million in ISAs that Toronto Hydro forecasted in Phase II for activities commencing in 2014 (including the Wireless Collector Upgrade), which were approved in the Phase II Decision but not funded through the Initial ICM Rate Rider or any rate adder; and

- about $1.2 million in additional prudent and non-discretionary ISAs associated with both filed and analogous jobs as described in sections II and III below.

The revenue recovered through the Initial ICM Rate Rider for this segment did not sufficiently cover the revenue requirement of all necessary and prudent work performed as part of this project segment. Revenue requirement associated with the ISAs that were not sufficiently funded through the Initial ICM Rate Rider remain to be recovered through the ICM True-Up Rate Rider.[1]

II SEGMENT OVERVIEW

To maintain compliance with Measurement Canada and IESO requirements, Toronto Hydro was required to perform the following work:

1. **Wholesale Metering Market Settlement Compliance.** Wholesale metering is the term used to describe the meters installed at delivery points in the distribution grid. These

[1] See [cite] for a detailed calculation of the ICM True-Up Rate Rider, which accounts for the timing of ISAs and the amount of ICM-eligible ISAs that were dropped below the ICM Materiality Threshold.

are locations where electricity is delivered from the Ontario transmission system to either a local distribution company (LDC) or a major power consumer. As the Metered Market Participant for 106 legacy metering points located at 35 different stations across the City of Toronto, Toronto Hydro is responsible for ensuring that every meter and instrument transformer used in a metering installation for settlement purposes has been approved for use by Measurement Canada. Additionally, all wholesale meter installations are required to be compliant with the Market Rules administered by the IESO.

It was necessary for Toronto Hydro to replace certain legacy transformers with new transformers during the ICM period in order to remain in compliance with the IESO Market Rules and Measurement Canada requirements for accuracy. Toronto Hydro proposed to upgrade 65 wholesale metering locations during the three-year ICM period.

2. **Seal Expiring Meters.** Toronto Hydro is required to comply with the metering requirements set out by Measurement Canada in Sections 9, 11 and 12 of the *Electricity and Gas Inspection Act*. These requirements state that all customer meters must be resealed at specific intervals in order to ensure that a customer's electricity use is being metered accurately.

   Toronto Hydro proposed to replace 6,408 meters with expired seals during the ICM period in order to comply with the *Electricity and Gas Inspection Act*.

3. **Wireless Collector Upgrade.** Collector technology is required to collect interval data for the purposes of billing time-of-use rates. Toronto Hydro's first generation phone line-based collectors were experiencing a high failure rate and the manufacturer had discontinued production of these types of collectors. Toronto Hydro proposed to replace the failing and obsolete modem-based collectors with wireless, second generation collectors in 2014.

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Toronto Hydro forecasted ISAs for the Metering segment totalling approximately $17.0 million during the ICM period.

III 2012-2014 ACCOMPLISHMENTS

Table 1 summarizes the variance between the forecast ISAs and the actual ISAs that took place over the ICM period. Toronto Hydro put into service $1.2 million more than forecasted. While ISAs in 2012 and 2013 were lower than forecasted, higher than forecast additions in 2014 produced the additional ISAs.

Table 1: Forecast vs. Actual In-service Additions

	Forecast ISAs				Actual ISAs				Variance
	2012	2013	2014	Total	2012	2013	2014	Total	Total
ISAs ($M)	2.1	7.8	7.1	**17.0**	0.1	7.1	11.0	**18.2**	**1.2**

Toronto Hydro created a small number of estimates to capture the forecasted costs for this segment during the ICM period. These estimates were intended to provide a level of detail that was consistent with jobs in other segments. For true-up purposes, Toronto Hydro has summarized its discussion of accomplishments in this segment at the activity level instead of providing a variance analysis at the job-level. This is necessary due to the actual nature of the activities in the Metering segment, which are generally based on units rather than geographical areas.

Table 2 summarizes the forecasted and actual capital expenditures for each of the three major activities carried-out in this segment. Capital expenditures are used instead of ISAs because Toronto Hydro did not establish ISA forecasts at any level below the overall segment level in any of the ICM segments.

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Table 2: Forecast Capital Expenditures vs. Actual Segment Capital Expenditures by Activity

	Forecast CAPEX ($M)				Actual CAPEX ($M)				Variance
	2012	2013	2014	Total	2012	2013	2014	Total	Total
Wholesale Metering	1.0	6.3	6.1	**13.4**	1.2	2.5	7.6	**11.3**	**(2.1)**
Seal Expiring Meters	3.8	2.1	0.5	**6.4**	4.6	2.0	1.0	**7.5**	**1.1**
Wireless Collector Upgrade	-	-	2.9	**2.9**	-	0.2	3.6	**3.9**	**0.9**
TOTAL	4.7	8.4	9.5	**22.7**	5.8	4.7	12.1	**22.7**	**(0.0)**

While Toronto Hydro was overspent by $1.2 million on an ISAs basis, on a capital expenditures basis the Metering segment was on budget. It is important to note that the ISA forecasts in all segments were calculated by applying historical ISA-to-CAPEX ratios to the forecasted CAPEX amounts at the segment level in each of the ICM years; the segment-level approximations were not based on specific schedules for job or activity completion. It is therefore reasonable to conclude that the primary reason for overspending in this segment on an ISAs basis was faster than expected financial recognition of capital expenditures during the ICM period.

Reasons for CAPEX variances in each of the three spending categories are discussed independently in the following section.

III REVIEW OF VARIANCES

1. Wholesale Metering

The wholesale metering upgrades originally planned for 2012 were all completed in 2012 for an amount slightly under budget. Toronto Hydro also received a schedule notification from Hydro One for a full upgrade of the Ellesmere TS ahead of schedule, with work commencing in 2012 instead of 2013 as originally planned. Since this work had to be completed in accordance with Hydro One's construction schedules, a portion of the Ellesmere station upgrade planned for

2013 was moved forward and completed in 2012. This acceleration resulted in wholesale metering upgrades expenditures being overspent by approximately $220,000 in 2012.

Spending in 2013 was significantly lower than forecasted due to changes in Hydro One's outage schedules. While Toronto Hydro was able to partially complete the engineering, design and construction for these transformers, the utility was not able to fully complete any of the projects until 2014. This resulted in underspending in 2013. The planned 2013 transformer stations that were addressed in 2014 included:

- Bermondsey;
- Scarborough;
- Dufferin; and
- Fairbank.

These deferrals had a cascading effect on the plan for 2014, resulting in the necessary deferral of three transformer stations (Gerrard, Main and Warden) to 2015. All other transformer work originally scheduled for 2014 was completed in that year.

Overall, for the reasons specified above, the net wholesale metering budget from 2012 to 2014 was underspent by about $2 million on a capital expenditures basis.

2. Seal Expiring Meters

Toronto Hydro planned to replace 6,408 seal expiring conventional meters, which included 846 that were mounted on asbestos backer boards.[2] In the years 2012 and 2014, Toronto Hydro's actual capital expenditures were above forecasts. For 2013, Toronto Hydro was able to complete all scheduled jobs within the forecasted costs. Overall, Toronto Hydro spending exceeded budget by approximately $1 million in this category.

There are two areas that contributed to overspending in this category. The first was related to the Province's requirement to install Smart Meters on all residential and small commercial

[2] Asbestos is a designated substance covered under Ontario Regulation 278/05 made under the *Occupational Health and Safety Act* which presents potential safety risks.

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accounts to enable Time of Use (TOU) billing. To accomplish this, Toronto Hydro was required to include additional activities, such as hiring bailiff services to provide access to the meters, in its standard processes. The costs for these additional activities were higher than anticipated and were added to the 2012 budget.

The second area that contributed to the overspending was related to the QuadLogic meters that are installed for suite metered accounts. In the 2014 evidence update, Toronto Hydro reduced the number of QuadLogic Meters due for replacement in 2014 from 4,703 to 970, and correspondingly lowered its costs for the seal expiring meters activity from $1 million to $0.50 million. This was a result of Measurement Canada extending the replacement period for a type of QuadLogic meter from six to ten years. However, it was later clarified that Measurement Canada's extension was applicable only to meters that were sealed after 2007. This increased the number of QuadLogic meters that needed to be replaced by 3,730, resulting in the overspending in 2014.

3. Wireless Collector Upgrade

Toronto Hydro incurred non-discretionary costs related to wireless collectors in 2013. These expenditures were necessary in order to maintain the current network of phone line gatekeepers. As the obsolete phone line gatekeepers failed, they required upgrades to sustain the collection of hourly meter reads for TOU billing.

In addition, the original estimate for this category anticipated installing collectors at customers' meter base locations. However, following the ice-storm in 2013, Toronto Hydro determined that its network of gatekeeper collectors should be installed on poles instead of meter base locations to ensure that the equipment would be robust and able to withstand severe weather. Gatekeeper installation on poles would improve communication and allow for the collectors to be equipped with battery backup to enable communication during power outages, which in turn would improve restoration efforts. The cost of installing the gatekeepers on poles increased the 2014 cost of this category by approximately $900,000, with an additional $704,000 carried over into the 2015 test year of Toronto Hydro's 2015-2019 CIR Application.

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High-Level Estimating Description

High-level cost estimates are created by identifying typical tasks needed to complete each job within a segment. A high-level estimate is part of the conceptual plan for a job. The following are typical characteristics of a conceptual plan for a job.

- A conceptual plan is based on typical planning standards, typical construction standards and generalized local conditions. It identifies the planning-level project scope and high-level cost estimate.
- The planning-level project scope identified in a conceptual plan is referenced by a designer who develops the detailed design of the job.
- The high-level cost estimate identified in a conceptual plan is referenced by the designer who determines when a job change request is needed as the detailed design develops (through review of site-specific conditions and with input from experienced field staff).
- Conceptual plans are in general based on maps and records assessed from the office. In some cases, the plans also involve a basic field review by the planner. The focus of the field review, however, is confirming the conceptual plan rather than refining the high-level cost estimate.
- Conceptual plans identify major components required for the job.
- Conceptual plans do not included research or efforts required to reveal detailed design or construction steps.
- At the conceptual planning stage, Toronto Hydro does not expend the design and construction planning resources necessary to identify all of the complications that would cause a job design to deviate from typical standards and generalized assumptions. (For example, the presence of overly congested utilities in an underground job area would not typically be known until the design stage, and could necessitate road crossings or realignment as opposed to an assumed straight-line primary rebuild). Complications to the high-level job plan typically result in positive cost variances because addressing the conditions encountered in the field usually requires additional labour and materials. The magnitude of variance is generally correlated to the complexity of work in a segment or job.

The process of building a high-level estimate for a job in the conceptual planning stage begins with identifying major task categories and concludes with construction of a high-level parametric cost estimate within a generalized work breakdown structure. For example, the process used for estimating the cost of an underground infrastructure segment job found in segment B1 of Toronto Hydro's ICM filing would resemble the following:

1. Identify task categories (e.g. rebuild duct bank) associated with the job and local conditions identified.
    a. Task categories include major items such as duct bank rebuild, cable replacement, and replacement of submersible transformers, as dictated by the conceptual plan for a job.

   b. Task categories do not include minor items such as cable termination, arrester installation, etc. These items are estimated at the design stage.
   c. Each job is made up of various task categories.
2. Refine task categories to follow standards where applicable.
   a. Refinement of task categories includes the dimension and number of ducts in a concrete encased bank, the size and rating of cable, and the rating and type of transformer. At the conceptual planning stage, refinement of task categories will be more or less accurate depending on the complexity of work, and can vary from category to category depending on information available.
   b. Certain task categories are considered universal at the conceptual planning stage. For example, tasks such as surface level repair are not refined (i.e. asphalt vs. concrete) at all until design and construction personnel perform a detailed assessment of construction requirements.
3. Estimate quantity and length of each task and refined task category.
   a. Quantities are based on a count of major components from the conceptual plan.
   b. Lengths are based on measurements taken from the conceptual plan map.
4. Identify labor hours, equipment hours, and material by labor, equipment and material type for each task and refined task category.
   a. Labor and equipment types and hours are based on the planner's experience from historical projects of similar scope as well as the estimated quantity and length of the task.
   b. Material types are based on major components from the conceptual plan and generally assume typical standards/installations.
5. Apply per hour and per material costs to assigned labor, equipment and material.
   a. Per hour labor costs are based on Toronto Hydro average labor costs by labor type.
   b. Per hour equipment costs are based on Toronto Hydro average equipment cost by equipment type.
   c. Per material costs are based on Toronto Hydro average material cost by material type.
   d. Year over year cost escalators are applied as jobs become part of the Execution Work Program in a given year. The cost escalators are applied by updating the labour, equipment and material costs that are embedded in the enterprise resource planning system that is used to estimate jobs costs.
6. Develop a subtotal of all task and refined task category costs.
7. For the purpose of the ICM filing, Toronto Hydro added an average percentage adder to every job in order to estimate items that are compiled centrally and then allocated to jobs at job close-out, such as design costs and road cut repair costs. The adder applied to 2012 and 2013 jobs was 19.9% while the adder in 2014 was 22.9%. (The adder applied in 2014 did not include road cut repairs as the costs were included in the estimates. However, other

DRAFT

elements of the adder increased in 2014, including design costs, engineering costs and apprenticeship costs.)

8. Develop a grand total job estimate cost.

DRAFT

Anna-Christina Crespo

From: Myers, Jonathan <jmyers@torys.com>
Sent: Tuesday, September 22, 2015 14:32
To: Sonju, Erik; Blecke, Charles; Williams, Dave
Cc: Keizer, Charles; Myers, Jonathan
Subject: FW: PSE Request
Attachments: EB-2012-0064_Tab 8_Schedule 5-1_Undertaking J5.1.pdf

Further to our call with Toronto Hydro last Friday, please see the explanation from THESL below and attached re the relationship between in-service addition forecasts in the narratives and the tables cited by the OEB. Please let me know if I can convey any follow up clarification questions you may have.

Regards,

Jonathan

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Toronto, Ontario M5K 1N2 Canada | www.torys.com

TORYS LLP

From: Matthew Higgins [mailto:mhiggins@torontohydro.com]
Sent: September-21-15 12:37 PM
To: Keizer, Charles
Cc: Andrew Sasso; Kathleen Burke; Myers, Jonathan; Anila Dumont; Angela Rouse; Joel Singer; Joel Singer
Subject: PSE Request

Charles,

PSE had requested clarification on how the in-service additions (ISAs) forecasts presented in the draft true-up narratives relate to one of the tables that the OEB cites in its Partial Decision. I've attached the table cited by the OEB for reference.

Specifically, PSE was curious as to how we got to a forecast 2013 ISAs number of $27 million for the Rear Lot Construction segment, when it appears in the attached table that it should only be $17.91 million. The answer is that $17.91 million is the forecast 2013 ISAs related to jobs *starting* in 2013. To calculate the full approved 2013 ISAs you also need to add the carry-over ISAs from 2012 jobs. That number can be found in the column labelled "Forecast 2013 In-Service for 2012 Carryforward". The amount is $9.11 million, which when added to $17.91 million is $27.02 million.

This is illustrative of the ISAs-to-CAPEX relationship that we attempted to clarify for PSE previously. You can actually see the ISAs-to-CAPEX ratio that was applied for 2012 and 2013 in the referenced table. The number used for Rear Lot was 44% in 2012. The 44% was applied to the CAPEX forecast of $16.36 million (column: "2012 Forecast") to arrive at a forecast 2012 ISAs amount of $7.25 million. The remaining $9.11 million is what carried over to 2013 and was added to forecast ISAs for 2013 jobs.

We are currently working on a full reconciliation of ISA forecast assumptions with actuals and will provide that information as soon as possible.

Regards,
Matt

Matthew Higgins
Lead, Regulatory Programs
Toronto Hydro Electric System Limited

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m. (416) 450-2713
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Anna-Christina Crespo

From: Myers, Jonathan <jmyers@torys.com>
Sent: Friday, September 25, 2015 13:47
To: Sonju, Erik; Williams, Dave; Blecke, Charles
Subject: FW: PSE Request
Attachments: EB-2012-0064_Tab 9_Schedule A1.pdf

Please see below and attached.

P. 416.865.7532 | F. 416.865.7380 | 1.800.505.8679

From: Matthew Higgins [mailto:mhiggins@torontohydro.com]
Sent: September-25-15 1:35 PM
To: Myers, Jonathan
Cc: Joel Singer (joel@singerwatts.com); Anila Dumont; Andrew Sasso; Angela Rouse
Subject: RE: PSE Request

Jonathan,

Please feel free to forward this response to PSE ahead of our call.

The $165.56 million that PSE calculated as the sum of all forecast job costs in Segment B1 (excluding analogous jobs) is equal to the total three-year **capital expenditures (CapEx)** forecast for the segment. An ISAs-to-CapEx ratio of less than one was applied to the CapEx forecasts in each of the three years of the ICM program to come up with forecast ISAs for each year, which is why the three-year ISAs forecast is a lesser value – $124.39 million – for the same segment.

To derive the $165.56 million number requires more than the table from J5.1, as J5.1 only includes complete CapEx forecasts for 2012 ($28.75 million) and 2013 ($58.94 million). I've attached a schedule from our Phase II ICM application that shows the total CapEx amounts proposed (and ultimately approved as part of the Settlement Agreement) for 2014. You'll see in the attached file that this amount is $77.86 million, which brings the total to $165.56 million.

Regards,
Matt

Matthew Higgins
Lead, Regulatory Programs
Toronto Hydro Electric System Limited

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e. mhiggins@torontohydro.com

From: Myers, Jonathan [mailto:jmyers@torys.com]
Sent: September 25, 2015 11:25 AM
To: Matthew Higgins
Cc: Joel Singer (joel@singerwatts.com); Anila Dumont; Andrew Sasso
Subject: FW: PSE Request

Matt,

Please see below/attached and be prepared to address this on the call this afternoon.

Thanks,

Jonathan

P. 416.865.7532 | F. 416.865.7380 | 1.800.505.8679

From: Williams, Dave [mailto:WilliamsD@powersystem.org]
Sent: September-25-15 11:21 AM
To: Myers, Jonathan; Keizer, Charles
Cc: Sonju, Erik; Blecke, Charles
Subject: FW: PSE Request

Hi Jonathan:

Here is one thing we'd like to ask about this afternoon. See attached spreadsheet "ISA summary".

In columns J and K of that spreadsheet we added up the projections of the jobs from the spreadsheets (material and non-material variances, we didn't include the analogous jobs). So for B1 the total was $165.56 million.

Is this figure $165.56 million derivable from the Dec. 2012 table that we've been using (attached)?

So for B1, the total of the forecasts for jobs was 33.1% higher than the total ISA projected. What is the significance of this %, if any? Do the numbers in that column N match up with THESL's calculations?

Thanks,

Dave

From: Myers, Jonathan [mailto:jmyers@torys.com]
Sent: Tuesday, September 22, 2015 1:32 PM
To: Sonju, Erik; Blecke, Charles; Williams, Dave
Cc: Keizer, Charles; Myers, Jonathan
Subject: FW: PSE Request

Further to our call with Toronto Hydro last Friday, please see the explanation from THESL below and attached re the relationship between in-service addition forecasts in the narratives and the tables cited by the OEB. Please let me know if I can convey any follow up clarification questions you may have.

Regards,

Jonathan

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TORYS LLP

From: Matthew Higgins [mailto:mhiggins@torontohydro.com]
Sent: September-21-15 12:37 PM

To: Keizer, Charles
Cc: Andrew Sasso; Kathleen Burke; Myers, Jonathan; Anila Dumont; Angela Rouse; Joel Singer; Joel Singer
Subject: PSE Request

Charles,

PSE had requested clarification on how the in-service additions (ISAs) forecasts presented in the draft true-up narratives relate to one of the tables that the OEB cites in its Partial Decision. I've attached the table cited by the OEB for reference.

Specifically, PSE was curious as to how we got to a forecast 2013 ISAs number of $27 million for the Rear Lot Construction segment, when it appears in the attached table that it should only be $17.91 million. The answer is that $17.91 million is the forecast 2013 ISAs related to jobs *starting* in 2013. To calculate the full approved 2013 ISAs you also need to add the carry-over ISAs from 2012 jobs. That number can be found in the column labelled "Forecast 2013 In-Service for 2012 Carryforward". The amount is $9.11 million, which when added to $17.91 million is $27.02 million.

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Regards,
Matt

Matthew Higgins
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Anna-Christina Crespo

From: Myers, Jonathan <jmyers@torys.com>
Sent: Wednesday, October 28, 2015 14:26
To: Williams, Dave; Sonju, Erik; Blecke, Charles
Cc: Keizer, Charles; Myers, Jonathan
Subject: FW: THESL

Please see below.

Jonathan Myers

P. 416.865.7532 | F. 416.865.7380 | 1.800.505.8679

From: Matthew Higgins [mailto:mhiggins@torontohydro.com]
Sent: October-28-15 1:58 PM
To: Myers, Jonathan
Cc: Keizer, Charles; Ben Sheng; Anila Dumont; Kathleen Burke
Subject: RE: THESL

Jonathan,

The answer to #1 regarding Segment B3 is that approximately 650 handwells were remediated. The field specialist for handwells just got back from vacation today and is going to validate this number, but it should be reasonably accurate.

I'll be in the air for the rest of the day and unavailable.

Thanks,
Matt

Matthew Higgins
Lead, Regulatory Programs
Toronto Hydro Electric System Limited

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e. mhiggins@torontohydro.com

From: Myers, Jonathan [mailto:jmyers@torys.com]
Sent: October 23, 2015 5:04 PM
To: Matthew Higgins
Cc: Keizer, Charles; Myers, Jonathan
Subject: FW: THESL

Matt,

Please see and respond to the questions set out below from PSE.

Thanks,

Jonathan Myers

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TORYS LLP

From: Williams, Dave [mailto:WilliamsD@powersystem.org]
Sent: October-23-15 4:19 PM
To: Keizer, Charles; Myers, Jonathan
Cc: Sonju, Erik; Blecke, Charles
Subject: THESL

Charles and Jonathan:

A few questions. For the two unit-based segments, B3 and B20, we wanted to outline our thinking and request a bit more information. We also have a couple questions about jobs from the other segments.

For the segments other than B# and B20, our strategy has been to evaluate the variance in the completed jobs first (without counting analogous jobs), comparing projected ISA with actual ISA. After that we compare the cancelled/deferred jobs with the analogous jobs—this gets us an idea of whether the work proposed is similar in magnitude to the work performed.

For the two unit-based segments, we are looking at projected ISA vs. actual ISA—but the natural follow-up question is how the # of units proposed compares to the # of units replaced. Thus to the extent possible for these two segments, we are looking at the forecasted unit price vs. the actual unit price.

To that end, our questions on the unit-based segments are:

1. For B3—it looks like 7,165 handwell unit replacements were forecasted and 7,264 were replaced, remediated, or abandoned. The narrative says about 10% were removed. It also says that a number of handwells were partially remediated—how many were in this "remediated" category?

2. For B20: it looks like 65 wholesale meter replacements were forecasted; how many wholesale meter replacements were completed?

3. For B20: the number of forecasted replacements is not clear to us, nor is the quantity of meters to be replaced by type. Was the forecast based solely on the replacement of 6,408 conventional meters? (This seems to be the implication on page 6, line 18 of the narrative.) Or was it based on a mix of conventional meters and Quadlogic meters etc.? Can we have a breakdown of the forecasted number of replaced meters by type, vs. the actual number of meters replaced by type?

4. For B20: How many wireless collector upgrades were forecasted? How many were completed?

A couple questions related to the jobs from other segments:

1. The B2 PILC narrative mentions one analogous job. Which job is that on the B2 spreadsheet?

2. The B10 narrative lists 17 analogous jobs in Table 2, but Table 3 lists 15 analogous jobs. Table 3 is all the analogous jobs that were completed in 2012-2014. So this means there are 2 analogous jobs in progress or partially complete? Which jobs are those on the B10 spreadsheet?

Thanks,

David

David Williams
Research Analyst
Power System Engineering, Inc.
1532 W. Broadway
Madison, WI 53713
Direct: (608) 268-3557
williamsd@powersystem.org
www.powersystem.org

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Anna-Christina Crespo

From: Myers, Jonathan <jmyers@torys.com>
Sent: Wednesday, October 28, 2015 14:25
To: Williams, Dave; Sonju, Erik; Blecke, Charles
Cc: Keizer, Charles; Myers, Jonathan
Subject: FW: THESL

Please see below.

Jonathan Myers

P. 416.865.7532 | F. 416.865.7380 | 1.800.505.8679

From: Matthew Higgins [mailto:mhiggins@torontohydro.com]
Sent: October-28-15 1:54 PM
To: Myers, Jonathan
Cc: Keizer, Charles; Robert Cappadocia; Anila Dumont; Kathleen Burke
Subject: RE: THESL

Jonathan,

For the questions related to Segment B20, the answers are as follows:

For Question 2, the answer is that 57 wholesale meter replacements were completed from 2012 to 2013.

For Question 3, I received the following response from our Metering DRP, which I'm quoting in full:

"Not all meters were conventional. The breakdown by meter type from table 3 of the original ICM is correct. Conventional should either be removed from line 18 or quantified "of which 5,989" were conventional meters. The meters that were seal expiring in 2012 as per the table below are no longer active in our CIS, and have therefore been replaced."

Table: Meter Replacement Requirements by Meter Type only the 2014 QuadLogic Meters would have a large enough homogeneous lot size to support reverification all others would require meter changes.

Meter Type	2012	2013	2014	Total
Conventional*	5,989	0	0	5,989
General Service > 50kW **	70	0	0	70
RIMS	13	327	304	644
Quadlogic	336	1,376	4,703 ***	6,415
Smart and Other	0	6	292	298
Total	**6,408**	**1,709**	**5,299**	**13,416**

Please note that we will make the change to the ICM True-up narrative to reflect the fact that they were not all conventional meters.

For Question 4, I received the following response. It appears that we are having some difficulty boiling the wireless collectors activity down to a simple unit count. (We didn't actually forecast based on units, so perhaps the following response will give enough of a sense of % completion that PSE can comment. If not, we can try again to break this down into units forecasted and completed by end of 2014):

"The wireless collector project required a new network that was built for this project as well as new software. Originally the project was slated for 2014, we upgraded the collectors to pole mounted and the project was carried over to 2015 in the CIR.

All of the work was or will be completed this year [2015], in terms of the collectors themselves. The project had a prerequisite for the software and network systems in order to read these meters which occurred in 2014. All of the wireless collectors were turned on once the network went live between Aril and May of 2015. Once the network stabilized we began removing the old phone line based collectors. Removing about 150 to 200 per week, began decommissioning phone lines (very last step for this project) and meters late September on track for completion first week of December 2015."

Please forward to PSE at your earliest convenience.

Thanks,
Matt

Matthew Higgins
Lead, Regulatory Programs
Toronto Hydro Electric System Limited

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m. (416) 450-2713
a. 14 Carlton Street, Toronto, Ontario M5B 1K5
e. mhiggins@torontohydro.com

From: Myers, Jonathan [mailto:jmyers@torys.com]
Sent: October 23, 2015 5:04 PM
To: Matthew Higgins
Cc: Keizer, Charles; Myers, Jonathan
Subject: FW: THESL

Matt,

Please see and respond to the questions set out below from PSE.

Thanks,

Jonathan Myers

P. 416.865.7532 | F. 416.865.7380 | 1.800.505.8679
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Toronto, Ontario M5K 1N2 Canada | www.torys.com

TORYS LLP

From: Williams, Dave [mailto:WilliamsD@powersystem.org]
Sent: October-23-15 4:19 PM
To: Keizer, Charles; Myers, Jonathan
Cc: Sonju, Erik; Blecke, Charles
Subject: THESL

Charles and Jonathan:

A few questions. For the two unit-based segments, B3 and B20, we wanted to outline our thinking and request a bit more information. We also have a couple questions about jobs from the other segments.

For the segments other than B# and B20, our strategy has been to evaluate the variance in the completed jobs first (without counting analogous jobs), comparing projected ISA with actual ISA. After that we compare the cancelled/deferred jobs with the analogous jobs—this gets us an idea of whether the work proposed is similar in magnitude to the work performed.

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4. For B20: How many wireless collector upgrades were forecasted? How many were completed?

A couple questions related to the jobs from other segments:

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Thanks,

David

David Williams
Research Analyst

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RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

INTERROGATORY 16:

REFERENCE(S): Exhibit 2, Tab 14, Schedule 1, page 24

With respect to completed jobs, for each segment, please provide the number of jobs where the actual ISA was more, less, and exactly the same as the budgeted ISA amount.

RESPONSE:

Please see table below for the number of completed jobs in each segment where the actual ISA was more, less, and exactly the same as the forecasted ISA amount.

Segment	Less than Forecast	Equal to Forecast	Greater than Forecast	Total
B01 UNDERGROUND INFRASTRUCTURE	29	0	82	**111**
B02 PILC - PIECE OUTS AND LEAKERS	1	0	2	**3**
B03 HANDWELL REPLACEMENT	N/A	N/A	N/A	**N/A**
B04 OVERHEAD INFRASTRUCTURE	21	0	50	**71**
B05 BOX CONSTRUCTION	2	0	5	**7**
B06 REAR LOT CONSTRUCTION	12	0	15	**27**
B09 NETWORK VAULT & ROOFS	6	0	8	**14**
B10 FIBERTOP NETWORK UNITS	17	0	25	**42**
B11 NETWORK - ATS & RPB	4	0	2	**6**
B12 STATIONS POWER TRANSFORMERS	3	0	3	**6**
B13.1 & 13.2 STATIONS SWITCHGEAR	0	0	2	**2**
B20 METERING	N/A	N/A	N/A	**N/A**
B21 PLANT RELOCATIONS AND EXPANSIONS	7	0	9	**16**
TOTAL	**102**	**0**	**203**	**305**

RESPONSES TO SUSTAINABLE INFRASTRUCTURE ALLIANCE OF ONTARIO INTERROGATORIES

INTERROGATORY 6:

REFERENCE(S): EB-2012-0064, Tab 4, Schedule B1, Appendix F and Exhibit 2, Tab 1, Schedule 1

In Schedule B1, Appendix F of THESL's original ICM application, THESL describes a business case evaluation process that was used to determine that the work in the B1 Underground segment was justified on the basis of a net benefit to customers (taking into consideration avoided estimate risk cost and the NPV of the job, among other factors).

In this application, THESL identifies a change in design standards as one of the main causes of costs variances in the B1 Underground segment:

> "The most frequent source of scope change leading to material cost variances was a change in Toronto Hydro's technical design standards with respect to the secondary cables and secondary services that connect customers to the distribution system in neighbourhoods with underground distribution configurations."
>
> "Given that the new design standard was not released until late in 2011, some of the earlier cost estimates presented in the Phase 1 filing, which would have been created in the years prior to and including 2011, would not have included the additional costs of labour and material associated with replacing the service connections."

a) What percentage of jobs in this segment did not include the additional costs of labour and material associated with replacing the service connections?
b) Did THESL at any time re-run the earlier net benefit analysis, or perform a similar alternative analysis, to determine that undertaking this work at generally higher cost

RESPONSES TO SUSTAINABLE INFRASTRUCTURE ALLIANCE OF ONTARIO INTERROGATORIES

levels (due to the design changes relating to secondary connections) was still resulting in a net benefit to customers? If not, why not?

RESPONSE:

a) Toronto Hydro investigated job-level variances that surpassed a defined threshold of materiality, providing detailed variance explanations for each. The list of jobs with explanations is provided in response to interrogatory 1-SEC-5, along with a description of the thresholds applied in deciding which jobs to investigate in detail. A reading of the detailed descriptions for High Level to Detailed Design variances in the Underground Infrastructure segment reveals that the variances for approximately 13 of the 76 filed and completed jobs (with variances greater than the threshold) were primarily related to the change in standard design practice for secondary service connections. This equates to 17% of the filed and completed jobs with variances above the threshold, or 11% of all filed and completed jobs.

b) Please note that the change in standard design practice was not necessarily the sole contributor to the overall variance in each of the 13 jobs. The change in standard design practice may also have been a contributing factor in job-level variances that did not meet Toronto Hydro's threshold for detailed variance analysis. In the absence of more granular data, Toronto Hydro cannot provide a precise measure of the ISAs variance related the change in standard design practice.

A net benefit analysis was performed prior to the release of the 2011 revision of the design standard which indicated that it was most prudent and cost effective to install

RESPONSES TO SUSTAINABLE INFRASTRUCTURE ALLIANCE OF ONTARIO INTERROGATORIES

concrete encased ducts along both sides of the street up to the lot line with PVC duct up to the customer's meter base for aged direct buried cables.

RESPONSES TO SUSTAINABLE INFRASTRUCTURE ALLIANCE OF ONTARIO INTERROGATORIES

INTERROGATORY 7:

REFERENCE(S): Exhibit 2

For a number of "analogous jobs", THESL notes poor historic reliability and performance as a justification for their immediate repair or replacement during the ICM period. For example, with regard to the B1 Underground job "E11217 Celeste Drive Rebuild NA47M15", THESL notes that "The supplying feeder NA47M14 was the second worst performing feeder in 2010 and continued to be a poor performer." If the primary trigger drivers of this and similar jobs were already known to THESL in the years prior to the ICM period, why were these jobs not included in THESL original ICM filing for planned replacement between 2012-2014?

RESPONSE:

Some of the analogous jobs that Toronto Hydro has included in ICM segments in this Application were originally part of the forecasted Continuing Projects and Emerging Issues Portfolio ("Emerging"), which was filed as part of the non-ICM Segment C1 – Operations Portfolio Capital in Phase 1 of the ICM Application. The job referenced in this interrogatory was one such job. It began in 2012, during the Phase 1 ICM proceeding, and was substantially complete by the end of 2013.

The OEB expressed a concern with the way Toronto Hydro had characterized the Emerging portfolio in Phase 1 finding that "Toronto Hydro had presented insufficient evidence on the nature of those projects for the Board to determine whether they are non-discretionary".[1] Toronto Hydro addressed this concern in Phase 2 of the ICM Application as follows:

[1] EB-2012-0064, Toronto Hydro-Electric System Limited Partial Decision and Order (April 2, 2013) at p. 63.

RESPONSES TO SUSTAINABLE INFRASTRUCTURE ALLIANCE OF ONTARIO INTERROGATORIES

As the OEB was not satisfied with the level of detail regarding this work in Phase 1, THESL has provided additional detail and further categorization of the non-discretionary work originally included within this subcategory in Phase 2.

Some (but not all) of the Emerging Issues jobs were essentially the same as jobs within certain ICM segments. Whether situated below or above the threshold, all the jobs were, and remain non-discretionary. THESL had included such jobs within this below-threshold subcategory (and not corresponding ICM segments) as part of establishing the non-discretionary work necessary to meet the materiality threshold before seeking ICM funding. Put another way, the reason the jobs appeared in Emerging Issues (as opposed to the ICM segments) was as an outcome of the ICM structure. Setting the ICM structure aside, this subset of the Emerging Issues budget is indistinguishable from the corresponding ICM segments that contain similar jobs. For example, while THESL proposed a number of fibertop replacements in the fibertop ICM segment, it also planned to do other, equally non-discretionary fibertop replacement jobs within the Emerging Issues budget.

However, to avoid confusion in Phase 2, THESL has reconfigured the jobs in the Emerging Issues subcategory into two categories. The first category consists of jobs that belong within ICM segments (i.e., jobs that are effectively the same as those within existing ICM segments). Jobs in this category are now contained

RESPONSES TO SUSTAINABLE INFRASTRUCTURE ALLIANCE OF ONTARIO INTERROGATORIES

> exclusively within those ICM segments. The second category consists of jobs that are not comparable to any established ICM segment. These jobs have been presented in more granular levels of detail within the Operations Portfolio Capital segment (Schedule C1).[2]

In light of this evidence, all parties and, subsequently, the OEB accepted that Toronto Hydro's 2014 ICM work segments were consistent with the segments approved by the OEB in the Phase 1 Partial Decision and Order.[3]

Toronto Hydro did not have the opportunity to reconfigure Continuing Projects and Emerging Issues jobs that were already started or completed in the period covered by the Phase 1 filing (2012-2013). As part of the ICM True-up Application, Toronto Hydro has continued the same approach as in its Phase 2 filing and has reallocated jobs that were effectively the same as those within ICM segments to the relevant segments.

As demonstrated in the detailed explanation for the job that is referenced in the preamble to this interrogatory, the job was identical in nature to other forecasted jobs in Segment B1 and was justified as non-discretionary on the same factual basis as all other work that was forecasted and undertaken in the segment.[4]

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[2] EB-2012-0064, Toronto Hydro-Electric System Limited Application Evidence Update for 2014 (August 19, 2013), Tab 9, Schedule 1, at pp. 16-17.
[3] EB-2012-0064, Toronto Hydro-Electric System Limited Phase 2, Settlement Agreement (December 18, 2014), at p. 8.
[4] EB-2015-0173, Toronto Hydro-Electric System Limited Incremental Capital Module True-up Application (March 8, 2016), Exhibit 2, Tab 1, Schedule 1, Appendix A, at p. 1.

RESPONSES TO SUSTAINABLE INFRASTRUCTURE ALLIANCE OF ONTARIO INTERROGATORIES

INTERROGATORY 8:

REFERENCE(S): Exhibit 2, Tab 11, Schedule 1, Appendix A, page 2

Please re-file, or provide as a response to this interrogatory, the complete "Rationale/Driver for Inclusion" for job "EST19121_003". The explanation appears to be cut-off.

RESPONSE:

Please see below the complete "Rationale/Driver for Inclusion" for EST19121_003:

Jane MS and Sentinel MS were sister stations constructed in the late 1960s.

The non-arc resistant Switchgear at Jane MS was manufactured in 1968 and was 45 years old during its replacement.

This Switchgear housed obsolete air-magnetic circuit breaker, which were past their useful lives of 40 years. The switchgear was made up of two housing sections, the north section contained the F1, F2 and F3 feeders, and the south section contained the F4 and F5 feeders. After a major failure that occurred at Sentinel MS in early 1970s, a modification of the switchgear was made at Jane MS to separate the incoming cell of each section by creating two separate compartments, one for each housing section.

During the modification of the Switchgear to separate the incoming cell and install differential voltage protection, the bus bars were cut to install current transformers, creating unintended sharp points which later generated corona. This corona caused a circuit breaker to fail in late 2008.

RESPONSES TO SUSTAINABLE INFRASTRUCTURE ALLIANCE OF ONTARIO INTERROGATORIES

The Jane MS and Sentinel MS supply the North West pocket of 13.8kV system area in North York. As only two stations supply this 13.8kV area, the reliability of each station is essential for customer services.

RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION INTERROGATORIES

INTERROGATORY 3:

REFERENCE(S): Exhibit 2, Tab 1, Schedule 1

a) Please provide a breakdown of the $55.6 million in Underground Infrastructure overruns into the two categories: (1) changes in scope to existing planned jobs – e.g., improved duct and service connection replacements and (2) incremental jobs not identified in Board proceedings – e.g., SCADA equipment additions.

RESPONSE:

Assuming that the question is seeking a breakdown between the relative contributions of incremental jobs (i.e., analogous jobs) and originally forecasted jobs to the overall variance in the segment, analogous jobs are responsible for $15.9 million of additional ISAs, while the remaining $39.7 million variance is due to ISAs associated with the originally forecasted jobs.

Regarding the example provided by VECC of an "incremental job," it should be noted that Toronto Hydro did not forecast or complete any jobs for the sole purpose of making SCADA equipment additions. While some jobs included the installation of standard SCADA-enabled equipment in place of end-of-life, poor condition and poor performing assets, the driver of work in all instances was the failure risk or poor performance associated with assets being replaced.

RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION INTERROGATORIES

INTERROGATORY 4:

REFERENCE(S): Exhibit 2, Tab 1, Schedule 1, Appendix A

a) Is the $13.5 million shown in Appendix A (ICM Segment B1 Underground Infrastructure projects) the incremental or "analogous" additional projects undertaken in that segment?

b) Please confirm the similar tables found at Exhibit 2, Tabs 4, 5, 6, 7, Appendix A, describe "analogous" projects undertaken by THESL. If this is not correct, then please explain the purpose of these tables.

RESPONSE:

a) Toronto Hydro is unable to find the reference to $13.5 million in Exhibit 2, Tab 1, Schedule 1, Appendix A. The correct total of the Underground Infrastructure analogous jobs ISAs is $15.9 million.

b) Appendix A included within each of Exhibit 2, Tab 4 (Overhead Infrastructure), Tab 5 (Box Construction), Tab 6 (Rear Lot Construction) and Tab 7 (Network Vaults and Roofs) refers to analogous jobs. The list of analogous jobs for Fibertop Network Units segment is found at Table 3 in Exhibit 2, Tab 8, Schedule 1.

RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION INTERROGATORIES

INTERROGATORY 5:

REFERENCE(S): Exhibit 2, Tab 4, Schedule 1, page 5

a) Please provide a table showing the total capital spent in each year for overhead infrastructure (poles, overhead conduction pole transformers switches etc.) in each of 2012 through 2015. On separate rows please show the "analogue" ICM spending in each year and the ICM "non-analogous" capital expenditures.

b) At page 5 of the exhibit it states: "[T]*wo of the analogous jobs were, in fact, included in the original Phase 1 ICM Application, but were subsequently deferred to Phase 2 of the ICM Application at the time of Toronto Hydro's evidentiary update in October 2012*." Does this mean the jobs were deferred ICM projects and not "analogous" (i.e., done in substitution of an ICM approved job). Does THESL definition of analogous jobs include approved ICM jobs from previous periods?

RESPONSE:

a) The table below presents capital spending for B4 Overhead Infrastructure jobs:

	2012 Capex ($ millions)	2013 Capex ($ millions)	2014 Capex ($ millions)	Total Capex ($ millions)
Analogous Jobs	1.57	1.59	(0.03)[1]	3.13
Filed ICM Jobs	9.19	38.05	65.33	112.57
Total	10.76	39.64	65.30	115.70

[1] The negative figure is due to lagging costs.

RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION INTERROGATORIES

b) No, the definition of analogous jobs does not include approved ICM jobs from previous periods.[2] The two analogous jobs referenced in the Overhead Infrastructure segment were not approved in the ICM application for Phase 1 or Phase 2.

As indicated in the original evidence, immediately following the passage cited in the question, these two jobs were submitted in the original Phase 1 filing. However, in the October update to the Phase 1 filing these two jobs were deferred to 2014 and thus not included and approved as part of Phase 1. Subsequent to the Phase 1 ICM Decision these two jobs were ultimately executed in 2013. At the time of the Phase 2 ICM Application, these two jobs were not filed. Therefore, the funding requirements for these projects were not captured in either of the ICM application phases.

[2] For an explanation of the criteria used to determine analogous jobs, please see Toronto Hydro's response to interrogatory 1-VECC-1, part (c).

RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION INTERROGATORIES

INTERROGATORY 6:

REFERENCE(S): Exhibit 2, Tab 6, Appendix A

a) Did both of the additional ("analogous") ICM segment projects shown in the Table result in the conversion of a customer's service from rear to front lot?

b) Please confirm (or correct) that these two projects were not directly for rear lot conversions but for additional plant required to allow the affected properties to be converted.

RESPONSE:

a) Yes, both the analogous projects (E11778 and E12437) shown in Exhibit 2, Tab 6, Appendix A resulted in the conversion of a customer's service from rear to front lot.

b) As indicated in part (a), above, both the jobs were for rear lot conversions.

RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION INTERROGATORIES

INTERROGATORY 7:

REFERENCE(S): Exhibit 2, page 46

a) Is Table 3 analogous to the Tables at Exhibit 2, Tabs 4, 5, 6, 7, 9, 10, Appendix A?

b) Please provide the capital expenditures for the list of analogous jobs shown in Table 3.

RESPONSE:

a) Yes, if the question is referencing the Table 3 which appears in Exhibit 2, Tab 8, Schedule 1, page 7 ("List of Analogous Jobs") then this table is analogous to the Appendix A in Exhibit 2, Tabs 4, 5, 6, 7, 9 and 10. A detailed explanation of how these jobs were prioritized for inclusion in the ICM segment can be found in Exhibit 2, Tab 8, Schedule 1, pages 3 to 6.

b) Please see response to interrogatory 2-AMPCO-18 part (e).

RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION INTERROGATORIES

INTERROGATORY 8:

REFERENCE(S): Exhibit 2, Tab 11, Schedule 1, page 5

a) In speaking of the under forecast of ISA for station switchgear THESL makes the statement that "[T]*he fact that the segment was only underspent by $3.57 million on a capital expenditures basis as opposed to $11.73 million on an ISAs basis illustrates this point"*. Does this mean that the ICM segments proposed and approved by the Board are substantively completed?

RESPONSE:

a) The cited statement does not, with respect to the Stations Switchgear segment specifically or in respect of any other segment, address whether the segment is 'substantively completed'. Rather, this statement and the ones before and after it that appear in Exhibit 2, Tab 11, Schedule 1, page 5, explained that in cases of switchgear renewal, the entire job must be complete for it to be placed in-service, unlike the case for other work which can be brought into service in-stages.

For a discussion of the completeness of the ICM program, please refer to the response to interrogatory 1-CCC-14.

RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION INTERROGATORIES

INTERROGATORY 9:

REFERENCE(S): Exhibit 2, Tab 14, Schedule 1, PSE ICM Evaluation

a) Which AACE estimate class did PSE assume the original segment forecasts provided to, and approved by, the Board fell into?
b) What is the basis for assuming a variance of between -30% and +50% for the THESL segment projects? Please show that calculations derivation.
c) Please confirm that the variation is equivalent to AACE Class 4 using the maximum high and low figures.
d) If Class 4 was assumed please explain the rationale for this assumption in light of the fact that THESL produced budgets for Board approval for these ICM segments.
e) Please explain why the detailed budgets provided to the Board in support of the ICM segment do not meet AACE Class 3 or higher.
f) Did PSE review THESL's original budget proposals for each of the segments prior to its analysis and conclusions?

RESPONSE:

a) PSE did not assume an AACE estimate class based solely on the original segment forecasted ISAs. PSE used the AACE and other sources as an independent yardstick against which to compare the Toronto Hydro estimation process. PSE concluded that a hybrid of "Class 5" and "Class 4" best reflected the stage at which Toronto Hydro's estimates were made.

RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION INTERROGATORIES

b) As stated in the answer to part a), PSE concluded that a hybrid of AACE "Class 5" and "Class 4" best reflected the stage at which Toronto Hydro's estimates were made. AACE Class 5 had expected accuracy ranges of -20% to -50% on the low end, and +30% to +100% on the high end, while Class 4 had expected accuracy ranges of -15% to -30% on the low end, and +20% to +50% on the high end (see Figure 3-6 of PSE's report). Although multiple sources were used, PSE gave AACE the highest qualitative weighting. It should also be noted that some of the other sources had wider ranges. For example, ISO-NE has a -50% to +200% range for a hybrid of Class 4 and Class 5. PSE ultimately decided that since Toronto Hydro's estimating process is a hybrid of two classes, a -30% to +50% range was reasonable. This was a comparative analysis and not a calculated derivation.

c) For reasons discussed in part b), above, the range PSE used for Class 4 (-30% to +50%) is comparable to the high and low ranges for AACE Class 4 as shown in Figure 3-6.

d) Class 4 was not assumed, but rather was determined to be appropriate—by looking at the stage of the projects during which Toronto Hydro's estimates were made, and comparing that high-level stage to the project classes from AACE and other sources, as shown in Table 3-1.

e) Toronto Hydro's forecasted ISAs presented to the Board in support of the ICM segment are more appropriately classified as AACE Class 4, and not AACE Class 3, 2, or 1, because they were based on a high-level estimation process, as opposed to a detailed design estimate or construction estimate, as illustrated in Figure 3-8.

RESPONSES TO VULNERABLE ENERGY CONSUMERS COALITION INTERROGATORIES

f) PSE reviewed the forecasted ISAs as provided by Toronto Hydro at the time of analysis.

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

INTERROGATORY 23:

REFERENCE(S): Exhibit 3, Tab 1, Schedule 1, page 7

Table 5 of the above reference provides proposed rates and bill impacts.

Please provide bill impacts for each customer class in the format of OEB Appendix 2-J similar to what was provided in EB-2014-0116 Exhibit 8, Tab 7, Schedule 1. For the Residential Customer Class, please include bill impacts for both 800 kilowatt hours (kWh) and the new OEB standard of 750 kWh. Please also provide these impacts assuming both a November 1, 2016 and January 1, 2017 implementation date.

RESPONSE:

Please see attachments (Appendices A to D to this response).

Appendix 2-W
Bill Impacts

Customer Class: RESIDENTIAL SERVICE

TOU / non-TOU: TOU

Consumption 800 kWh ○ May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)

		Current Board-Approved			Nov. 1, 2016 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 22.78	1	$ 22.78	$ 22.78	1	$ 22.78	$ -	0.00%
Rate Rider for Incremental Capital Module True-up	per 30 days				$ 0.49	1	$ 0.49	$ 0.49	
Rate Rider for Recovery of 2008-2010 Smart Meter Costs	per 30 days	$ 0.08	1	$ 0.08	$ 0.08	1	$ 0.08	$ -	0.00%
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 0.88	1	$ 0.88	$ 0.88	1	$ 0.88	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.28	1	$ 0.28	$ 0.28	1	$ 0.28	$ -	0.00%
Rate Rider for Recovery of Stranded Meter Assets	per 30 days	$ 0.28	1	$ 0.28	$ 0.28	1	$ 0.28	$ -	0.00%
Rate Rider for Recovery of Smart Metering Entity Variance	per 30 days	$ 0.06	1	$ 0.06	$ 0.06	1	$ 0.06	$ -	0.00%
Distribution Volumetric Rate	per kWh	$ 0.01880	800	$ 15.04	$ 0.01880	800	$ 15.04	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per 30 days	-$ 0.17	1	-$ 0.17	-$ 0.17	1	-$ 0.17	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance - HST	per 30 days	-$ 0.08	1	-$ 0.08	-$ 0.08	1	-$ 0.08	$ -	0.00%
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per 30 days	$ 0.10	1	$ 0.10	$ 0.10	1	$ 0.10	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per 30 days	$ 0.03	1	$ 0.03	$ 0.03	1	$ 0.03	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kWh	-$ 0.00009	800	-$ 0.07	-$ 0.00009	800	-$ 0.07	$ -	0.00%
Rate Rider for Disposition of LRAM Variance Account	per 30 days	-$ 0.03	1	-$ 0.03	-$ 0.03	1	-$ 0.03	$ -	0.00%
Rate Rider for Application of IFRS - 2014 Derecognition	per 30 days	$ 0.46	1	$ 0.46	$ 0.46	1	$ 0.46	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per 30 days	-$ 0.48	1	-$ 0.48	-$ 0.48	1	-$ 0.48	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per 30 days	-$ 1.48	1	-$ 1.48	-$ 1.48	1	-$ 1.48	$ -	0.00%
Sub-Total A (excluding pass through)				$ 37.68			$ 38.17	**$ 0.49**	**1.30%**
Rate Rider for Recovery of Low Voltage Variance	per kWh	$ 0.00006	800	$ 0.05	$ 0.00006	800	$ 0.05	$ -	0.00%
Line Losses on Cost of Power	per kWh	$ 0.1118	30	$ 3.36	$ 0.1118	30	$ 3.36	$ -	0.00%
Rate Rider for Smart Metering Entity Charge	per 30 days	$ 0.78	1	$ 0.78	$ 0.78	1	$ 0.78	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 41.87**			**$ 42.36**	**$ 0.49**	**1.17%**
RTSR - Network	per kWh	$ 0.00914	830	$ 7.59	$ 0.00914	830	$ 7.59	$ -	0.00%
RTSR - Line and Transformation Connection	per kWh	$ 0.00786	830	$ 6.52	$ 0.00786	830	$ 6.52	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 55.98**			**$ 56.47**	**$ 0.49**	**0.88%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	830	$ 2.99	$ 0.0036	830	$ 2.99	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	830	$ 1.08	$ 0.0013	830	$ 1.08	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	830	$ 0.91	$ 0.0011	830	$ 0.91	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ -	800	$ -	$ -	800	$ -	$ -	
TOU - Off Peak	per kWh	$ 0.087	512	$ 44.54	$ 0.0870	512	$ 44.54	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.132	144	$ 19.01	$ 0.1320	144	$ 19.01	$ -	0.00%
TOU - On Peak	per kWh	$ 0.180	144	$ 25.92	$ 0.1800	144	$ 25.92	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.103	800	$ 82.40	$ 0.1030	800	$ 82.40	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.121	0	$ -	$ 0.1210	0	$ -	$ -	
Total Bill on TOU (before Taxes)				**$ 150.68**			**$ 151.17**	**$ 0.49**	**0.33%**
HST		13%		$ 19.59	13%		$ 19.65	$ 0.06	0.33%
Total Bill (including HST)				$ 170.27			$ 170.83	$ 0.55	0.33%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 170.27**			**$ 170.83**	**$ 0.55**	**0.33%**
Total Bill on RPP (before Taxes)				**$ 143.61**			**$ 144.10**	**$ 0.49**	**0.34%**
HST		13%		$ 18.67	13%		$ 18.73	$ 0.06	0.34%
Total Bill (including HST)				$ 162.28			$ 162.84	$ 0.55	0.34%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 162.28**			**$ 162.84**	**$ 0.55**	**0.34%**

Loss Factor (%) 3.76% 3.76%

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: RESIDENTIAL SERVICE

TOU / non-TOU: TOU

Consumption 750 kWh ○ May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)

		Current Board-Approved			Nov. 1, 2016 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 22.78	1	$ 22.78	$ 22.78	1	$ 22.78	$ -	0.00%
Rate Rider for Incremental Capital Module True-up	per 30 days				$ 0.49	1	$ 0.49	$ 0.49	
Rate Rider for Recovery of 2008-2010 Smart Meter Costs	per 30 days	$ 0.08	1	$ 0.08	$ 0.08	1	$ 0.08	$ -	0.00%
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 0.88	1	$ 0.88	$ 0.88	1	$ 0.88	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.28	1	$ 0.28	$ 0.28	1	$ 0.28	$ -	0.00%
Rate Rider for Recovery of Stranded Meter Assets	per 30 days	$ 0.28	1	$ 0.28	$ 0.28	1	$ 0.28	$ -	0.00%
Rate Rider for Recovery of Smart Metering Entity Variance	per 30 days	$ 0.06	1	$ 0.06	$ 0.06	1	$ 0.06	$ -	0.00%
Distribution Volumetric Rate	per kWh	$ 0.01880	750	$ 14.10	$ 0.01880	750	$ 14.10	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per 30 days	-$ 0.17	1	-$ 0.17	-$ 0.17	1	-$ 0.17	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance - HST	per 30 days	-$ 0.08	1	-$ 0.08	-$ 0.08	1	-$ 0.08	$ -	0.00%
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per 30 days	$ 0.10	1	$ 0.10	$ 0.10	1	$ 0.10	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per 30 days	$ 0.03	1	$ 0.03	$ 0.03	1	$ 0.03	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kWh	-$ 0.00009	750	-$ 0.07	-$ 0.00009	750	-$ 0.07	$ -	0.00%
Rate Rider for Disposition of LRAM Variance Account	per 30 days	-$ 0.03	1	-$ 0.03	-$ 0.03	1	-$ 0.03	$ -	0.00%
Rate Rider for Application of IFRS - 2014 Derecognition	per 30 days	$ 0.46	1	$ 0.46	$ 0.46	1	$ 0.46	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per 30 days	-$ 0.48	1	-$ 0.48	-$ 0.48	1	-$ 0.48	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per 30 days	-$ 1.48	1	-$ 1.48	-$ 1.48	1	-$ 1.48	$ -	0.00%
Sub-Total A (excluding pass through)				$ 36.74			$ 37.23	**$ 0.49**	**1.33%**
Rate Rider for Recovery of Low Voltage Variance	per kWh	$ 0.00006	750	$ 0.05	$ 0.00006	750	$ 0.05	$ -	0.00%
Line Losses on Cost of Power	per kWh	$ 0.1118	28	$ 3.15	$ 0.1118	28	$ 3.15	$ -	0.00%
Rate Rider for Smart Metering Entity Charge	per 30 days	$ 0.78	1	$ 0.78	$ 0.78	1	$ 0.78	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 40.72**			**$ 41.21**	**$ 0.49**	**1.20%**
RTSR - Network	per kWh	$ 0.00914	778	$ 7.11	$ 0.00914	778	$ 7.11	$ -	0.00%
RTSR - Line and Transformation Connection	per kWh	$ 0.00786	778	$ 6.12	$ 0.00786	778	$ 6.12	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 53.95**			**$ 54.44**	**$ 0.49**	**0.91%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	778	$ 2.80	$ 0.0036	778	$ 2.80	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	778	$ 1.01	$ 0.0013	778	$ 1.01	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	778	$ 0.86	$ 0.0011	778	$ 0.86	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ -	750	$ -	$ -	750	$ -	$ -	
TOU - Off Peak	per kWh	$ 0.087	480	$ 41.76	$ 0.0870	480	$ 41.76	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.132	135	$ 17.82	$ 0.1320	135	$ 17.82	$ -	0.00%
TOU - On Peak	per kWh	$ 0.180	135	$ 24.30	$ 0.1800	135	$ 24.30	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.103	750	$ 77.25	$ 0.1030	750	$ 77.25	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.121	0	$ -	$ 0.1210	0	$ -	$ -	
Total Bill on TOU (before Taxes)				**$ 142.75**			**$ 143.24**	**$ 0.49**	**0.34%**
HST		13%		$ 18.56	13%		$ 18.62	$ 0.06	0.34%
Total Bill (including HST)				$ 161.31			$ 161.86	$ 0.55	0.34%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 161.31**			**$ 161.86**	**$ 0.55**	**0.34%**
Total Bill on RPP (before Taxes)				**$ 136.12**			**$ 136.61**	**$ 0.49**	**0.36%**
HST		13%		$ 17.70	13%		$ 17.76	$ 0.06	0.36%
Total Bill (including HST)				$ 153.82			$ 154.37	$ 0.55	0.36%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 153.82**			**$ 154.37**	**$ 0.55**	**0.36%**

Loss Factor (%)	3.76%		3.76%

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: COMPETITIVE SECTOR MULTI-UNIT RESIDENTIAL SERVICE

TOU / non-TOU: TOU

Consumption 334 kWh ● May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)

		Current Board-Approved			Nov. 1, 2016 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 19.07	1	$ 19.07	$ 19.07	1	$ 19.07	$ -	0.00%
Rate Rider for Incremental Capital Module True-up	per 30 days			$ -	$ 0.16	1	$ 0.16	$ 0.16	
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 0.19	1	$ 0.19	$ 0.19	1	$ 0.19	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.09	1	$ 0.09	$ 0.09	1	$ 0.09	$ -	0.00%
Rate Rider for Recovery of Smart Metering Entity Variance	per 30 days	$ 0.03	1	$ 0.03	$ 0.03	1	$ 0.03	$ -	0.00%
Distribution Volumetric Rate	per kWh	$ 0.02877	334	$ 9.61	$ 0.02877	334	$ 9.61	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per 30 days	-$ 0.07	1	-$ 0.07	-$ 0.07	1	-$ 0.07	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance - HST	per 30 days	-$ 0.03	1	-$ 0.03	-$ 0.03	1	-$ 0.03	$ -	0.00%
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per 30 days	$ 0.04	1	$ 0.04	$ 0.04	1	$ 0.04	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per 30 days	$ 0.01	1	$ 0.01	$ 0.01	1	$ 0.01	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kWh	-$ 0.00006	334	-$ 0.02	-$ 0.00006	334	-$ 0.02	$ -	0.00%
Rate Rider for Disposition of LRAM Variance Account	per 30 days	$ -	1	$ -	$ -	1	$ -	$ -	
Rate Rider for Application of IFRS - 2014 Derecognition	per 30 days	$ 0.18	1	$ 0.18	$ 0.18	1	$ 0.18	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per 30 days	-$ 0.19	1	-$ 0.19	-$ 0.19	1	-$ 0.19	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per 30 days	-$ 0.59	1	-$ 0.59	-$ 0.59	1	-$ 0.59	$ -	0.00%
Sub-Total A (excluding pass through)				$ 28.32			$ 28.48	**$ 0.16**	**0.56%**
Rate Rider for Recovery of Low Voltage Variance	per kWh	$ 0.00002	334	$ 0.01	$ 0.00002	334	$ 0.01	$ -	0.00%
Line Losses on Cost of Power	per kWh	$ 0.1118	13	$ 1.40	$ 0.1118	13	$ 1.40	$ -	0.00%
Rate Rider for Smart Metering Entity Charge	per 30 days	$ 0.78	1	$ 0.78	$ 0.78	1	$ 0.78	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 30.51**			**$ 30.67**	**$ 0.16**	**0.52%**
RTSR - Network	per kWh	$ 0.00914	347	$ 3.17	$ 0.00914	347	$ 3.17	$ -	0.00%
RTSR - Line and Transformation Connection	per kWh	$ 0.00786	347	$ 2.72	$ 0.00786	347	$ 2.72	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 36.40**			**$ 36.56**	**$ 0.16**	**0.44%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0044	347	$ 1.52	$ 0.0044	347	$ 1.52	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	347	$ 0.45	$ 0.0013	347	$ 0.45	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	347	$ 0.38	$ 0.0011	347	$ 0.38	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ -	334	$ -	$ -	334	$ -	$ -	
TOU - Off Peak	per kWh	$ 0.0870	214	$ 18.60	$ 0.0870	214	$ 18.60	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	60	$ 7.94	$ 0.1320	60	$ 7.94	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	60	$ 10.82	$ 0.1800	60	$ 10.82	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	334	$ 34.40	$ 0.1030	334	$ 34.40	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	0	$ -	$ 0.1210	0	$ -	$ -	
Total Bill on TOU (before Taxes)				**$ 76.36**			**$ 76.52**	**$ 0.16**	**0.21%**
HST		13%		$ 9.93	13%		$ 9.95	$ 0.02	0.21%
Total Bill (including HST)				$ 86.29			$ 86.47	$ 0.18	0.21%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 86.29**			**$ 86.47**	**$ 0.18**	**0.21%**
Total Bill on RPP (before Taxes)				**$ 73.41**			**$ 73.57**	**$ 0.16**	**0.22%**
HST		13%		$ 9.54	13%		$ 9.56	$ 0.02	0.22%
Total Bill (including HST)				$ 82.95			$ 83.13	$ 0.18	0.22%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 82.95**			**$ 83.13**	**$ 0.18**	**0.22%**

Loss Factor (%)	3.76%		3.76%

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: GENERAL SERVICE LESS THAN 50 kW SERVICE

TOU / non-TOU: TOU

Consumption 2,000 kWh ● May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)

		Current Board-Approved			Nov. 1, 2016 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 30.47	1	$ 30.47	$ 30.47	1	$ 30.47	$ -	0.00%
Rate Rider for Incremental Capital Module True-up	per 30 days			$ -	$ 0.41	1	$ 0.41	$ 0.41	
Rate Rider for Recovery of 2008-2010 Smart Meter Costs	per 30 days	$ 5.60	1	$ 5.60	$ 5.60	1	$ 5.60	$ -	0.00%
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 0.79	1	$ 0.79	$ 0.79	1	$ 0.79	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Rate Rider for Recovery of Stranded Meter Assets	per 30 days	$ 1.55	1	$ 1.55	$ 1.55	1	$ 1.55	$ -	0.00%
Rate Rider for Recovery of Smart Metering Entity Variance	per 30 days	$ 0.06	1	$ 0.06	$ 0.06	1	$ 0.06	$ -	0.00%
Distribution Volumetric Rate	per kWh	$ 0.02818	2,000	$ 56.36	$ 0.02818	2,000	$ 56.36	$ -	0.00%
Rate Rider for Incremental Capital Module True-up	per kWh			$ -	$ 0.00042	2,000	$ 0.84	$ 0.84	
Rate Rider for Recovery of 2015 Foregone Revenue	per kWh	$ 0.00076	2,000	$ 1.52	$ 0.00076	2,000	$ 1.52	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per kWh	$ 0.00024	2,000	$ 0.48	$ 0.00024	2,000	$ 0.48	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kWh	-$ 0.00018	2,000	-$ 0.36	-$ 0.00018	2,000	-$ 0.36	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance - HST	per kWh	-$ 0.00009	2,000	-$ 0.18	-$ 0.00009	2,000	-$ 0.18	$ -	0.00%
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kWh	$ 0.00013	2,000	$ 0.26	$ 0.00013	2,000	$ 0.26	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kWh	$ 0.00003	2,000	$ 0.06	$ 0.00003	2,000	$ 0.06	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kWh	-$ 0.00009	2,000	-$ 0.18	-$ 0.00009	2,000	-$ 0.18	$ -	0.00%
Rate Rider for Disposition of LRAM Variance Account	per kWh	$ 0.00056	2,000	$ 1.12	$ 0.00056	2,000	$ 1.12	$ -	0.00%
Rate Rider for Application of IFRS - 2014 Derecognition	per kWh	$ 0.00049	2,000	$ 0.98	$ 0.00049	2,000	$ 0.98	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kWh	-$ 0.00051	2,000	-$ 1.02	-$ 0.00051	2,000	-$ 1.02	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kWh	-$ 0.00156	2,000	-$ 3.12	-$ 0.00156	2,000	-$ 3.12	$ -	0.00%
Sub-Total A (excluding pass through)				$ 94.64			$ 95.89	**$ 1.25**	**1.32%**
Rate Rider for Recovery of Low Voltage Variance	per kWh	$ 0.00006	2,000	$ 0.12	$ 0.00006	2,000	$ 0.12	$ -	0.00%
Line Losses on Cost of Power	per kWh	$ 0.1118	75	$ 8.41	$ 0.1118	75	$ 8.41	$ -	0.00%
Rate Rider for Smart Metering Entity Charge	per 30 days	$ 0.78	1	$ 0.78	$ 0.78	1	$ 0.78	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 103.95**			**$ 105.20**	**$ 1.25**	**1.20%**
RTSR - Network	per kWh	$ 0.00884	2,075	$ 18.34	$ 0.00884	2,075	$ 18.34	$ -	0.00%
RTSR - Line and Transformation Connection	per kWh	$ 0.00709	2,075	$ 14.71	$ 0.00709	2,075	$ 14.71	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 137.01**			**$ 138.26**	**$ 1.25**	**0.91%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	2,075	$ 7.47	$ 0.0036	2,075	$ 7.47	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	2,075	$ 2.70	$ 0.0013	2,075	$ 2.70	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	2,075	$ 2.28	$ 0.0011	2,075	$ 2.28	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	2,000	$ 14.00	$ 0.0070	2,000	$ 14.00	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	1,280	$ 111.36	$ 0.0870	1,280	$ 111.36	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	360	$ 47.52	$ 0.1320	360	$ 47.52	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	360	$ 64.80	$ 0.1800	360	$ 64.80	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	600	$ 61.80	$ 0.1030	600	$ 61.80	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	1,400	$ 169.40	$ 0.1210	1,400	$ 169.40	$ -	0.00%
Total Bill on TOU (before Taxes)				**$ 387.39**			**$ 388.64**	**$ 1.25**	**0.32%**
HST		13%		$ 50.36	13%		$ 50.52	$ 0.16	0.32%
Total Bill (including HST)				$ 437.75			$ 439.16	$ 1.41	0.32%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 437.75**			**$ 439.16**	**$ 1.41**	**0.32%**
Total Bill on RPP (before Taxes)				**$ 394.91**			**$ 396.16**	**$ 1.25**	**0.32%**
HST		13%		$ 51.34	13%		$ 51.50	$ 0.16	0.32%
Total Bill (including HST)				$ 446.25			$ 447.66	$ 1.41	0.32%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 446.25**			**$ 447.66**	**$ 1.41**	**0.32%**
Loss Factor (%)		3.76%			3.76%				

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: GENERAL SERVICE 50 TO 999 kW SERVICE

TOU / non-TOU: non-TOU

Consumption	349	kW
	388	kVA
	150,000	kWh

May 1 - October 31 | November 1 - April 30 (Select this radio button for applications filed after Oct 31)

		Current Board-Approved			Nov. 1, 2016 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 43.82	1	$ 43.82	$ 43.82	1	$ 43.82	$ -	0.00%
Rate Rider for Incremental Capital Module True-up	per 30 days			$ -	$ 0.67	1	$ 0.67	$ 0.67	
Rate Rider for Recovery of 2008-2010 Smart Meter Costs	per 30 days	$ 18.79	1	$ 18.79	$ 18.79	1	$ 18.79	$ -	0.00%
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 1.01	1	$ 1.01	$ 1.01	1	$ 1.01	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.30	1	$ 0.30	$ 0.30	1	$ 0.30	$ -	0.00%
Rate Rider for Recovery of Stranded Meter Assets	per 30 days	$ 4.64	1	$ 4.64	$ 4.64	1	$ 4.64	$ -	0.00%
Distribution Volumetric Rate	per kVA	$ 6.8970	388	$ 2,676.04	$ 6.8970	388	$ 2,676.04	$ -	0.00%
Rate Rider for Incremental Capital Module True-up	per kVA			$ -	$ 0.1024	388	$ 39.73	$ 39.73	
Rate Rider for Recovery of 2015 Foregone Revenue	per kVA	$ 0.1659	388	$ 64.37	$ 0.1659	388	$ 64.37	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per kVA	$ 0.0498	388	$ 19.32	$ 0.0498	388	$ 19.32	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kVA	-$ 0.0292	388	-$ 11.33	-$ 0.0292	388	-$ 11.33	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance - HST	per kVA	-$ 0.0138	388	-$ 5.35	-$ 0.0138	388	-$ 5.35	$ -	0.00%
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kVA	$ 0.0114	388	$ 4.42	$ 0.0114	388	$ 4.42	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kVA	$ 0.0047	388	$ 1.82	$ 0.0047	388	$ 1.82	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kVA	-$ 0.0354	388	-$ 13.74	-$ 0.0354	388	-$ 13.74	$ -	0.00%
Rate Rider for Disposition of LRAM Variance Account	per kVA	$ 0.1286	388	$ 49.90	$ 0.1286	388	$ 49.90	$ -	0.00%
Rate Rider for Application of IFRS - 2014 Derecognition	per kVA	$ 0.0781	388	$ 30.30	$ 0.0781	388	$ 30.30	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kVA	-$ 0.0814	388	-$ 31.58	-$ 0.0814	388	-$ 31.58	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kVA	-$ 0.2512	388	-$ 97.47	-$ 0.2512	388	-$ 97.47	$ -	0.00%
Sub-Total A (excluding pass through)				$ 2,755.27			$ 2,795.67	**$ 40.40**	**1.47%**
Rate Rider for Recovery of Low Voltage Variance	per kVA	$ 0.0225	388	$ 8.73	$ 0.0225	388	$ 8.73	$ -	0.00%
Line Losses on Cost of Power	per kWh	$ 0.1210	5,640	$ 682.44	$ 0.1210	5,640	$ 682.44	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 3,446.44**			**$ 3,486.84**	**$ 40.40**	**1.17%**
RTSR - Network	per kW	$ 3.1647	349	$ 1,104.48	$ 3.1647	349	$ 1,104.48	$ -	0.00%
RTSR - Line and Transformation Connection	per kW	$ 2.7017	349	$ 942.89	$ 2.7017	349	$ 942.89	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 5,493.81**			**$ 5,534.21**	**$ 40.40**	**0.74%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	155,640	$ 560.30	$ 0.0036	155,640	$ 560.30	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	155,640	$ 202.33	$ 0.0013	155,640	$ 202.33	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	155,640	$ 171.20	$ 0.0011	155,640	$ 171.20	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	150,000	$ 1,050.00	$ 0.0070	150,000	$ 1,050.00	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	96,000	$ 8,352.00	$ 0.0870	96,000	$ 8,352.00	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	27,000	$ 3,564.00	$ 0.1320	27,000	$ 3,564.00	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	27,000	$ 4,860.00	$ 0.1800	27,000	$ 4,860.00	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	750	$ 77.25	$ 0.1030	750	$ 77.25	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	149,250	$ 18,059.25	$ 0.1210	149,250	$ 18,059.25	$ -	0.00%
Total Bill on TOU (before Taxes)				**$ 24,253.90**			**$ 24,294.30**	**$ 40.40**	**0.17%**
HST		13%		$ 3,153.01	13%		$ 3,158.26	$ 5.25	0.17%
Total Bill (including HST)				$ 27,406.91			$ 27,452.56	$ 45.65	0.17%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 27,406.91**			**$ 27,452.56**	**$ 45.65**	**0.17%**
Total Bill on RPP (before Taxes)				**$ 25,614.40**			**$ 25,654.80**	**$ 40.40**	**0.16%**
HST		13%		$ 3,329.87	13%		$ 3,335.12	$ 5.25	0.16%
Total Bill (including HST)				$ 28,944.27			$ 28,989.92	$ 45.65	0.16%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 28,944.27**			**$ 28,989.92**	**$ 45.65**	**0.16%**
Loss Factor (%)		3.76%			3.76%				

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: GENERAL SERVICE 1,000 TO 4,999 kW SERVICE

TOU / non-TOU: non-TOU

	1,600	kW	
	1,778	kVA	◉ May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)
Consumption	800,000	kWh	

		Current Board-Approved			Nov. 1, 2016 Proposed			Impact	
	Charge Unit	**Rate ($)**	**Volume**	**Charge ($)**	**Rate ($)**	**Volume**	**Charge ($)**	**$ Change**	**% Change**
Service Charge	per 30 days	$ 837.09	1	$ 837.09	$ 837.09	1	$ 837.09	$ -	0.00%
Rate Rider for Incremental Capital Module True-up	per 30 days				$ 14.21	1	$ 14.21	$ 14.21	
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 18.89	1	$ 18.89	$ 18.89	1	$ 18.89	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 5.48	1	$ 5.48	$ 5.48	1	$ 5.48	$ -	0.00%
Distribution Volumetric Rate	per kVA	$ 5.4262	1,778	$ 9,647.78	$ 5.4262	1,778	$ 9,647.78	$ -	0.00%
Rate Rider for Incremental Capital Module True-up	per kVA				$ 0.0790	1,778	$ 140.46	$ 140.46	
Rate Rider for Recovery of 2015 Foregone Revenue	per kVA	$ 0.1226	1,778	$ 217.98	$ 0.1226	1,778	$ 217.98	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per kVA	$ 0.0356	1,778	$ 63.30	$ 0.0356	1,778	$ 63.30	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kVA	-$ 0.0232	1,778	-$ 41.25	-$ 0.0232	1,778	-$ 41.25	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance - HST	per kVA	-$ 0.0110	1,778	-$ 19.56	-$ 0.0110	1,778	-$ 19.56	$ -	0.00%
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kVA	$ 0.0056	1,778	$ 9.96	$ 0.0056	1,778	$ 9.96	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kVA	$ 0.0038	1,778	$ 6.76	$ 0.0038	1,778	$ 6.76	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kVA	-$ 0.0401	1,778	-$ 71.30	-$ 0.0401	1,778	-$ 71.30	$ -	0.00%
Rate Rider for Disposition of LRAM Variance Account	per kVA	-$ 0.0041	1,778	-$ 7.29	-$ 0.0041	1,778	-$ 7.29	$ -	0.00%
Rate Rider for Application of IFRS - 2014 Derecognition	per kVA	$ 0.0627	1,778	$ 111.48	$ 0.0627	1,778	$ 111.48	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kVA	-$ 0.0653	1,778	-$ 116.10	-$ 0.0653	1,778	-$ 116.10	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kVA	-$ 0.2017	1,778	-$ 358.62	-$ 0.2017	1,778	-$ 358.62	$ -	0.00%
Sub-Total A (excluding pass through)				$ 10,304.60			$ 10,459.27	**$ 154.67**	**1.50%**
Rate Rider for Recovery of Low Voltage Variance	per kVA	$ 0.0273	1,778	$ 48.54	$ 0.0273	1,778	$ 48.54	$ -	0.00%
Line Losses on Cost of Power	per kWh	$ 0.1210	30,080	$ 3,639.68	$ 0.1210	30,080	$ 3,639.68	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 13,992.82**			**$ 14,147.49**	**$ 154.67**	**1.11%**
RTSR - Network	per kW	$ 3.0576	1,600	$ 4,892.16	$ 3.0576	1,600	$ 4,892.16	$ -	0.00%
RTSR - Line and Transformation Connection	per kW	$ 2.6990	1,600	$ 4,318.40	$ 2.6990	1,600	$ 4,318.40	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 23,203.38**			**$ 23,358.05**	**$ 154.67**	**0.67%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	830,080	$ 2,988.29	$ 0.0036	830,080	$ 2,988.29	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	830,080	$ 1,079.10	$ 0.0013	830,080	$ 1,079.10	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	830,080	$ 913.09	$ 0.0011	830,080	$ 913.09	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	800,000	$ 5,600.00	$ 0.0070	800,000	$ 5,600.00	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	512,000	$ 44,544.00	$ 0.0870	512,000	$ 44,544.00	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	144,000	$ 19,008.00	$ 0.1320	144,000	$ 19,008.00	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	144,000	$ 25,920.00	$ 0.1800	144,000	$ 25,920.00	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	750	$ 77.25	$ 0.1030	750	$ 77.25	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	799,250	$ 96,709.25	$ 0.1210	799,250	$ 96,709.25	$ -	0.00%
Total Bill on TOU (before Taxes)				**$ 123,256.11**			**$ 123,410.78**	**$ 154.67**	**0.13%**
HST		13%		$ 16,023.29	13%		$ 16,043.40	$ 20.11	0.13%
Total Bill (including HST)				$ 139,279.40			$ 139,454.18	$ 174.78	0.13%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 139,279.40**			**$ 139,454.18**	**$ 174.78**	**0.13%**
Total Bill on RPP (before Taxes)				**$ 130,570.61**			**$ 130,725.28**	**$ 154.67**	**0.12%**
HST		13%		$ 16,974.18	13%		$ 16,994.29	$ 20.11	0.12%
Total Bill (including HST)				$ 147,544.78			$ 147,719.56	$ 174.78	0.12%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 147,544.78**			**$ 147,719.56**	**$ 174.78**	**0.12%**
Loss Factor (%)		3.76%			3.76%				

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: LARGE USE SERVICE

TOU / non-TOU: non-TOU

	8,491	kW	
	9,434	kVA	● May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)
Consumption	4,500,000	kWh	

		Current Board-Approved			Nov. 1, 2016 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 3,694.97	1	$ 3,694.97	$ 3,694.97	1	$ 3,694.97	$ -	0.00%
Rate Rider for Incremental Capital Module True-up	per 30 days				$ 50.45	1	$ 50.45	$ 50.45	
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 85.84	1	$ 85.84	$ 85.84	1	$ 85.84	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 25.18	1	$ 25.18	$ 25.18	1	$ 25.18	$ -	0.00%
Distribution Volumetric Rate	per kVA	$ 5.8210	9,434	$ 54,915.31	$ 5.8210	9,434	$ 54,915.31	$ -	0.00%
Rate Rider for Incremental Capital Module True-up	per kVA				$ 0.0800	9,434	$ 754.72	$ 754.72	
Rate Rider for Recovery of 2015 Foregone Revenue	per kVA	$ 0.1382	9,434	$ 1,303.78	$ 0.1382	9,434	$ 1,303.78	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per kVA	$ 0.0406	9,434	$ 383.02	$ 0.0406	9,434	$ 383.02	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kVA	-$ 0.0241	9,434	-$ 227.36	-$ 0.0241	9,434	-$ 227.36	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance - HST	per kVA	-$ 0.0114	9,434	-$ 107.55	-$ 0.0114	9,434	-$ 107.55	$ -	0.00%
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kVA	$ 0.0044	9,434	$ 41.51	$ 0.0044	9,434	$ 41.51	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kVA	$ 0.0039	9,434	$ 36.79	$ 0.0039	9,434	$ 36.79	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kVA	-$ 0.0423	9,434	-$ 399.06	-$ 0.0423	9,434	-$ 399.06	$ -	0.00%
Rate Rider for Disposition of LRAM Variance Account	per kVA	-$ 0.0223	9,434	-$ 210.38	-$ 0.0223	9,434	-$ 210.38	$ -	0.00%
Rate Rider for Application of IFRS - 2014 Derecognition	per kVA	$ 0.0648	9,434	$ 611.32	$ 0.0648	9,434	$ 611.32	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kVA	-$ 0.0675	9,434	-$ 636.80	-$ 0.0675	9,434	-$ 636.80	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kVA	-$ 0.2084	9,434	-$ 1,966.05	-$ 0.2084	9,434	-$ 1,966.05	$ -	0.00%
Sub-Total A (excluding pass through)				$ 57,550.54			$ 58,355.71	**$ 805.17**	**1.40%**
Rate Rider for Recovery of Low Voltage Variance	per kVA	$ 0.0261	9,434	$ 246.23	$ 0.0261	9,434	$ 246.23	$ -	0.00%
Line Losses on Cost of Power	per kWh	$ 0.1210	84,150	$ 10,182.15	$ 0.1210	84,150	$ 10,182.15	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 67,978.92**			**$ 68,784.09**	**$ 805.17**	**1.18%**
RTSR - Network	per kW	$ 3.4855	8,491	$ 29,595.38	$ 3.4855	8,491	$ 29,595.38	$ -	0.00%
RTSR - Line and Transformation Connection	per kW	$ 2.9986	8,491	$ 25,461.11	$ 2.9986	8,491	$ 25,461.11	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 123,035.42**			**$ 123,840.59**	**$ 805.17**	**0.65%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	4,584,150	$ 16,502.94	$ 0.0036	4,584,150	$ 16,502.94	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	4,584,150	$ 5,959.40	$ 0.0013	4,584,150	$ 5,959.40	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	4,584,150	$ 5,042.57	$ 0.0011	4,584,150	$ 5,042.57	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	4,500,000	$ 31,500.00	$ 0.0070	4,500,000	$ 31,500.00	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	2,880,000	$ 250,560.00	$ 0.0870	2,880,000	$ 250,560.00	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	810,000	$ 106,920.00	$ 0.1320	810,000	$ 106,920.00	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	810,000	$ 145,800.00	$ 0.1800	810,000	$ 145,800.00	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	750	$ 77.25	$ 0.1030	750	$ 77.25	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	4,499,250	$ 544,409.25	$ 0.1210	4,499,250	$ 544,409.25	$ -	0.00%
Total Bill on TOU (before Taxes)				**$ 685,320.57**			**$ 686,125.74**	**$ 805.17**	**0.12%**
HST		13%		$ 89,091.67	13%		$ 89,196.35	$ 104.67	0.12%
Total Bill (including HST)				$ 774,412.24			$ 775,322.08	$ 909.84	0.12%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 774,412.24**			**$ 775,322.08**	**$ 909.84**	**0.12%**
Total Bill on RPP (before Taxes)				**$ 726,527.07**			**$ 727,332.24**	**$ 805.17**	**0.11%**
HST		13%		$ 94,448.52	13%		$ 94,553.19	$ 104.67	0.11%
Total Bill (including HST)				$ 820,975.58			$ 821,885.43	$ 909.84	0.11%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 820,975.58**			**$ 821,885.43**	**$ 909.84**	**0.11%**
Loss Factor (%)		1.87%			1.87%				

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: STREET LIGHTING SERVICE

TOU / non-TOU: non-TOU

		1	Devices
		0.165	kW
		0.165	kVA (●) May 1 - October 31 ( ) November 1 - April 30 (Select this radio button for applications filed after Oct 31)
	Consumption	60	kWh

		Current Board-Approved			Nov. 1, 2016 Proposed			Impact	
	Charge Unit	**Rate ($)**	**Volume**	**Charge ($)**	**Rate ($)**	**Volume**	**Charge ($)**	**$ Change**	**% Change**
Service Charge (per device)	per device per 30 days	$ 1.37	1	$ 1.37	$ 1.37	1	$ 1.37	$ -	0.00%
Rate Rider for Incremental Capital Module True-up	per device per 30 days				$ 0.02	1	$ 0.02	$ 0.02	
Rate Rider for Recovery of 2015 Foregone Revenue	per device per 30 days	$ -		$ -	$ -	-	$ -	$ -	
Rate Rider for Recovery of 2016 Foregone Revenue	per device per 30 days	$ -		$ -	$ -	-	$ -	$ -	
Distribution Volumetric Rate	per kVA	$ 30.4431	0.165	$ 5.02	$ 30.4431	0.165	$ 5.02	$ -	0.00%
Rate Rider for Incremental Capital Module True-up	per kVA				$ 0.5069	0.165	$ 0.08	$ 0.08	
Rate Rider for Recovery of 2015 Foregone Revenue	per kVA	$ -	0.165	$ -	$ -	0.165	$ -	$ -	
Rate Rider for Recovery of 2016 Foregone Revenue	per kVA	$ 0.0478	0.165	$ 0.01	$ 0.0478	0.165	$ 0.01	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kVA	-$ 0.1926	0.165	-$ 0.03	-$ 0.1926	0.165	-$ 0.03	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance - HST	per kVA	-$ 0.0911	0.165	-$ 0.02	-$ 0.0911	0.165	-$ 0.02	$ -	0.00%
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kVA	$ 0.0741	0.165	$ 0.01	$ 0.0741	0.165	$ 0.01	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kVA	$ 0.0312	0.165	$ 0.01	$ 0.0312	0.165	$ 0.01	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kVA	-$ 0.0364	0.165	-$ 0.01	-$ 0.0364	0.165	-$ 0.01	$ -	0.00%
Rate Rider for Application of IFRS - 2014 Derecognition	per kVA	$ 0.5133	0.165	$ 0.08	$ 0.5133	0.165	$ 0.08	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kVA	-$ 0.5347	0.165	-$ 0.09	-$ 0.5347	0.165	-$ 0.09	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kVA	-$ 1.6506	0.165	-$ 0.27	-$ 1.6506	0.165	-$ 0.27	$ -	0.00%
Sub-Total A (excluding pass through)				$ 6.09			$ 6.19	**$ 0.10**	**1.70%**
Rate Rider for Recovery of Low Voltage Variance	per kVA	$ 0.0210	0.165	$ 0.00	$ 0.0210	0.165	$ 0.00	$ -	0.00%
Line Losses on Cost of Power	per kWh	$ 0.1030	2	$ 0.23	$ 0.1030	2	$ 0.23	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 6.33**			**$ 6.43**	**$ 0.10**	**1.64%**
RTSR - Network	per kW	$ 2.8147	0.165	$ 0.46	$ 2.8147	0	$ 0.46	$ -	0.00%
RTSR - Line and Transformation Connection	per kW	$ 3.2215	0.165	$ 0.53	$ 3.2215	0	$ 0.53	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 7.32**			**$ 7.43**	**$ 0.10**	**1.42%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	62	$ 0.22	$ 0.0036	62	$ 0.22	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	62	$ 0.08	$ 0.0013	62	$ 0.08	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	62	$ 0.07	$ 0.0011	62	$ 0.07	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	60	$ 0.42	$ 0.0070	60	$ 0.42	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	38	$ 3.34	$ 0.0870	38	$ 3.34	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	11	$ 1.43	$ 0.1320	11	$ 1.43	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	11	$ 1.94	$ 0.1800	11	$ 1.94	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	60	$ 6.18	$ 0.1030	60	$ 6.18	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	-	$ -	$ 0.1210	-	$ -	$ -	
Total Bill on TOU (before Taxes)				**$ 15.08**			**$ 15.18**	**$ 0.10**	**0.69%**
HST		13%		$ 1.96	13%		$ 1.97	$ 0.01	0.69%
Total Bill (including HST)				$ 17.04			$ 17.15	$ 0.12	0.69%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 17.04**			**$ 17.15**	**$ 0.12**	**0.69%**
Total Bill on RPP (before Taxes)				**$ 14.55**			**$ 14.65**	**$ 0.10**	**0.71%**
HST		13%		$ 1.89	13%		$ 1.90	$ 0.01	0.71%
Total Bill (including HST)				$ 16.44			$ 16.55	$ 0.12	0.71%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 16.44**			**$ 16.55**	**$ 0.12**	**0.71%**

Loss Factor (%)	3.76%	3.76%

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: UNMETERED SCATTERED LOAD SERVICE

TOU / non-TOU: non-TOU

Consumption — 1 Connection; 365 kWh; May 1 - October 31; November 1 - April 30 (Select this radio button for applications filed after Oct 31)

	Charge Unit	Current Board-Approved Rate ($)	Current Board-Approved Volume	Current Board-Approved Charge ($)	Nov. 1, 2016 Proposed Rate ($)	Nov. 1, 2016 Proposed Volume	Nov. 1, 2016 Proposed Charge ($)	Impact $ Change	Impact % Change
Service Charge	per 30 days	$ 6.08	1	$ 6.08	$ 6.08	1	$ 6.08	$ -	0.00%
Rate Rider for Incremental Capital Module True-up	per 30 days				$ 0.01	1	$ 0.01	$ 0.01	
Connection Charge (per connection)	per connection per 30 days	$ 0.62	1	$ 0.62	$ 0.62	1	$ 0.62	$ -	0.00%
Rate Rider for Incremental Capital Module True-up	per connection per 30 days				$ 0.16	1	$ 0.16	$ 0.16	
Rate Rider for Recovery of 2015 Foregone Revenue (per connection)	per connection per 30 days	$ 0.02	1	$ 0.02	$ 0.02	1	$ 0.02	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue (per connection)	per connection per 30 days	$ 0.01	1	$ 0.01	$ 0.01	1	$ 0.01	$ -	0.00%
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 0.16	1	$ 0.16	$ 0.16	1	$ 0.16	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.05	1	$ 0.05	$ 0.05	1	$ 0.05	$ -	0.00%
Distribution Volumetric Rate	per kWh	$ 0.07634	365	$ 27.86	$ 0.07634	365	$ 27.86	$ -	0.00%
Rate Rider for Incremental Capital Module True-up	per kWh				$ 0.00150	365	$ 0.55	$ 0.55	
Rate Rider for Recovery of 2015 Foregone Revenue	per kWh	$ 0.00203	365	$ 0.74	$ 0.00203	365	$ 0.74	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per kWh	$ 0.00062	365	$ 0.23	$ 0.00062	365	$ 0.23	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kWh	-$ 0.00035	365	-$ 0.13	-$ 0.00035	365	-$ 0.13	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance - HST	per kWh	-$ 0.00016	365	-$ 0.06	-$ 0.00016	365	-$ 0.06	$ -	0.00%
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kWh	$ 0.00029	365	$ 0.11	$ 0.00029	365	$ 0.11	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kWh	$ 0.00006	365	$ 0.02	$ 0.00006	365	$ 0.02	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kWh	-$ 0.00011	365	-$ 0.04	-$ 0.00011	365	-$ 0.04	$ -	0.00%
Rate Rider for Application of IFRS - 2014 Derecognition	per kWh	$ 0.00092	365	$ 0.34	$ 0.00092	365	$ 0.34	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kWh	-$ 0.00096	365	-$ 0.35	-$ 0.00096	365	-$ 0.35	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kWh	-$ 0.00296	365	-$ 1.08	-$ 0.00296	365	-$ 1.08	$ -	0.00%
Sub-Total A (excluding pass through)				$ 34.58			$ 35.30	**$ 0.72**	**2.08%**
Rate Rider for Recovery of Low Voltage Variance	per kWh	$ 0.00006	365	$ 0.02	$ 0.00006	365	$ 0.02	$ -	0.00%
Line Losses on Cost of Power	per kWh	$ 0.1030	14	$ 1.41	$ 0.1030	14	$ 1.41	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 36.01**			**$ 36.73**	**$ 0.72**	**1.99%**
RTSR - Network	per kWh	$ 0.00555	379	$ 2.10	$ 0.00555	379	$ 2.10	$ -	0.00%
RTSR - Line and Transformation Connection	per kWh	$ 0.00497	379	$ 1.88	$ 0.00497	379	$ 1.88	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 40.00**			**$ 40.71**	**$ 0.72**	**1.79%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	379	$ 1.36	$ 0.0036	379	$ 1.36	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	379	$ 0.49	$ 0.0013	379	$ 0.49	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	379	$ 0.42	$ 0.0011	379	$ 0.42	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	365	$ 2.56	$ 0.0070	365	$ 2.56	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	234	$ 20.32	$ 0.0870	234	$ 20.32	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	66	$ 8.67	$ 0.1320	66	$ 8.67	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	66	$ 11.83	$ 0.1800	66	$ 11.83	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	365	$ 37.60	$ 0.1030	365	$ 37.60	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	-	$ -	$ 0.1210	-	$ -	$ -	
Total Bill on TOU (before Taxes)				**$ 85.90**			**$ 86.61**	**$ 0.72**	**0.84%**
HST		13%		$ 11.17	13%		$ 11.26	$ 0.09	0.84%
Total Bill (including HST)				$ 97.06			$ 97.87	$ 0.81	0.84%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 97.06**			**$ 97.87**	**$ 0.81**	**0.84%**
Total Bill on RPP (before Taxes)				**$ 82.67**			**$ 83.39**	**$ 0.72**	**0.87%**
HST		13%		$ 10.75	13%		$ 10.84	$ 0.09	0.87%
Total Bill (including HST)				$ 93.42			$ 94.23	$ 0.81	0.87%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 93.42**			**$ 94.23**	**$ 0.81**	**0.87%**
Loss Factor (%)		3.76%			3.76%				

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: RESIDENTIAL SERVICE

TOU / non-TOU: TOU

Consumption 800 kWh ○ May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)

		Current Board-Approved			Jan. 1, 2017 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 22.78	1	$ 22.78	$ 27.72	1	$ 27.72	$ 4.94	21.69%
Rate Rider for Incremental Capital Module True-up	per 30 days				$ 0.58	1	$ 0.58	$ 0.58	
Rate Rider for Recovery of 2008-2010 Smart Meter Costs	per 30 days	$ 0.08	1	$ 0.08	$ 0.08	1	$ 0.08	$ -	0.00%
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 0.88	1	$ 0.88	$ 0.88	1	$ 0.88	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.28	1	$ 0.28	$ 0.28	1	$ 0.28	$ -	0.00%
Rate Rider for Recovery of Stranded Meter Assets	per 30 days	$ 0.28	1	$ 0.28	$ 0.28	1	$ 0.28	$ -	0.00%
Rate Rider for Recovery of Smart Metering Entity Variance	per 30 days	$ 0.06	1	$ 0.06		1	$ -	-$ 0.06	
Distribution Volumetric Rate	per kWh	$ 0.01880	800	$ 15.04	$ 0.01514	800	$ 12.11	-$ 2.93	-19.47%
Rate Rider for Disposition of PILs and Tax Variance	per 30 days	-$ 0.17	1	-$ 0.17		1	$ -	$ 0.17	
Rate Rider for Disposition of PILs and Tax Variance - HST	per 30 days	-$ 0.08	1	-$ 0.08		1	$ -	$ 0.08	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per 30 days	$ 0.10	1	$ 0.10	$ 0.10	1	$ 0.10	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per 30 days	$ 0.03	1	$ 0.03	$ 0.03	1	$ 0.03	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kWh	-$ 0.00009	800	-$ 0.07		800	$ -	$ 0.07	
Rate Rider for Disposition of LRAM Variance Account	per 30 days	-$ 0.03	1	-$ 0.03		1	$ -	$ 0.03	
Rate Rider for Application of IFRS - 2014 Derecognition	per 30 days	$ 0.46	1	$ 0.46	$ 0.46	1	$ 0.46	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per 30 days	-$ 0.48	1	-$ 0.48	-$ 0.48	1	-$ 0.48	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per 30 days	-$ 1.48	1	-$ 1.48	-$ 1.48	1	-$ 1.48	$ -	0.00%
Sub-Total A (excluding pass through)				$ 37.68			$ 40.56	**$ 2.88**	**7.65%**
Rate Rider for Recovery of Low Voltage Variance	per kWh	$ 0.00006	800	$ 0.05		800	$ -	-$ 0.05	
Line Losses on Cost of Power	per kWh	$ 0.1118	30	$ 3.36	$ 0.1118	30	$ 3.36	$ -	0.00%
Rate Rider for Smart Metering Entity Charge	per 30 days	$ 0.78	1	$ 0.78	$ 0.78	1	$ 0.78	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 41.87**			**$ 44.71**	**$ 2.84**	**6.77%**
RTSR - Network	per kWh	$ 0.00914	830	$ 7.59	$ 0.00914	830	$ 7.59	$ -	0.00%
RTSR - Line and Transformation Connection	per kWh	$ 0.00786	830	$ 6.52	$ 0.00786	830	$ 6.52	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 55.98**			**$ 58.82**	**$ 2.84**	**5.07%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	830	$ 2.99	$ 0.0036	830	$ 2.99	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	830	$ 1.08	$ 0.0013	830	$ 1.08	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	830	$ 0.91	$ 0.0011	830	$ 0.91	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ -	800	$ -	$ -	800	$ -	$ -	
TOU - Off Peak	per kWh	$ 0.087	512	$ 44.54	$ 0.0870	512	$ 44.54	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.132	144	$ 19.01	$ 0.1320	144	$ 19.01	$ -	0.00%
TOU - On Peak	per kWh	$ 0.180	144	$ 25.92	$ 0.1800	144	$ 25.92	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.103	800	$ 82.40	$ 0.1030	800	$ 82.40	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.121	0	$ -	$ 0.1210	0	$ -	$ -	
Total Bill on TOU (before Taxes)				**$ 150.68**			**$ 153.52**	**$ 2.84**	**1.88%**
HST		13%		$ 19.59	13%		$ 19.96	$ 0.37	1.88%
Total Bill (including HST)				$ 170.27			$ 173.48	$ 3.20	1.88%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 170.27**			**$ 173.48**	**$ 3.20**	**1.88%**
Total Bill on RPP (before Taxes)				**$ 143.61**			**$ 146.45**	**$ 2.84**	**1.97%**
HST		13%		$ 18.67	13%		$ 19.04	$ 0.37	1.97%
Total Bill (including HST)				$ 162.28			$ 165.49	$ 3.20	1.97%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 162.28**			**$ 165.49**	**$ 3.20**	**1.97%**
Loss Factor (%)		3.76%			3.76%				

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: RESIDENTIAL SERVICE

TOU / non-TOU: TOU

Consumption 750 kWh ○ May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)

		Current Board-Approved			Jan. 1, 2017 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 22.78	1	$ 22.78	$ 27.72	1	$ 27.72	$ 4.94	21.69%
Rate Rider for Incremental Capital Module True-up	per 30 days				$ 0.58	1	$ 0.58	$ 0.58	
Rate Rider for Recovery of 2008-2010 Smart Meter Costs	per 30 days	$ 0.08	1	$ 0.08	$ 0.08	1	$ 0.08	$ -	0.00%
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 0.88	1	$ 0.88	$ 0.88	1	$ 0.88	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.28	1	$ 0.28	$ 0.28	1	$ 0.28	$ -	0.00%
Rate Rider for Recovery of Stranded Meter Assets	per 30 days	$ 0.28	1	$ 0.28	$ 0.28	1	$ 0.28	$ -	0.00%
Rate Rider for Recovery of Smart Metering Entity Variance	per 30 days	$ 0.06	1	$ 0.06		1	$ -	-$ 0.06	
Distribution Volumetric Rate	per kWh	$ 0.01880	750	$ 14.10	$ 0.01514	750	$ 11.36	-$ 2.75	-19.47%
Rate Rider for Disposition of PILs and Tax Variance	per 30 days	-$ 0.17	1	-$ 0.17		1	$ -	$ 0.17	
Rate Rider for Disposition of PILs and Tax Variance - HST	per 30 days	-$ 0.08	1	-$ 0.08		1	$ -	$ 0.08	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per 30 days	$ 0.10	1	$ 0.10	$ 0.10	1	$ 0.10	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per 30 days	$ 0.03	1	$ 0.03	$ 0.03	1	$ 0.03	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kWh	-$ 0.00009	750	-$ 0.07		750	$ -	$ 0.07	
Rate Rider for Disposition of LRAM Variance Account	per 30 days	-$ 0.03	1	-$ 0.03		1	$ -	$ 0.03	
Rate Rider for Application of IFRS - 2014 Derecognition	per 30 days	$ 0.46	1	$ 0.46	$ 0.46	1	$ 0.46	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per 30 days	-$ 0.48	1	-$ 0.48	-$ 0.48	1	-$ 0.48	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per 30 days	-$ 1.48	1	-$ 1.48	-$ 1.48	1	-$ 1.48	$ -	0.00%
Sub-Total A (excluding pass through)				$ 36.74			$ 39.81	**$ 3.06**	**8.34%**
Rate Rider for Recovery of Low Voltage Variance	per kWh	$ 0.00006	750	$ 0.05		750	$ -	-$ 0.05	
Line Losses on Cost of Power	per kWh	$ 0.1118	28	$ 3.15	$ 0.1118	28	$ 3.15	$ -	0.00%
Rate Rider for Smart Metering Entity Charge	per 30 days	$ 0.78	1	$ 0.78	$ 0.78	1	$ 0.78	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 40.72**			**$ 43.74**	**$ 3.02**	**7.41%**
RTSR - Network	per kWh	$ 0.00914	778	$ 7.11	$ 0.00914	778	$ 7.11	$ -	0.00%
RTSR - Line and Transformation Connection	per kWh	$ 0.00786	778	$ 6.12	$ 0.00786	778	$ 6.12	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 53.95**			**$ 56.97**	**$ 3.02**	**5.59%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	778	$ 2.80	$ 0.0036	778	$ 2.80	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	778	$ 1.01	$ 0.0013	778	$ 1.01	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	778	$ 0.86	$ 0.0011	778	$ 0.86	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ -	750	$ -	$ -	750	$ -	$ -	
TOU - Off Peak	per kWh	$ 0.087	480	$ 41.76	$ 0.0870	480	$ 41.76	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.132	135	$ 17.82	$ 0.1320	135	$ 17.82	$ -	0.00%
TOU - On Peak	per kWh	$ 0.180	135	$ 24.30	$ 0.1800	135	$ 24.30	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.103	750	$ 77.25	$ 0.1030	750	$ 77.25	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.121	0	$ -	$ 0.1210	0	$ -	$ -	
Total Bill on TOU (before Taxes)				**$ 142.75**			**$ 145.77**	**$ 3.02**	**2.11%**
HST		13%		$ 18.56	13%		$ 18.95	$ 0.39	2.11%
Total Bill (including HST)				$ 161.31			$ 164.72	$ 3.41	2.11%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 161.31**			**$ 164.72**	**$ 3.41**	**2.11%**
Total Bill on RPP (before Taxes)				**$ 136.12**			**$ 139.14**	**$ 3.02**	**2.22%**
HST		13%		$ 17.70	13%		$ 18.09	$ 0.39	2.22%
Total Bill (including HST)				$ 153.82			$ 157.23	$ 3.41	2.22%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 153.82**			**$ 157.23**	**$ 3.41**	**2.22%**
Loss Factor (%)		3.76%			3.76%				

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: COMPETITIVE SECTOR MULTI-UNIT RESIDENTIAL SERVICE

TOU / non-TOU: TOU

Consumption 334 kWh (●) May 1 - October 31 ( ) November 1 - April 30 (Select this radio button for applications filed after Oct 31)

	Charge Unit	Current Board-Approved Rate ($)	Volume	Charge ($)	Jan. 1, 2017 Proposed Rate ($)	Volume	Charge ($)	Impact $ Change	Impact % Change
Service Charge	per 30 days	$ 19.07	1	$ 19.07	$ 22.95	1	$ 22.95	$ 3.88	20.35%
Rate Rider for Incremental Capital Module True-up	per 30 days			$ -	$ 0.18	1	$ 0.18	$ 0.18	
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 0.19	1	$ 0.19	$ 0.19	1	$ 0.19	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.09	1	$ 0.09	$ 0.09	1	$ 0.09	$ -	0.00%
Rate Rider for Recovery of Smart Metering Entity Variance	per 30 days	$ 0.03	1	$ 0.03		1	$ -	-$ 0.03	
Distribution Volumetric Rate	per kWh	$ 0.02877	334	$ 9.61	$ 0.02316	334	$ 7.74	-$ 1.87	-19.50%
Rate Rider for Disposition of PILs and Tax Variance	per 30 days	-$ 0.07	1	-$ 0.07		1	$ -	$ 0.07	
Rate Rider for Disposition of PILs and Tax Variance - HST	per 30 days	-$ 0.03	1	-$ 0.03		1	$ -	$ 0.03	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per 30 days	$ 0.04	1	$ 0.04	$ 0.04	1	$ 0.04	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per 30 days	$ 0.01	1	$ 0.01	$ 0.01	1	$ 0.01	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kWh	-$ 0.00006	334	-$ 0.02		334	$ -	$ 0.02	
Rate Rider for Disposition of LRAM Variance Account	per 30 days	$ -	1	$ -		1	$ -	$ -	
Rate Rider for Application of IFRS - 2014 Derecognition	per 30 days	$ 0.18	1	$ 0.18	$ 0.18	1	$ 0.18	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per 30 days	-$ 0.19	1	-$ 0.19	-$ 0.19	1	-$ 0.19	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per 30 days	-$ 0.59	1	-$ 0.59	-$ 0.59	1	-$ 0.59	$ -	0.00%
Sub-Total A (excluding pass through)				$ 28.32			$ 30.60	**$ 2.28**	**8.04%**
Rate Rider for Recovery of Low Voltage Variance	per kWh	$ 0.00002	334	$ 0.01		334	$ -	-$ 0.01	
Line Losses on Cost of Power	per kWh	$ 0.1118	13	$ 1.40	$ 0.1118	13	$ 1.40	$ -	0.00%
Rate Rider for Smart Metering Entity Charge	per 30 days	$ 0.78	1	$ 0.78	$ 0.78	1	$ 0.78	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 30.51**			**$ 32.78**	**$ 2.27**	**7.44%**
RTSR - Network	per kWh	$ 0.00914	347	$ 3.17	$ 0.00914	347	$ 3.17	$ -	0.00%
RTSR - Line and Transformation Connection	per kWh	$ 0.00786	347	$ 2.72	$ 0.00786	347	$ 2.72	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 36.40**			**$ 38.67**	**$ 2.27**	**6.23%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0044	347	$ 1.52	$ 0.0044	347	$ 1.52	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	347	$ 0.45	$ 0.0013	347	$ 0.45	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	347	$ 0.38	$ 0.0011	347	$ 0.38	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ -	334	$ -	$ -	334	$ -	$ -	
TOU - Off Peak	per kWh	$ 0.0870	214	$ 18.60	$ 0.0870	214	$ 18.60	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	60	$ 7.94	$ 0.1320	60	$ 7.94	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	60	$ 10.82	$ 0.1800	60	$ 10.82	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	334	$ 34.40	$ 0.1030	334	$ 34.40	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	0	$ -	$ 0.1210	0	$ -	$ -	
Total Bill on TOU (before Taxes)				**$ 76.36**			**$ 78.63**	**$ 2.27**	**2.97%**
HST		13%		$ 9.93	13%		$ 10.22	$ 0.30	2.97%
Total Bill (including HST)				$ 86.29			$ 88.85	$ 2.56	2.97%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 86.29**			**$ 88.85**	**$ 2.56**	**2.97%**
Total Bill on RPP (before Taxes)				**$ 73.41**			**$ 75.68**	**$ 2.27**	**3.09%**
HST		13%		$ 9.54	13%		$ 9.84	$ 0.30	3.09%
Total Bill (including HST)				$ 82.95			$ 85.52	$ 2.56	3.09%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 82.95**			**$ 85.52**	**$ 2.56**	**3.09%**
Loss Factor (%)		3.76%			3.76%				

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kW) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: GENERAL SERVICE LESS THAN 50 kW SERVICE

TOU / non-TOU: TOU

Consumption 2,000 kWh ● May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)

		Current Board-Approved			Jan. 1, 2017 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 30.47	1	$ 30.47	$ 32.70	1	$ 32.70	$ 2.23	7.32%
Rate Rider for Incremental Capital Module True-up	per 30 days			$ -	$ 0.48	1	$ 0.48	$ 0.48	
Rate Rider for Recovery of 2008-2010 Smart Meter Costs	per 30 days	$ 5.60	1	$ 5.60	$ 5.60	1	$ 5.60	$ -	0.00%
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 0.79	1	$ 0.79	$ 0.79	1	$ 0.79	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Rate Rider for Recovery of Stranded Meter Assets	per 30 days	$ 1.55	1	$ 1.55	$ 1.55	1	$ 1.55	$ -	0.00%
Rate Rider for Recovery of Smart Metering Entity Variance	per 30 days	$ 0.06	1	$ 0.06		1	$ -	-$ 0.06	
Distribution Volumetric Rate	per kWh	$ 0.02818	2,000	$ 56.36	$ 0.03024	2,000	$ 60.48	$ 4.12	7.31%
Rate Rider for Incremental Capital Module True-up	per kWh			$ -	$ 0.00049	2,000	$ 0.98	$ 0.98	
Rate Rider for Recovery of 2015 Foregone Revenue	per kWh	$ 0.00076	2,000	$ 1.52	$ 0.00076	2,000	$ 1.52	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per kWh	$ 0.00024	2,000	$ 0.48	$ 0.00024	2,000	$ 0.48	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kWh	-$ 0.00018	2,000	-$ 0.36		2,000	$ -	$ 0.36	
Rate Rider for Disposition of PILs and Tax Variance - HST	per kWh	-$ 0.00009	2,000	-$ 0.18		2,000	$ -	$ 0.18	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kWh	$ 0.00013	2,000	$ 0.26	$ 0.00013	2,000	$ 0.26	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kWh	$ 0.00003	2,000	$ 0.06	$ 0.00003	2,000	$ 0.06	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kWh	-$ 0.00009	2,000	-$ 0.18		2,000	$ -	$ 0.18	
Rate Rider for Disposition of LRAM Variance Account	per kWh	$ 0.00056	2,000	$ 1.12		2,000	$ -	-$ 1.12	
Rate Rider for Application of IFRS - 2014 Derecognition	per kWh	$ 0.00049	2,000	$ 0.98	$ 0.00049	2,000	$ 0.98	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kWh	-$ 0.00051	2,000	-$ 1.02	-$ 0.00051	2,000	-$ 1.02	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kWh	-$ 0.00156	2,000	-$ 3.12	-$ 0.00156	2,000	-$ 3.12	$ -	0.00%
Sub-Total A (excluding pass through)				$ 94.64			$ 101.99	**$ 7.35**	**7.77%**
Rate Rider for Recovery of Low Voltage Variance	per kWh	$ 0.00006	2,000	$ 0.12		2,000	$ -	-$ 0.12	
Line Losses on Cost of Power	per kWh	$ 0.1118	75	$ 8.41	$ 0.1118	75	$ 8.41	$ -	0.00%
Rate Rider for Smart Metering Entity Charge	per 30 days	$ 0.78	1	$ 0.78	$ 0.78	1	$ 0.78	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 103.95**			**$ 111.18**	**$ 7.23**	**6.96%**
RTSR - Network	per kWh	$ 0.00884	2,075	$ 18.34	$ 0.00884	2,075	$ 18.34	$ -	0.00%
RTSR - Line and Transformation Connection	per kWh	$ 0.00709	2,075	$ 14.71	$ 0.00709	2,075	$ 14.71	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 137.01**			**$ 144.24**	**$ 7.23**	**5.28%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	2,075	$ 7.47	$ 0.0036	2,075	$ 7.47	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	2,075	$ 2.70	$ 0.0013	2,075	$ 2.70	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	2,075	$ 2.28	$ 0.0011	2,075	$ 2.28	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	2,000	$ 14.00	$ 0.0070	2,000	$ 14.00	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	1,280	$ 111.36	$ 0.0870	1,280	$ 111.36	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	360	$ 47.52	$ 0.1320	360	$ 47.52	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	360	$ 64.80	$ 0.1800	360	$ 64.80	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	600	$ 61.80	$ 0.1030	600	$ 61.80	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	1,400	$ 169.40	$ 0.1210	1,400	$ 169.40	$ -	0.00%
Total Bill on TOU (before Taxes)				**$ 387.39**			**$ 394.62**	**$ 7.23**	**1.87%**
HST		13%		$ 50.36	13%		$ 51.30	$ 0.94	1.87%
Total Bill (including HST)				$ 437.75			$ 445.92	$ 8.17	1.87%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 437.75**			**$ 445.92**	**$ 8.17**	**1.87%**
Total Bill on RPP (before Taxes)				**$ 394.91**			**$ 402.14**	**$ 7.23**	**1.83%**
HST		13%		$ 51.34	13%		$ 52.28	$ 0.94	1.83%
Total Bill (including HST)				$ 446.25			$ 454.42	$ 8.17	1.83%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 446.25**			**$ 454.42**	**$ 8.17**	**1.83%**
Loss Factor (%)		3.76%			3.76%				

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: GENERAL SERVICE 50 TO 999 kW SERVICE

TOU / non-TOU: non-TOU

Consumption			
349	kW		
388	kVA	● May 1 - October 31	○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)
150,000	kWh		

		Current Board-Approved			Jan. 1, 2017 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 43.82	1	$ 43.82	$ 47.03	1	$ 47.03	$ 3.21	7.33%
Rate Rider for Incremental Capital Module True-up	per 30 days			$ -	$ 0.78	1	$ 0.78	$ 0.78	
Rate Rider for Recovery of 2008-2010 Smart Meter Costs	per 30 days	$ 18.79	1	$ 18.79	$ 18.79	1	$ 18.79	$ -	0.00%
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 1.01	1	$ 1.01	$ 1.01	1	$ 1.01	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.30	1	$ 0.30	$ 0.30	1	$ 0.30	$ -	0.00%
Rate Rider for Recovery of Stranded Meter Assets	per 30 days	$ 4.64	1	$ 4.64	$ 4.64	1	$ 4.64	$ -	0.00%
Distribution Volumetric Rate	per kVA	$ 6.8970	388	$ 2,676.04	$ 7.4019	388	$ 2,871.94	$ 195.90	7.32%
Rate Rider for Incremental Capital Module True-up	per kVA			$ -	$ 0.1191	388	$ 46.21	$ 46.21	
Rate Rider for Recovery of 2015 Foregone Revenue	per kVA	$ 0.1659	388	$ 64.37	$ 0.1659	388	$ 64.37	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per kVA	$ 0.0498	388	$ 19.32	$ 0.0498	388	$ 19.32	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kVA	-$ 0.0292	388	-$ 11.33		388	$ -	$ 11.33	
Rate Rider for Disposition of PILs and Tax Variance - HST	per kVA	-$ 0.0138	388	-$ 5.35		388	$ -	$ 5.35	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kVA	$ 0.0114	388	$ 4.42	$ 0.0114	388	$ 4.42	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kVA	$ 0.0047	388	$ 1.82	$ 0.0047	388	$ 1.82	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kVA	-$ 0.0354	388	-$ 13.74		388	$ -	$ 13.74	
Rate Rider for Disposition of LRAM Variance Account	per kVA	$ 0.1286	388	$ 49.90		388	$ -	-$ 49.90	
Rate Rider for Application of IFRS - 2014 Derecognition	per kVA	$ 0.0781	388	$ 30.30	$ 0.0781	388	$ 30.30	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kVA	-$ 0.0814	388	-$ 31.58	-$ 0.0814	388	-$ 31.58	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kVA	-$ 0.2512	388	-$ 97.47	-$ 0.2512	388	-$ 97.47	$ -	0.00%
Sub-Total A (excluding pass through)				$ 2,755.27			$ 2,981.89	**$ 226.62**	**8.23%**
Rate Rider for Recovery of Low Voltage Variance	per kVA	$ 0.0225	388	$ 8.73		388	$ -	-$ 8.73	
Line Losses on Cost of Power	per kWh	$ 0.1210	5,640	$ 682.44	$ 0.1210	5,640	$ 682.44	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 3,446.44**			**$ 3,664.33**	**$ 217.89**	**6.32%**
RTSR - Network	per kW	$ 3.1647	349	$ 1,104.48	$ 3.1647	349	$ 1,104.48	$ -	0.00%
RTSR - Line and Transformation Connection	per kW	$ 2.7017	349	$ 942.89	$ 2.7017	349	$ 942.89	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 5,493.81**			**$ 5,711.70**	**$ 217.89**	**3.97%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	155,640	$ 560.30	$ 0.0036	155,640	$ 560.30	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	155,640	$ 202.33	$ 0.0013	155,640	$ 202.33	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	155,640	$ 171.20	$ 0.0011	155,640	$ 171.20	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	150,000	$ 1,050.00	$ 0.0070	150,000	$ 1,050.00	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	96,000	$ 8,352.00	$ 0.0870	96,000	$ 8,352.00	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	27,000	$ 3,564.00	$ 0.1320	27,000	$ 3,564.00	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	27,000	$ 4,860.00	$ 0.1800	27,000	$ 4,860.00	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	750	$ 77.25	$ 0.1030	750	$ 77.25	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	149,250	$ 18,059.25	$ 0.1210	149,250	$ 18,059.25	$ -	0.00%
Total Bill on TOU (before Taxes)				**$ 24,253.90**			**$ 24,471.79**	**$ 217.89**	**0.90%**
HST		13%		$ 3,153.01	13%		$ 3,181.33	$ 28.33	0.90%
Total Bill (including HST)				$ 27,406.91			$ 27,653.13	$ 246.22	0.90%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 27,406.91**			**$ 27,653.13**	**$ 246.22**	**0.90%**
Total Bill on RPP (before Taxes)				**$ 25,614.40**			**$ 25,832.29**	**$ 217.89**	**0.85%**
HST		13%		$ 3,329.87	13%		$ 3,358.20	$ 28.33	0.85%
Total Bill (including HST)				$ 28,944.27			$ 29,190.49	$ 246.22	0.85%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 28,944.27**			**$ 29,190.49**	**$ 246.22**	**0.85%**
Loss Factor (%)		3.76%			3.76%				

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: GENERAL SERVICE 1,000 TO 4,999 kW SERVICE

TOU / non-TOU: non-TOU

Consumption		
1,600	kW	
1,778	kVA	◉ May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)
800,000	kWh	

		Current Board-Approved			Jan. 1, 2017 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 837.09	1	$ 837.09	$ 898.36	1	$ 898.36	$ 61.27	7.32%
Rate Rider for Incremental Capital Module True-up	per 30 days				$ 16.58	1	$ 16.58	$ 16.58	
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 18.89	1	$ 18.89	$ 18.89	1	$ 18.89	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 5.48	1	$ 5.48	$ 5.48	1	$ 5.48	$ -	0.00%
Distribution Volumetric Rate	per kVA	$ 5.4262	1,778	$ 9,647.78	$ 5.8234	1,778	$ 10,354.01	$ 706.22	7.32%
Rate Rider for Incremental Capital Module True-up	per kVA				$ 0.0917	1,778	$ 163.04	$ 163.04	
Rate Rider for Recovery of 2015 Foregone Revenue	per kVA	$ 0.1226	1,778	$ 217.98	$ 0.1226	1,778	$ 217.98	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per kVA	$ 0.0356	1,778	$ 63.30	$ 0.0356	1,778	$ 63.30	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kVA	-$ 0.0232	1,778	-$ 41.25		1,778	$ -	$ 41.25	
Rate Rider for Disposition of PILs and Tax Variance - HST	per kVA	-$ 0.0110	1,778	-$ 19.56		1,778	$ -	$ 19.56	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kVA	$ 0.0056	1,778	$ 9.96	$ 0.0056	1,778	$ 9.96	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kVA	$ 0.0038	1,778	$ 6.76	$ 0.0038	1,778	$ 6.76	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kVA	-$ 0.0401	1,778	-$ 71.30		1,778	$ -	$ 71.30	
Rate Rider for Disposition of LRAM Variance Account	per kVA	-$ 0.0041	1,778	-$ 7.29		1,778	$ -	$ 7.29	
Rate Rider for Application of IFRS - 2014 Derecognition	per kVA	$ 0.0627	1,778	$ 111.48	$ 0.0627	1,778	$ 111.48	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kVA	-$ 0.0653	1,778	-$ 116.10	-$ 0.0653	1,778	-$ 116.10	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kVA	-$ 0.2017	1,778	-$ 358.62	-$ 0.2017	1,778	-$ 358.62	$ -	0.00%
Sub-Total A (excluding pass through)				$ 10,304.60			$ 11,391.11	**$ 1,086.51**	**10.54%**
Rate Rider for Recovery of Low Voltage Variance	per kVA	$ 0.0273	1,778	$ 48.54		1,778	$ -	-$ 48.54	
Line Losses on Cost of Power	per kWh	$ 0.1210	30,080	$ 3,639.68	$ 0.1210	30,080	$ 3,639.68	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 13,992.82**			**$ 15,030.79**	**$ 1,037.97**	**7.42%**
RTSR - Network	per kW	$ 3.0576	1,600	$ 4,892.16	$ 3.0576	1,600	$ 4,892.16	$ -	0.00%
RTSR - Line and Transformation Connection	per kW	$ 2.6990	1,600	$ 4,318.40	$ 2.6990	1,600	$ 4,318.40	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 23,203.38**			**$ 24,241.35**	**$ 1,037.97**	**4.47%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	830,080	$ 2,988.29	$ 0.0036	830,080	$ 2,988.29	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	830,080	$ 1,079.10	$ 0.0013	830,080	$ 1,079.10	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	830,080	$ 913.09	$ 0.0011	830,080	$ 913.09	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	800,000	$ 5,600.00	$ 0.0070	800,000	$ 5,600.00	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	512,000	$ 44,544.00	$ 0.0870	512,000	$ 44,544.00	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	144,000	$ 19,008.00	$ 0.1320	144,000	$ 19,008.00	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	144,000	$ 25,920.00	$ 0.1800	144,000	$ 25,920.00	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	750	$ 77.25	$ 0.1030	750	$ 77.25	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	799,250	$ 96,709.25	$ 0.1210	799,250	$ 96,709.25	$ -	0.00%
Total Bill on TOU (before Taxes)				**$ 123,256.11**			**$ 124,294.08**	**$ 1,037.97**	**0.84%**
HST		13%		$ 16,023.29	13%		$ 16,158.23	$ 134.94	0.84%
Total Bill (including HST)				$ 139,279.40			$ 140,452.30	$ 1,172.91	0.84%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 139,279.40**			**$ 140,452.30**	**$ 1,172.91**	**0.84%**
Total Bill on RPP (before Taxes)				**$ 130,570.61**			**$ 131,608.58**	**$ 1,037.97**	**0.79%**
HST		13%		$ 16,974.18	13%		$ 17,109.11	$ 134.94	0.79%
Total Bill (including HST)				$ 147,544.78			$ 148,717.69	$ 1,172.91	0.79%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 147,544.78**			**$ 148,717.69**	**$ 1,172.91**	**0.79%**
Loss Factor (%)		3.76%			3.76%				

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: LARGE USE SERVICE

TOU / non-TOU: non-TOU

	8,491	kW	
	9,434	kVA	◉ May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)
Consumption	4,500,000	kWh	

		Current Board-Approved			Jan. 1, 2017 Proposed			Impact	
	Charge Unit	**Rate ($)**	**Volume**	**Charge ($)**	**Rate ($)**	**Volume**	**Charge ($)**	**$ Change**	**% Change**
Service Charge	per 30 days	$ 3,694.97	1	$ 3,694.97	$ 3,965.44	1	$ 3,965.44	$ 270.47	7.32%
Rate Rider for Incremental Capital Module True-up	per 30 days				$ 58.88	1	$ 58.88	$ 58.88	
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 85.84	1	$ 85.84	$ 85.84	1	$ 85.84	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 25.18	1	$ 25.18	$ 25.18	1	$ 25.18	$ -	0.00%
Distribution Volumetric Rate	per kVA	$ 5.8210	9,434	$ 54,915.31	$ 6.2471	9,434	$ 58,935.14	$ 4,019.83	7.32%
Rate Rider for Incremental Capital Module True-up	per kVA				$ 0.0932	9,434	$ 879.25	$ 879.25	
Rate Rider for Recovery of 2015 Foregone Revenue	per kVA	$ 0.1382	9,434	$ 1,303.78	$ 0.1382	9,434	$ 1,303.78	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per kVA	$ 0.0406	9,434	$ 383.02	$ 0.0406	9,434	$ 383.02	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kVA	-$ 0.0241	9,434	-$ 227.36		9,434	$ -	$ 227.36	
Rate Rider for Disposition of PILs and Tax Variance - HST	per kVA	-$ 0.0114	9,434	-$ 107.55		9,434	$ -	$ 107.55	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kVA	$ 0.0044	9,434	$ 41.51	$ 0.0044	9,434	$ 41.51	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kVA	$ 0.0039	9,434	$ 36.79	$ 0.0039	9,434	$ 36.79	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kVA	-$ 0.0423	9,434	-$ 399.06		9,434	$ -	$ 399.06	
Rate Rider for Disposition of LRAM Variance Account	per kVA	-$ 0.0223	9,434	-$ 210.38		9,434	$ -	$ 210.38	
Rate Rider for Application of IFRS - 2014 Derecognition	per kVA	$ 0.0648	9,434	$ 611.32	$ 0.0648	9,434	$ 611.32	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kVA	-$ 0.0675	9,434	-$ 636.80	-$ 0.0675	9,434	-$ 636.80	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kVA	-$ 0.2084	9,434	-$ 1,966.05	-$ 0.2084	9,434	-$ 1,966.05	$ -	0.00%
Sub-Total A (excluding pass through)				$ 57,550.54			$ 63,723.31	**$ 6,172.77**	**10.73%**
Rate Rider for Recovery of Low Voltage Variance	per kVA	$ 0.0261	9,434	$ 246.23		9,434	$ -	-$ 246.23	
Line Losses on Cost of Power	per kWh	$ 0.1210	84,150	$ 10,182.15	$ 0.1210	84,150	$ 10,182.15	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 67,978.92**			**$ 73,905.46**	**$ 5,926.54**	**8.72%**
RTSR - Network	per kW	$ 3.4855	8,491	$ 29,595.38	$ 3.4855	8,491	$ 29,595.38	$ -	0.00%
RTSR - Line and Transformation Connection	per kW	$ 2.9986	8,491	$ 25,461.11	$ 2.9986	8,491	$ 25,461.11	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 123,035.42**			**$ 128,961.96**	**$ 5,926.54**	**4.82%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	4,584,150	$ 16,502.94	$ 0.0036	4,584,150	$ 16,502.94	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	4,584,150	$ 5,959.40	$ 0.0013	4,584,150	$ 5,959.40	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	4,584,150	$ 5,042.57	$ 0.0011	4,584,150	$ 5,042.57	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	4,500,000	$ 31,500.00	$ 0.0070	4,500,000	$ 31,500.00	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	2,880,000	$ 250,560.00	$ 0.0870	2,880,000	$ 250,560.00	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	810,000	$ 106,920.00	$ 0.1320	810,000	$ 106,920.00	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	810,000	$ 145,800.00	$ 0.1800	810,000	$ 145,800.00	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	750	$ 77.25	$ 0.1030	750	$ 77.25	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	4,499,250	$ 544,409.25	$ 0.1210	4,499,250	$ 544,409.25	$ -	0.00%
Total Bill on TOU (before Taxes)				**$ 685,320.57**			**$ 691,247.11**	**$ 5,926.54**	**0.86%**
HST		13%		$ 89,091.67	13%		$ 89,862.12	$ 770.45	0.86%
Total Bill (including HST)				$ 774,412.24			$ 781,109.23	$ 6,696.99	0.86%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 774,412.24**			**$ 781,109.23**	**$ 6,696.99**	**0.86%**
Total Bill on RPP (before Taxes)				**$ 726,527.07**			**$ 732,453.61**	**$ 5,926.54**	**0.82%**
HST		13%		$ 94,448.52	13%		$ 95,218.97	$ 770.45	0.82%
Total Bill (including HST)				$ 820,975.58			$ 827,672.58	$ 6,696.99	0.82%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 820,975.58**			**$ 827,672.58**	**$ 6,696.99**	**0.82%**
Loss Factor (%)		1.87%			1.87%				

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: STREET LIGHTING SERVICE

TOU / non-TOU: non-TOU

Consumption	1	Devices
	0.165	kW
	0.165	kVA ● May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)
	60	kWh

		Current Board-Approved			Jan. 1, 2017 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge (per device)	per device per 30 days	$ 1.37	1	$ 1.37	$ 1.47	1	$ 1.47	$ 0.10	7.30%
Rate Rider for Incremental Capital Module True-up	per device per 30 days				$ 0.03	1	$ 0.03	$ 0.03	
Rate Rider for Recovery of 2015 Foregone Revenue	per device per 30 days	$ -		$ -	$ -	-	$ -	$ -	
Rate Rider for Recovery of 2016 Foregone Revenue	per device per 30 days	$ -		$ -	$ -	-	$ -	$ -	
Distribution Volumetric Rate	per kVA	$ 30.4431	0.165	$ 5.02	$ 32.6715	0.165	$ 5.39	$ 0.37	7.32%
Rate Rider for Incremental Capital Module True-up	per kVA				$ 0.5916	0.165	$ 0.10	$ 0.10	
Rate Rider for Recovery of 2015 Foregone Revenue	per kVA	$ -	0.165	$ -	$ -	0.165	$ -	$ -	
Rate Rider for Recovery of 2016 Foregone Revenue	per kVA	$ 0.0478	0.165	$ 0.01	$ 0.0478	0.165	$ 0.01	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kVA	-$ 0.1926	0.165	-$ 0.03		0.165	$ -	$ 0.03	
Rate Rider for Disposition of PILs and Tax Variance - HST	per kVA	-$ 0.0911	0.165	-$ 0.02		0.165	$ -	$ 0.02	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kVA	$ 0.0741	0.165	$ 0.01	$ 0.0741	0.165	$ 0.01	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kVA	$ 0.0312	0.165	$ 0.01	$ 0.0312	0.165	$ 0.01	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kVA	-$ 0.0364	0.165	-$ 0.01		0.165	$ -	$ 0.01	
Rate Rider for Application of IFRS - 2014 Derecognition	per kVA	$ 0.5133	0.165	$ 0.08	$ 0.5133	0.165	$ 0.08	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kVA	-$ 0.5347	0.165	-$ 0.09	-$ 0.5347	0.165	-$ 0.09	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kVA	-$ 1.6506	0.165	-$ 0.27	-$ 1.6506	0.165	-$ 0.27	$ -	0.00%
Sub-Total A (excluding pass through)				$ 6.09			$ 6.74	**$ 0.65**	**10.64%**
Rate Rider for Recovery of Low Voltage Variance	per kVA	$ 0.0210	0.165	$ 0.00		0.165	$ -	-$ 0.00	
Line Losses on Cost of Power	per kWh	$ 0.1030	2	$ 0.23	$ 0.1030	2	$ 0.23	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 6.33**			**$ 6.97**	**$ 0.64**	**10.19%**
RTSR - Network	per kW	$ 2.8147	0.165	$ 0.46	$ 2.8147	0	$ 0.46	$ -	0.00%
RTSR - Line and Transformation Connection	per kW	$ 3.2215	0.165	$ 0.53	$ 3.2215	0	$ 0.53	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 7.32**			**$ 7.97**	**$ 0.64**	**8.80%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	62	$ 0.22	$ 0.0036	62	$ 0.22	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	62	$ 0.08	$ 0.0013	62	$ 0.08	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	62	$ 0.07	$ 0.0011	62	$ 0.07	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	60	$ 0.42	$ 0.0070	60	$ 0.42	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	38	$ 3.34	$ 0.0870	38	$ 3.34	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	11	$ 1.43	$ 0.1320	11	$ 1.43	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	11	$ 1.94	$ 0.1800	11	$ 1.94	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	60	$ 6.18	$ 0.1030	60	$ 6.18	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	-	$ -	$ 0.1210	-	$ -	$ -	
Total Bill on TOU (before Taxes)				**$ 15.08**			**$ 15.72**	**$ 0.64**	**4.28%**
HST		13%		$ 1.96	13%		$ 2.04	$ 0.08	4.28%
Total Bill (including HST)				$ 17.04			$ 17.76	$ 0.73	4.28%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 17.04**			**$ 17.76**	**$ 0.73**	**4.28%**
Total Bill on RPP (before Taxes)				**$ 14.55**			**$ 15.19**	**$ 0.64**	**4.43%**
HST		13%		$ 1.89	13%		$ 1.97	$ 0.08	4.43%
Total Bill (including HST)				$ 16.44			$ 17.16	$ 0.73	4.43%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 16.44**			**$ 17.16**	**$ 0.73**	**4.43%**

Loss Factor (%)	3.76%	3.76%

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: UNMETERED SCATTERED LOAD SERVICE

TOU / non-TOU: non-TOU

Consumption — 1 Connection; 365 kWh; ◉ May 1 - October 31; ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)

		Current Board-Approved			Jan. 1, 2017 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 6.08	1	$ 6.08	$ 6.53	1	$ 6.53	$ 0.45	7.40%
Rate Rider for Incremental Capital Module True-up	per 30 days				$ 0.01	1	$ 0.01	$ 0.01	
Connection Charge (per connection)	per connection per 30 days	$ 0.62	1	$ 0.62	$ 0.67	1	$ 0.67	$ 0.05	8.06%
Rate Rider for Incremental Capital Module True-up	per connection per 30 days				$ 0.19	1	$ 0.19	$ 0.19	
Rate Rider for Recovery of 2015 Foregone Revenue (per connection)	per connection per 30 days	$ 0.02	1	$ 0.02	$ 0.02	1	$ 0.02	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue (per connection)	per connection per 30 days	$ 0.01	1	$ 0.01	$ 0.01	1	$ 0.01	$ -	0.00%
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 0.16	1	$ 0.16	$ 0.16	1	$ 0.16	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.05	1	$ 0.05	$ 0.05	1	$ 0.05	$ -	0.00%
Distribution Volumetric Rate	per kWh	$ 0.07634	365	$ 27.86	$ 0.08193	365	$ 29.90	$ 2.04	7.32%
Rate Rider for Incremental Capital Module True-up	per kWh				$ 0.00175	365	$ 0.64	$ 0.64	
Rate Rider for Recovery of 2015 Foregone Revenue	per kWh	$ 0.00203	365	$ 0.74	$ 0.00203	365	$ 0.74	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per kWh	$ 0.00062	365	$ 0.23	$ 0.00062	365	$ 0.23	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kWh	-$ 0.00035	365	-$ 0.13		365	$ -	$ 0.13	
Rate Rider for Disposition of PILs and Tax Variance - HST	per kWh	-$ 0.00016	365	-$ 0.06		365	$ -	$ 0.06	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kWh	$ 0.00029	365	$ 0.11	$ 0.00029	365	$ 0.11	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kWh	$ 0.00006	365	$ 0.02	$ 0.00006	365	$ 0.02	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kWh	-$ 0.00011	365	-$ 0.04		365	$ -	$ 0.04	
Rate Rider for Application of IFRS - 2014 Derecognition	per kWh	$ 0.00092	365	$ 0.34	$ 0.00092	365	$ 0.34	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kWh	-$ 0.00096	365	-$ 0.35	-$ 0.00096	365	-$ 0.35	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kWh	-$ 0.00296	365	-$ 1.08	-$ 0.00296	365	-$ 1.08	$ -	0.00%
Sub-Total A (excluding pass through)				$ 34.58			$ 38.18	**$ 3.61**	**10.43%**
Rate Rider for Recovery of Low Voltage Variance	per kWh	$ 0.00006	365	$ 0.02		365	$ -	-$ 0.02	
Line Losses on Cost of Power	per kWh	$ 0.1030	14	$ 1.41	$ 0.1030	14	$ 1.41	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 36.01**			**$ 39.60**	**$ 3.58**	**9.95%**
RTSR - Network	per kWh	$ 0.00555	379	$ 2.10	$ 0.00555	379	$ 2.10	$ -	0.00%
RTSR - Line and Transformation Connection	per kWh	$ 0.00497	379	$ 1.88	$ 0.00497	379	$ 1.88	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 40.00**			**$ 43.58**	**$ 3.58**	**8.96%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	379	$ 1.36	$ 0.0036	379	$ 1.36	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	379	$ 0.49	$ 0.0013	379	$ 0.49	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	379	$ 0.42	$ 0.0011	379	$ 0.42	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	365	$ 2.56	$ 0.0070	365	$ 2.56	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	234	$ 20.32	$ 0.0870	234	$ 20.32	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	66	$ 8.67	$ 0.1320	66	$ 8.67	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	66	$ 11.83	$ 0.1800	66	$ 11.83	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	365	$ 37.60	$ 0.1030	365	$ 37.60	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	-	$ -	$ 0.1210	-	$ -	$ -	
Total Bill on TOU (before Taxes)				**$ 85.90**			**$ 89.48**	**$ 3.58**	**4.17%**
HST		13%		$ 11.17	13%		$ 11.63	$ 0.47	4.17%
Total Bill (including HST)				$ 97.06			$ 101.11	$ 4.05	4.17%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 97.06**			**$ 101.11**	**$ 4.05**	**4.17%**
Total Bill on RPP (before Taxes)				**$ 82.67**			**$ 86.25**	**$ 3.58**	**4.33%**
HST		13%		$ 10.75	13%		$ 11.21	$ 0.47	4.33%
Total Bill (including HST)				$ 93.42			$ 97.47	$ 4.05	4.33%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 93.42**			**$ 97.47**	**$ 4.05**	**4.33%**
Loss Factor (%)		3.76%			3.76%				

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

	2012 Revenue Requirement A	2013 Revenue Requirement B	2014 Revenue Requirement C	Total to be Recovered D = A + B + C	Amt collected from ICM Rate Rider (ending May 2015) E	Over / (Under) Recovered E - D	
ICM TRUE UP	**$ 4,552,635**	**$ 36,214,558**	**$ 12,146,367**	**$ 52,913,559**	**$ 41,746,787**	**$ (11,166,772)**	**Under Recovered**

Rate DESIGN

	Service Charge %	Distribution Volumetric kWh %	Distribution Volumetric kVa %	% of Revenue Adjustment
Residential	100.0%	0.0%	0.0%	38.7%
CSMUR	100.0%	0.0%	0.0%	1.4%
General Service Less Than 50 kW	28.5%	71.5%	0.0%	12.7%
General Service 50 to 999 kW	3.6%	0.0%	96.4%	29.5%
General Service 1,000 to 4,999 kW	8.2%	0.0%	91.8%	9.7%
Large Use	6.7%	0.0%	93.3%	4.8%
Street Lighting	21.5%	0.0%	78.5%	2.2%
Unmetered Scattered Load	0.2%	99.8%	0.0%	0.6%
Unmetered Scattered Load	100.0%	0.0%	0.0%	0.2%

Jan 2017 to Dec 2017 Load Forecast

	Billed Customers or Connections	Billed kWh	Billed kVA	Service Charge (per 30 Days)	Distribution Volumetric Rate kWh	Distribution Volumetric Rate kVA (per 30 days)	
Residential	616,654	4,851,685,133	-	$ 4,320,710	$ -	$ -	$ 4,320,710
CSMUR	73,991	289,587,529	-	$ 161,221	$ -	$ -	$ 161,221
General Service Less Than 50 kW	69,402	2,058,843,341	-	$ 404,908	$ 1,014,550	$ -	$ 1,419,458
General Service 50 to 999 kW	12,412	-	26,332,008	$ 117,679	$ -	$ 3,180,985	$ 3,298,664
General Service 1,000 to 4,999 kW	443	-	10,688,401	$ 89,362	$ -	$ 994,268	$ 1,083,630
Large Use	50	-	5,285,383	$ 35,819	$ -	$ 499,636	$ 535,455
Street Lighting	164,644	-	325,489	$ 53,594	$ -	$ 195,226	$ 248,820
Unmetered Scattered Load	898	41,132,354	-	$ 140	$ 72,038	$ -	$ 72,179
Unmetered Scattered Load	11,720	-	-	$ 26,636	$ -	$ -	$ 26,636
				$ 5,210,069	**$ 1,086,588**	**$ 4,870,115**	**$ 11,166,772**

ICM TRUE UP Rate Rider (12 Months Recovery)	Service Charge (per 30 Days)	Distribution Volumetric Rate kWh	Distribution Volumetric Rate kVA (per 30 days)
Residential	**0.58**		
CSMUR	**0.18**		
General Service Less Than 50 kW	**0.48**	**0.00049**	
General Service 50 to 999 kW	**0.78**		**0.1191**
General Service 1,000 to 4,999 kW	**16.58**		**0.0917**
Large Use	**58.88**		**0.0932**
Street Lighting	**0.03**		**0.5916**
Unmetered Scattered Load	**0.01**	**0.00175**	
Unmetered Scattered Load	**0.19**		

Appendix 2-W
Bill Impacts

Customer Class: RESIDENTIAL SERVICE

TOU / non-TOU: TOU

Consumption 800 kWh ○ May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)

		Current Board-Approved			Jan. 1, 2017 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 22.78	1	$ 22.78	$ 22.72	1	$ 22.72	-$ 0.06	-0.26%
Rate Rider for Incremental Capital Module True-up	per 30 days				$ 0.58	1	$ 0.58	$ 0.58	
Rate Rider for Recovery of 2008-2010 Smart Meter Costs	per 30 days	$ 0.08	1	$ 0.08	$ 0.08	1	$ 0.08	$ -	0.00%
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 0.88	1	$ 0.88	$ 0.88	1	$ 0.88	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.28	1	$ 0.28	$ 0.28	1	$ 0.28	$ -	0.00%
Rate Rider for Recovery of Stranded Meter Assets	per 30 days	$ 0.28	1	$ 0.28	$ 0.28	1	$ 0.28	$ -	0.00%
Rate Rider for Recovery of Smart Metering Entity Variance	per 30 days	$ 0.06	1	$ 0.06		1	$ -	-$ 0.06	
Distribution Volumetric Rate	per kWh	$ 0.01880	800	$ 15.04	$ 0.01514	800	$ 12.11	-$ 2.93	-19.47%
Rate Rider for Disposition of PILs and Tax Variance	per 30 days	-$ 0.17	1	-$ 0.17		1	$ -	$ 0.17	
Rate Rider for Disposition of PILs and Tax Variance - HST	per 30 days	-$ 0.08	1	-$ 0.08		1	$ -	$ 0.08	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per 30 days	$ 0.10	1	$ 0.10	$ 0.10	1	$ 0.10	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per 30 days	$ 0.03	1	$ 0.03	$ 0.03	1	$ 0.03	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kWh	-$ 0.00009	800	-$ 0.07		800	$ -	$ 0.07	
Rate Rider for Disposition of LRAM Variance Account	per 30 days	-$ 0.03	1	-$ 0.03		1	$ -	$ 0.03	
Rate Rider for Application of IFRS - 2014 Derecognition	per 30 days	$ 0.46	1	$ 0.46	$ 0.46	1	$ 0.46	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per 30 days	-$ 0.48	1	-$ 0.48	-$ 0.48	1	-$ 0.48	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per 30 days	-$ 1.48	1	-$ 1.48	-$ 1.48	1	-$ 1.48	$ -	0.00%
Sub-Total A (excluding pass through)				$ 37.68			$ 35.56	**-$ 2.12**	**-5.62%**
Rate Rider for Recovery of Low Voltage Variance	per kWh	$ 0.00006	800	$ 0.05		800	$ -	-$ 0.05	
Line Losses on Cost of Power	per kWh	$ 0.1118	30	$ 3.36	$ 0.1118	30	$ 3.36	$ -	0.00%
Rate Rider for Smart Metering Entity Charge	per 30 days	$ 0.78	1	$ 0.78	$ 0.78	1	$ 0.78	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 41.87**			**$ 39.71**	**-$ 2.16**	**-5.17%**
RTSR - Network	per kWh	$ 0.00914	830	$ 7.59	$ 0.00914	830	$ 7.59	$ -	0.00%
RTSR - Line and Transformation Connection	per kWh	$ 0.00786	830	$ 6.52	$ 0.00786	830	$ 6.52	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 55.98**			**$ 53.82**	**-$ 2.16**	**-3.87%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	830	$ 2.99	$ 0.0036	830	$ 2.99	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	830	$ 1.08	$ 0.0013	830	$ 1.08	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	830	$ 0.91	$ 0.0011	830	$ 0.91	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ -	800	$ -	$ -	800	$ -	$ -	
TOU - Off Peak	per kWh	$ 0.087	512	$ 44.54	$ 0.0870	512	$ 44.54	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.132	144	$ 19.01	$ 0.1320	144	$ 19.01	$ -	0.00%
TOU - On Peak	per kWh	$ 0.180	144	$ 25.92	$ 0.1800	144	$ 25.92	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.103	800	$ 82.40	$ 0.1030	800	$ 82.40	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.121	0	$ -	$ 0.1210	0	$ -	$ -	
Total Bill on TOU (before Taxes)				**$ 150.68**			**$ 148.52**	**-$ 2.16**	**-1.44%**
HST		13%		$ 19.59	13%		$ 19.31	-$ 0.28	-1.44%
Total Bill (including HST)				$ 170.27			$ 167.83	-$ 2.45	-1.44%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 170.27**			**$ 167.83**	**-$ 2.45**	**-1.44%**
Total Bill on RPP (before Taxes)				**$ 143.61**			**$ 141.45**	**-$ 2.16**	**-1.51%**
HST		13%		$ 18.67	13%		$ 18.39	-$ 0.28	-1.51%
Total Bill (including HST)				$ 162.28			$ 159.84	-$ 2.45	-1.51%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 162.28**			**$ 159.84**	**-$ 2.45**	**-1.51%**
Loss Factor (%)		3.76%			3.76%				

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010*.

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: RESIDENTIAL SERVICE

TOU / non-TOU: TOU

Consumption 750 kWh ○ May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)

		Current Board-Approved			Jan. 1, 2017 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 22.78	1	$ 22.78	$ 27.72	1	$ 27.72	$ 4.94	21.69%
Rate Rider for Incremental Capital Module True-up	per 30 days				$ 0.58	1	$ 0.58	$ 0.58	
Rate Rider for Recovery of 2008-2010 Smart Meter Costs	per 30 days	$ 0.08	1	$ 0.08	$ 0.08	1	$ 0.08	$ -	0.00%
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 0.88	1	$ 0.88	$ 0.88	1	$ 0.88	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.28	1	$ 0.28	$ 0.28	1	$ 0.28	$ -	0.00%
Rate Rider for Recovery of Stranded Meter Assets	per 30 days	$ 0.28	1	$ 0.28	$ 0.28	1	$ 0.28	$ -	0.00%
Rate Rider for Recovery of Smart Metering Entity Variance	per 30 days	$ 0.06	1	$ 0.06		1	$ -	-$ 0.06	
Distribution Volumetric Rate	per kWh	$ 0.01880	750	$ 14.10	$ 0.01514	750	$ 11.36	-$ 2.75	-19.47%
Rate Rider for Disposition of PILs and Tax Variance	per 30 days	-$ 0.17	1	-$ 0.17		1	$ -	$ 0.17	
Rate Rider for Disposition of PILs and Tax Variance - HST	per 30 days	-$ 0.08	1	-$ 0.08		1	$ -	$ 0.08	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per 30 days	$ 0.10	1	$ 0.10	$ 0.10	1	$ 0.10	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per 30 days	$ 0.03	1	$ 0.03	$ 0.03	1	$ 0.03	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kWh	-$ 0.00009	750	-$ 0.07		750	$ -	$ 0.07	
Rate Rider for Disposition of LRAM Variance Account	per 30 days	-$ 0.03	1	-$ 0.03		1	$ -	$ 0.03	
Rate Rider for Application of IFRS - 2014 Derecognition	per 30 days	$ 0.46	1	$ 0.46	$ 0.46	1	$ 0.46	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per 30 days	-$ 0.48	1	-$ 0.48	-$ 0.48	1	-$ 0.48	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per 30 days	-$ 1.48	1	-$ 1.48	-$ 1.48	1	-$ 1.48	$ -	0.00%
Sub-Total A (excluding pass through)				$ 36.74			$ 39.81	**$ 3.06**	**8.34%**
Rate Rider for Recovery of Low Voltage Variance	per kWh	$ 0.00006	750	$ 0.05		750	$ -	-$ 0.05	
Line Losses on Cost of Power	per kWh	$ 0.1118	28	$ 3.15	$ 0.1118	28	$ 3.15	$ -	0.00%
Rate Rider for Smart Metering Entity Charge	per 30 days	$ 0.78	1	$ 0.78	$ 0.78	1	$ 0.78	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 40.72**			**$ 43.74**	**$ 3.02**	**7.41%**
RTSR - Network	per kWh	$ 0.00914	778	$ 7.11	$ 0.00914	778	$ 7.11	$ -	0.00%
RTSR - Line and Transformation Connection	per kWh	$ 0.00786	778	$ 6.12	$ 0.00786	778	$ 6.12	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 53.95**			**$ 56.97**	**$ 3.02**	**5.59%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	778	$ 2.80	$ 0.0036	778	$ 2.80	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	778	$ 1.01	$ 0.0013	778	$ 1.01	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	778	$ 0.86	$ 0.0011	778	$ 0.86	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ -	750	$ -	$ -	750	$ -	$ -	
TOU - Off Peak	per kWh	$ 0.087	480	$ 41.76	$ 0.0870	480	$ 41.76	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.132	135	$ 17.82	$ 0.1320	135	$ 17.82	$ -	0.00%
TOU - On Peak	per kWh	$ 0.180	135	$ 24.30	$ 0.1800	135	$ 24.30	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.103	750	$ 77.25	$ 0.1030	750	$ 77.25	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.121	0	$ -	$ 0.1210	0	$ -	$ -	
Total Bill on TOU (before Taxes)				**$ 142.75**			**$ 145.77**	**$ 3.02**	**2.11%**
HST		13%		$ 18.56	13%		$ 18.95	$ 0.39	2.11%
Total Bill (including HST)				$ 161.31			$ 164.72	$ 3.41	2.11%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 161.31**			**$ 164.72**	**$ 3.41**	**2.11%**
Total Bill on RPP (before Taxes)				**$ 136.12**			**$ 139.14**	**$ 3.02**	**2.22%**
HST		13%		$ 17.70	13%		$ 18.09	$ 0.39	2.22%
Total Bill (including HST)				$ 153.82			$ 157.23	$ 3.41	2.22%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 153.82**			**$ 157.23**	**$ 3.41**	**2.22%**

Loss Factor (%)	3.76%	3.76%

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010*.

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: COMPETITIVE SECTOR MULTI-UNIT RESIDENTIAL SERVICE

TOU / non-TOU: TOU

Consumption 334 **kWh** ● May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)

		Current Board-Approved			Jan. 1, 2017 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 19.07	1	$ 19.07	$ 22.95	1	$ 22.95	$ 3.88	20.35%
Rate Rider for Incremental Capital Module True-up	per 30 days			$ -	$ 0.18	1	$ 0.18	$ 0.18	
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 0.19	1	$ 0.19	$ 0.19	1	$ 0.19	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.09	1	$ 0.09	$ 0.09	1	$ 0.09	$ -	0.00%
Rate Rider for Recovery of Smart Metering Entity Variance	per 30 days	$ 0.03	1	$ 0.03		1	$ -	-$ 0.03	
Distribution Volumetric Rate	per kWh	$ 0.02877	334	$ 9.61	$ 0.02316	334	$ 7.74	-$ 1.87	-19.50%
Rate Rider for Disposition of PILs and Tax Variance	per 30 days	-$ 0.07	1	-$ 0.07		1	$ -	$ 0.07	
Rate Rider for Disposition of PILs and Tax Variance - HST	per 30 days	-$ 0.03	1	-$ 0.03		1	$ -	$ 0.03	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per 30 days	$ 0.04	1	$ 0.04	$ 0.04	1	$ 0.04	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per 30 days	$ 0.01	1	$ 0.01	$ 0.01	1	$ 0.01	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kWh	-$ 0.00006	334	-$ 0.02		334	$ -	$ 0.02	
Rate Rider for Disposition of LRAM Variance Account	per 30 days	$ -	1	$ -		1	$ -	$ -	
Rate Rider for Application of IFRS - 2014 Derecognition	per 30 days	$ 0.18	1	$ 0.18	$ 0.18	1	$ 0.18	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per 30 days	-$ 0.19	1	-$ 0.19	-$ 0.19	1	-$ 0.19	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per 30 days	-$ 0.59	1	-$ 0.59	-$ 0.59	1	-$ 0.59	$ -	0.00%
Sub-Total A (excluding pass through)				$ 28.32			$ 30.60	**$ 2.28**	**8.04%**
Rate Rider for Recovery of Low Voltage Variance	per kWh	$ 0.00002	334	$ 0.01		334	$ -	-$ 0.01	
Line Losses on Cost of Power	per kWh	$ 0.1118	13	$ 1.40	$ 0.1118	13	$ 1.40	$ -	0.00%
Rate Rider for Smart Metering Entity Charge	per 30 days	$ 0.78	1	$ 0.78	$ 0.78	1	$ 0.78	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 30.51**			**$ 32.78**	**$ 2.27**	**7.44%**
RTSR - Network	per kWh	$ 0.00914	347	$ 3.17	$ 0.00914	347	$ 3.17	$ -	0.00%
RTSR - Line and Transformation Connection	per kWh	$ 0.00786	347	$ 2.72	$ 0.00786	347	$ 2.72	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 36.40**			**$ 38.67**	**$ 2.27**	**6.23%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0044	347	$ 1.52	$ 0.0044	347	$ 1.52	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	347	$ 0.45	$ 0.0013	347	$ 0.45	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	347	$ 0.38	$ 0.0011	347	$ 0.38	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ -	334	$ -	$ -	334	$ -	$ -	
TOU - Off Peak	per kWh	$ 0.0870	214	$ 18.60	$ 0.0870	214	$ 18.60	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	60	$ 7.94	$ 0.1320	60	$ 7.94	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	60	$ 10.82	$ 0.1800	60	$ 10.82	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	334	$ 34.40	$ 0.1030	334	$ 34.40	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	0	$ -	$ 0.1210	0	$ -	$ -	
Total Bill on TOU (before Taxes)				**$ 76.36**			**$ 78.63**	**$ 2.27**	**2.97%**
HST		13%		$ 9.93	13%		$ 10.22	$ 0.30	2.97%
Total Bill (including HST)				$ 86.29			$ 88.85	$ 2.56	2.97%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 86.29**			**$ 88.85**	**$ 2.56**	**2.97%**
Total Bill on RPP (before Taxes)				**$ 73.41**			**$ 75.68**	**$ 2.27**	**3.09%**
HST		13%		$ 9.54	13%		$ 9.84	$ 0.30	3.09%
Total Bill (including HST)				$ 82.95			$ 85.52	$ 2.56	3.09%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 82.95**			**$ 85.52**	**$ 2.56**	**3.09%**
Loss Factor (%)		3.76%			3.76%				

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: GENERAL SERVICE LESS THAN 50 kW SERVICE

TOU / non-TOU: TOU

Consumption 2,000 **kWh** ● May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)

		Current Board-Approved			Jan. 1, 2017 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 30.47	1	$ 30.47	$ 32.70	1	$ 32.70	$ 2.23	7.32%
Rate Rider for Incremental Capital Module True-up	per 30 days			$ -	$ 0.48	1	$ 0.48	$ 0.48	
Rate Rider for Recovery of 2008-2010 Smart Meter Costs	per 30 days	$ 5.60	1	$ 5.60	$ 5.60	1	$ 5.60	$ -	0.00%
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 0.79	1	$ 0.79	$ 0.79	1	$ 0.79	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Rate Rider for Recovery of Stranded Meter Assets	per 30 days	$ 1.55	1	$ 1.55	$ 1.55	1	$ 1.55	$ -	0.00%
Rate Rider for Recovery of Smart Metering Entity Variance	per 30 days	$ 0.06	1	$ 0.06		1	$ -	-$ 0.06	
Distribution Volumetric Rate	per kWh	$ 0.02818	2,000	$ 56.36	$ 0.03024	2,000	$ 60.48	$ 4.12	7.31%
Rate Rider for Incremental Capital Module True-up	per kWh			$ -	$ 0.00049	2,000	$ 0.98	$ 0.98	
Rate Rider for Recovery of 2015 Foregone Revenue	per kWh	$ 0.00076	2,000	$ 1.52	$ 0.00076	2,000	$ 1.52	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per kWh	$ 0.00024	2,000	$ 0.48	$ 0.00024	2,000	$ 0.48	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kWh	-$ 0.00018	2,000	-$ 0.36		2,000	$ -	$ 0.36	
Rate Rider for Disposition of PILs and Tax Variance - HST	per kWh	-$ 0.00009	2,000	-$ 0.18		2,000	$ -	$ 0.18	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kWh	$ 0.00013	2,000	$ 0.26	$ 0.00013	2,000	$ 0.26	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kWh	$ 0.00003	2,000	$ 0.06	$ 0.00003	2,000	$ 0.06	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kWh	-$ 0.00009	2,000	-$ 0.18		2,000	$ -	$ 0.18	
Rate Rider for Disposition of LRAM Variance Account	per kWh	$ 0.00056	2,000	$ 1.12		2,000	$ -	-$ 1.12	
Rate Rider for Application of IFRS - 2014 Derecognition	per kWh	$ 0.00049	2,000	$ 0.98	$ 0.00049	2,000	$ 0.98	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kWh	-$ 0.00051	2,000	-$ 1.02	-$ 0.00051	2,000	-$ 1.02	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kWh	-$ 0.00156	2,000	-$ 3.12	-$ 0.00156	2,000	-$ 3.12	$ -	0.00%
Sub-Total A (excluding pass through)				$ 94.64			$ 101.99	**$ 7.35**	**7.77%**
Rate Rider for Recovery of Low Voltage Variance	per kWh	$ 0.00006	2,000	$ 0.12		2,000	$ -	-$ 0.12	
Line Losses on Cost of Power	per kWh	$ 0.1118	75	$ 8.41	$ 0.1118	75	$ 8.41	$ -	0.00%
Rate Rider for Smart Metering Entity Charge	per 30 days	$ 0.78	1	$ 0.78	$ 0.78	1	$ 0.78	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 103.95**			**$ 111.18**	**$ 7.23**	**6.96%**
RTSR - Network	per kWh	$ 0.00884	2,075	$ 18.34	$ 0.00884	2,075	$ 18.34	$ -	0.00%
RTSR - Line and Transformation Connection	per kWh	$ 0.00709	2,075	$ 14.71	$ 0.00709	2,075	$ 14.71	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 137.01**			**$ 144.24**	**$ 7.23**	**5.28%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	2,075	$ 7.47	$ 0.0036	2,075	$ 7.47	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	2,075	$ 2.70	$ 0.0013	2,075	$ 2.70	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	2,075	$ 2.28	$ 0.0011	2,075	$ 2.28	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	2,000	$ 14.00	$ 0.0070	2,000	$ 14.00	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	1,280	$ 111.36	$ 0.0870	1,280	$ 111.36	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	360	$ 47.52	$ 0.1320	360	$ 47.52	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	360	$ 64.80	$ 0.1800	360	$ 64.80	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	600	$ 61.80	$ 0.1030	600	$ 61.80	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	1,400	$ 169.40	$ 0.1210	1,400	$ 169.40	$ -	0.00%
Total Bill on TOU (before Taxes)				**$ 387.39**			**$ 394.62**	**$ 7.23**	**1.87%**
HST		13%		$ 50.36	13%		$ 51.30	$ 0.94	1.87%
Total Bill (including HST)				$ 437.75			$ 445.92	$ 8.17	1.87%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 437.75**			**$ 445.92**	**$ 8.17**	**1.87%**
Total Bill on RPP (before Taxes)				**$ 394.91**			**$ 402.14**	**$ 7.23**	**1.83%**
HST		13%		$ 51.34	13%		$ 52.28	$ 0.94	1.83%
Total Bill (including HST)				$ 446.25			$ 454.42	$ 8.17	1.83%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 446.25**			**$ 454.42**	**$ 8.17**	**1.83%**

Loss Factor (%) 3.76% 3.76%

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: GENERAL SERVICE 50 TO 999 kW SERVICE

TOU / non-TOU: non-TOU

Consumption		
349	kW	
388	kVA	● May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)
150,000	kWh	

		Current Board-Approved			Jan. 1, 2017 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 43.82	1	$ 43.82	$ 47.03	1	$ 47.03	$ 3.21	7.33%
Rate Rider for Incremental Capital Module True-up	per 30 days			$ -	$ 0.78	1	$ 0.78	$ 0.78	
Rate Rider for Recovery of 2008-2010 Smart Meter Costs	per 30 days	$ 18.79	1	$ 18.79	$ 18.79	1	$ 18.79	$ -	0.00%
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 1.01	1	$ 1.01	$ 1.01	1	$ 1.01	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.30	1	$ 0.30	$ 0.30	1	$ 0.30	$ -	0.00%
Rate Rider for Recovery of Stranded Meter Assets	per 30 days	$ 4.64	1	$ 4.64	$ 4.64	1	$ 4.64	$ -	0.00%
Distribution Volumetric Rate	per kVA	$ 6.8970	388	$ 2,676.04	$ 7.4019	388	$ 2,871.94	$ 195.90	7.32%
Rate Rider for Incremental Capital Module True-up	per kVA			$ -	$ 0.1191	388	$ 46.21	$ 46.21	
Rate Rider for Recovery of 2015 Foregone Revenue	per kVA	$ 0.1659	388	$ 64.37	$ 0.1659	388	$ 64.37	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per kVA	$ 0.0498	388	$ 19.32	$ 0.0498	388	$ 19.32	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kVA	-$ 0.0292	388	-$ 11.33		388	$ -	$ 11.33	
Rate Rider for Disposition of PILs and Tax Variance - HST	per kVA	-$ 0.0138	388	-$ 5.35		388	$ -	$ 5.35	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kVA	$ 0.0114	388	$ 4.42	$ 0.0114	388	$ 4.42	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kVA	$ 0.0047	388	$ 1.82	$ 0.0047	388	$ 1.82	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kVA	-$ 0.0354	388	-$ 13.74		388	$ -	$ 13.74	
Rate Rider for Disposition of LRAM Variance Account	per kVA	$ 0.1286	388	$ 49.90		388	$ -	-$ 49.90	
Rate Rider for Application of IFRS - 2014 Derecognition	per kVA	$ 0.0781	388	$ 30.30	$ 0.0781	388	$ 30.30	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kVA	-$ 0.0814	388	-$ 31.58	-$ 0.0814	388	-$ 31.58	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kVA	-$ 0.2512	388	-$ 97.47	-$ 0.2512	388	-$ 97.47	$ -	0.00%
Sub-Total A (excluding pass through)				$ 2,755.27			$ 2,981.89	**$ 226.62**	**8.23%**
Rate Rider for Recovery of Low Voltage Variance	per kVA	$ 0.0225	388	$ 8.73		388	$ -	-$ 8.73	
Line Losses on Cost of Power	per kWh	$ 0.1210	5,640	$ 682.44	$ 0.1210	5,640	$ 682.44	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 3,446.44**			**$ 3,664.33**	**$ 217.89**	**6.32%**
RTSR - Network	per kW	$ 3.1647	349	$ 1,104.48	$ 3.1647	349	$ 1,104.48	$ -	0.00%
RTSR - Line and Transformation Connection	per kW	$ 2.7017	349	$ 942.89	$ 2.7017	349	$ 942.89	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 5,493.81**			**$ 5,711.70**	**$ 217.89**	**3.97%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	155,640	$ 560.30	$ 0.0036	155,640	$ 560.30	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	155,640	$ 202.33	$ 0.0013	155,640	$ 202.33	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	155,640	$ 171.20	$ 0.0011	155,640	$ 171.20	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	150,000	$ 1,050.00	$ 0.0070	150,000	$ 1,050.00	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	96,000	$ 8,352.00	$ 0.0870	96,000	$ 8,352.00	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	27,000	$ 3,564.00	$ 0.1320	27,000	$ 3,564.00	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	27,000	$ 4,860.00	$ 0.1800	27,000	$ 4,860.00	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	750	$ 77.25	$ 0.1030	750	$ 77.25	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	149,250	$ 18,059.25	$ 0.1210	149,250	$ 18,059.25	$ -	0.00%
Total Bill on TOU (before Taxes)				**$ 24,253.90**			**$ 24,471.79**	**$ 217.89**	**0.90%**
HST		13%		$ 3,153.01	13%		$ 3,181.33	$ 28.33	0.90%
Total Bill (including HST)				$ 27,406.91			$ 27,653.13	$ 246.22	0.90%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 27,406.91**			**$ 27,653.13**	**$ 246.22**	**0.90%**
Total Bill on RPP (before Taxes)				**$ 25,614.40**			**$ 25,832.29**	**$ 217.89**	**0.85%**
HST		13%		$ 3,329.87	13%		$ 3,358.20	$ 28.33	0.85%
Total Bill (including HST)				$ 28,944.27			$ 29,190.49	$ 246.22	0.85%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 28,944.27**			**$ 29,190.49**	**$ 246.22**	**0.85%**
Loss Factor (%)		3.76%			3.76%				

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: GENERAL SERVICE 1,000 TO 4,999 kW SERVICE

TOU / non-TOU: non-TOU

Consumption	1,600	kW	
	1,778	kVA	● May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)
	800,000	kWh	

		Current Board-Approved			Jan. 1, 2017 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 837.09	1	$ 837.09	$ 898.36	1	$ 898.36	$ 61.27	7.32%
Rate Rider for Incremental Capital Module True-up	per 30 days				$ 16.58	1	$ 16.58	$ 16.58	
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 18.89	1	$ 18.89	$ 18.89	1	$ 18.89	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 5.48	1	$ 5.48	$ 5.48	1	$ 5.48	$ -	0.00%
Distribution Volumetric Rate	per kVA	$ 5.4262	1,778	$ 9,647.78	$ 5.8234	1,778	$ 10,354.01	$ 706.22	7.32%
Rate Rider for Incremental Capital Module True-up	per kVA				$ 0.0917	1,778	$ 163.04	$ 163.04	
Rate Rider for Recovery of 2015 Foregone Revenue	per kVA	$ 0.1226	1,778	$ 217.98	$ 0.1226	1,778	$ 217.98	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per kVA	$ 0.0356	1,778	$ 63.30	$ 0.0356	1,778	$ 63.30	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kVA	-$ 0.0232	1,778	-$ 41.25		1,778	$ -	$ 41.25	
Rate Rider for Disposition of PILs and Tax Variance - HST	per kVA	-$ 0.0110	1,778	-$ 19.56		1,778	$ -	$ 19.56	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kVA	$ 0.0056	1,778	$ 9.96	$ 0.0056	1,778	$ 9.96	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kVA	$ 0.0038	1,778	$ 6.76	$ 0.0038	1,778	$ 6.76	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kVA	-$ 0.0401	1,778	-$ 71.30		1,778	$ -	$ 71.30	
Rate Rider for Disposition of LRAM Variance Account	per kVA	-$ 0.0041	1,778	-$ 7.29		1,778	$ -	$ 7.29	
Rate Rider for Application of IFRS - 2014 Derecognition	per kVA	$ 0.0627	1,778	$ 111.48	$ 0.0627	1,778	$ 111.48	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kVA	-$ 0.0653	1,778	-$ 116.10	-$ 0.0653	1,778	-$ 116.10	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kVA	-$ 0.2017	1,778	-$ 358.62	-$ 0.2017	1,778	-$ 358.62	$ -	0.00%
Sub-Total A (excluding pass through)				$ 10,304.60			$ 11,391.11	**$ 1,086.51**	**10.54%**
Rate Rider for Recovery of Low Voltage Variance	per kVA	$ 0.0273	1,778	$ 48.54		1,778	$ -	-$ 48.54	
Line Losses on Cost of Power	per kWh	$ 0.1210	30,080	$ 3,639.68	$ 0.1210	30,080	$ 3,639.68	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 13,992.82**			**$ 15,030.79**	**$ 1,037.97**	**7.42%**
RTSR - Network	per kW	$ 3.0576	1,600	$ 4,892.16	$ 3.0576	1,600	$ 4,892.16	$ -	0.00%
RTSR - Line and Transformation Connection	per kW	$ 2.6990	1,600	$ 4,318.40	$ 2.6990	1,600	$ 4,318.40	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 23,203.38**			**$ 24,241.35**	**$ 1,037.97**	**4.47%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	830,080	$ 2,988.29	$ 0.0036	830,080	$ 2,988.29	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	830,080	$ 1,079.10	$ 0.0013	830,080	$ 1,079.10	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	830,080	$ 913.09	$ 0.0011	830,080	$ 913.09	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	800,000	$ 5,600.00	$ 0.0070	800,000	$ 5,600.00	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	512,000	$ 44,544.00	$ 0.0870	512,000	$ 44,544.00	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	144,000	$ 19,008.00	$ 0.1320	144,000	$ 19,008.00	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	144,000	$ 25,920.00	$ 0.1800	144,000	$ 25,920.00	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	750	$ 77.25	$ 0.1030	750	$ 77.25	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	799,250	$ 96,709.25	$ 0.1210	799,250	$ 96,709.25	$ -	0.00%
Total Bill on TOU (before Taxes)				**$ 123,256.11**			**$ 124,294.08**	**$ 1,037.97**	**0.84%**
HST		13%		$ 16,023.29	13%		$ 16,158.23	$ 134.94	0.84%
Total Bill (including HST)				$ 139,279.40			$ 140,452.30	$ 1,172.91	0.84%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 139,279.40**			**$ 140,452.30**	**$ 1,172.91**	**0.84%**
Total Bill on RPP (before Taxes)				**$ 130,570.61**			**$ 131,608.58**	**$ 1,037.97**	**0.79%**
HST		13%		$ 16,974.18	13%		$ 17,109.11	$ 134.94	0.79%
Total Bill (including HST)				$ 147,544.78			$ 148,717.69	$ 1,172.91	0.79%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 147,544.78**			**$ 148,717.69**	**$ 1,172.91**	**0.79%**

Loss Factor (%)	3.76%	3.76%

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: LARGE USE SERVICE

TOU / non-TOU: non-TOU

		8,491	kW	
		9,434	kVA	● May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)
	Consumption	4,500,000	kWh	

		Current Board-Approved			Jan. 1, 2017 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge	per 30 days	$ 3,694.97	1	$ 3,694.97	$ 3,965.44	1	$ 3,965.44	$ 270.47	7.32%
Rate Rider for Incremental Capital Module True-up	per 30 days				$ 58.88	1	$ 58.88	$ 58.88	
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 85.84	1	$ 85.84	$ 85.84	1	$ 85.84	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 25.18	1	$ 25.18	$ 25.18	1	$ 25.18	$ -	0.00%
Distribution Volumetric Rate	per kVA	$ 5.8210	9,434	$ 54,915.31	$ 6.2471	9,434	$ 58,935.14	$ 4,019.83	7.32%
Rate Rider for Incremental Capital Module True-up	per kVA				$ 0.0932	9,434	$ 879.25	$ 879.25	
Rate Rider for Recovery of 2015 Foregone Revenue	per kVA	$ 0.1382	9,434	$ 1,303.78	$ 0.1382	9,434	$ 1,303.78	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per kVA	$ 0.0406	9,434	$ 383.02	$ 0.0406	9,434	$ 383.02	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kVA	-$ 0.0241	9,434	-$ 227.36		9,434	$ -	$ 227.36	
Rate Rider for Disposition of PILs and Tax Variance - HST	per kVA	-$ 0.0114	9,434	-$ 107.55		9,434	$ -	$ 107.55	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kVA	$ 0.0044	9,434	$ 41.51	$ 0.0044	9,434	$ 41.51	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kVA	$ 0.0039	9,434	$ 36.79	$ 0.0039	9,434	$ 36.79	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kVA	-$ 0.0423	9,434	-$ 399.06		9,434	$ -	$ 399.06	
Rate Rider for Disposition of LRAM Variance Account	per kVA	-$ 0.0223	9,434	-$ 210.38		9,434	$ -	$ 210.38	
Rate Rider for Application of IFRS - 2014 Derecognition	per kVA	$ 0.0648	9,434	$ 611.32	$ 0.0648	9,434	$ 611.32	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kVA	-$ 0.0675	9,434	-$ 636.80	-$ 0.0675	9,434	-$ 636.80	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kVA	-$ 0.2084	9,434	-$ 1,966.05	-$ 0.2084	9,434	-$ 1,966.05	$ -	0.00%
Sub-Total A (excluding pass through)				$ 57,550.54			$ 63,723.31	**$ 6,172.77**	**10.73%**
Rate Rider for Recovery of Low Voltage Variance	per kVA	$ 0.0261	9,434	$ 246.23		9,434	$ -	-$ 246.23	
Line Losses on Cost of Power	per kWh	$ 0.1210	84,150	$ 10,182.15	$ 0.1210	84,150	$ 10,182.15	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 67,978.92**			**$ 73,905.46**	**$ 5,926.54**	**8.72%**
RTSR - Network	per kW	$ 3.4855	8,491	$ 29,595.38	$ 3.4855	8,491	$ 29,595.38	$ -	0.00%
RTSR - Line and Transformation Connection	per kW	$ 2.9986	8,491	$ 25,461.11	$ 2.9986	8,491	$ 25,461.11	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 123,035.42**			**$ 128,961.96**	**$ 5,926.54**	**4.82%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	4,584,150	$ 16,502.94	$ 0.0036	4,584,150	$ 16,502.94	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	4,584,150	$ 5,959.40	$ 0.0013	4,584,150	$ 5,959.40	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	4,584,150	$ 5,042.57	$ 0.0011	4,584,150	$ 5,042.57	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	4,500,000	$ 31,500.00	$ 0.0070	4,500,000	$ 31,500.00	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	2,880,000	$ 250,560.00	$ 0.0870	2,880,000	$ 250,560.00	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	810,000	$ 106,920.00	$ 0.1320	810,000	$ 106,920.00	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	810,000	$ 145,800.00	$ 0.1800	810,000	$ 145,800.00	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	750	$ 77.25	$ 0.1030	750	$ 77.25	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	4,499,250	$ 544,409.25	$ 0.1210	4,499,250	$ 544,409.25	$ -	0.00%
Total Bill on TOU (before Taxes)				**$ 685,320.57**			**$ 691,247.11**	**$ 5,926.54**	**0.86%**
HST		13%		$ 89,091.67	13%		$ 89,862.12	$ 770.45	0.86%
Total Bill (including HST)				$ 774,412.24			$ 781,109.23	$ 6,696.99	0.86%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 774,412.24**			**$ 781,109.23**	**$ 6,696.99**	**0.86%**
Total Bill on RPP (before Taxes)				**$ 726,527.07**			**$ 732,453.61**	**$ 5,926.54**	**0.82%**
HST		13%		$ 94,448.52	13%		$ 95,218.97	$ 770.45	0.82%
Total Bill (including HST)				$ 820,975.58			$ 827,672.58	$ 6,696.99	0.82%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 820,975.58**			**$ 827,672.58**	**$ 6,696.99**	**0.82%**

Loss Factor (%)	1.87%	1.87%

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010*.

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: STREET LIGHTING SERVICE

TOU / non-TOU: non-TOU

Consumption		
1	Devices	
0.165	kW	
0.165	kVA	May 1 - October 31 / November 1 - April 30 (Select this radio button for applications filed after Oct 31)
60	kWh	

		Current Board-Approved			Jan. 1, 2017 Proposed			Impact	
	Charge Unit	Rate ($)	Volume	Charge ($)	Rate ($)	Volume	Charge ($)	$ Change	% Change
Service Charge (per device)	per device per 30 days	$ 1.37	1	$ 1.37	$ 1.47	1	$ 1.47	$ 0.10	7.30%
Rate Rider for Incremental Capital Module True-up	per device per 30 days				$ 0.03	1	$ 0.03	$ 0.03	
Rate Rider for Recovery of 2015 Foregone Revenue	per device per 30 days	$ -		$ -	$ -	-	$ -	$ -	
Rate Rider for Recovery of 2016 Foregone Revenue	per device per 30 days	$ -		$ -	$ -	-	$ -	$ -	
Distribution Volumetric Rate	per kVA	$ 30.4431	0.165	$ 5.02	$ 32.6715	0.165	$ 5.39	$ 0.37	7.32%
Rate Rider for Incremental Capital Module True-up	per kVA				$ 0.5916	0.165	$ 0.10	$ 0.10	
Rate Rider for Recovery of 2015 Foregone Revenue	per kVA	$ -	0.165	$ -	$ -	0.165	$ -	$ -	
Rate Rider for Recovery of 2016 Foregone Revenue	per kVA	$ 0.0478	0.165	$ 0.01	$ 0.0478	0.165	$ 0.01	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kVA	-$ 0.1926	0.165	-$ 0.03		0.165	$ -	$ 0.03	
Rate Rider for Disposition of PILs and Tax Variance - HST	per kVA	-$ 0.0911	0.165	-$ 0.02		0.165	$ -	$ 0.02	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kVA	$ 0.0741	0.165	$ 0.01	$ 0.0741	0.165	$ 0.01	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kVA	$ 0.0312	0.165	$ 0.01	$ 0.0312	0.165	$ 0.01	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kVA	-$ 0.0364	0.165	-$ 0.01		0.165	$ -	$ 0.01	
Rate Rider for Application of IFRS - 2014 Derecognition	per kVA	$ 0.5133	0.165	$ 0.08	$ 0.5133	0.165	$ 0.08	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kVA	-$ 0.5347	0.165	-$ 0.09	-$ 0.5347	0.165	-$ 0.09	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kVA	-$ 1.6506	0.165	-$ 0.27	-$ 1.6506	0.165	-$ 0.27	$ -	0.00%
Sub-Total A (excluding pass through)				$ 6.09			$ 6.74	**$ 0.65**	**10.64%**
Rate Rider for Recovery of Low Voltage Variance	per kVA	$ 0.0210	0.165	$ 0.00		0.165	$ -	-$ 0.00	
Line Losses on Cost of Power	per kWh	$ 0.1030	2	$ 0.23	$ 0.1030	2	$ 0.23	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 6.33**			**$ 6.97**	**$ 0.64**	**10.19%**
RTSR - Network	per kW	$ 2.8147	0.165	$ 0.46	$ 2.8147	0	$ 0.46	$ -	0.00%
RTSR - Line and Transformation Connection	per kW	$ 3.2215	0.165	$ 0.53	$ 3.2215	0	$ 0.53	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 7.32**			**$ 7.97**	**$ 0.64**	**8.80%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	62	$ 0.22	$ 0.0036	62	$ 0.22	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	62	$ 0.08	$ 0.0013	62	$ 0.08	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	62	$ 0.07	$ 0.0011	62	$ 0.07	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	60	$ 0.42	$ 0.0070	60	$ 0.42	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	38	$ 3.34	$ 0.0870	38	$ 3.34	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	11	$ 1.43	$ 0.1320	11	$ 1.43	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	11	$ 1.94	$ 0.1800	11	$ 1.94	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	60	$ 6.18	$ 0.1030	60	$ 6.18	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	-	$ -	$ 0.1210	-	$ -	$ -	
Total Bill on TOU (before Taxes)				**$ 15.08**			**$ 15.72**	**$ 0.64**	**4.28%**
HST		13%		$ 1.96	13%		$ 2.04	$ 0.08	4.28%
Total Bill (including HST)				$ 17.04			$ 17.76	$ 0.73	4.28%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 17.04**			**$ 17.76**	**$ 0.73**	**4.28%**
Total Bill on RPP (before Taxes)				**$ 14.55**			**$ 15.19**	**$ 0.64**	**4.43%**
HST		13%		$ 1.89	13%		$ 1.97	$ 0.08	4.43%
Total Bill (including HST)				$ 16.44			$ 17.16	$ 0.73	4.43%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 16.44**			**$ 17.16**	**$ 0.73**	**4.43%**

Loss Factor (%) 3.76% 3.76%

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

Appendix 2-W
Bill Impacts

Customer Class: UNMETERED SCATTERED LOAD SERVICE

TOU / non-TOU: non-TOU

Consumption 1 Connection; 365 kWh ● May 1 - October 31 ○ November 1 - April 30 (Select this radio button for applications filed after Oct 31)

	Charge Unit	Current Board-Approved Rate ($)	Volume	Charge ($)	Jan. 1, 2017 Proposed Rate ($)	Volume	Charge ($)	Impact $ Change	Impact % Change
Service Charge	per 30 days	$ 6.08	1	$ 6.08	$ 6.53	1	$ 6.53	$ 0.45	7.40%
Rate Rider for Incremental Capital Module True-up	per 30 days				$ 0.01	1	$ 0.01	$ 0.01	
Connection Charge (per connection)	per connection per 30 days	$ 0.62	1	$ 0.62	$ 0.67	1	$ 0.67	$ 0.05	8.06%
Rate Rider for Incremental Capital Module True-up	per connection per 30 days				$ 0.19	1	$ 0.19	$ 0.19	
Rate Rider for Recovery of 2015 Foregone Revenue (per connection)	per connection per 30 days	$ 0.02	1	$ 0.02	$ 0.02	1	$ 0.02	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue (per connection)	per connection per 30 days	$ 0.01	1	$ 0.01	$ 0.01	1	$ 0.01	$ -	0.00%
Rate Rider for Recovery of 2015 Foregone Revenue	per 30 days	$ 0.16	1	$ 0.16	$ 0.16	1	$ 0.16	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per 30 days	$ 0.05	1	$ 0.05	$ 0.05	1	$ 0.05	$ -	0.00%
Distribution Volumetric Rate	per kWh	$ 0.07634	365	$ 27.86	$ 0.08193	365	$ 29.90	$ 2.04	7.32%
Rate Rider for Incremental Capital Module True-up	per kWh				$ 0.00175	365	$ 0.64	$ 0.64	
Rate Rider for Recovery of 2015 Foregone Revenue	per kWh	$ 0.00203	365	$ 0.74	$ 0.00203	365	$ 0.74	$ -	0.00%
Rate Rider for Recovery of 2016 Foregone Revenue	per kWh	$ 0.00062	365	$ 0.23	$ 0.00062	365	$ 0.23	$ -	0.00%
Rate Rider for Disposition of PILs and Tax Variance	per kWh	-$ 0.00035	365	-$ 0.13		365	$ -	$ 0.13	
Rate Rider for Disposition of PILs and Tax Variance - HST	per kWh	-$ 0.00016	365	-$ 0.06		365	$ -	$ 0.06	
Rate Rider for Recovery of the Gain on the Sale of Named Properties	per kWh	$ 0.00029	365	$ 0.11	$ 0.00029	365	$ 0.11	$ -	0.00%
Rate Rider for Recovery of Hydro One Capital Contributions Variance	per kWh	$ 0.00006	365	$ 0.02	$ 0.00006	365	$ 0.02	$ -	0.00%
Rate Rider for Disposition of Residual Regulatory Asset Recovery Account	per kWh	-$ 0.00011	365	-$ 0.04		365	$ -	$ 0.04	
Rate Rider for Application of IFRS - 2014 Derecognition	per kWh	$ 0.00092	365	$ 0.34	$ 0.00092	365	$ 0.34	$ -	0.00%
Rate Rider for Disposition of Post Employment Benefit - Tax Savings	per kWh	-$ 0.00096	365	-$ 0.35	-$ 0.00096	365	-$ 0.35	$ -	0.00%
Rate Rider for Application of Operations Center Consolidation Plan Sharing	per kWh	-$ 0.00296	365	-$ 1.08	-$ 0.00296	365	-$ 1.08	$ -	0.00%
Sub-Total A (excluding pass through)				$ 34.58			$ 38.18	**$ 3.61**	**10.43%**
Rate Rider for Recovery of Low Voltage Variance	per kWh	$ 0.00006	365	$ 0.02		365	$ -	-$ 0.02	
Line Losses on Cost of Power	per kWh	$ 0.1030	14	$ 1.41	$ 0.1030	14	$ 1.41	$ -	0.00%
Sub-Total B - Distribution (includes Sub-Total A)				**$ 36.01**			**$ 39.60**	**$ 3.58**	**9.95%**
RTSR - Network	per kWh	$ 0.00555	379	$ 2.10	$ 0.00555	379	$ 2.10	$ -	0.00%
RTSR - Line and Transformation Connection	per kWh	$ 0.00497	379	$ 1.88	$ 0.00497	379	$ 1.88	$ -	0.00%
Sub-Total C - Delivery (including Sub-Total B)				**$ 40.00**			**$ 43.58**	**$ 3.58**	**8.96%**
Wholesale Market Service Charge (WMSC)	per kWh	$ 0.0036	379	$ 1.36	$ 0.0036	379	$ 1.36	$ -	0.00%
Rural and Remote Rate Protection (RRRP)	per kWh	$ 0.0013	379	$ 0.49	$ 0.0013	379	$ 0.49	$ -	0.00%
Ontario Electricity Support Program (OESP)	per kWh	$ 0.0011	379	$ 0.42	$ 0.0011	379	$ 0.42	$ -	0.00%
Standard Supply Service Charge	per 30 days	$ 0.25	1	$ 0.25	$ 0.25	1	$ 0.25	$ -	0.00%
Debt Retirement Charge (DRC)	per kWh	$ 0.0070	365	$ 2.56	$ 0.0070	365	$ 2.56	$ -	0.00%
TOU - Off Peak	per kWh	$ 0.0870	234	$ 20.32	$ 0.0870	234	$ 20.32	$ -	0.00%
TOU - Mid Peak	per kWh	$ 0.1320	66	$ 8.67	$ 0.1320	66	$ 8.67	$ -	0.00%
TOU - On Peak	per kWh	$ 0.1800	66	$ 11.83	$ 0.1800	66	$ 11.83	$ -	0.00%
Energy - RPP - Tier 1	per kWh	$ 0.1030	365	$ 37.60	$ 0.1030	365	$ 37.60	$ -	0.00%
Energy - RPP - Tier 2	per kWh	$ 0.1210	-	$ -	$ 0.1210	-	$ -	$ -	
Total Bill on TOU (before Taxes)				**$ 85.90**			**$ 89.48**	**$ 3.58**	**4.17%**
HST		13%		$ 11.17	13%		$ 11.63	$ 0.47	4.17%
Total Bill (including HST)				$ 97.06			$ 101.11	$ 4.05	4.17%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on TOU (including OCEB)				**$ 97.06**			**$ 101.11**	**$ 4.05**	**4.17%**
Total Bill on RPP (before Taxes)				**$ 82.67**			**$ 86.25**	**$ 3.58**	**4.33%**
HST		13%		$ 10.75	13%		$ 11.21	$ 0.47	4.33%
Total Bill (including HST)				$ 93.42			$ 97.47	$ 4.05	4.33%
Ontario Clean Energy Benefit [1]				$ -			$ -	$ -	
Total Bill on RPP (including OCEB)				**$ 93.42**			**$ 97.47**	**$ 4.05**	**4.33%**
Loss Factor (%)		3.76%			3.76%				

[1] Applicable to eligible customers only. Refer to the *Ontario Clean Energy Benefit Act, 2010.*

Note that the "Charge $" columns provide breakdowns of the amounts that each bill component contributes to the total monthly bill at the referenced consumption level at existing and proposed rates.

Applicants must provide bill impacts for residential at 800 kWh and GS<50kW at 2000 kWh. In addition, their filing must cover the range that is relevant to their service territory, class by class. A general guideline of consumption levels follows:

Residential (kWh) - 100, 250, 500, 800, 1000, 1500, 2000
GS<50kW (kWh) - 1000, 2000, 5000, 10000, 15000
GS>50kW (kW) - 60, 100, 500, 1000
Large User - range appropriate for utility
Lighting Classes and USL - 150 kWh and 1 kW, range appropriate for utility.

Note that cells with the highlighted color shown to the left indicate quantities that are loss adjusted.

RESPONSES TO ONTARIO ENERGY BOARD STAFF INTERROGATORIES

INTERROGATORY 24:

REFERENCE(S): Exhibit 3, Tab 2, Schedule 4 and
Exhibit 3, Tab 3, Schedule 1

Please provide recalculated versions of the two schedules referenced above on the basis that no 2012 ISAs are eligible for recovery assuming both a November 1, 2016 and January 1, 2017 implementation date.

RESPONSE:

Please see attached (Appendices A to C to this response).

2012, 2013 and 2014 ICM True-Up

	2012			2013			2014		
	Net Fixed Asset	Amort. Exp	CCA	Net Fixed Asset	Amort. Exp	CCA	Net Fixed Asset	Amort. Exp	CCA
01 Underground Infrastructure				66,816,313	2,119,715	5,345,305	48,890,725	1,592,427	3,911,258
02 Paper Insulated Lead Covered Cable - Piece Outs and Leakers				128,199	2,276	10,256	1,251,332	28,985	100,107
03 Handwell Replacement				16,613,719	739,310	1,329,098	6,787,380	302,358	542,990
04 Overhead Infrastructure				33,073,032	890,052	2,645,843	23,689,595	619,169	1,895,168
05 Box Construction				5,649,973	141,885	451,998	8,120,856	211,922	649,668
06 Rear Lot Construction				28,557,004	821,303	2,284,560	12,485,955	369,314	998,876
07 Polymer SMD - 20 Fuses				-	-	-	-	-	-
08 Scadamate R1 Switches				-	-	-	-	-	-
09 Network Vault & Roofs				14,727,912	447,279	1,178,233	1,143,224	37,785	91,458
10 Fibertop Network Units				6,366,000	309,397	509,280	2,295,328	100,499	183,626
11 Automatic Transfer Switches (ATS) & Reverse Power Breakers (RPB)				1,535,186	65,705	122,815	149,485	5,458	11,959
12 Stations Power Transformers				913,537	29,005	73,083	857,448	26,720	68,596
13.1 & 13.2 Stations Switchgear -Municipal and Transformer Stations				1,130	28	90	1,954,951	51,029	156,396
15 Stations Control & Communication Systems				-	-	-	-	-	-
16 Downtown Station Load Transfers				-	-	-	-	-	-
17 Bremner Transformer Station				-	-	-	-	-	-
18 Hydro One Capital Contributions				-	-	-	-	-	-
19 Feeder Automation				-	-	-	-	-	-
20 Metering				7,127,528	319,863	570,202	5,199,941	222,352	415,995
21 Externally-Initiated Plant Relocations and Expansions				7,425,566	187,273	594,045	11,536,791	284,386	922,943
Total	**-**	**-**	**-**	**188,935,099**	**6,073,091**	**15,114,808**	**124,363,009**	**3,852,404**	**9,949,040**
Values Above Threshold for ICM Model	**-**	**-**	**-**	**188,935,099**	**6,073,091**	**15,114,808**	**124,363,009**	**3,852,404**	**9,949,040**

Return on Rate Base										
Incremental Capital CAPEX			$ -			$ 188,935,099			$ 124,363,009	B
Depreciation Expense			$ -			$ 6,073,091			$ 3,852,404	C
Incremental Capital CAPEX to be included in Rate Base			$ -			$ 182,862,008			$ 120,510,605	D = B - C
Deemed ShortTerm Debt %	4.0%	E	$ -	4.0%	E	$ 7,314,480	4.0%	E	$ 4,820,424	G = D * E
Deemed Long Term Debt %	56.0%	F	$ -	56.0%	F	$ 102,402,724	56.0%	F	$ 67,485,939	H = D * F
Short Term Interest	2.46%	I	$ -	2.46%	I	$ 179,936	2.46%	I	$ 118,582	K = G * I
Long Term Interest	5.37%	J	$ -	5.37%	J	$ 5,499,026	5.37%	J	$ 3,623,995	L = H * J
Return on Rate Base - Interest			$ -			$ 5,678,963			$ 3,742,577	M = K + L
Deemed Equity %	40.0%	N	$ -	40.0%	N	$ 73,144,803	40.0%	N	$ 48,204,242	P = D * N
Return on Rate Base -Equity	9.58%	O	$ -	9.58%	O	$ 7,007,272	9.58%	O	$ 4,617,966	Q = P * O
Return on Rate Base - Total			$ -			$ 12,686,235			$ 8,360,544	R = M + Q

Amortization Expense										
Amortization Expense - Incremental		C	$ -		C	$ 6,073,091		C	$ 3,852,404	S

Grossed up PILs										
Regulatory Taxable Income		O	$ -		O	$ 7,007,272		O	$ 4,617,966	T
Add Back Amortization Expense		S	$ -		S	$ 6,073,091		S	$ 3,852,404	U
Deduct CCA			$ -			$ 15,114,808			$ 9,949,040	V
Incremental Taxable Income			$ -			-$ 2,034,445			-$ 1,478,670	W = T + U - V
Current Tax Rate (F1.1 Z-Factor Tax Changes)	26.4%	X		26.4%	X		26.4%	X		
PIL's Before Gross Up			$ -			-$ 537,093			-$ 390,369	Y = W * X
Incremental Grossed Up PIL's			$ -			-$ 729,747			-$ 530,392	Z = Y / (1 - X)

Ontario Capital Tax									
Incremental Capital CAPEX		$ -			$ 188,935,099			$ 124,363,009	**AA**
Less : Available Capital Exemption (if any)		$ -			$ -			$ -	**AB**
Incremental Capital CAPEX subject to OCT		$ -			$ 188,935,099			$ 124,363,009	**AC = AA - AB**
Ontario Capital Tax Rate (F1.1 Z-Factor Tax Changes)	**AD**		0.000%	**AD**		0.000%	**AD**		
Incremental Ontario Capital Tax		$ -			$ -			$ -	**AE = AC * AD**

Incremental Revenue Requirement									
Return on Rate Base - Total	**Q**	$ -		**Q**	$ 12,686,235		**Q**	$ 8,360,544	**AF**
Amortization Expense - Total	**S**	$ -		**S**	$ 6,073,091		**S**	$ 3,852,404	**AG**
Incremental Grossed Up PIL's	**Z**	$ -		**Z**	-$ 729,747		**Z**	-$ 530,392	**AH**
Incremental Ontario Capital Tax	**AE**	$ -		**AE**	$ -		**AE**	$ -	**AI**
Incremental Revenue Requirement		**$ -**			**$ 18,029,579**			**$ 11,682,555**	**AJ = AF + AG + AH + AI**
To Be Collected		**-**			**36,059,158**			**$ 11,682,555**	**47,741,714**

	2012 Revenue Requirement A	2013 Revenue Requirement B	2014 Revenue Requirement C	Total to be Recovered D = A + B + C	Amt collected from ICM Rate Rider (ending May 2015) E	Over / (Under) Recovered E - D	
ICM TRUE UP	**$ -**	**$ 36,214,558**	**$ 12,146,367**	**$ 48,360,924**	**$ 41,746,787**	**$ (6,614,137)**	**Under Recovered**

Rate DESIGN

	Service Charge %	Distribution Volumetric kWh %	Distribution Volumetric kVa %	% of Revenue Adjustment
Residential	100.0%	0.0%	0.0%	38.7%
CSMUR	100.0%	0.0%	0.0%	1.4%
General Service Less Than 50 kW	28.5%	71.5%	0.0%	12.7%
General Service 50 to 999 kW	3.6%	0.0%	96.4%	29.5%
General Service 1,000 to 4,999 kW	8.2%	0.0%	91.8%	9.7%
Large Use	6.7%	0.0%	93.3%	4.8%
Street Lighting	21.5%	0.0%	78.5%	2.2%
Unmetered Scattered Load	0.2%	99.8%	0.0%	0.6%
Unmetered Scattered Load	100.0%	0.0%	0.0%	0.2%

	Jan 2017 to Dec 2017 Load Forecast						
	Billed Customers or Connections	Billed kWh	Billed kVA	Service Charge (per 30 Days)	Distribution Volumetric Rate kWh	Distribution Volumetric Rate kVA (per 30 days)	
Residential	616,654	4,851,685,133	-	$ 2,559,179	$ -	$ -	$ 2,559,179
CSMUR	73,991	289,587,529	-	$ 95,492	$ -	$ -	$ 95,492
General Service Less Than 50 kW	69,402	2,058,843,341	-	$ 239,829	$ 600,923	$ -	$ 840,752
General Service 50 to 999 kW	12,412	-	26,332,008	$ 69,702	$ -	$ 1,884,114	$ 1,953,816
General Service 1,000 to 4,999 kW	443	-	10,688,401	$ 52,930	$ -	$ 588,910	$ 641,840
Large Use	50	-	5,285,383	$ 21,216	$ -	$ 295,937	$ 317,153
Street Lighting	164,644	-	325,489	$ 31,744	$ -	$ 115,634	$ 147,377
Unmetered Scattered Load	898	41,132,354	-	$ 83	$ 42,669	$ -	$ 42,752
Unmetered Scattered Load	11,720	-	-	$ 15,776	$ -	$ -	$ 15,776
				$ 3,085,951	**$ 643,592**	**$ 2,884,594**	**$ 6,614,137**

ICM TRUE UP Rate Rider (12 Months Recovery)	Service Charge (per 30 Days)	Distribution Volumetric Rate kWh	Distribution Volumetric Rate kVA (per 30 days)
Residential	**0.34**		
CSMUR	**0.11**		
General Service Less Than 50 kW	**0.28**	**0.00029**	
General Service 50 to 999 kW	**0.46**		**0.0706**
General Service 1,000 to 4,999 kW	**9.82**		**0.0543**
Large Use	**34.88**		**0.0552**
Street Lighting	**0.02**		**0.3504**
Unmetered Scattered Load	**0.01**	**0.00104**	
Unmetered Scattered Load	**0.11**		

	2012 Revenue Requirement A	2013 Revenue Requirement B	2014 Revenue Requirement C	Total to be Recovered D = A + B + C	Amt collected from ICM Rate Rider (ending May 2015) E	Over / (Under) Recovered E - D	
ICM TRUE UP	**$ -**	**$ 36,214,558**	**$ 12,146,367**	**$ 48,360,924**	**$ 41,746,787**	**$ (6,614,137)**	**Under Recovered**

Rate Design	Service Charge %	Distribution Volumetric kWh %	Distribution Volumetric kVa %	% of Revenue Adjustment
Residential	100.0%	0.0%	0.0%	38.7%
CSMUR	100.0%	0.0%	0.0%	1.4%
General Service Less Than 50 kW	28.5%	71.5%	0.0%	12.7%
General Service 50 to 999 kW	3.6%	0.0%	96.4%	29.5%
General Service 1,000 to 4,999 kW	8.2%	0.0%	91.8%	9.7%
Large Use	6.7%	0.0%	93.3%	4.8%
Street Lighting	21.5%	0.0%	78.5%	2.2%
Unmetered Scattered Load	0.2%	99.8%	0.0%	0.6%
Unmetered Scattered Load	100.0%	0.0%	0.0%	0.2%

	Nov 2016 to Dec 2017 Load Forecast						
	Billed Customers or Connections	Billed kWh	Billed kVA	Service Charge (per 30 Days)	Distribution Volumetric Rate kWh	Distribution Volumetric Rate kVA (per 30 days)	
Residential	616,501	5,681,547,376	-	$ 2,559,179	$ -	$ -	$ 2,559,179
CSMUR	73,248	334,626,462	-	$ 95,492	$ -	$ -	$ 95,492
General Service Less Than 50 kW	69,390	2,415,024,888	-	$ 239,829	$ 600,923	$ -	$ 840,752
General Service 50 to 999 kW	12,397	-	30,627,099	$ 69,702	$ -	$ 1,884,114	$ 1,953,816
General Service 1,000 to 4,999 kW	443	-	12,412,624	$ 52,930	$ -	$ 588,910	$ 641,840
Large Use	50	-	6,158,909	$ 21,216	$ -	$ 295,937	$ 317,153
Street Lighting	164,621	-	379,688	$ 31,744	$ -	$ 115,634	$ 147,377
Unmetered Scattered Load	898	48,006,528	-	$ 83	$ 42,669	$ -	$ 42,752
Unmetered Scattered Load	11,720	-	-	$ 15,776	$ -	$ -	$ 15,776
				$ 3,085,951	**$ 643,592**	**$ 2,884,594**	**$ 6,614,137**

ICM TRUE UP Rate Rider (14 Months Recovery)	Service Charge (per 30 Days)	Distribution Volumetric Rate kWh	Distribution Volumetric Rate kVA (per 30 days)
Residential	**0.29**		
CSMUR	**0.09**		
General Service Less Than 50 kW	**0.24**	**0.00025**	
General Service 50 to 999 kW	**0.40**		**0.0607**
General Service 1,000 to 4,999 kW	**8.41**		**0.0468**
Large Use	**29.88**		**0.0474**
Street Lighting	**0.01**		**0.3003**
Unmetered Scattered Load	**0.01**	**0.00089**	
Unmetered Scattered Load	**0.09**		

RESPONSES TO SCHOOL ENERGY COALITION INTERROGATORIES

INTERROGATORY 17:

REFERENCE(S): Exhibit 3, Tab 1, Schedule 1, page 2

In 2012, the total actual ISA for all approved ICM segments were not above the ICM materiality threshold. For the purpose of determining the ICM true-up revenue requirement shown in Table 2, how did the Applicant determine how to allocate ICM amounts between what is above and below the materiality threshold?

RESPONSE:

Toronto Hydro does not agree with the statement that "in 2012, the total actual ISA for all approved ICM segments were not above the ICM materiality threshold." In both 2012 and 2014, the materiality thresholds were not entirely met by non-ICM ISAs. In those instances, Toronto Hydro allocated ICM amounts from all ICM segments proportionately, i.e., on a *pro rata* basis, in order to meet the thresholds.