

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 **INTERROGATORY 1:**

2 **Reference(s):** **Exhibit 1A, Tab 2, Schedule 1, page 5**

3

4 Preamble: Toronto Hydro states that its asset base includes approximately 175,000
 5 poles.

6

7 a) Complete the table below to provide further information on the number of poles
 8 currently in use or available for use by Toronto Hydro and communications attachers.
 9 The number of poles should include those that have been fully depreciated,
 10 derecognized, retired or otherwise not recorded in the company's accounts for
 11 financial purposes where the poles continue to be in use or available for use.

	Number of Poles	Number of Poles available for communications wireline attachers	Number of Poles available for other attachers (e.g., wireless)
Transmission poles			
Distribution poles			
Street lighting poles			
Other (specify)			
TOTAL			

12 For purposes of completing the above table, a pole available for communications
 13 wireline attachers is one on which there is communications space for wireline
 14 attachments.

15 b) With respect to the number of poles provided in the table in response to (a), provide
 16 the percentage of poles currently in use or available for use for communications
 17 attachments that are included in the company's accounts for financial purposes.

18 c) With respect to the number of poles provided in the table in response to (a), provide
 19 the percentage of poles in each column that are:

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- 1 i) Wood
 2 ii) Concrete
 3 iii) Steel
 4 iv) Other (specify)
 5 d) With respect to the number of poles provided in the table in response to (a), provide
 6 the percentage of poles that are more than 45 years old.

7
 8 **RESPONSE:**

- 9 a) Please see table below:

	Number of Poles	Number of Poles available for communications wireline attachers	Number of Poles available for other attachers (e.g., wireless)
Transmission poles	0	0	0
Distribution poles	135,986	135,986	135,986
Street lighting* poles	39,430	0	39,430
Other (specify)	0	0	0
TOTAL	175,416	135,986	175,416

*The poles included in the "Street lighting" category are those that were formerly part of the street lighting system in Toronto, as detailed in Exhibit 2A, Tab 5.

- 10 b) A hundred percent of Toronto Hydro's poles are currently in use or available for use
 11 by either communications wireline or wireless attachers. Seventy-eight percent of
 12 those poles (i.e., 135,986 of 175,416) are available for wireline communication
 13 attachers.
 14
 15 c) Please see table below:

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Pole Type	Number of Poles				Number of Poles available for communications wireline attachers				Number of Poles available for other attachers (e.g., wireless)			
	W	C	S	O	W	C	S	O	W	C	S	O
Transmission poles	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Distribution poles	72%	25%	2%	0%	72%	25%	2%	0%	72%	25%	2%	0%
Street lighting poles	6%	76%	10%	8%	0%	0%	0%	0%	6%	76%	10%	8%
Other (specify)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
TOTAL	58%	36%	4%	2%	72%	25%	2%	0%	58%	36%	4%	2%

- 2 d) The percentage of poles that are greater than 45 years old is outlined in the table
 3 below:

	% of Poles	% of Poles available for communications wireline attachers	% of Poles available for other attachers (e.g., wireless)
Transmission poles	0%	0%	0%
Distribution poles	27%	27%	27%
Street lighting poles	26%	0%	26%
Other (specify)	0%	0%	0%
TOTAL	26%	27%	26%

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1 **INTERROGATORY 2:**

2 **Reference(s):** **Exhibit 8A, Tab 2, Schedule 1, Appendix B, pages 6 to 8**

3

4 a) Using the table below, indicate whether there are attachments on poles owned by
 5 Toronto Hydro in one of the four spaces (excluding buried) on a typical pole that is
 6 used or available for use by wireline communications attachments: power space,
 7 separation space, communications, and clearance. Where there are attachments
 8 owned by Toronto Hydro or one of its affiliates, enter Toronto Hydro, as indicated in
 9 the sample entry provided. Where there are attachments owned by a third party, enter
 10 3rd party, as indicated in the sample entry in the column labelled Communications.

	Power Space	Separation Space	Communication	Clearance
Power-specific	<i>Toronto Hydro</i>			
Wireline communications attachment			<i>3rd party</i>	
Wireless communications attachment				
Lighting (street or other)				
Decorative				
Other (add rows for each specific type of attachment)				

11 b) For each type of attachment included in the table in response to (a), indicate whether
 12 the type of attachments was included in the calculation of the 2.61 total number of
 13 users of the pole employed in the allocation factor. Provide the supporting rationale
 14 for excluding a type of attachment.

15

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1 **RESPONSE:**

2 a) The table below lists the types of attachments that Toronto Hydro can accommodate
 3 on a typical distribution pole that is used or available for use by wireline
 4 communications attachments.

	Power Space	Separation Space	Communication	Clearance
Power-specific	Toronto Hydro			Toronto Hydro
Wireline communications attachment		Toronto Hydro / 3rd party	Toronto Hydro / 3rd party	Toronto Hydro / 3rd party
Wireless communications attachment	Toronto Hydro ¹ / 3rd party			Toronto Hydro
Lighting (street or decorative)	Toronto Hydro			3rd party
Cathodic Protection Devices				3rd party
Transit DC & Trolley Cables				3rd party
Red Light Cameras				3rd party
Power Supplies & Disconnects				3rd party
Traffic Signs & Signals				3rd party
Bus Loop Detectors & Signals				3rd party
Banners, Pole Wraps & Flower Basket Hoops				3rd party
Other				3rd party

6 b) Toronto Hydro confirms that all the attachments listed above were included in the
 7 calculation of the total numbers of users of the pole employed in the allocation factor.

¹ Includes metering and protection control devices.

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1 **INTERROGATORY 3:**

2 **Reference(s):** **none provided**

3

4 a) Provide a list of the companies with one or more wireline attachment in the
 5 communications space of poles owned by Toronto Hydro (e.g., communications
 6 wireline attachers).

7 b) Provide a list of the companies with one or more non-wireline communications
 8 attachments (e.g., wireless attachers) located anywhere on poles owned by Toronto
 9 Hydro that are used or available for use by wireline communications attachments.

10 c) Complete the table below to provide the number of poles currently in use or available
 11 for use for each of the years as of calendar year-end, using actuals for 2010 through
 12 2014 and estimates for 2015. Exclude poles used for street lighting purposes or any
 13 other poles on which wireline attachments cannot be accommodated, as per Toronto
 14 Hydro's letter of February 27, 2015.

# of poles with:	2010	2011	2012	2013	2014	2015 (est.)
0 communications attachers						
1 communications attacher						
3 communications attachers						
4 communications attachers						
5 communications attachers						
6 communications attachers						
7 communications attachers						
8 communications attachers						
TOTAL number of poles (sum of the above rows)						

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1 **RESPONSE:**

2 a) The companies that have one or more wireline attachments in the communication
 3 space on Toronto Hydro poles are Allstream, Beanfield, Bell, Cogeco, Rogers, Telus,
 4 Videotron, Hydro One, Toronto Police Services, and Toronto Hydro.

5
 6 b) The companies that have non-wireline communication attachments on Toronto Hydro
 7 poles are Cogeco, Rogers, Toronto Police Services, Toronto Transit Commission,
 8 City of Toronto, Enbridge, and Toronto Hydro Energy Services, Inc.

9
 10 c) The number of poles in use is based on the number of attachers identified through
 11 Toronto Hydro's pole inspection audit. The table below provides number of poles
 12 currently in use or available for use for each of the years as of calendar year-end, for
 13 2011-2014. Because the Pole Inspection Program was not completed until 2014, the
 14 2011, 2012, and 2013 figures below represent the cumulative data available at each of
 15 the respective year-ends. Toronto Hydro is unable to provide the 2010 data as the
 16 pole inspection audit commenced in 2011.

Number of poles with:	2011	2012	2013	2014	2015 (est.)
0 communications attachers	4,245	27,994	42,196	48,664	48,717
1 communications attacher	6,952	30,719	47,609	55,706	55,734
2 communications attachers	3,251	13,313	19,162	22,377	22,393
3 communications attachers	986	3,969	5,329	6,143	6,149
4 communications attachers	315	1,211	1,554	1,725	1,727
5 communications attachers	103	380	468	510	510
6 communications attachers	29	112	135	142	142
7 communications attachers	10	35	38	39	39
8 communications attachers	0	0	0	0	0
TOTAL number of poles (sum of the above rows)	15,891	77,733	116,491	135,306	135,411

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1 **INTERROGATORY 4:**

2 **Reference(s):** **Exhibit 8A, Tab 2, Schedule 1, Appendix B, page 8**

3

4 Preamble: Toronto Hydro stated there are 1.61 communications attachers per pole, plus
5 Toronto Hydro, for a total of 2.61 users per pole.

6

7 a) Provide all of the source data used to derive the value 1.61 and provide the
8 calculation demonstrating the result. List all sources used to determine the number of
9 attachments and attachers on each pole, and the date that the data was retrieved from
10 those sources. Also state whether the source of the data is based on a census of all
11 poles or based on a sample of poles. If a sample was used, provide details regarding
12 the nature and scope of the sampling undertaken.

13 b) Confirm that the value of 1.61 is based on a count of poles excluding poles that
14 cannot accommodate wireline attachments, e.g., street lighting poles, and provide the
15 calculation demonstrating the result. List all sources used to determine the number of
16 attachments and attachers on each pole exclusive of street lighting poles, and the date
17 that the data was retrieved from those sources. Also state whether the source of the
18 data is based on a census of all poles or based on a sample of poles. If a sample was
19 used, provide details regarding the nature and scope of the sampling undertaken.

20 c) If the value of 1.61 is based on a count of poles that includes street lighting poles or
21 other poles that cannot accommodate wireline attachments, provide the average
22 number of users per pole based on data that excludes such poles, the calculation, the
23 sources used and the date that the data was retrieved from those sources. Also state
24 whether the source of the data is based on a census of all poles or based on a sample
25 of poles. If a sample was used, provide details regarding the nature and scope of the
26 sampling undertaken.

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- 1 d) Does the value of 1.61 include wireless attachments and any other attachments, as
2 identified in the table in response to Carriers-02? If not, provide the average number
3 of users per pole based on data that includes wireless and any other attachments, the
4 calculation, the sources used and the date that the data was retrieved from those
5 sources. Also state whether the source of the data is based on a census of all poles or
6 based on a sample of poles. If a sample was used, provide details regarding the
7 nature and scope of the sampling undertaken.
- 8 e) Provide a detailed explanation why the 1.61 communications attachers per pole
9 remained unchanged following the revisions in the pole attachment fee calculation
10 filed on February 27, 2015, which excluded street lighting poles.
- 11 f) Provide a detailed description of the Pole Inspection Program that is stated as the
12 source of data on the total number of poles with one or more communications
13 attachers. Include in the description a list of all data elements captured in the Pole
14 Inspection Program (e.g., location, class and size of the pole, year install, type and
15 ownership of attachments).
- 16 g) Using the data provided in the table in response to Carriers-03, calculate the average
17 number of communications attachers per pole for each year shown, and provide the
18 underlying calculations including source data. If the value for 2014 is different from
19 1.61, provide an explanation for the variance.
- 20 h) Using the data provided in the table in response to Carriers-03, calculate the average
21 number of communications attachers per pole where the total number of poles used in
22 the denominator includes only poles with one or more communications attachers.

23

24 **RESPONSE:**

- 25 a) The value of 1.61 attachers per pole was calculated by dividing the total number of
26 third party attachments (74,638) by the number of poles (46,405) on which those
27 attachments are found. This data was retrieved in March 2014. The source of this

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1 data is a census of over 80% of the poles inspected as of March 2014, as part of
2 Toronto Hydro's Pole Inspection Program. The nature and scope of the Pole
3 Inspection Program is discussed in more detail below in part (f) of this response.

4

5 b) The value of 1.61 attachments per pole does not include poles that cannot accommodate
6 wireline attachments (e.g., street lighting poles). Please refer to the response in part
7 (a) for the sources used to determine the number of attachments.

8

9 c) Not applicable. Please refer to the response in part (b).

10

11 d) The value of 1.61 attachments per pole includes wireless and all other attachments
12 identified in the table provided in response to interrogatory Carriers-2 part (a).

13

14 e) The value of 1.61 attachments per pole was not affected by the revision to the pole
15 attachment rate filed on February 27, 2015 because, as mentioned above in part (b),
16 the calculation of this value did not include street lighting poles.

17

18 f) The Pole Inspection Program collects data for the purposes of updating Toronto
19 Hydro's records, assessing the condition of overhead assets and identifying
20 deficiencies. The third party portion of the Pole Inspection Program collects data
21 regarding third party attachments on the utility's poles (e.g., attachment owners,
22 types, heights and equipment configurations). Typically, the data points collected
23 through the Pole Inspection Program are as follows:

- 24 • Inspection Date
- 25 • Map Reference Number
- 26 • Civic Address

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- 1 • Pole Number
- 2 • Pole Height
- 3 • Pole Class
- 4 • Pole Condition
- 5 • Pole Material
- 6 • Pole Ownership
- 7 • Pole Foundation Type
- 8 • Installation Date
- 9 • Cut off Poles
- 10 • Primary Insulator Types
- 11 • Primary & Secondary Risers
- 12 • Transformer Type
- 13 • Animal Guard Installations
- 14 • Porcelain Pothead Installations
- 15 • Third Party Attachments
- 16 • Third Party Risers
- 17 • Third Party Attachment Owner
- 18 • Third Party Attachment Heights
- 19 • Third Party Attachment Location on Pole
- 20 • Third Party Non-Conformances
- 21
- 22 g) The table below provides the average number of communication attachers for each of
- 23 the years as of calendar year-end, for 2011-2015. Because the Pole Inspection
- 24 Program was not completed until 2014, the figures below represent the cumulative
- 25 data available at each of the respective year-ends. The data for 2010 is outside the

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- 1 scope of this proceeding, and in any case, is not available as the pole inspection
2 program was not initiated at that time.

	2011	2012	2013	2014	2015 (estimate)
Number of 3 rd Party Attachments	11,646	49,739	74,295	86,642	86,694
Number of Poles With Attachments	6,952	30,719	47,609	55,706	55,734
Average Number of Attachers Per Pole	1.7	1.6	1.6	1.6	1.6

- 3 h) As noted above in part (a), the calculation of the average number of attachers per pole
4 only included poles that had one or more attachers.

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1 **INTERROGATORY 5:**

2 **Reference(s):** **Exhibit 8A, Tab 2, Schedule 1, Appendix B, page 7**

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12

- a) Provide a list of the different pole lengths, measured in feet, that are currently in use, or available for use, by Toronto Hydro as of December 31, 2014.
- b) Provide a list of pole lengths, measured in feet, that are currently in use, or available for use, by communications attachers as of December 31, 2014. Confirm that a pole that is available for use by communications attachers has a designated communications space.
- c) Complete the table below to provide the number of poles currently in use or available for use by Toronto Hydro and wireline communications attachers as of December 31, 2014.

Pole lengths	30 feet or less	35 feet	40 feet	45 feet	50 feet	55 feet or more
Pole with no communications attachers						
Pole with one or more communications attachers						
TOTAL number of poles						

13 **RESPONSE:**

- 14 a) The different pole lengths, measured in feet that are available for use by Toronto
15 Hydro are 30, 35, 40, 45, 50, 55, 60, and 65.
- 16
- 17 b) The different pole lengths, measured in feet, that are available for use by Toronto
18 Hydro and communications attachers are the same as those listed in part (a). In most

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1 instances, poles that are available for use by communications attachers have a
 2 designated communications space. In circumstances where there are clearance
 3 concerns (i.e., box construction poles), steps may be taken to provide the necessary
 4 communications attachment space.

5
 6 c) Please see table below:

Pole lengths	30 feet or less	35 feet	40 feet	45 feet	50 feet	55 feet or more
Pole with no communications attachers	22,781	14,738	28,505	11,037	6,106	4,425
Pole with one or more communications attachers	7,580	7,480	15,255	5,146	5,949	5,869
Total	30,361	22,218	43,760	16,183	12,055	10,294

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1 **INTERROGATORY 6:**

2 **Reference(s):** **Exhibit 8A, Tab 2, Schedule 1, Appendix B, page 4**

3

4 a) Complete the table below for each of the years 2010 to 2015, using actuals for 2010
 5 through 2014 and estimates for 2015. Provide the dollar amounts in total to the
 6 nearest thousands of dollars.

	Account	2010	2011	2012	2013	2014	2015 (est.)
Total embedded costs*	1830						
Total embedded costs used as input for pole attachment fee (poles only)**	1830 Other if applicable						
Accumulated depreciation	1830						
Accumulated depreciation used as input for pole attachment fee (poles only)**	1830 Other if applicable						
Net embedded value	1830						
Net embedded value used as input for pole attachment fee (poles only)**	1830 Other if applicable						

7 * For purposes of completing the above table, include rows for each aggregate
 8 account from which amounts are taken as inputs for the pole attachment fee. For
 9 example, in addition to Poles, Towers & Fixtures (Account 1830), include other
 10 accounts in the 1800 series of accounts, as applicable.

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- 1 ** For purposes of completing the above table, the amounts for “poles only – input
2 for pole attachment fee” corresponds to the elements used to calculate the pole
3 attachment fee.
- 4 b) Provide a detailed description of the methodology and cost inputs used to determine
5 the portion of the embedded, depreciation and net embedded values that are
6 attributable to poles for purposes of calculating the pole attachment fee, including a
7 detailed description of the manner in which power-specific asset costs have been
8 excluded. Include in the response the supporting evidence, assumptions and
9 calculations employed.
- 10 c) Provide a detailed explanation of how the costs associated with street lighting poles
11 were excluded, including the relevant accounts and all assumptions, methodology and
12 supporting documentation relied upon.
- 13 d) Further to the information provided in the table in response to (a), provide a list of the
14 assets included in the aggregated accounts (e.g., Account 1830) and all sub-accounts
15 (e.g., Account 1830-5). For example, poles, guys, anchors, crossarms, foundations.
- 16 e) For each item listed in the response to (d), identify whether it is included as a relevant
17 cost item for purposes of calculating the pole attachment fee.

18

19 **RESPONSE:**

- 20 a) Please see the table below. Toronto Hydro notes that the year 2010 is outside the
21 scope of this proceeding, and declines to produce the requested information for the
22 year 2010 on this basis.

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	Account	2011	2012	2013	2014	2015
Total embedded Costs	1830	379,088,430	392,623,745	406,836,503	414,359,894	489,157,471
Total embedded Costs used as input for pole attachment fee (poles only)	1830	379,088,430	392,623,745	406,836,503	414,359,894	456,259,373
	1995	(8,189,150)	(9,743,665)	(11,183,299)	(11,282,730)	(12,424,891)
Accumulated depreciation	1830	(176,839,838)	(183,309,619)	(190,106,418)	(196,678,227)	(185,414,933)
Accumulated depreciation used as input for pole attachment fee (poles only)	1830	(176,839,838)	(183,309,619)	(190,106,418)	(196,678,227)	(184,272,282)
	1995	1,852,497	2,047,612	2,283,300	2,539,744	2,801,029
Net Embedded Value		202,248,592	209,314,126	216,730,084	217,681,668	303,742,539
Net Embedded Value used as input for pole attachment fee (poles only)		195,911,940	201,618,072	207,830,086	208,938,682	262,363,229

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1 b) Further to the definition of Net Embedded Cost per Pole found in Exhibit 8, Tab 2,
2 Schedule 1, Appendix B at page 4, the Net Embedded Cost per Pole is calculated by
3 dividing the net book value of pole assets (net of capital contributions related to pole
4 assets and streetlight poles) by the total number of poles, as per Toronto Hydro's
5 2015 forecast. Please refer to Toronto Hydro's response to interrogatory Carriers-
6 7(c) for a further breakdown.

7

8 c) Please refer to Toronto Hydro's response to interrogatory Carriers-7(c) for a summary
9 of the cost inputs used to determine the portion of the embedded, depreciation and net
10 embedded values that are attributable to poles for purposes of calculating the pole
11 attachment fee. The methodology used to determine the net embedded cost and
12 depreciation expenses is outlined in Exhibit 8, Tab 2, Schedule 1, Appendix B at page
13 4 and can be summarized as follows:

14

15 • The net embedded cost per pole is calculated by dividing the net book value of the
16 pole assets, as per Toronto Hydro's 2015 forecast in Exhibit 2A, Tab 1, Schedule
17 2, by the total number of poles. Net book value of the pole assets is calculated by
18 subtracting accumulated depreciation from the original cost of the pole assets.

19

20 • The depreciation expense per pole is calculated by dividing the pole asset class
21 depreciation expense, as per Toronto Hydro's 2015 forecast at Exhibit 4B, Tab 1,
22 Schedule 1, Appendix A, by the total number of poles. The depreciation expense
23 represents the monthly amortization of the original costs of the pole assets over
24 their useful life calculated on a straight line basis.

25

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- 1 d) Toronto Hydro does not separately track the costs of guys, anchors, cross-arms and
2 foundations. Toronto Hydro confirms that these costs are included in the total pole
3 cost.
4
- 5 e) Please refer to the response in part (c) above.
6
- 7 f) Please refer to the response in part (c) above.

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1 **INTERROGATORY 7:**

2 **Reference(s):** **Exhibit 2A, Tab 1, Schedule 2, OEB Appendix 2-BA,**
3 **Fixed Asset Continuity Schedule**

- 4
- 5 a) Provide the percentage change year-over-year in the cost and accumulated
6 depreciation values for each aggregate account (e.g., Account 1830, Poles, Towers &
7 Fixtures) identified in the table in response to Carriers-06, for each of the years 2011
8 to 2015.
- 9 b) Further to the response to (a), provide a description of the reasons for each percentage
10 change in excess of 5%.
- 11 c) Provide the information requested in parts (a) and (b) with respect to the cost
12 components of each aggregate account that Toronto Hydro included in calculating the
13 pole attachment fee.
- 14 d) Provide a detailed explanation of the impact of the column labeled "ICM Transfer"
15 on pages 6 and 7 of the referenced document with respect to the responses to parts (a)
16 through (c).
- 17 e) Provide a detailed explanation of the impact, if any, resulting from the adoption of
18 MIFRS with respect to the responses to parts (a) through (c).

19
20
21 **RESPONSE:**

- 22 a) Please see Appendix A.
- 23
- 24 b) Please refer to Exhibit 2A, Tab 1, Schedule 1, section 3.5 for an explanation of the
25 increase in OEB Account 1830 Poles, Towers & Fixtures in 2015.

26

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1 Variances in account 1995 Contribution & Grants for Poles, Towers and Fixtures are
2 driven by external customer connection demands. The increases in 2012 and 2013
3 include unique large projects such as Civil Install Cherry Street Realignment, West
4 Don Lands Phase 1, and the Sherway Gardens Connection. The 2014 and 2015
5 balances were forecasted using the average recovery for routine customer connection
6 jobs during 2012 and 2013, excluding unique projects as described above. The
7 increase in 2015 includes the ICM in-service capital additions from 2012 and 2014
8 being transferred into rate base from the regulatory asset account, as described below
9 in part (d).

10

11 c) The table below identifies the cost components that Toronto Hydro included in
12 calculating the pole attachment rate. See response to part (a) for the details of
13 “Subtotal Cost” and “Subtotal Accumulated Depreciation” found in the table below:

Description	2015 MIFRS
Subtotal Cost	\$ 443,834,483
Subtotal Accumulated Depreciation	(\$ 181,471,253)
Quantity	135,986
Net Embedded Cost per Pole	\$ 1,929.34

14 d) As directed by the OEB in its Partial Decision and Order in EB-2012-0064, Toronto
15 Hydro placed ICM in-service capital additions in the years 2012-2014 in a regulatory
16 asset account, and not in its fixed assets registry used for calculating rate base. For
17 the purpose of 2015 opening rate base, Toronto Hydro transferred the forecasted ICM
18 in-service additions into its fixed assets registry. These additions are represented by
19 the column labeled “ICM Transfer” on the referenced document.

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- 1 e) Please refer to Exhibit 9, Tab 1, Schedule 1, section 5.8 for the detailed explanation
- 2 of the impacts relating to the adoption of MIFRS.

CARRIER 07 (a) PERCENTAGE CHANGE YEAR-OVER-YEAR

		Cost						
	OEB	Description	2011 CGAAP	2012 UGAAP	2013 UGAAP	2014 USGAAP	2014 MIFRS	2015 MIFRS
Cost	1830	Poles, Towers & Fixtures	\$ 379,088,430	\$ 392,623,745	\$ 406,836,503	\$ 414,359,894	\$ 394,723,714	\$ 489,157,471
		<i>1830 Percentage Change Year-Over-Year</i>		3.6%	3.6%	1.8%	-3.0%	18.1%
	1995	Contributions & Grants (Poles, Towers & Fixtures)	(\$ 8,189,150)	(\$ 9,743,665)	(\$ 11,183,299)	(\$ 11,282,730)	(\$ 11,282,800)	(\$ 12,424,891)
		<i>1995 Percentage Change Year-Over-Year</i>		19.0%	14.8%	0.9%	0.0%	10.1%
	1830	Remove Streetlighting Poles, Towers & Fixtures						(\$ 32,898,098)
		Subtotal Cost	\$ 370,899,280	\$ 382,880,079	\$ 395,653,204	\$ 403,077,164	\$ 383,440,914	\$ 443,834,483

		Accumulated Depreciation						
	OEB	Description	2011 CGAAP	2012 UGAAP	2013 UGAAP	2014 USGAAP	2014 MIFRS	2015 MIFRS
Accumulated Depreciation	1830	Poles, Towers & Fixtures	(\$ 176,839,838)	(\$ 183,309,619)	(\$ 190,106,418)	(\$ 196,678,227)	(\$ 186,196,694)	(\$ 185,414,933)
		<i>1830 Percentage Change Year-Over-Year</i>		3.7%	3.7%	3.5%	-2.1%	-5.7%
	1995	Contributions & Grants (Poles, Towers & Fixtures)	\$ 1,852,497	\$ 2,047,612	\$ 2,283,300	\$ 2,539,744	\$ 2,541,242	\$ 2,801,029
		<i>1995 Percentage Change Year-Over-Year</i>		10.5%	11.5%	11.2%	0.1%	10.3%
	1830	Remove Streetlighting Poles, Towers & Fixtures						\$ 1,142,651
		Subtotal Accumulated Depreciation	(\$ 174,987,340)	(\$ 181,262,007)	(\$ 187,823,118)	(\$ 194,138,482)	(\$ 183,655,451)	(\$ 181,471,253)

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 **INTERROGATORY 8:**

2 **Reference(s): Exhibit 8A, Tab 2, Schedule 1, Appendix B, page 1, Corrected:**
 3 **2015 Feb 27**

4 **Toronto Hydro-Electric System Limited EB-2013-0234, Tab J,**
 5 **Schedule 2-16, updated 2014 April 9, page 2**

6

7 Preamble: The referenced documents provide the inputs used to calculate the pole
 8 attachment fee. These are reproduced in the table below. The additional column presents
 9 the inputs included in a similar table filed by Toronto Hydro in the proceeding EB-2013-
 10 0234.

Item	Type of cost	Cost - 2015	Cost - 2013	Explanation
DIRECT COST				
A	Administration Costs	\$18.77	\$15.32	Estimate for 2015, 2013
B	Loss in Productivity	\$5.72	\$5.66	Estimate of \$9.19 in 2015 and \$9.10 in 2013, divided between 1.61 pole attachers
C	Total Direct Costs	\$24.49	\$20.98	A+B
INDIRECT COST				
D	Net Embedded Cost per pole	\$1,929.34	\$1,533.68	2015 MIFRS Forecast Data, 2013 Data
E	Depreciation Expense	\$58.71	\$48.88	2015 MIFRS Forecast Data, 2013 Data
F	Pole Maintenance Expense	\$6.09	\$5.26	2015 MIFRS Forecast Data, 2013 Data
G	Capital Carrying Cost	\$133.90	\$106.44	Pre-tax weighed average cost of capital 6.94% applied to net embedded cost per pole (D)
H	Total Indirect Cost per Pole	\$198.70	\$160.58	E+F+G
I	Allocation Factor	30.4%	30.4%	
J	Indirect Costs Allocated	\$60.49	\$48.89	H x I
K	Estimated Annual Cost	\$84.98	\$69.87	Total Direct + Indirect Costs (C+J)

RESPONSES TO THE CARRIERS' INTERROGATORIES

- 1 a) Provide the embedded and net embedded costs in total, and per pole, associated with
2 street lighting poles that were removed from the calculation of the pole attachment
3 fee, as per Toronto Hydro's letter of February 27, 2015. Also state whether the
4 amounts for 2013 are based on the same adjustments to exclude costs associated with
5 street lighting poles.
- 6 b) Provide the detailed supporting evidence, including all calculations, assumptions and
7 methodology used to derive the embedded and net embedded costs associated with
8 street lighting poles that were removed from the calculation of the pole attachment
9 fee.
- 10 c) Provide the number of poles used to derive each item shown on a cost per pole basis
11 for 2015 and 2013, as noted in the table above. Also provide the number of street
12 lighting poles that removed from the calculation of the pole attachment fee, as per
13 Toronto Hydro's letter of February 27, 2015.
- 14 d) Provide a detailed explanation for the increase in administration cost estimated for
15 2015 compared to the estimate for 2013.
- 16 e) Provide a detailed explanation for the increase in loss of productivity cost estimated
17 for 2015 compared to the estimate for 2013.
- 18 f) Provide a detailed explanation for the increase in the pole maintenance expense
19 estimated for 2015 compared to the estimate for 2013.
- 20 g) Provide a detailed explanation for the increase in net embedded costs in total (e.g.,
21 before derivation of the per pole amounts) estimated for 2015 compared to the
22 estimate for 2013. Provide the calculation for net embedded costs in each year
23 shown.
- 24 h) Why has Toronto Hydro used an estimate for net embedded costs in 2015 instead of
25 actuals for 2014?
- 26 i) Provide a detailed explanation for the increase in depreciation expense estimated for
27 2015 compared to the estimate for 2013. Include in the response information on any

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 changes in the expected asset lives of poles, and average life of poles between 2015
 2 and 2013.

3

4 **RESPONSE:**

5 a) Total net embedded costs associated with street lighting poles that are forecast for
 6 removal in 2015 is \$31.8M and the unit net embedded costs associated with
 7 streetlight poles forecast for removal in 2015 is \$233.55.

8

9 Toronto Hydro has proposed to transfer the street lighting assets into the utility's rate
 10 base as of January 1, 2015 (Exhibit 2A, Tab 5, Schedule 1). Therefore, there were no
 11 embedded costs related to street lighting poles in 2013.

12

13 b) The table below provides detailed supporting calculations for the net embedded costs
 14 associated with the street lighting poles.

Assumptions	Value in millions	Reference
Increase to opening Cost for Poles	\$36.1M	Exhibit 2A Tab 1 Schedule 2, Appendix 2-BA - page 6 OEB Account 1830 - STL Transfer
Increase to Opening Accumulated Depreciation for Poles	(\$3.5M)	Exhibit 2A Tab 1 Schedule 2, Appendix 2-BA - page 7 OEB Account 1830 - STL Transfer
2015 Additions to Poles	\$0.3M	Exhibit 2A Tab 1 Schedule 2, Appendix 2-BA - page 6 OEB Account 1830 - inclusive in Additions
2015 Depreciation	(\$1.1 M)	
Net Embedded Streetlight Costs	\$31.8M	

RESPONSES TO THE CARRIERS' INTERROGATORIES

- 1 c) The table below lists the total number of poles that were used to derive the cost per
2 pole in 2013 and 2015.

Year	Number of Poles
2013 Pole Attachment Calculation	135,986
2015 Pole Attachment Calculation	135,986

3 The street lighting poles were not included in the total number/quantities of poles that
4 were used to calculate the pole attachment rate in the original submission; only the
5 costs associated with the street lighting poles were included. The February 27, 2015
6 correction removed the costs of the street lighting poles from the net embedded cost
7 per pole in the updated pole attachment rate calculations.

- 8
9 d) The increase in administration costs in 2015 compared to 2013 is due to increases in
10 payroll, vehicle and inventory under the administration costs category. It is also
11 attributed to increases in usage charges and shared services costs for managing third
12 party attachments and licensed occupancy of Toronto Hydro distribution plant, which
13 includes corporate services such as finance, health and safety, communications,
14 information technology and legal services.

- 15
16 e) The increase in loss of productivity costs in 2015 compared to 2013 is due to
17 increased labour and vehicle usage rates.

- 18
19 f) The increase in the pole maintenance expense from 2013 to 2015 is attributed to the
20 following:

RESPONSES TO THE CARRIERS' INTERROGATORIES

- 1 • a 5% increase in unit costs charged by Toronto Hydro's pole testing and
2 treatment service provider; and
3 • a forecasted increase in the number of inspected poles that will require
4 additional testing and treatment (e.g., boron, fumigant, insecticide) in 2015
5 relative to 2013.

6

7 g) Please refer to Toronto Hydro's response to interrogatory Carriers-7(c).

8

9 h) Generally, all costs presented for consideration in 2015 rates are based on 2015
10 forecasts of Toronto Hydro's costs.

11

12 Toronto Hydro used a forecast of its Net Embedded Cost per pole for 2015 as an
13 input into the proposed 2015 wireline attachment rate to reflect the cost of the new
14 poles forecast to come into service in 2015. Using 2014 actuals would understate the
15 Net Embedded Cost per pole because it would not capture the cost of those poles that
16 are forecast to come into service in 2015.

17

18 i) The increase in depreciation expense estimated for 2015 compared to the estimate for
19 2013 is due to the new poles forecasted to come into service in 2015.

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 **INTERROGATORY 9:**

2 **Reference(s):** **Volume 6 of the Oral hearing transcript, February 25, 2015,**
3 **page 86.**

- 4
- 5 a) The study by ValuQuest, referenced at Volume 6 of the hearing transcript, February
6 25, 2015, page 86 (the "ValuQuest Study"), determined an average value of a new
7 pole of \$2,340. Did the valuation include poles that have the same characteristics as
8 poles that would be available for communications wireline attachments?
- 9 b) Provide a detailed description of all differences between the poles evaluated in the
10 ValuQuest Study and poles that would be available for communications wireline
11 attachments, including typical pole length, expected asset life, construction (e.g.,
12 wood, concrete).

13

14 **RESPONSE:**

- 15 a) No, the poles in the ValuQuest study (i.e., street lighting poles) do not have the same
16 characteristics as poles that would be available for communications wireline
17 attachments.
- 18
- 19 b) The fundamental difference between the streetlighting poles evaluated in the
20 ValuQuest Study and poles that would be available for communications wireline
21 attachments is that the streetlighting poles have not been designed to support wireline
22 attachments. They do not have the strength to withstand forces exerted by attached
23 equipment and elements such as ice and wind. In addition, streetlighting poles often
24 do not have the height required for wireline attachments. Generally, these poles have
25 been designed specifically for street lighting purposes with limited strength to support
26 only street light fixtures and associated conductors. Pole heights and spans are
27 designed to satisfy minimum roadway lighting requirements.

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- 1 Finally, Toronto Hydro notes that the expected asset life of a pole does not affect its
- 2 availability to accommodate communications wireline attachments.

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 **INTERROGATORY 10:**

2 **Reference(s):** Exhibit 2B, Section E6.4, page 6

3

4 Preamble: Toronto Hydro stated that wood poles it uses have an expected life of 45
5 years.

6

7 a) Are all of the poles included in the calculation of the pole attachment fee wood poles?

8 b) If the response to (a) is no, provide the other type(s) of poles included, and the
9 expected life of these poles.

10 c) If the response to (a) is no, provide the percentage of poles that are wood.

11 d) Complete the table below to indicate the average age of wood poles in use or
12 available for use by wireline communications attachers. Exclude poles used for street
13 lighting.

	2010	2011	2012	2013	2014	2015
Average Age						

14 e) If wood poles have an expected life of 45 years, explain why the depreciation expense
15 per pole would differ substantially from the value obtained by multiplying $[1/45]$ by
16 the average embedded cost per pole.

17

18 **RESPONSE:**

19 a) No, the calculation of the pole attachment rate is not limited to wood poles.

20

RESPONSES TO THE CARRIERS' INTERROGATORIES

- 1 b) The other types of poles included in the pole attachment fee are concrete, steel and
 2 aluminum poles. The useful life of concrete poles is 55 years. The useful lives for
 3 steel and aluminum poles are 50 years respectively.
 4
- 5 c) Please refer to Toronto Hydro's response to WR-Carriers-1(c).
 6
- 7 d) The average age of wood poles in use or available for use by wireline
 8 communications attachers is provided in the table below.

	2010	2011	2012	2013	2014	2015
Average Age	N/A	32	31	31	29	N/A

9 Historical information for population averages for wood poles is derived based upon
 10 Toronto Hydro's current-state system analysis ("CSA"), and this information is not
 11 available prior to 2011. The average age is unavailable for 2015 as the CSA for this
 12 year has not yet been finalized and is expected to be completed later in 2015.
 13

- 14 e) A direct recalculation of depreciation expense using gross cost of the asset over the
 15 useful life would not provide a reasonable estimation of Toronto Hydro's
 16 depreciation expense for several reasons. First, financial useful life for a pole asset is
 17 40-50 years (dependent on the type of pole). Toronto Hydro's definition of financial
 18 useful life is the period over which an asset is depreciated, resulting in depreciation
 19 expense. In contrast, the 45-year useful life stated in Exhibit 2B Section E6.4, page 6
 20 refers to the "end-of-life" or "engineering end-of-life", and represents the mean
 21 service life of an asset. Toronto Hydro discusses at great length the differences in
 22 useful lives in Technical Conference Undertaking J1.7. Secondly, gross costs as

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 reported in the fixed asset continuity schedule is inclusive of fully depreciated assets.
2 Therefore, the direct recalculation of pole depreciation expense using gross pole costs
3 over the useful life of poles does not result in Toronto Hydro's reported pole
4 depreciation.

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 **INTERROGATORY 11:**

2 **Reference(s):** **Exhibit 2B, Section E6.4, pages 6 and 31**

3

4 Preamble: Toronto Hydro states that approximately 31% of existing poles are at or near
 5 end-of-life and will require proactive replacement during the 2015-2019 period, and that
 6 42,043 wood poles are past their useful life.

- 7 a) Provide the number of existing poles that are currently at or near end-of-life.
- 8 b) Provide the number of poles that have been, or will be replaced, in 2015 pursuant to:
 9 (i) the proactive replacement program; (ii) another capital program. Include in the
 10 response the nature of the capital program(s) for the pole replacements.
- 11 c) Provide the percentage of poles provided in response to (a) that are currently in use or
 12 available for use by wireline communications attachers.
- 13 d) Complete the table below with respect to poles replaced as part of a proactive
 14 replacement program.

	2010	2011	2012	2013	2014
Number of poles replaced					
Percentage of total poles in use that were replaced					
Percentage of poles replaced that were aged 45 years or more					

- 15 e) Table 2 at page 31 of the referenced document states that 11,214 poles will be
 16 replaced during the 2015 through 2019 period. Are these poles currently 45 years old

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 or older, or will reach that age during the next four years? Complete the following
 2 table.

	2015	2016	2017	2018	2019
Number of poles replaced					
Percentage of poles replaced that were aged 45 years or more					

- 3 f) Is it Toronto Hydro's practice to automatically replace all poles that are older than 45
 4 years?
- 5 g) Confirm that the source of the information on the health of wood poles provided in
 6 Figure 25 on page 31 of Exhibit 2B, Section E6.4 is the same as for Figure 16-2
 7 "Health Index Distribution Comparison" provided in Exhibit 2B, Tab D4, Appendix
 8 A, at page 58 of the report. Also confirm that this information is based on a sample
 9 of poles and not the entire pole population.

10

11 **RESPONSE:**

12 With respect to the preamble statement for this interrogatory question, it should be
 13 clarified that Section E6.4 does not indicate that 31% of those poles past their useful life
 14 "will require proactive replacement during the 2015-2019 period". Rather, the Overhead
 15 Circuit Renewal program considers assets for replacement based upon a variety of
 16 factors, including age, condition, historical reliability and location.

17

- 18 a) Due to an administrative error, Section E6.4 incorrectly refers to 42,043 wood poles
 19 as being at or near end-of-life. The figure of approximately 42,000 poles includes

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 additional pole types that are at or near the end of their useful lives (beyond 45 years
 2 of age), including approximately:

- 3 i) 32,700 wood poles beyond useful life
- 4 ii) 1,000 concrete poles beyond useful life
- 5 iii) 600 aluminum and steel poles beyond useful life
- 6 iv) 7,600 concrete poles between 45 and 55 years (end-of-life)
- 7 v) 100 aluminum and steel poles between 45 and 50 years (end-of-life)

8

9 Correcting for this breakdown yields a more precise total of 25% of all poles
 10 currently past end of useful life, with 33% of all wood poles being at or beyond end-
 11 of-life.

12

13 From 2016 onwards to 2019, an additional 11,153 poles are expected to exceed their
 14 useful lives.

15

16 b) The number of poles addressed in 2015 as part of capital investment programs are
 17 included in Table 11-1.

18

19 **Table 11-1: Poles to be addressed in 2015 within Capital Programs**

Capital Program	2015 Pole Count	Nature Of Capital Program For Pole Replacement
Overhead Circuit Renewal	2,838	The Overhead Circuit Renewal program includes proactive replacement of deteriorating poles that are unfit for continued use due to age and poor condition. Depending on the particular pole, a number of degradation modes such as feathering,

RESPONSES TO THE CARRIERS' INTERROGATORIES

Capital Program	2015 Pole Count	Nature Of Capital Program For Pole Replacement
		<p>internal rot, decay at the ground line, shell rot and infestation may combine to reduce pole strength. Cracking and corrosion reduces the pole strength and reduces the useful life of concrete poles. Further discussion can be found in Exhibit 2B, Section E6.4.</p>
Underground Circuit Renewal	111	<p>The Underground Circuit Renewal program replaces underground switches, transformers and cables. Underground street lighting conductors are replaced at the same time as the street lighting poles to ensure more reliable service to residents of the City of Toronto. In some cases, poles (including riser poles) are in poor condition and have to be replaced. Further discussion can be found in Exhibit 2B, Section E6.1.</p>
Rear Lot Conversion	352	<p>The Rear Lot Conversion program addresses the need to convert the functionally obsolete rear lot configuration to an underground front lot configuration as a result of operational constraints and safety risks. By doing so, poles will be removed. Further discussion can be found in Exhibit 2B, Section E6.6.</p>
Box Construction Conversion	377	<p>The Box Construction program replaces the legacy 4.16 kV overhead construction with 13.8 kV or 27.6 kV overhead feeders. As a result of this conversion,</p>

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Capital Program	2015 Pole Count	Nature Of Capital Program For Pole Replacement
		poles will be replaced. Further discussion can be found in Exhibit 2B, Section E6.7.
Contingency Enhancement	157	The Contingency Enhancement program allows the distribution system to respond adequately to contingency conditions, rerouting affected customers to alternate feeders. To establish new tie connection points between feeders, installation and removal of poles may be involved. Further discussion can be found in Exhibit 2B, Section E7.1.

1 Apart from the capital investment programs listed above, there are instances where
 2 pole replacements may be necessary if the pole is in a worse condition than indicated
 3 in records and requires replacement, if the pole may compromise an installation, if a
 4 pole is damaged (e.g., in a vehicle accident) or if the pole otherwise requires
 5 replacement as part of reactive work.

6

7 c) All Toronto Hydro distribution poles noted in part (a) are available for wireline
 8 communication attachments.

9

10 d) The In-Service Asset (ISA) quantities as part of the Overhead Circuit Renewal
 11 Program for the years 2012, 2013, and 2014 (June End) are provided in “Toronto
 12 Hydro Response re AMPCO Motion Settlement”, page 8 of 14, in Table 4. These
 13 amounts have been re-produced in Table 11-2:

14

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1 **Table 11-2: In-Service Quantities of Poles**

	2012 ISA Quantities	2013 ISA Quantities	As at June 2014 ISA Quantities
Wood Poles	147	2,672	804
Concrete Poles	3	39	5

2 It should be noted that these amounts represent in-service asset installations and may
 3 not necessarily equal exactly the actual assets removed from the system.

4
 5 As described in the January 16, 2015 affidavit of Angela Rouse on page 3, in-service
 6 asset information for 2010, 2011 and the complete year of 2014 are not available and
 7 could instead only be ascertained through the manual mapping process described in
 8 the January 14, 2015 affidavit of Mike Walker.

9
 10 e) Exhibit 2B, Section E6.4, Table 2, page 13 of Toronto Hydro's 2015-2019 CIR
 11 Application provides the year-by-year breakdown of poles to be replaced from 2015
 12 onwards to 2019. This information has been reproduced in Table 11-3.

13
 14 **Table 11-3: Based on Exhibit 2B, Section E6.4, page 13, Table 2**

	2015	2016	2017	2018	2019
Number of poles replaced	2,838	1,735	1,900	1,934	2,313

15 For 2015, the percentage of poles to be replaced that are beyond useful life is
 16 approximately 27%. That percentage increases to 32% if those assets that will exceed
 17 useful life over the next five-year period are included.

18

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 Apart from age, there are a number of other factors that drive the prioritization and
2 selection of assets for inclusion within the Overhead Circuit Renewal program. This
3 includes the condition of the assets, historical reliability information and system
4 configuration considerations. Location also plays a part in cases where, for example,
5 poles that have not yet reached their end-of-useful lives are replaced as part of a
6 capital project because they fall within a project area such that it is more economical
7 to replace the poles or other assets as part of a planned project.

8

9 The number of poles to be replaced in the period from 2016-2019 that are at their
10 end-of-useful life cannot be provided, as detailed capital projects have not yet been
11 developed. As described within Exhibit 2B, Section D3.1.2.2, as per Toronto
12 Hydro's project development procedure, discrete projects are developed using the
13 assets that were prioritized as per long-term planning processes – for Overhead
14 Circuit Renewal, such prioritization factors would include age, condition, historical
15 reliability, along with location.

16

17 f) As demonstrated by the number of poles that are already past their end-of-useful-
18 lives, it is not Toronto Hydro's practice to automatically replace poles that are 45
19 years old or older. While age is a key factor in identifying assets for replacement, it
20 is not the only factor that determines an asset's replacement. Various other factors
21 will play a key role in determining the replacement of poles including their condition,
22 historical reliability and location.

23

24 g) Yes, Figure 25 on page 31 of Exhibit 2B, Section E6.4 has the same source as Figure
25 16-2 "Health Index Distribution Comparison" provided in Exhibit 2B, Tab D4,
26 Appendix A, at page 58 of the report. This information is based on a sample size of
27 37.66% of the population.

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1 **INTERROGATORY 12:**

2 **Reference(s):** **Exhibit 8A, Tab 2, Schedule 1, Appendix B, pages 1 and 4.**

3

4 Preamble: Toronto Hydro described maintenance expenses included in the calculation of
 5 the pole attachment fee as capturing the “cost of various activities undertaken by Toronto
 6 Hydro for the purposes of maintaining the structural integrity of its distribution poles.”

7 Two programs were noted: Wood Pole Inspection & Treatment, and Pole Inspection
 8 Program (Hydro Portion).

9

- 10 a) Complete the table below with respect to the costs associated with the maintenance
 11 expenses for each of the years 2010 to 2015, using actuals for 2010 through 2014 and
 12 estimates for 2015. Provide the dollar amounts in total to the nearest thousands of
 13 dollars, and also on a per pole basis.

	2010	2011	2012	2013	2014	2015 (estimate)
Wood Pole Inspection & Treatment - total costs						
Wood Pole Inspection & Treatment - number of poles inspected						
Pole Inspection Program (Hydro Portion) - total costs						
Pole Inspection Program (Hydro Portion) - number of poles inspected						
TOTAL maintenance expenses (aggregated for all						

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	2010	2011	2012	2013	2014	2015 (estimate)
poles)						
TOTAL maintenance expenses - per pole						\$6.09
Number of Poles used to derive maintenance expenses per pole (total poles in use)						

- 1 b) Provide the sources and supporting evidence for the values used to populate the table
 2 provided in response to (a).
- 3 c) Provide the methodology, assumptions and calculations used to exclude from the total
 4 costs of the two programs the costs of inspecting poles that cannot accommodate
 5 wireline communications attachments.
- 6 d) Provide a description of the Wood Pole Inspection & Treatment Program, including
 7 the tasks completed, the employee categories involved, the hourly wages, vehicle
 8 costs and time required to complete each task.
- 9 e) Provide a description of the Pole Inspection Program, including the tasks completed,
 10 the employee categories involved, the hourly wages, vehicle costs and time required
 11 to complete each task. Include in the response the different tasks involved for each of
 12 the “hydro portion” and the “communications portion”.
- 13 f) Toronto Hydro estimated pole maintenance expense per pole of \$5.26 in evidence it
 14 filed in the case EB-2013-0234. Describe and quantify the changes in the Wood Pole
 15 Inspection and Treatment program that contributed to increases in the per pole
 16 expense since 2013. For example, changes in input costs such as labour rates,
 17 frequency of inspections, vehicle costs.
- 18 g) Further to the response to (f), describe the changes in the Pole Inspection Program
 19 (Hydro Portion) that contributed to increases in the per pole expense since 2013. For

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 example, changes in input costs such as labour rates, frequency of inspections,
 2 vehicle costs.

3

4 **RESPONSE:**

5 a) Please find the completed table below. Toronto Hydro notes that the year 2010
 6 outside the scope of this proceeding, and declines to provide the requested
 7 information for this year. In addition, only part of the data requested for the 2010 is
 8 readily available.

	2011	2012	2013	2014	2015 (Estimate)
Wood Pole Inspection & Treatment - (\$000s)	\$149	\$149	\$166	\$201	\$263
Wood Pole Inspection & Treatment - number of poles inspected	6,504	9,734	8,426	11,140	10,500
Total Wood Inspection & Treatment (\$ Per Pole)	\$22.83	\$15.29	\$19.70 ¹	\$18.02	\$25.00
Frequency of Inspections	10 Years	10 Years	10 Years	10 Years	10 Years
Annualized Total Wood Inspection & Treatment (\$ Per Pole)	\$2.28	\$1.53	\$1.97	\$1.80	\$2.50 ²
Pole Inspection Program (Hydro Portion) - (\$000s) ¹	\$518	\$1,473	\$680	\$391	\$335
Pole Inspection Program (Hydro Portion) - number of poles inspected	35,004	94,996	49,365	25,685	22,640
Total Pole Inspection Program (Hydro Portion) Cost Per Pole	\$14.81	\$15.51	\$13.77	\$15.21	\$14.82
Frequency of Inspections	5 Years	5 Years	5 Years	5 Years	5 Years
Annualized Total Pole Inspection Program (Hydro Portion) (\$ per Pole)	\$2.96	\$3.10	\$2.75	\$3.04	\$2.96
TOTAL maintenance expenses - per pole	\$5.24	\$4.63	\$4.72	\$4.84	\$5.46 ³

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Notes:

¹ As further discussed in the response to WR-Carriers-14(d) (and Exhibit 8, Tab 2, Schedule 1, Appendix B, at pages 3 and 5), the costs associated with Toronto Hydro's Pole Inspection Program are divided between a Hydro Portion and Third Party Portion. The allocation is based on the number of data inputs related to each portion and results in 72.7% of costs allocated to the Hydro Portion and 27.3% of costs allocated to the Third Party Portion.

² In the course of responding to this interrogatory, Toronto Hydro identified a discrepancy between the figures used to derive the Annualized Total Wood Inspection and Treatment Program cost per pole and the amounts planned for the program in 2015. This discrepancy has been addressed and has resulted in a reduction from \$3.13 to \$2.50 per pole, as shown in the table.

³ As a result of Note 1, the total maintenance expenses are estimated to be \$5.46 per pole rather than \$6.09 per pole (i.e. the figure originally filed). Toronto Hydro will update the related evidence to reflect this change.

1 b) The contained in the response to part (a) above was retrieved from Toronto Hydro's
2 databases.

3

4 c) The total costs associated with the Wood Pole Inspection & Treatment program are
5 entirely directed to poles that can accommodate wireline communications
6 attachments. No exclusions are required.

7

8 The total costs associated with the Pole Inspection Program (Hydro Portion) include
9 costs associated with poles that are not available for wireline communications
10 attachments. However, these costs are normalized by the total number of poles
11 inspected (i.e., both poles that are and are not available) to determine an average cost
12 per pole. It is this cost per pole that is used to derive the pole rate which is only
13 applied to poles with attachments. As a result, no exclusion of costs is required.

14

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1 d) The dedicated Wood Pole Inspection and Treatment program is conducted on a ten-
2 year cycle and is performed by one of Toronto Hydro's contractors. For each pole, a
3 qualified tradesperson first conducts a visual assessment and a sounding test to check
4 for internal cavities, and indications of infestation, damage, and internal decay.
5 Based upon the results from this first assessment, the tradesperson may proceed to
6 conduct one or more of the following:

- 7 • a bore test, using a 12-mm diameter bit to drill into the pole such that shavings
8 can be assessed to indicate the condition of the interior;
- 9 • a resistograph test, using a 2-mm diameter needle drill bit and an electronic
10 resistance measurement device to drill into the pole to determine the presence of
11 wood decay, stages of rot, and hollow areas;
- 12 • treatment using a boron rod which is placed into the pole to act as a preservative;
- 13 • treatment using an external copper naphthenate wrap; and
- 14 • treatment using an internal fumigant.

15

16 Toronto Hydro does not have information about the contractor's hourly wages,
17 vehicle costs and time required to complete each task.

18

19 e) The description of the Pole Inspection Program including the scope of both the
20 "hydro portion" and "third party portion" was provided in Exhibit EB-2014-0116,
21 WR-Carriers-4(f). The employee categories involved in performing both portions of
22 the Pole Inspection Program, as well as the associated hourly labour and vehicle rates
23 are indicated in the below table. The hourly labour rates have been filed
24 confidentially. The average time to complete both portions of the pole inspection for
25 one pole is approximately 21 minutes per pole, based on data from the years 2011-
26 2013.

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Employee Category	Hourly Rate (As of 2014)
Field Inspectors	██████
Design Technicians	██████
Supervisors	██████
Vehicle	\$ 15.16

- 1 f) Please refer to Toronto Hydro's response to interrogatory Carriers-8(f).
2
3 g) The "hydro portion" of the Pole Inspection Program has remained unchanged from
4 the amounts filed in EB-2013-0234.

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 **INTERROGATORY 13:**

2 **Reference(s):** **Exhibit 8A, Tab 2, Schedule 1, Appendix B, pages 1 through 3.**

3

4 Preamble: Toronto Hydro described administration costs as, “the estimated operation
 5 costs of managing and administering communications attachments and licensed
 6 occupancy on Toronto Hydro’s distribution plant.” Several inputs were listed: payroll
 7 costs, vehicle costs, inventory & direct purchases, invoicing/billing costs, support costs,
 8 and usage charges.

9

10 a) Complete the table below with respect to the administration costs associated with
 11 wireline communications attachments for each of the years 2010 to 2015, using
 12 actuals for 2010 through 2014 and estimates for 2015. Provide the dollar amounts in
 13 total to the nearest thousands of dollars.

	2010	2011	2012	2013	2014	2015 (estimate)
Payroll Costs						
Vehicle Costs						
Inventory & Direct Purchases						
Invoicing / Billing Costs						
Support Costs						
Usage Charges						
TOTAL administration costs (aggregated for all poles)						
TOTAL administration costs – per pole						\$18.77
Number of Poles used to derive administration costs per pole						

RESPONSES TO THE CARRIERS' INTERROGATORIES

- 1 b) With respect to Payroll Costs, list all staff positions that are involved and for each
2 staff position, provide the hourly wage and the number of hours spent on an annual
3 basis that are dedicated to administering wireline communications attachments.
4 Describe the functions and activities undertaken by these staff in support of
5 administering wireline communications attachments.
- 6 c) With respect to Vehicle Costs, provide all the underlying supporting inputs, including
7 the number of hours of vehicle support dedicated to administering wireline
8 communications attachments per day and annually, and the average cost per hour.
- 9 d) With respect to Vehicle Costs, provide a description of the purpose for using vehicles,
10 for example, to inspect wireline communications attachments. Include in the
11 response the actual or estimated proportion of time vehicles are used for purposes of
12 processing requests to attach wireline facilities to poles.
- 13 e) With respect to Inventory & Direct Purchases, describe the materials involved,
14 provide the unit cost of each item and the number of units used for each on an annual
15 basis.
- 16 f) With respect to Invoicing/Billing Costs, provide the labour costs as a distinct cost
17 element and explain why these costs are not included in the line item "payroll costs".
18 Also provide the hourly wage and the number of hours spent on an annual basis that
19 are dedicated to administering invoices for wireline communications attachments.
- 20 g) With respect to Invoicing/Billing Costs, provide the mailing costs as a distinct cost
21 element, as well as the cost per item mailed and the number of mailed items per year.
- 22 h) With respect to Support Costs, provide the underlying supporting inputs, including all
23 assumptions and supporting evidence (e.g., mark-up or other adjustment factor for
24 overhead).
- 25 i) With respect to Support Costs, and taking into account the various input elements of
26 this category of costs listed in Exhibit 8A, Tab 2, Schedule 1, Appendix B, page 3,
27 lines 20-26, explain how these elements are tracked separately from the other

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 administration costs (e.g., payroll, vehicle costs, invoicing/billing, usage). Provide
 2 sufficient information to demonstrate that none of the elements in "Support Costs" are
 3 included in the other categories. For example, whether employee expenses may be
 4 included as part of "Payroll Costs"; postage and courier as part of
 5 "Invoicing/Billing"; transportation as part of "Vehicle Costs"; photocopy and
 6 stationary supplies as part of "Inventory & Direct Purchases"; and
 7 telecommunications, cellular phone and radio charges as part of "Usage Charges".
 8 j) With respect to Usage Charges, provide the underlying supporting inputs, including
 9 all assumptions and supporting evidence (e.g., mark-up or other adjustment factor for
 10 usage charges).

11

12 **RESPONSE:**

13 a) The table below provides a breakdown of the administration costs associated with
 14 wireline communications attachments for years 2012 to 2015, using actuals for 2012
 15 through 2014 and estimates for 2015.

\$000s	2012	2013	2014	2015 (estimate)
Payroll Costs	\$619.0	\$707.1	\$718.2	\$856.2
Vehicle Costs	\$(2.7)	\$22.0	\$24.4	\$28.8
Inventory Direct Purchases	\$12.9	\$17.3	\$6.6	\$16.9
Invoices/Billing Costs ¹	\$-	\$-	\$-	\$-
Support Costs	\$662.9	\$646.4	\$840.3	\$913.9
Usage Charges	\$164.3	\$173.6	\$154.0	\$159.4
TOTAL administration costs (aggregated for all poles)	\$1,456.5	\$1,566.3	\$1,743.5	\$1,975.2

¹ Due to their immateriality (i.e., approximately \$400 per year), these costs were not actually included in the pole attachment calculation.

RESPONSES TO THE CARRIERS' INTERROGATORIES

\$000s	2012	2013	2014	2015 (estimate)
TOTAL administration costs - per pole	\$13.91	\$15.32	\$16.47	\$18.77
Number of Poles used to derive administration costs per pole	135,986	135,986	135,986	135,986

1 Toronto Hydro is unable to provide the breakdown for the year 2010 and 2011
 2 because these costs were not centrally managed at the time.

3

4 b) The payroll costs included in administration costs are calculated by taking the gross
 5 payroll costs for the Asset Attachment and Leases function, less the cost/time charged
 6 by employees in this department to discreet jobs for specific customer work (e.g.,
 7 make ready work), and allocating the net costs to the Overhead and Underground
 8 portfolios based on the proportion of permit issuances in these portfolios. On
 9 average, 76% of the permit issuances relate to Overhead attachments, therefore 76%
 10 of the net costs have been allocated to the pole attachment rate calculation.

11

12 The staff complement that supports the Asset Attachment and Leases function
 13 includes field inspectors, engineering technicians, support and management staff.

14

15 c) Vehicle costs are allocated in the same manner as payroll costs; please refer to the
 16 response in part (a) above. A complement of ten vehicles (e.g., light duty trucks and
 17 cargo vans) support the Asset Attachment and Leases function.

18

19 d) Toronto Hydro uses vehicles to perform a number of activities relating to
 20 communications attachments, including:

RESPONSES TO THE CARRIERS' INTERROGATORIES

- 1 • Pre-permit site inspections to review the proposed installations and validate any
2 proposed make-ready work that is required to support the installation;
- 3 • Pre-construction meetings to provide permits and approved hard copies of
4 planned drawings.
- 5 • Post-construction site visits to ensure the installations comply with Ontario
6 Regulation 22/04 (Electrical Distribution Safety) and applicable Toronto Hydro
7 standards.
- 8 • Inspection and validation of third party equipment relocations and/or removals
9 from Toronto Hydro poles to facilitate the replacement of poles.
- 10 • Inspections for processing temporary permit application requests.
- 11 • Pole inspection maintenance program.

12

13 Approximately 18% of vehicle time is used to process requests to attach wireline
14 facilities to poles.

15

16 e) Inventory and Direct Purchases includes uniforms, small tools and safety equipment
17 for the field inspectors supporting the Asset Attachments and Leases function.
18 Consistent with the response in part (a) above, 76% of these costs are allocated to the
19 pole attachment rate calculation.

20

21 f) Due to their immateriality (i.e., approximately \$400 per year), these costs were not
22 actually included in the pole attachment calculation.

23

24 g) Please refer to the response in part (f) above.

25

RESPONSES TO THE CARRIERS' INTERROGATORIES

- 1 h) As discussed in Exhibit 8, Tab 2, Schedule 1, Appendix B at page 2, support costs
2 include expenditures related to electricity usage, water and gas usage,
3 telecommunications, cellular phone and radio charges, postage, courier freight &
4 duties, computer supplies, photocopy and stationary supplies, printing expenses, and
5 internal employee expenditures required for their employment such as professional
6 dues, membership fees, transportation, parking, conferences and seminars, education
7 fees and subscriptions. Shared service costs related to finance, legal, communications
8 and human resources are also included in support costs, pursuant to the methodology
9 set out in Exhibit 4A, Tab 5, Schedule 1. Consistent with the response in part (a)
10 above, 76% of the support costs are allocated to the pole attachment rate calculation.
11
- 12 i) Toronto Hydro maintains a standard chart of accounts which comprises hundreds of
13 expense element codes and discreet responsibility centres to facilitate both internal
14 management and external financial reporting. In addition, costs discussed in parts (a)
15 through (j) of this response are all tracked in one responsibility cost centre, as the
16 staff and their related work and support costs are functionally and financially
17 segregated to support the Asset Attachment and Leases function at Toronto Hydro.
18 The uses of discreet account codes and the methodical approach to the aggregation of
19 costs eliminates the possibility of cost duplications.
20
- 21 j) Usage Charges are based on Toronto Hydro's standard allocation methodology for IT
22 and Occupancy Charges as discussed in Exhibit 4A, Tab 2, Schedule 21. The
23 allocations are based on the total number of staff and square-footage and type of
24 space. Consistent with the response in part (a) above, 76% of these costs are
25 allocated to the pole attachment rate calculation.

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 **INTERROGATORY 14:**

2 **Reference(s):** **Exhibit 8A, Tab 2, Schedule 1, Appendix B, pages 1 through 3.**

3

4 Preamble: Toronto Hydro described costs associated with loss in productivity as, “the
 5 additional expenditures that Toronto Hydro incurs in carrying out its regular activities, as
 6 a result of communications attachers’ presence on its poles”. Two inputs to the costs of
 7 loss in productivity were described: Pole Replacements and Pole Inspection Program
 8 (communications portion).

9

- 10 a) Complete the table below with respect to the costs for loss in productivity for each of
 11 the years 2010 to 2015, using actuals for 2010 through 2014 and estimates for 2015.
 12 Provide the dollar amounts in total to the nearest thousands of dollars.

	2010	2011	2012	2013	2014	2015 (estimate)
Pole replacement – total costs						
Pole Inspection Program (communications portion) – total costs						
TOTAL loss in productivity – all costs						
TOTAL loss in productivity – per pole						\$5.72
Number of Poles used to derive loss in productivity per pole						

- 13 b) Complete the table below with respect to the pole replacement costs for loss in
 14 productivity for each of the years 2010 to 2015, using actuals for 2010 through 2014

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 and estimates for 2015. Describe the functions and activities undertaken by these
 2 staff in support of administering wireline communications attachments.

	2010	2011	2012	2013	2014	2015 (estimate)
Number of poles replaced – all distribution poles						
Number of poles replaced with communications wireline communications attachers						
Average cost per pole replaced – all distribution poles						
Average cost per pole replaced – poles with communications wireline communications attachers						

3 c) Are the costs for pole replacement and the number of poles replaced inclusive of
 4 poles replaced for which Toronto Hydro receives payment (e.g., customer requested
 5 replacements or relocations, make ready work to accommodate communications
 6 attachers)? If so, provide the amount of revenues received and the number of poles
 7 replaced for each of the years indicated in the table above.

8 d) Provide a detailed explanation of the “data inputs” captured in the Pole Inspection
 9 Program that were used to derive the percentage of the costs of the Pole Inspection
 10 Program attributed to communications attachments, and identify the data inputs that
 11 are unique to communications attachments in total, and specifically wireline
 12 communications attachments and wireless communications attachments.

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- 1 e) Provide the information in the table below with respect to the data inputs of the Pole
 2 Inspection Program for each of the years 2010 to 2015, using actuals for 2010
 3 through 2014 and estimates for 2015, providing one table for all types of
 4 communications attachments, a second table with respect to on inputs related solely
 5 to wireline communications attachments, and a third table for inputs related solely to
 6 wireless communications attachments.

	2010	2011	2012	2013	2014	2015 (estimate)
Number of data inputs – hydro portion						
Number of data inputs – hydro portion per pole						
Number of data inputs – communications (total, wireline, wireless) attachments portion						
Number of data inputs – communications portion per pole with communications (total, wireline, wireless) attachment						
Total number of data inputs						

- 7 f) Further to the information requested in the table in (e), provide a detailed explanation
 8 of all inputs, assumptions, calculations used to derive the percentage of the costs of
 9 the Pole Inspection Program attributed to communications attachments and to
 10 wireline and wireless communications attachments respectively.
- 11 g) The process for replacing poles described at page 3 of Exhibit 8A, Tab 2, Schedule 1,
 12 Appendix B, stated that two site visits are required. Is the same crew employed for

RESPONSES TO THE CARRIERS' INTERROGATORIES

- 1 installing the new pole, and transferring the hydro attachments, and removing the old
 2 pole?
- 3 h) Provide a detailed description of the differences in crew, equipment, time and number
 4 of visits required to complete pole replacements that do not have communications
 5 attachments, as compared to poles that do have communications attachments.
- 6 i) With respect to pole replacements, provide the detailed cost elements for each crew
 7 visit, including the hourly wages, vehicle costs, and all other associated costs.

8

9 **RESPONSE:**

- 10 a) The table below lists the loss in productivity costs for the years 2011-2015. These
 11 costs are described in more detail in the evidence filed at Exhibit 8, Tab 2, Schedule
 12 1, Appendix B, page 3.

13

14 Toronto Hydro notes that the year 2010 outside the scope of this proceeding, and
 15 declines to provide the requested information for this year. In addition, the data for
 16 the 2010 is not readily available.

	2011	2012	2013	2014	2015
Pole replacement – Cost Per Pole	\$ 7.84	\$ 7.58	\$ 7.99	\$ 7.85	\$ 8.08
Pole Inspection Program (communications portion) – Cost Per Pole	\$ 1.05	\$ 1.36	\$ 1.13	\$ 2.14	\$ 1.11
TOTAL loss in productivity – all costs per pole	\$ 8.89	\$ 8.94	\$ 9.12	\$ 9.99	\$ 9.19
Average # of Attachers Per Pole	1.7	1.6	1.5	1.5	1.61
TOTAL loss in productivity – per pole	\$ 5.31	\$ 5.58	\$ 6.28	\$ 6.55	\$ 5.72
Number of Poles used to derive loss in productivity per pole	35,004	94,996	49,365	25,685	22,640

RESPONSES TO THE CARRIERS' INTERROGATORIES

- 1 b) Toronto Hydro is unable to provide a response to this question as the requested
 2 information (i.e., the number of poles that were replaced with and without wireline
 3 attachments) is not readily available.
 4
- 5 c) Please refer to the response in part (b) above.
 6
- 7 d) The data inputs captured through the Pole Inspection Program are listed in Toronto
 8 Hydro's response to interrogatory Carriers-4(f). Of the 3.75 million data inputs
 9 captured through the Pole Inspection Program as of March 2014, 1.03 million data
 10 inputs are specifically related to third party attachers, including wireline and wireless
 11 communication attachers. This results in a percentage of 27.26%, which was applied
 12 to the total annualized cost per pole to obtain the \$1.11 per pole cost for the "third
 13 party portion" of the Pole Inspection Program.
 14
- 15 e) The table below provides the number of data inputs captured through the Pole
 16 Inspection Program for the years 2011-2014 (as of year-end):
 17

	2011	2012	2013	2014
Number of data inputs – hydro portion	495,625	1,457,996	769,179	400,809
Number of data inputs – hydro portion per pole	23	23	23	23
Number of data inputs – communications (total, wireline, wireless) attachments portion	172,746	684,321	328,839	166,503
Number of data inputs – communications portion per pole with communications (total, wireline, wireless) attachment	90	90	90	90
Total number of data inputs	668,371	2,142,317	1,098,018	567,312

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 Toronto Hydro declines to produce this information for the year 2010 on the basis
2 that it is outside the scope of this proceeding. In addition, the data for the 2010 is not
3 readily available.

4

5 Toronto Hydro is unable produce the information for 2015 because it has not
6 forecasted the number of data inputs that it will collect through its Pole Inspection
7 Program in 2015.

8

9 f) Please refer to Toronto Hydro's response to part (d) above.

10

11 g) Due to various operational factors (e.g., work scope, resource availability), the same
12 crew may not necessarily be employed to perform the noted tasks. However, as noted
13 in the response to part (h) below, the costs of the additional site visits are based on a
14 typical crew complement.

15

16 h) The only difference is that an additional site visit is required for pole replacements
17 that have communications attachments. As noted in Exhibit 8, Tab 2, Schedule 1,
18 Appendix A, page 3, at the first visit, the crew installs the new pole, and at the second
19 visit, after the attachment(s) have been transferred, the crew removes the old pole.
20 The cost of the additional site visit (i.e., the loss in productivity cost relating to pole
21 replacement) is based on the estimate of two hours for a typical crew complement;
22 this includes travel time to the worksite, worksite set up, worksite breakdown, and
23 travel time back to the work centre.

24

25 i) Please see the tables below:

RESPONSES TO THE CARRIERS' INTERROGATORIES

Crew Complement	Quantity	Hourly Rates (\$)
Crew Leader	1	██████
Journeyman Lineman	1	██████
Apprentice	1	██████
Crane Operator	1	██████

Note: Redacted information has been filed confidentially.

Vehicle Complement	Quantity	Hourly Rates (\$)
Single Bucket Truck	1	\$25.76
Pickup Truck – Crew Leader	1	\$9.26
Crane – Pole Removal	1	\$22.69
Dump Truck – Backfilling	1	\$18.55

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 **INTERROGATORY 15:**

2 **Reference(s):** **Exhibit 3, Tab 2, Schedule 1, Table 2, line18.**

3 **Exhibit 8A, Tab 2, Schedule 1, Appendix B, pages 1 through 5.**

4
 5 Preamble: Toronto Hydro reported expenses for "Pole & Duct Rental" in aggregate at
 6 line 18 of Table 2 of Exhibit 3, Tab 2, Schedule 1. The following requests information to
 7 assist with correlating the aggregate amount with the expenses per pole indicated in the
 8 calculation of the pole attachment fee.

9 a) Complete the table below with respect to the expenses attributed to poles alone that
 10 were included in the amount shown for "Pole & Duct Rental", for each of the years
 11 2010 to 2015, using actuals for 2011 through 2014 and estimates for 2015. Provide
 12 the dollar amounts in total to the nearest thousands of dollars.

	2011	2012	2013	2014	2015 (estimate)
Pole & Duct Rental expenses	906.3 7	082.2 4	405.8 6	942.6 6	942.6
Pole Rental expenses					
Pole Rental expenses attributed to each of the following categories of expense					
(i) Maintenance expense					
(ii) Administration costs -payroll					
(iii) Administration costs -vehicle costs					
iv) Administration costs -inventory & direct purchases					
(v) Administration costs - all other sub-categories					
(vi) Loss in productivity - pole replacements					
(vii) Loss in productivity					

RESPONSES TO THE CARRIERS' INTERROGATORIES

	2011	2012	2013	2014	2015 (estimate)
- pole inspection program					

- 1 b) Further to the response to (a), provide a detailed explanation of all expenses listed
 2 under "Direct Cost" in the calculation of the pole attachment fee that are not included
 3 in the amount shown for Pole & Duct Rental expenses.
- 4 c) Further to the response to (a), provide a detailed explanation of all maintenance
 5 expenses listed under "Indirect Cost" in the calculation of the pole attachment fee that
 6 are not included in the amount shown for Pole & Duct Rental expenses.
- 7 d) Further to the response to (a), provide a description of the reasons for each percentage
 8 change year over year for each line item in the table in (a) that is in excess of 5%.

9

10 **RESPONSE:**

11 a)

	2011	2012	2013	2014	2015 (estimate)
Pole & Duct Rental expenses	\$2,906.3	\$7,082.2	\$4,405.8	\$6,942.6	\$6,942.6
Pole Rental expenses	N/A	\$5,287.8	\$3,394.6	\$3,232.4	\$3,678.4
Pole Rental expenses attributed to each of the following categories of expense					
(i) Maintenance expense	N/A	\$4,479.5	\$2,458.3	\$2,310.5	\$2,575.4
(ii) Administration costs -payroll	N/A	\$619.0	\$707.1	\$718.2	\$856.2
(iii) Administration costs -vehicle costs	N/A	\$(2.7)	\$22.0	\$24.4	\$28.8
iv) Administration costs -inventory & direct purchases	N/A	\$12.9	\$17.3	\$6.6	\$16.9
(v) Administration costs	N/A	\$179.1	\$189.9	\$172.7	\$201.1

RESPONSES TO THE CARRIERS' INTERROGATORIES

	2011	2012	2013	2014	2015 (estimate)
- all other sub-categories					
(vi) Loss in productivity - pole replacements	N/A	N/A	N/A	N/A	N/A
(vii) Loss in productivity - pole inspection program	N/A	N/A	N/A	N/A	N/A

1 Costs related to loss in productivity in pole replacement (vi) and pole inspections (vii)
 2 is not included in “Pole & Duct Rental expenses” as the costs are incurred within the
 3 capital program. `

4

5 b) There are two types of expenses that are “Direct Costs” but that are not captured in
 6 the Pole & Duct Rental expenses. The first is Shared Service expenses, which
 7 contribute to the support costs component of Administration costs. Shared Service
 8 expenses are allocated using the methodology detailed in Exhibit 4A, Tab 5, Schedule
 9 1. The second type is incremental capital expenses that are incurred when a pole with
 10 an attachment is removed or replaced. This is captured in the Loss in Productivity
 11 Direct Cost.

12

13 c) There is one type of expense that is an “Indirect Costs” but that is not captured in the
 14 Pole and Duct Rental expenses. This expense relates to wood pole inspection and
 15 treatment efforts within Toronto Hydro’s Overhead Line Patrols and Pole Inspections
 16 activities. For more on Toronto Hydro’s Overhead Line Patrols and Pole Inspections
 17 activities, please see the Preventative & Predictive Maintenance Program at Exhibit
 18 4A, Tab 2, Schedule 1.

19

RESPONSES TO THE CARRIERS' INTERROGATORIES

- 1 d) Toronto Hydro notes that it would be overly burdensome to produce the requested
2 variance explanation given the relatively small amounts in question. Below, Toronto
3 Hydro has provided variance explanations for variances that exceed a materiality
4 threshold of \$100,000:
- 5 • Due to a significant increase in overhead permits in 2012, the maintenance
6 program increased in order to facilitate the unusually higher customer demands.
7 Therefore, the maintenance expenses reported from 2013-2015 are relatively
8 consistent year-over-year as a result of more stable overhead permit volumes.
 - 9 • Payroll increased from 2014 to 2015 due to a slight reduction in the recovery rate
10 assumed to be charged direct to jobs.

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 **INTERROGATORY 16:**

2 **Reference(s):** **Exhibit 8A, Tab 2, Schedule 1, Appendix B, page 5, lines 19-20**
 3 **Exhibit 9, Tab 2, Schedule 4, page 1 of 1.**

4
 5 Preamble: Toronto Hydro states that the capital carrying cost was calculated by applying
 6 the most recent OEB-approved (2011) weighted average cost of capital (WACC) rate of
 7 6.94% to the net embedded cost per pole.

- 8
 9 a) Does Toronto Hydro propose any changes to WACC of 6.94% that was approved in
 10 2011 as part of its application in EB-2014-0116?
 11 b) If changes to the proposed WACC have been proposed, provide the proposed value
 12 and explain why this was not used for calculating the pole attachment fee.
 13 c) Explain why a WACC of 6.94% was used for calculating the pole attachment fee,
 14 instead of the 6.19% WACC shown in Exhibit 9, Tab 2, Schedule 4.

15
 16 **RESPONSE:**

- 17 a) Yes, Toronto Hydro proposed a new WACC rate in this application.
 18
 19 b) and c) The proposed WACC rate is 6.19%. Toronto Hydro used the previous
 20 WACC rate because the proposed WACC rate was not available at the time that the
 21 model was developed. In the table below, Toronto Hydro has updated the capital
 22 carrying cost per pole calculation with the proposed WACC rate.

Component	Value	Reference
Net Embedded Cost per Pole	\$1,929.34	A
New WACC Rate	6.19%	B
Updated Capital Carrying Cost per Pole	\$119.43	C = A x B

RESPONSES TO THE CARRIERS' INTERROGATORIES

- 1 In light of the updated information, Toronto Hydro intends to reflect this change in
- 2 its evidence.

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 **INTERROGATORY 17:**

2 **Reference(s): Exhibit 3, Tab 2, Schedule 1, Table 2, line 8, Corrected: 2015**
3 **Feb 27.**

4 **Exhibit 3, Tab 2, Schedule 2, OEB Appendix 2-H, Corrected:**
5 **2015 Feb 27.**

6

7 Preamble: Toronto Hydro reported revenues for "Pole & Duct Rental" in aggregated
8 form at line 8 of Table 2 of Exhibit 3, Tab 2, Schedule 1, and reported revenues for each
9 of Duct Rental and Pole Attachment Rental in OEB Appendix 2-H, filed in Exhibit 3,
10 Tab 2, Schedule 2.

11

12 a) The sum of revenues reported in each of the line items labeled Duct Rental and Pole
13 Attachment Rental in OEB Appendix 2-H, filed in Exhibit 3, Tab 2, Schedule 2 is
14 approximately \$15 million, which is less than the approximately \$18.8 million in
15 revenues reported for "Pole & Duct Rental" at line 8 of Table 2 of Exhibit 3, Tab 2,
16 Schedule 1 for 2015. Similar differences are found for the years 2011 to 2014.

17 Provide a detailed explanation for the differences in the amount of revenues between
18 the two referenced documents for each of the years 2011 to 2015.

19 b) List all of the revenue sub-accounts included in the revenues reported for "Pole &
20 Duct Rental" at line 8 of Table 2 of Exhibit 3, Tab 2, Schedule 1, and identify each
21 account item that is included in the revenues reported that is not included in the
22 revenues reported in OEB Appendix 2-H, filed in Exhibit 3, Tab 2, Schedule 2 for
23 Duct Rental and Pole Attachment Rental.

24 c) Provide the revenues from wireless communications attachments to poles for each of
25 the years 2011 to 2015 and list the revenue sub-accounts associated with the reporting
26 of these revenues.

RESPONSES TO THE CARRIERS' INTERROGATORIES

- 1 d) Provide the revenues from all other third party (non-communications) attachments to
2 poles for each of the years 2011 to 2015 and list the revenue sub-accounts associated
3 with the reporting of these revenues.
4

5 **RESPONSE:**

- 6 a) The Pole and Duct Rental amounts in the Merchandise and Jobbing Summary Table
7 (Exhibit 3, Tab 2, Schedule 1, Table 2) include Miscellaneous Revenues, whereas are
8 the Pole and Duct Rental Appoint in OEB Appendix 2-H (Exhibit 3, Tab 2, Schedule
9 2) do not include Miscellaneous Revenues.

10

11 Miscellaneous Revenues capture cost recovered for Toronto Hydro make-ready work,
12 permits inspections, and bonding.¹ Make-ready work consists of any changes,
13 alterations, rearrangements, or repairs of the attachments or poles and other plant, or
14 any other user, to accommodate the attachments and to comply with Ontario
15 Regulation 22/04 (Electrical Distribution Safety). Please refer to Toronto Hydro's
16 response to interrogatory Carriers-20(a) for a description of what the permitting
17 process entails.

18

19 The table below provides a reconciliation of the amounts in the schedules.

¹ Bonding refers to the electrical interconnection of metallic parts or conductors in order to maintain them at the same voltage and to achieve a desired distribution of currents within a grounding system (CSA 22.3, No. 5.1). For safety purposes, wireline communications attachments must be grounded by bonding their steel support cable to Toronto Hydro's system neutral.

RESPONSES TO THE CARRIERS' INTERROGATORIES

	2011 Actual	2012 Actual	2013 Actual	2014 Bridge	2015 Test	
Pole & Duct Rental (Exhibit 3, Tab 2, Schedule 1, Table 2)	7,292.1	9,484.8	9,609.3	10,740.8	18,751.2	A
Pole Rental (OEB Appendix 2-H)	1,987.6	2,256.1	2,133.4	2,304.6	8,273.8	B
Duct Rental (OEB Appendix 2-H)	4,620.5	5,261.2	6,000.0	6,743.7	6,743.7	C
OEB Appendix 2-H (Exhibit	6,608.10	7,517.30	8,133.40	9,048.30	15,017.50	D = B+C
Variance	684.0	1,967.5	1,475.9	1,692.4	3,733.8	C = A-D
Misc Revenue	684.0	1,967.5	1,475.9	1,692.4	3,733.8	

1 b) Please refer to the table in part (a) above.

2

3 c) The revenues are tracked in deferral and variance account 1508, as approved by the
 4 OEB in EB-2013-0234. As noted in the response to interrogatory 3-CCC-27, revenue
 5 for wireless communication attachments to poles are as follows:

	2011	2012	2013	2014	2015
Wireless Communication Attachments (\$M)	\$0.0	\$0.1	\$0.1	\$0.1	\$0.2

7 d) Revenue for all other third party (i.e., non-communication) attachments to poles for
 8 each of the years 2011 to 2015 are recorded in OEB Account 4325 and are as follows.

	2011	2012	2013	2014	2015
Other Third Party (non-communication) Attachments (\$ 000s)	15.8	81.4	57.9	64.7	66.7

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 **INTERROGATORY 18:**

2 **Reference(s):** **Exhibit 3, Tab 2, Schedule 1, page 5, lines 5-11, Corrected:**
 3 **2015 Feb 27.**

4 **Exhibit 3, Tab 2, Schedule 2, OEB Appendix 2-H, Corrected:**
 5 **2015 Feb 27.**

6

7 Preamble: Toronto Hydro has proposed to increase its pole attachment rental fee, and
 8 expects revenue to increase from \$2.3 million to approximately \$6.0 million. The
 9 following requests information regarding the revenues from Pole Attachment fees, as
 10 stated in Exhibit 3.

11

12 a) Confirm or correct all amounts shown in the table below, with respect to revenues for
 13 Pole Attachment Rental and pole attachment fee for each of the years 2011 to 2015.

	2011	2012	2013	2014	2015 (estimate)
(i) Pole Attachment Rental - revenues (\$ 000s)	1,987.6	2,256.4	2,133.4	2,304.6	8,273.81
(ii) Pole Attachment Fee per pole per year	\$22.35	\$22.35	\$22.35	\$22.35	\$84.98
(iii) Billable pole attachments = (i) / (ii)	88,931	100,944	95,454	103,114	95,309

14 b) Is the revenue from Pole Attachment Rentals for 2015 based on a pole attachment rate
 15 of \$84.98 in effect for 12 months? If not, provide the weighted average pole
 16 attachment fee per pole that will be in effect, assuming the proposed fee is approved.

17 c) Provide the underlying data inputs used to derive the estimated revenue from Pole
 18 Attachment Rentals for 2015; specifically, the number of attachers per pole, the
 19 number of poles with billable attachments and the billable pole attachments in total.
 20 Include in the response supporting evidence and assumptions employed.

RESPONSES TO THE CARRIERS' INTERROGATORIES

- 1 d) Provide a detailed explanation for the variations in the calculated billable pole
 2 attachments in each of the years 2012 to 2015.
- 3 e) Provide a detailed explanation why Toronto Hydro stated that Pole Attachment
 4 revenue is expected to be \$6 million in 2015, in Exhibit 3, Tab 2, Schedule 1, at page
 5 5, line 10, whereas the revenues from Pole Attachment Rental are indicated to exceed
 6 \$8.2 million for 2015, in Exhibit 3, Tab 2, Schedule 2, OEB Appendix 2-H.

7

8 **RESPONSE:**

- 9 a) The corrected amounts are shown in the table below, with respect to revenues for
 10 Pole Attachment Rental and pole attachment fee for each of the years 2011 to 2015.

	2011	2012	2013	2014	2015 (estimate)
(i) Pole Attachment Rental - revenues (\$000s) = (ia) + (ib)	1,987.6	2,256.1	2,133.4	2,304.6	7,843.8
(ia) Pole Attachment Rental - revenues (\$000s) non-prescribed rate	70.1	292.6	188.2	342.3	331.4
(ib) Pole Attachment Rental - revenues (\$000s) prescribed rate	1,917.5	1,963.5	1,945.2	1,962.3	7,512.4
(ii) Pole Attachment Fee per pole per year	22.4	22.4	22.4	22.4	80.38
(iii) Billable pole attachments = (ib) / (ii)	85,795.0	87,852.0	87,035.0	87,799.0	93,461.0

- 11 b) The revenue from Pole Attachment Rentals for 2015 above is based on a pole
 12 attachment rate of \$80.38 in effect for 12 months, consistent with changes noted in
 13 Toronto Hydro's response to interrogatories Carriers-12(a) and 16(b).
- 14
- 15 c) The underlying data inputs used to arrive at the total estimated pole revenue for 2015
 16 are as follows:

RESPONSES TO THE CARRIERS' INTERROGATORIES

Number of Attachers per pole	1.61
Number of Poles with Billable Attachments	58,050
Number of Billable Attachments	93,461

- 1 d) The variation in the in the calculated billable pole attachments in 2014 compared to
2 the estimate in 2015 is due to the projected increase in pole attachment quantities for
3 2015. The projected number of billable attachments was derived using historical
4 growth rates for new pole attachments and, where available, customer projections for
5 new pole attachments in 2015.
6
- 7 e) The \$6 million figure quote in Exhibit 3, Tab 2, Schedule 1, at page 5, line 10 was
8 meant to refer to the increase in the Pole Attachment Rental from \$2.3 million
9 reported for 2014 to the \$8.2 million for 2015 (i.e., the figure quoted in Exhibit 3, Tab
10 2, Schedule 2, OEB Appendix 2-H). The discrepancy between these two pieces of
11 evidence is a purely administrative error.

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 **INTERROGATORY 19:**

2 **Reference(s):** **Exhibit 3, Tab 2, Schedule 1, Table 2, Corrected: 2015 Feb 27.**
 3 **Exhibit 3, Tab 2, Schedule 2, OEB Appendix 2-H, Corrected:**
 4 **2015 Feb 27.**

5
 6 a) Based on the information provided in the responses to Carriers-15(a) and Carriers-
 7 18(a), provide the Net Revenue associated with Pole Attachment Rental for each of
 8 the years 2011 to 2015, using actuals for 2011 through 2014 and estimates for 2015.
 9 Provide the dollar amounts in total to the nearest thousands of dollars.

10
 11 **RESPONSE:**

12 a) Please see the table below.

in \$000s	2012	2013	2014	2015	Reference
Revenues from Pole Attachment Rental (Carrier 18)	2,256.1	2,133.4	2,304.6	7,843.8	A
Pole Rental Expenses (Carrier 15)	(5,287.8)	(3,394.6)	(3,232.4)	(3,678.4)	B
Net (Loss) Revenues from Pole Attachment Rental	(3,031.7)	(1,261.2)	(927.8)	4,165.4	C

13 Toronto Hydro notes that the comparison of Carriers-15(a) and 18(a) is not
 14 meaningful because the values in Carriers-18(a) (Reference A) do not capture the
 15 same type costs as the values in Carriers-15(b) (Reference B). The revenues in
 16 Carriers-18(a) (Reference A) are meant to cover the direct and indirect costs
 17 associated with wireline pole attachments, in accordance with the cost methodology
 18 approved by the OEB in the CCTA Decision. The expenses in Carriers-15(b)
 19 (Reference B) relate to all overhead asset attachments (i.e., not just wireline pole
 20 attachments), and as stated in the response to Carriers-15(b) and (c), exclude shared

RESPONSES TO THE CARRIERS' INTERROGATORIES

- 1 services fees, loss productivity costs and wood pole maintenance and inspections, as
- 2 well as capital carrying costs and depreciation expense.

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 **INTERROGATORY 20:**

2 **Reference(s):** **none provided**

3

- 4 a) Provide a detailed description of the process, including all steps involved, for a
5 communications attacher to receive approval to place a first attachment on a pole
6 owned by Toronto Hydro. Also identify in the response which steps, if any, in the
7 process must be completed for each subsequent attachment placed on a pole by the
8 same communications attacher.
- 9 b) Further to the response to (a), provide copies of all forms, permit applications or
10 similar documents that Toronto Hydro requires communications attachers to
11 complete.
- 12 c) Provide the fee associated with the process for obtaining approval for attachments
13 (e.g., permit fee), if separate from the pole attachment fee for rental of the space.
- 14 d) Further to the response to (c), provide the total annual revenues received from
15 communications attachers for permits for each of the years 2010 through 2014, and
16 estimated for 2015.
- 17 e) Confirm that a request from a communications attacher to place facilities on poles
18 owned by Toronto Hydro is subject to the pole having space available to
19 accommodate the attachment (i.e., spare capacity).
- 20 f) If no spare capacity is available for a communications attacher, confirm that there is a
21 process by which Toronto Hydro will modify or replace the pole to accommodate the
22 attachment, subject to the communications paying for all costs associated with the
23 work (i.e., make ready).
- 24 g) Further to the response to (f), provide the total annual revenues received from
25 communications attachers for make ready work for each of the years 2010 through
26 2014, and estimated for 2015.

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 h) Has Toronto Hydro ever refused to grant a request from a communications attacher to
2 place facilities on poles it owns? If so, provide the reasons why requests for
3 attachments were not approved.

4

5 **RESPONSE:**

6 a) Toronto Hydro's general practice with respect to the permitting process is as follows:

- 7 • The party seeking an attachment submits an application, which usually consists of
8 a cover letter, a plan ("the construction drawings and instructions that are
9 prepared for the construction of new or modified distribution system that have
10 been reviewed and approved by a professional engineer"¹), and an engineer's
11 report. The applicant will propose make-ready work² in the plan if the existing
12 field conditions, or the addition of the proposed attachment, do not satisfy the
13 requirements of Ontario Regulation 22/04 (Electrical Distribution Safety) or
14 Toronto Hydro's construction standards. The engineer's report provides the
15 supporting technical information that is not typically contained in the plan
16 including calculations, pole loading analysis, and any assumptions made by the
17 professional engineer.
- 18 • Upon receipt of a complete application, Toronto Hydro reviews the
19 documentation submitted to assess whether the proposed plan complies with the
20 requirements of Ontario Regulation 22/04 (Electrical Distribution Safety) and
21 conforms to Toronto Hydro's construction standards.

¹ ESA Guideline for Third Party Attachments, online:

<http://www.esasafe.com/assets/files/esaeds/pdf/ALL/Guideline_for_Third_Party_Attachments.pdf> at
7.

² Make-ready work consists of any changes, alterations, rearrangements, or repairs of the attachments or
poles and other plant of Toronto Hydro, or any other user, to accommodate the attachments of the
applicant.

RESPONSES TO THE CARRIERS' INTERROGATORIES

- 1 • After the application is reviewed, Toronto Hydro conducts a field inspection to
2 verify that the information provided in the application is consistent with the
3 conditions in the field. If the application contains a proposal for any make-ready
4 work, Toronto Hydro also conducts a preliminary assessment of the feasibility of
5 that work.
- 6 • Upon a satisfactory review of the application and field inspection, a permit is
7 granted to the applicant. The permit may be conditional upon the completion of
8 any Toronto Hydro make-ready work. A cost estimate to complete the make-
9 ready work is prepared by Toronto Hydro and provided to the applicant for
10 approval.
- 11 • The applicant will approve the cost estimate by providing Toronto Hydro with a
12 purchase order. Toronto Hydro will then proceed with completing the make-
13 ready work and a granted permit will subsequently be issued to the applicant.
- 14 • With the exception of service drops³, each subsequent attachment placed on a
15 pole by the same communications attacher is subject to the same requirements
16 described above. Service drops may be affixed or altered by the attacher when
17 affixed to a pole for which a permit has been issued, or affixed in-span between
18 poles where a permit has been issued for the nearest pole.
- 19
- 20 b) Toronto Hydro requires a plan drawing and an engineer's report sample that satisfies
21 Toronto Hydro's permitting requirements. The utility's permitting requirements are
22 consistent with the Electrical Safety Authority ("ESA") Guideline for Third Party
23 Attachments (see Appendix A to this response).
- 24

³ Service drops means the telecommunications cables or wires, whether affixed in-span or to a pole, owned by the attacher and connected to a telecommunications cable, that are used to supply telecommunications services to one or more customers of the attacher.

RESPONSES TO THE CARRIERS' INTERROGATORIES

- 1 c) The fee associated with the process of obtaining approvals for attachments is \$118
 2 per application as of 2015.
- 3 d) The total annual revenues received from communications attachers (both wireline and
 4 wireless) for permits for the years 2012 through 2014, and estimated for 2015, are
 5 summarized in the table below. Toronto Hydro is unable to provide the values for
 6 2010 and 2011 because the data is not readily available. In addition, Toronto Hydro
 7 notes that the year 2010 is outside the scope of this proceeding.

	2012	2013	2014	2015 Estimate
Pole Permit Application Fee (\$ 000s)	\$ 52.11	\$ 27.84	\$ 66.90	\$ 206.61

- 9 e) Confirmed.
- 10
- 11 f) Confirmed.
- 12
- 13 g) The table below provides the total annual revenues received from communications
 14 attachers (both wireline and wireless) for make-ready work for the years 2012
 15 through 2014. Toronto Hydro is unable to provide the values for 2010 and 2011
 16 because the data is not readily available. In addition, Toronto Hydro notes that the
 17 year 2010 is outside the scope of this proceeding. Toronto Hydro is unable to provide
 18 an estimate for 2015 because this type of revenue is demand driven and is therefore
 19 dependent on when and in respect of which poles communication attachers apply for
 20 permits.

	2012	2013	2014
Pole Permit Hydro Make Ready Revenue (\$ 000s)	\$ 1,270	\$ 503	\$ 360

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 h) Toronto Hydro may deny access to its poles if the addition and/or installation of the
2 attachment fails to satisfy the requirements of Ontario Regulation 22/04 (Electrical
3 Distribution Safety) or Toronto Hydro's construction standards.

4
5 Safety, reliability and operational considerations are central to Toronto Hydro's
6 decisions for granting approval of attachments to its poles. Toronto Hydro's practice
7 is to confirm that the structures (i.e., poles, guy, and anchors) have adequate strength
8 to support all imposed loads.⁴ If the structures cannot withstand the imposed loads,
9 Toronto Hydro will not grant approval for the attachment because a pole that is
10 "overloaded" is at a greater risk of breaking. For this reason, overloaded structures
11 present a potential safety risk, and could result in power outages.

12
13 For public safety, Toronto Hydro's requires the attachment to satisfy minimum
14 clearances from the ground/roadway. Toronto Hydro also requires attachments to
15 maintain minimum clearances from energized conductors, in order to minimize the
16 potential risk to field crews.⁵ In addition, attachments must not conflict with Toronto
17 Hydro's ability to operate or maintain Toronto Hydro-owned equipment. In other
18 words, Toronto Hydro must be able to properly operate, access, or replace the
19 equipment (e.g., switches and transformers) on its poles.

20
21 On average, over the 2012 to 2014 period, Toronto Hydro denied approximately 30%
22 of pole attachment requests on one or more of the above-noted grounds.

⁴ O. Reg. 22/04, at s. 5.

⁵ O. Reg. 22/04 (Electrical Distribution Safety), at s. 5.



Guideline for Third Party Attachments

Ontario Regulation 22/04

Electrical Distribution Safety

October 5, 2005

Legal Disclaimer.

This document contains GUIDELINES ONLY to assist members of the industry in interpreting Ontario Regulation 22/04 - Electrical Distribution Safety - made under subsection 113(1) of Part VIII of the Electricity Act, 1998. These guidelines do not have the force of law. Where there is a conflict between these guidelines and any legislation or regulation which may apply, the relevant law prevails.

Retention Periods stated in the guidelines set out the minimum period for which referenced documents are to be retained. Each *owner* needs to make its own assessment of the appropriate retention period for specific documents based on its assessment of risk factors and potential liability.

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1.0 General

1.1 Purpose of Guideline.

This Guideline has been prepared to provide guidance to distributors on how to comply with section 7 Approval of plans, drawings and specifications for installation work and section 8 Inspection and Approval of Construction of Ontario Regulation 22/04 Electrical Distribution Safety. Specifically this guideline addresses third party attachments to the distribution systems of licensed distributors.

This Guideline is to be read in conjunction with Regulation 22/04. As a condition to using its distribution systems, each distributor will need to engage an auditor on an annual basis to prepare an audit report and demonstrate compliance with sections 4, 5, 7 and 8 of the Regulation.

This Guideline along with the Regulation and other appropriate standards form the basis on which the ESA will assess the safety of the electrical distribution installations within the Province of Ontario.

1.2 Condition of Attachment.

All companies who wish to place *attachments* on an *owner's* pole should have an agreement that allows the "*attacher*" to request these same *attachments*.

1.3 Definitions

1.1.1 "**attacher**" means the party making or applying for permission to attach to the *owner's* support structure (such as a pole);

1.1.2 "**attachment**" means a single connection of the *attacher's* equipment to the *owner's* support structure that has a direct or indirect influence on the performance, appearance, and safety of the support structure or the *owner's* ability to access and maintain it. The *attacher* may have multiple attachments to a support structure (such as a pole);

1.1.3 "**Certificate**" means a certificate issued by a *professional engineer*, ESA or a *qualified person* identified in the *owner's* construction verification program, that the construction meets the safety standards set out in Section 4 of the *Regulation*;

- 1.1.4 “**certificate of approval**” means the certificate issued by a *professional engineer* or ESA confirming that a *plan* or *Standard Design* meets the safety standards set out in section 4 of the *Regulation* and provided to the *owner*;
- 1.1.5 “**construction verification**” means the inspection, approval and documentation of any new construction or repairs to *distribution systems* including replacements of part or portion of a *distribution system*, *like-for-like replacements*, and *legacy construction* replacement with respect to the safety standards set out in Section 4 of the *Regulation*;
- 1.1.6 “**competent person**” means a person who,
- a) is qualified because of knowledge, training and experience,
 - (i) to perform specific work, or
 - (ii) to organize work and its performance,
 - b) has knowledge of any potential or actual danger to health or safety in the workplace in relation to the work, and
 - c) is familiar with section 113 of the Act and the regulations made under it, and with the Occupational Health and Safety Act and the regulations made under that Act, that apply to the work. O. Reg.22/04;
- 1.1.7 “**distribution system**” means a system for distributing electricity, and includes any structures, equipment or other things used by a *owner* for that purpose;
- 1.1.8 “**distributor**” means a person who owns or operates a *distribution system* in the service territory defined in the electricity distribution license issued by the Ontario Energy Board (OEB);
- 1.1.9 “**equipment**” or “**electrical equipment**” means any apparatus, device, material used for the distribution of electricity, including materials that are non-electric in origin (*refer to the Regulation for the complete definition of “electrical equipment”*)(O.Reg.22/04);
- 1.1.10 “**Good Utility Practice**” means any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry in North America during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts

known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good practices, reliability, safety and expedition. Good utility practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in North America (DSC);

- 1.1.11 **“legacy construction”** means existing construction built in accordance with *Good Utility Practice*, that does not meet current *Standard Designs*;
- 1.1.12 **“like-for-like replacement”** means the replacement of one piece of *electrical equipment* (one assembly) under all conditions, or a part or portion of a line under emergency conditions, on an existing *distribution system* that maintains as a minimum the characteristics and functionalities of the original installation;
- 1.1.13 **“no undue hazard”** for the purpose of construction verification of an electrical installation where indicated in this Guideline means that:
- metal parts that are not intended to be energized and that are accessible to unauthorized persons are adequately grounded,
 - live parts are adequately insulated or barriered,
 - the installation meets the minimum CSA clearances from buildings, signs and ground or barriers are installed to protect,
 - the structure has adequate strength
- where adequate means in accordance with *Good Utility Practice*;
- 1.1.14 **“owner”** means a licensed *distributor* that owns the support structure;
- 1.1.15 **“plan”** means the drawings and instructions that are prepared for the construction of new or modified *distribution system* that have been reviewed and approved by a *professional engineer* or ESA;
- 1.1.16 **“professional engineer”** means a person who holds a license or temporary license under the Professional Engineers Act (Reg. 22/04);

- 1.1.17 “**qualified person**” means a person identified in a *construction verification* program developed by the *owner* and approved by ESA for the purpose of inspection and approval of construction;
- 1.1.18 “**record of inspection**” means a record prepared by a *professional engineer*, ESA, or a *qualified person* identified in the *owner’s construction verification* program, detailing the inspection of a constructed or repaired portion of an electrical *distribution system* with respect to the safety standards set out in section 4 of the *Regulation*;
- 1.1.19 “**Regulation**” means the Ontario Regulation 22/04 – Electrical Distribution Safety;
- 1.1.20 “**Service Drop**” means a small light-weight single communication cable or wire between an *attacher’s* plant and customer's residence or place of business. The cable or wire shall be affixed in span, to a pole or existing messenger, constructed per the *attacher’s* engineered "service drop" standard. The *owner* should establish a maximum lateral load to the plant;
- 1.1.21 “**Standard Designs**” means the standards such as standard design drawings, standard design specifications, technical specifications, and construction standards that have been reviewed and approved by a *professional engineer* or ESA for use by an *owner* or *attacher* and that the *owner* or *attacher* has authorized for use on an ongoing basis for the construction, operation, and maintenance of its plant in relation to the *distribution system*;
- 1.1.22 “**work instruction**” means the assembly of *Standard Designs* into drawings and instructions prepared by a *competent person* in accordance with the *owner’s* or *attacher’s* job planning process used for the installation of the *attacher’s* new or modified *equipment* on the *owner’s* support.

2.0 Third Party Attachment Process.

2.1 What is required under section 7 of Regulation 22/04?

Starting February 11, 2005 under section 7 of the *Regulation*, before beginning work on a *distribution system*, or effecting repairs, alterations or extensions on an existing *distribution system* an *owner* shall ensure that installation work is based on *plans* prepared by a *professional engineer* and,

- a *plan* must be reviewed and approved by a *professional engineer* or ESA and a *certificate of approval* provided to the *owner*, or
- a *work instruction* must be based on *Standard Designs* that have been reviewed and approved by a *professional engineer* or ESA and for which *certificates of approval* have been provided to the *owner*.

After approval, the *Regulation* allows the *attacher* to utilize *Standard Designs* for work on *distribution systems* without further design approvals being required by a *professional engineer* or ESA. The *attacher* may prepare *work instructions* using its own approved *Standard Designs* in accordance with its job planning process.

2.2 Exemption of *Service Drops* from audit requirements.

The installation and removal of *Service Drops* are exempted from the audit requirements of section 7 and section 8 of the *Regulation*. *Service Drops* are not exempt from section 4,5,7 and 8 of the *Regulation* and as such, must meet CSA C22.3, No. 1-01 Overhead Systems or C22.3, No.7-94 Underground Systems (Reaffirmed 1999).

2.3 Like-for-Like Replacement.

Like-for-like replacement, line repair or replacement work of non-electrical equipment done under emergency conditions (i.e. trouble calls), or *owner* or *attacher* maintenance programs are exempted from the requirements of section 7 of the *Regulation*. However, such work is to be inspected by a *competent person* to confirm that it presents *no undue hazards*.

When a transfer of equipment is proposed by an *owner* or an *attacher* it shall be considered a *like-for-like replacement* and shall be subject to the process for completing *records of inspection* and statement of *no undue hazards* identified in the *owner's* Construction Verification Program.

2.4 Additional Guideline References to Third Party Attachment.

Further references to third party attachments can be found in the Technical Guideline for Section 7 (Design) clause 2 and the Technical Guideline for Section 8 (Construction Verification) clause 2.

2.5 Design Approval.

There are two basic approaches to approving designs for third party attachments:

2.5.1 *Owner* Developed

The first approach is based on *standard designs* developed and approved by the *owner*, which allows for third party attachments of predetermined construction types. The *attacher* will need to supply information to the *owner* to ascertain that the proposed attachment is in accordance with the approved *standard designs*. After review and approval by the *owner* the permission is granted to proceed with construction; or

2.5.2 *Attacher* Developed

The second approach is based on the *attacher* providing a *plan* or *work instruction* assembled by a *professional engineer*, by the *attacher's* engineering technologist certified by the Ontario Association of Certified Engineering Technicians and Technologists or by the *attacher's competent person*, from a *standard design* developed and approved by a *professional engineer*, to the *owner*. The *owner* will grant permission to proceed after a review of the design and the *attacher's Certificate of Approval*. The *attacher* shall satisfy the *owner* as to the qualifications of it's *competent person*. See Appendix A for examples of what information may be required to be provided to prepare the *plan* or *work*

instruction. If both parties agree, different levels of information may be required and provided than identified in Appendix A.

2.5.3 Work instructions.

The *attacher* may provide the *owner* with *work instructions* prepared to the *owner's* or *attacher's* standard design specifications that have been assembled by a *professional engineer* or a *competent person* and accepted by the *owner*.

2.6 Application for Licensed Occupancy of Poles

Accompanying this engineered drawing or *work instruction* should be an Application for Licensed Occupancy of Poles form filled out accordingly. This requested application should include the details from Appendix A as required. This application may also have the pole markings that the *owner* has installed in the field for clarity for current and future records.

2.7 Inspection and approval of construction

2.7.1 Record of Inspection and a Certificate

Once the new plant has been installed or the modifications to an existing *attachment* have been completed, a *professional engineer* or *ESA* or a *qualified person* identified in the *owner's* Construction Verification Program *must prepare a record of inspection and a certificate*. The *owner* will keep completed *records of inspection and certificates*.

2.7.2 What is an acceptable *Record of Inspection*?

A *record of inspection* is to include sufficient description to identify the work and equipment inspected. A *record of inspection* can consist of an engineered *plan*, an as-built drawing, or a set of *work instructions* signed and dated by a *professional engineer* or ESA or a *qualified person*.

2.7.3 Field Visits

Initial contact is required prior to the commencement of work and field visits may be required from time to time. Both parties should agree if a joint field visit might be required.

2.7.4 What is required for the *Certificate*?

The *certificate* can be a separate document or it can be a stamp or signature added to the *record of inspection* and/or construction drawings. It should include the following information:

- name and signature of the inspecting *professional engineer*, ESA representative or *qualified person*;
- name of the *distributor* that owns the system (i.e. *owner*);
- confirmation that the construction meets the *plan*, *work instruction*, or *Standard Design*; and
- date of certification.

2.7.5 Who can be designated as *Qualified Persons* to inspect?

A *qualified person* may be an employee of the *attacher*, but they must be identified in the *owner's* approved Construction Verification Program. It is the responsibility of the *owner* to determine the qualifications necessary to designate the *attacher's* employees as qualified in the Construction Verification Program. Alternatively the *owner* may choose to complete all of the inspections.

2.7.6 Confirmation of compliance.

The *owner* is responsible for the safety of the *distribution system* and all work completed on it. If the *owner* has designated employees of an *attacher* as *qualified persons*, it should complete an annual confirmation review of the work inspected and certified by the *attacher*. Once a year, a sample (suggested rate 10% to 15%) of the new “Application for Licensed Occupancy of Pole” locations taken out that year, may be audited for compliance.

2.7.7 Documentation

The *owner* is to retain the *records of inspection* and *certificates* and make them available to the ESA upon request for a period of at least one year after the annual audit, following construction completion, for audit purposes.

Appendix A1 - Minimum Permit Drawing Requirements for Proposed Attachments on Owner Poles.

- 1 Basic Drawing Requirements (applies to all drawings)
 - a. Title block (name & address of *Attacher*, date, drawing/project number, drawing revision number, location of project)
 - b. Name & phone number of the Project Manager for the specific application
 - c. Language: English/French as appropriate
 - d. Scale or Dimensions (where applicable): Metric
 - e. Scale Size (where applicable): Larger than or equal to 1:1000 (e.g. 1:1000, 1:500, 1:250)
 - f. Legend of symbols
 - g. Certified standards that have been applied
 - h. The competent person who assembled the work instruction or the *Professional Engineer* who approved the plan/design

- 2 Project Specific Drawing Orientation Requirements
 - i. North Point
 - j. Key Map
 - k. Street names: clearly indicated
 - l. Sidewalks, driveways, curbs, trees, buildings, bridges, rivers, railroads, other utilities if they add clarity to specific issues
 - m. Lot lines and/or buildings, and house numbers in front of poles
 - n. Clearly indicated poles and their ownership
 - o. Horizontal offset measurements for proposed pole contact close construction to buildings, other non-Owner overhead systems (ex. traffic, street lighting, signs), and/or bridges.

- 3 Project Specific Drawing Requirements

Proposed *Attacher* Information

 - a. Which side of the pole and orientation to be contacted
 - b. Proposed Electrical bonding locations and method (eg. Ground rods)
 - c. Proposed Dips and/or risers (Cable dip/riser details)
 - d. Proposed Ducts, guards, and/or concrete work on poles for dips and/or risers
 - e. Proposed and existing (where available) *Attacher* anchoring including size, strength, tension, and location (Including height and lead data)
 - f. Make ready work anticipated by the *Attacher* with the *Owner's* poles or third party *attachments*
 - g. Proposed/existing pedestal locations along route outside of boundaries specified in the Joint Use Agreement
 - h. Railroad, major highway, & river crossing engineering details & associated profiles
 - i. Pole height contact detail (by drawing or table) indicating dimensions above grade for all other existing attachments such as other Telecommunications /

CATV contacts by name, streetlight contacts, approximate separation to lowest electrical contact (neutral, secondary, primary, transformers, unprotected electrical riser/dips, decorative banners) for both new and existing Support Strands.

4 Project Specific Drawing Telecom Requirements

Proposed *Attacher* Information

- a. Proposed cable and Support Strands clearly indicated with heavier line style and attachment method (e.g. CSA Heavy or diameter or kN)
- b. Proposed cable to be Over-lashed to existing Support Strand and indicate owner of that Support Strand (e.g. CSA Heavy or diameter or kN)
- c. Proposed/existing support strand size, strength, and sag/tension with proposed/existing cables (profile drawing acceptable) (e.g. CSA Heavy or diameter or kN)
- d. Proposed telecommunication attachments to the pole (e.g. amplifiers, power supplies, antenna, *Attacher* electrical wiring and protection, and wire routing on the pole.) (Including information such as design data)
- e. Proposed in span features and equipment such as slack storage & splice can locations

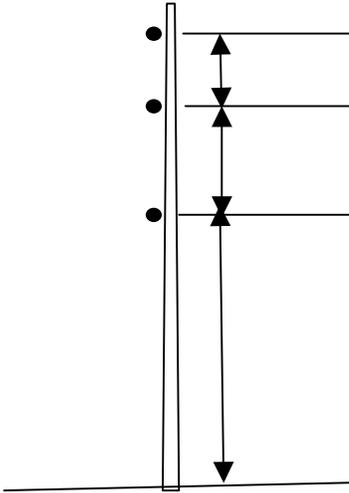


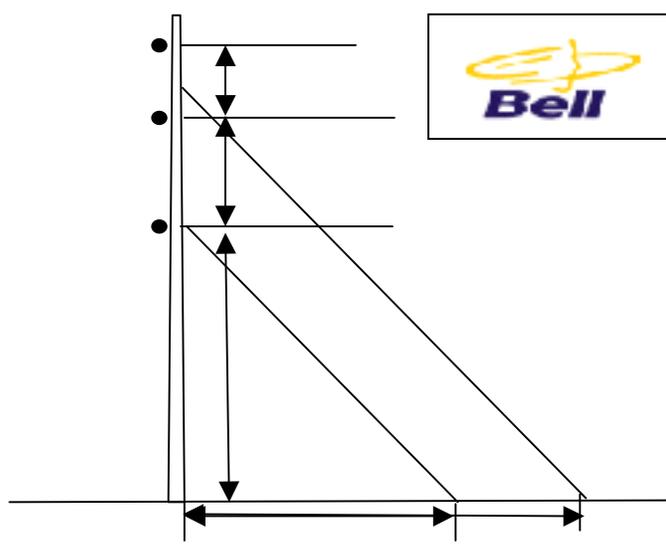
Guideline for
Third Party Attachments

Appendix A2 – Sample Telecomm Data for JUP submissions

Default Telecomm Data for JUP submissions

	Allstream	Bell	FibreTech	Rogers	Telus
Messenger					
diameter (inches)	0.375"	0.375"	0.249 inches	0.25 inches	
type/grade	galvanized / class A	galvanized / grade A	galvanized / 180 grade	galvanized	
# wire composition	7 wire	7 wire	7 strand	7 strand	
UTS (lbs)	12,000 lbs	12,000 lbs	6400 lbs	6650 lbs	
weight (lbs/ft)	.270 lb/ft		0.129lbs/ft	.121lbs/ft	
Mounting height (mtr or ft)	5.1m	5.3m			
Down Guy Steel					
diameter (inches)	0.375"	0.375"	0.249 inches	0.25 inches	
type/grade	galvanized / class A	galvanized / grade A	galvanized / 180 grade	galvanized	
# wire composition	7 wire	7 wire	7 strand	7 strand	
UTS (lbs)	12,000 lbs	12,000 lbs	6400 lbs	6650 lbs	
weight (lbs/ft)	.270 lb/ft		0.129lbs/ft	.121lbs/ft	
Anchor					
Type	8" expanding	20" single plate	8" single helix	150mm	
holding capacity (Soil Type 5)*	13,500 lbs	32,000 lbs	13,500 lbs	28913N	
lead length			determined in field by applicant		
exclusive / shared			determined in field by applicant		
Rod					
diameter (inches)	5/8"	1.0"	0.75 inches	20mm	
length (ft)	8 ft		7 ft	1700mm	
breaking strength (lbs)	12,000 lbs		16,000 lbs	28692N	
Bundle					
Weight		applicant to gather specifics on a submission by submission basis.			
Diameter		applicant to gather specifics on a submission by submission basis.			
CSA Heavy Tension (45m Ruling Span)					
		applicant to gather specifics on a submission by submission basis.			

Net X Tangent Pole Profile													
<p>Orientation</p> <p>Hydro Supply Space</p> <p>Neutral Space</p> <p>Communication Space</p>													
													
Pole Data	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 20%;">No. / Location</td><td></td></tr> <tr><td>Plan #</td><td></td></tr> <tr><td>Height</td><td></td></tr> <tr><td>Class</td><td></td></tr> <tr><td>Composition</td><td></td></tr> <tr><td>Orientaton</td><td></td></tr> </table>	No. / Location		Plan #		Height		Class		Composition		Orientaton	
No. / Location													
Plan #													
Height													
Class													
Composition													
Orientaton													
Communication Space	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 20%;">Strand</td><td></td></tr> <tr><td>Sag/Tension</td><td></td></tr> <tr><td>Bundle Size</td><td></td></tr> </table>	Strand		Sag/Tension		Bundle Size							
Strand													
Sag/Tension													
Bundle Size													
<p>Notes:</p> <p>Design</p> <p>All project drawing(s) have been assembled utilizing existing Bell Canada Construction Standards, Specifications and Equipment which comply with the requirements of CSA C22.3 No.1 Overhead Systems and CSA-C83-96(R2000) Communication and Power Line Hardware. (Meets Section 7)</p>													

Net X Anc Guy Pole Profile						
Orientation						
Hydro Supply Space						
Neutral Space						
Communication Space						
Down Guy Lead						
Pole Data	No. / Location					
	Plan #					
	Height					
	Class					
	Composition					
	Orientaton					
	Pole Appilcation					
Communication Space						
	Structure	Type	Size	Sag/Tension	Breaking	Sep./Lead
	Strand					
	Guy					
	Anchor					
	Bundle Size					
Notes:						
Design						
All project drawing(s) have been assembled utilizing existing Bell Canada Construction Standards, Specifications and Equipment which comply with the requirements of CSA C22.3 No.1 Overhead Systems and CSA-C83-96(R2000) Communication and Power Line Hardware. (Meets Section 7)						



Guideline for
Third Party Attachments
Appendix A4 – Sample Toronto Hydro Record Of
Inspection for Third Party Attachment #1

**Pole Owner
Logo Here**

**Record of Inspection
Third Party Attachment
Like for Like Construction**

Date	
Reference	

Project Information:

Project	Project	Constructio Issued	Propose Complion Date	Number Poles

Attacher Inspection Information:

Utility	Yes /No	Inspector' Name	Date Inspecte	Position	Signatur
Bell					
Roger' CAT					
TTC					
Hydro Teleco					
Viac					
Allstea					
Enbridg					
City Traffic Signs					
City Traffic Signals					
CityStreet lighting					
Othe					

Sample only

Ontario Regulation 22/04

This site has been left in a condition that presents no undue hazard to the the Technical Guidelines ed by the ESA under Ontario Regulation

Please return original document upon



Guideline for
Third Party Attachments
Appendix A4 – Sample Toronto Hydro Record Of
Inspection for Third Party Attachment #2

Record of Inspection Third Party Attachment		
<p style="text-align: center;">AS CONSTRUCTED</p> <p><input type="checkbox"/> Aerial Installation</p> <p><input type="checkbox"/> UG Installation</p> <p>With changes shown on this Drawing</p>	<p><input type="checkbox"/> North District</p> <p><input type="checkbox"/> South District</p> <p><input type="checkbox"/> East District</p> <p><input type="checkbox"/> West District</p>	
Attachment owner	Permit #	Date
	Print Name	
	Position	
	Signature	
<p><input type="checkbox"/> This is to certify that the construction as recorded in this drawing is consistent with the Approved Plan, Standard Designs, or work instruction.</p>		

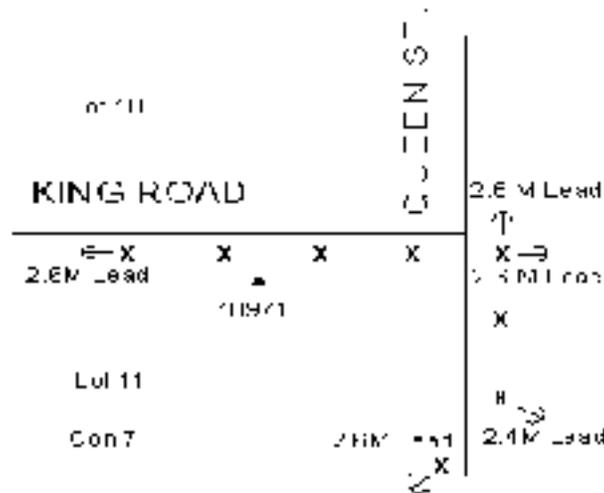
...MYDOCU-TESACOM-1VASCONS-1.DGN 19/09/2005 6:46:34 AM



APPLICATION FOR LICENSED OCCUPANCY OF POLES

*Please complete all boxes above the dotted line.

Authority/Date of first part of the agreement (if any): April Date August, 2001		License/Project name/Reference approved Permit No. of "Fee" 1071-102	
permission requested by name of Cable/Tolson company	signed: (for individual Cable Company)	title: (of individual Cable Co. Rep)	
Cable statement as follows: use specific quantities, size and nature of proposed attachment(s): <p style="text-align: center;">1-075 inch dia. Coaxial cable & 1-0.9 inch Fibre Cable on 1-6M strand, Line Tension- 21 kN, 7mm Guy Steel, Anchor bolts in meters</p> Detail Construction Detail			
address of attachment: Lots 10 - 11	city/town or municipality: Con. 7	township/region of East. Gwillimbury	county/municipality York Region

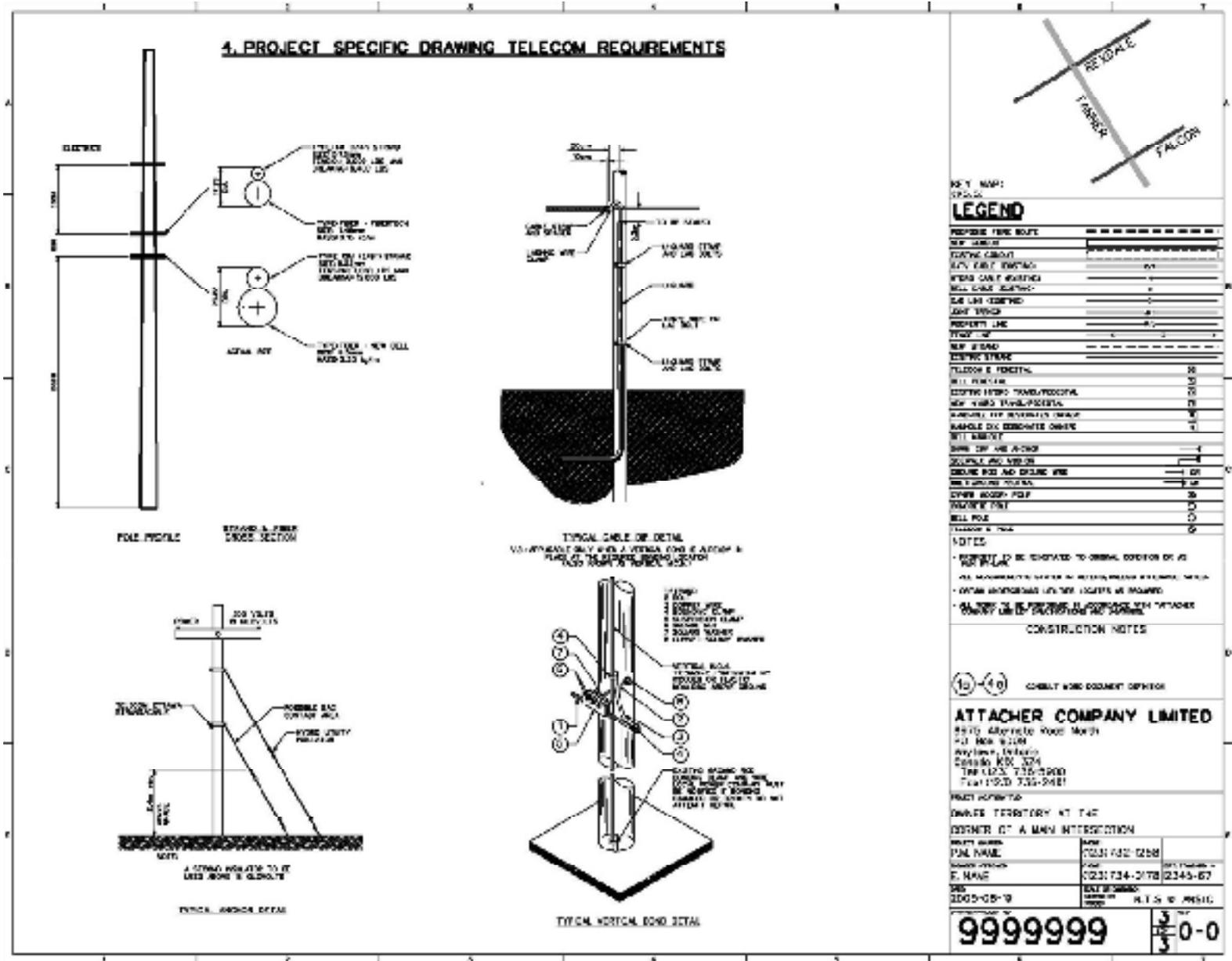


* Please enter field in the north-south-east-west (NSEW) direction in order of increasing distance from the pole.

For Internal Use Only

Approved Hydro Use: Operator at stage of design: Operations/ Front Line Manager	Type: () = Access X = Rental Pole	No. of poles on pole: 8
Operator's name: Newmarket	Phone: 2185-799	
Construction Verification:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Date:	Date received:	

Appendix A6 – Sample Drawing - Telecom Requirements



RESPONSES TO THE CARRIERS' INTERROGATORIES

1 **INTERROGATORY 21:**

2 **Reference(s):** Exhibit 8A, Tab 2, Schedule 1, page 5, lines 14:18.

3

- 4 a) Does Toronto Hydro currently have in place with Bell Canada any agreements or
5 arrangements with respect to the use of poles owned by the other party?
- 6 b) Does Toronto Hydro provide any services to Bell Canada for work done on poles
7 owned by the latter, for example, maintenance related to vegetation, storm,
8 emergency repairs?
- 9 c) If the response to (b) is yes, are the expenditures for this work included in the amount
10 of maintenance expenses reported in Toronto Hydro's accounts?
- 11 d) If the response to (b) is yes, does Toronto Hydro receive revenues from Bell Canada
12 that fully recovers the expenditures for this work?
- 13 e) Does Toronto Hydro have a reciprocal agreement with respect to pole attachments
14 with any other unaffiliated corporation? If yes, provide the same information with
15 respect to all such agreements as requested in parts (b) through (d) above.

16

17 **RESPONSE:**

- 18 a) Toronto Hydro currently has a reciprocal agreement with Bell Canada for joint use of
19 Bell Canada poles and vice versa.
- 20
- 21 b) Toronto Hydro does not provide services to Bell Canada for work done on Bell
22 Canada poles. However, in emergency response situations, Toronto Hydro crews
23 may be dispatched to respond to "wires down" calls that are initially reported as
24 involving Toronto Hydro's assets but that are subsequently identified (by crews
25 arriving at sites) as belonging to Bell Canada or other third party attachers. When
26 these situations arise, Toronto Hydro will in the interest of public safety make the

RESPONSES TO THE CARRIERS' INTERROGATORIES

1 area safe and report the conditions to Bell Canada or the appropriate third party
2 attacher.

3

4 c) No, these amounts are not captured as a maintenance expense.

5

6 d) As the costs are immaterial, Toronto Hydro is not currently receiving revenues from
7 Bell Canada (or other third party attachers) for work identified in (b).

8

9 e) Toronto Hydro also has a reciprocal agreement with Hydro One Networks Inc.
10 (“HONI”) for joint use of HONI poles and vice versa. Toronto Hydro does not
11 provide services to HONI for work done on HONI poles.