North Rosedale Ratepayers Association (NRRA) INTERROGATORY #1 List 3

Interrogatory

Reference:
1) Section 4.8 - Key Issues Summary and Hydro One Responses

Preamble:
Table 4-2 contains very general "Hydro One Responses" and fails to address a number of serious concerns.

Question/Request:
Please be more specific about the following:

a) ROUTE SELECTION
(i) Requested Plans and/or Surveys showing full details of the existing use of the relevant portion of the CPR corridor with dimensions have not been provided.
(ii) Details of "existing below-ground infrastructure" on Shaftesbury Avenue and Yonge Street have not been provided.
(iii) Details of "easement requirements" for trenching alternative have not been provided.

b) COST OF BURYING TRANSMISSION LINE
(i) Detailed cost comparisons for the various routing alternatives for both the trenching option and for the tunneling option have not been provided in sufficient detail to assess the merits of each approach.
(ii) Additional detail is required on the differences between the two approaches from the construction perspective: type, operating time and cost of equipment used and labour component in terms of hours and cost.
(iii) In Exhibit C, Tab 1, Schedule 5, to which we have been referred, Hydro One states that trenching costs are estimated to be $12,300,000 per kilometer and tunneling costs are estimated to be $12,500,000 per kilometer, but the basis for such estimates has not been provided.
(iv) In Exhibit C, Tab 1, Schedule 5, it is stated that, since the original proposal for this project, real estate costs have increased by 395 %, contingency allowances have increased by 290% and interest costs have increased by 368%, but the basis for these statements has not been provided.

Response

a)

i) Please see the attached CD for the plans and/or surveys showing Hydro One's existing uses on the CPR corridor. Hydro One does not have plans or surveys showing existing uses of other parties on the CPR corridor.

ii) Please see Attachment 2 for details of the existing below-ground infrastructure in the vicinity of Shaftesbury Ave. and Yonge St.

iii) Please see Appendix A below for details of easement requirements for the trenching alternative.

b) (i), (ii) (iii) Please see Table 1 below which shows a detailed cost comparison of trenching vs. tunneling for the preferred routing alternative. Hydro One does not have detailed cost comparisons for the other routing alternatives, as detailed costs were not prepared for alternatives that were rejected during the evaluation process.

(1) (iv) With respect to the basis for the increase in Real Estate costs, please see Note 1 on page 4 of Exhibit C, Tab 1, Schedule 4. As indicated in the note:

> "Real estate costs are significantly higher than anticipated in 2007, as the current proposal is based on an in-depth assessment of easement requirements and land values compared with the 2007 estimate, which was preliminary in nature. As well real estate values in Toronto have generally increased since 2007."

Additionally, considerable detail on the real estate requirements and costs (including market value assumptions) for both the trenching and tunneling alternative are included in the response to a (iii) above.

With respect to the basis for the increase in contingency, please see part c) of Exhibit C, Tab 1, Schedule 12 for information regarding the amount included as contingency in the current proposal. As indicated in that response, the amount included for contingency in the current proposal was informed by Hydro One's experience on the John x Esplanade project. That experience was not available at the time the original proposal was prepared in the 2005/2006 timeframe. As well the original proposal was for the trenching alternative, not tunneling and as such the contingency amounts for each are not directly comparable. Finally, the original cost proposal was preliminary in nature using budgetary costs compared with the detailed cost estimate that has been prepared for the current proposal.

With respect to the basis for the increase in interest costs, please see the table in part h) of Exhibit C, Tab 1, Schedule 4. As indicated in that table, interest costs have increased for the following reasons:

> "Higher project costs, longer construction time and higher interest rates result in the increase in costs."

Interest during construction (Allowance for Funds used During Construction or AFUDC) is calculated for costing and regulatory purposes based on the construction cost balance over the construction period. An increase in the estimated construction cost and a longer forecast construction period, coupled with a higher forecast interest rate, will automatically lead to an increase in the forecast amount of interest during construction included for the project, as is the case for the Midtown project. Please note that the interest rate that Hydro One charges to construction costs is an OEB-prescribed rate (AFUDC rate) which is re-set quarterly by the OEB, based on an index of bond yields. Hydro One's forecast AFUDC rate used for cost estimating purposes is based on a forecast of that index.

Table 1

Cost of Burying Cables - Comparison				
Trench Option				**$M**
Birch x Bayview (install 2 cables in concrete duct by trench construction)	1	Yonge St Crossing	Soft Ground Tunnel	5.8
	2	U/G Trench/Duct (Civil Material)		8.8
	3	Civil labour includes directional drilling		4.0
	4	15% escalation of direct cost + incremental real eastate cost ($23.6M x 5%)		3.5
	5	Real Estate Costs	9m easement required	11.0
	6	Engineering		1.7
	7	Project Management		0.7
	8	Cable Supply and Install		15.0
	9	Total		50.5
Notes: *Soft Ground Tunnel crossing Yonge St cost including liner and shafts was by budgetary price from contractor.* *Civil material includes road building materials, backfill materials, concrete for duct, rebar, conduit, etc.* *Civil labour includes trenching, road building, forming duct, backfilling, flagging on railway, traffic control, material handling.* *Price per kilometer was calculated for the trench direct cost using civil costs ($18.6) (lines 1,2,3), incremental real estate cost ($5M) and escalation of 15% ($3.5M) for a cost of $27.1M/2.2km = $12.3M/km* *Incremental Real Estate Cost of $5M for trench vs. tunnel is added to direct cost for calculation of trench per kilometer to make costs comparable to tunnel cost per kilometer which does not include real estate.*				
Tunnel Option				**$M**
Bayview x Birch (install 2 cables in deep rock tunnel) Civil price includes stairs in main shaft, ventilation in main shaft - 1 main shaft, 2 exit shafts and 2 rescue shafts	1	Deep Rock Tunnel (Civil)	escalation included in rock tunnel	27.5
	2	Cable Supply and Install		15.0
	3	Real Estate Costs	5m easement required (55.5% of 9m easem	6.0
	4	Terminations @ Jcts.	Included with cable replacement	
	5	Engineering		1.7
	6	Project Management		0.5
	7	Total		50.7
Notes: *Deep Rock Tunnel cost including liner and shafts was by budgetary price from contractor.* *Price per kilometer was calculated for the tunnel direct cost $27.5M/2.2km = $12.5M/km.*				

Appendix A

MIDTOWN PROJECT: REAL ESTATE COST ESTIMATION

Methodology

Real estate costs have been estimated for a 6 meter underground easement and then converted to the 5 meter equivalent required for a tunnel and the 9 meter equivalent required for a trench. The land requirements for each section of the line between Bayview and Birch (the underground part of the Midtown project) are shown below. Costs are based on estimated land market values ranging between $800k and $13M per acre for the various sections.

Moorehill Drive to Moore Park Ravine

Area Requirements: Underground 6 meter easements from Moorehill Drive, along the CPR corridor to the rear Moorehill Drive, to Moore Park Ravine

Affected Landowners: CPR, Toronto District School Board, City of Toronto

Route Requirements

Moorehill Drive to Moore Park Ravine, 100 m by 6 m easement in rear of properties along Moorehill Drive:

600 m2 or 0.148 acres

Moore Park Ravine, 100 m by 6 m easement:

600 m2 or 0.148 acres

Construction Requirements

Construction Access Easement of 0.05 acre property fronting on Bayview Heights Drive, beside the Bayview JCT site:

0.05 acres

Access Roads

Access off Bayview Ave south to Bennington Heights park 300m x 6 m access road, 3 year term:

1800 m2 or 0.445 acres

Access to Bayview JCT to from Bennington Heights 300 m x 6 m access road, 3 year term:

1800 m2 or 0.445 acres

Moore Park Ravine to Rosedale Heights Drive

Area Requirements: Underground 6 meter easements from Moore Park Ravine, along the CPR corridor to the rear of properties along Rosedale Heights Drive, to Hydro One property on Old Bridle Path.

Affected Landowners: CPR, City of Toronto

Route Requirements

Moore Park Ravine to Old Bridle Path, 410 m by 6 m easement on CPR corridor to the rear of properties along Rosedale Heights Drive:

2460 m2 or 0.608 acres

David Balfour Park

Area Requirements: Underground 6meter easements from Mount Pleasant Road crossing David a Balfour Park to CPR corridor.

Affected Landowners: City of Toronto, TRCA

Route Requirements

Mount Pleasant Road to David a Balfour Park 150 m by 6 m easement:

900 m2 or 0.222 acres

Crossover under bridge within David Balfour Park 20 m by 6 m easement:

120 m2 or 0.029 acres

Construction Requirements

Temporary construction area 30 m x 40 m to accommodate tunnel:

1200 m2 or 0.297 acres

David Balfour Park to Birch JCT

Area Requirements: Underground 6 meter easements from David Balfour Park to Shaftesbury

Affected Land Owners: Private

Route Requirements

From David Balfour Park paralleling CPR Corridor to Summerhill/ Shaftsbury Road Allowance 80 m by 6 m easement:

480 m2 or 0.11 acres

Real Estate Costs for Bayview x Birch Cable Section with 6m Easement

$6,842,716.00 (based on real estate requirements per above and per acre MV estimates).

Real Estate Costs for Bayview x Birch Cable Section with 5m Easement required for tunnel

5m easement is suitable for 3m tunnel
6m easement cost x 83.5% = $**5,713,668***

** Cost above for the Bayview x Birch section of the line differs from the real estate cost of $9.9M included in Exhibit B, Tab 4, Schedule 2, which is for the entire project.*

Real Estate Costs for Bayview x Birch Cable Section with 9m Easement required for trench

9m easement is suitable for concrete duct option
6m easement cost x 150% = **$10,264,074**
(In addition to above cost the trench option would require an easement from Balfour Park to Yonge St. as Shaftesbuty Ave. road allowance space is unavailable at trench depths)

Attachment 1 can be found on the attached CD.


YONGE
STREET
AVENUE
SHAFTESBURY
AVENUE
LANE
SHAFTESBURY
PLACE
SHAFTESBURY
TACOMA
AVENUE
AVENUE
OTTAWA
LANE
Y-41