CITY OF VAUGHAN

EXTRACT FROM COUNCIL MEETING MINUTES OF APRIL 23, 2013

Item 4, Report No. 3, of the Priorities and Key Initiatives Committee, which was adopted without amendment by the Council of the City of Vaughan on April 23, 2013.

4 UNDERGROUND RELOCATION OF HYDRO TRANSMISSION LINES VIVA RAPIDWAY PROJECT – H2 VMC SEGMENT WARD 4

The Priorities and Key Initiatives Committee recommends approval of the recommendation contained in the following report of the City Clerk on behalf of the Vaughan Metropolitan Centre Sub-Committee, dated April 15, 2013:

Recommendation

The City Clerk, on behalf of the Vaughan Metropolitan Centre Sub-committee, forwards the following recommendations from its meeting of April 11, 2013:

1) That staff explore funding options through Federal/Provincial infrastructure grants for the undergrounding of hydro transmission lines and utilities along Highway 7 and Jane Street in the Vaughan Metropolitan Centre;

2) That the recommendation contained in the following report of the Commissioner of Engineering and Public Works and the Commissioner of Planning, dated April 11, 2013, be approved and referred for consideration by Council;

3) That the presentation by the Director of Development and Transportation Engineering, and C4, presentation material, be received; and

4) That the following deputations be received:

    1. Mr. Giovanni Marcelli, Potestas Properties, Jane Street, Concord; and
    2. Ms. Paula Bustard, SmartCentres, Applewood Crescent, Vaughan.

Report of the Commissioner of Engineering and Public Works and the Commissioner of Planning, dated April 11, 2013

Recommendation

The Commissioner of Engineering and Public Works, and the Commissioner of Planning, recommends:

1. THAT staff work with York Region Rapid Transit Corporation, York Region, PowerStream, utility companies, and the landowners to pursue the undergrounding of the hydro transmission lines along Highway 7 and Jane Street in the VMC;

2. THAT staff explore funding options for the undergrounding of the hydro transmission lines and utilities on the north side of Highway 7 west of Jane Street in conjunction with the VivaNext H2-VMC Rapidway Project including cost-sharing agreements with key stakeholders, and report back to the Vaughan Metropolitan Centre Sub-Committee Meeting in June 2013;

3. THAT the Region of York be requested to protect sufficient space along the VivaNext Rapidways within Regional Centres and Corridors to provide for the undergrounding of the hydro transmission and utility lines in the future to the satisfaction of the City and PowerStream; and

4. THAT a copy of this report be forwarded to the Region of York, York Rapid Transit Corporation and PowerStream.

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Contribution to Sustainability

The H2-VMC Viva Rapidway project will provide higher order transit infrastructure to support compact urban form and offer an alternative mode of transportation to the single occupant vehicle. Rapid transit in the City will stimulate the establishment of transit orientated development, especially in the Vaughan Metropolitan Centre.

Economic Impact

There are no immediate economic impacts associated with the recommendations of this report.

Communications Plan

There is no specific communication plan associated with this report other than to forward a copy of this report to York Region, York Region Rapid Transit Corporation and PowerStream.

Purpose

The purpose of this report is to respond to Council's direction to provide information on the opportunity for the underground relocation of the existing hydro transmission lines along the H2-VMC section of the Viva Rapidway project.

Background - Analysis and Options

The Vaughan Metropolitan Centre Sub-Committee, at its meeting on February 14, 2013, directed staff to report to the next Sub-Committee meeting on the undergrounding of utilities along Highway 7.

Construction of the York Region VivaNext Bus Rapidway is underway

When completed, the VivaNext Bus Rapidway project will establish 41 kilometres of rapid transit corridor along Highway 7, Yonge Street and Davis Drive. The Rapidway is expected to be completed by 2018 and cost an estimated $1.4 billion. This project is part of the first wave of the Metrolinx Big Move.

The construction of the Rapidway project is being phased. The first phase of the project in Vaughan extends along Highway 7 from Edgeley Boulevard to approximately Bowes Road. This phase of the project is referred to as H2-VMC and is scheduled to be completed concurrently with the opening of the Toronto-York Spadina Subway Extension in 2016.

During the initial stages of the Rapidway project, York Region Rapid Transit Corporation and PowerStream completed a hydro line relocation study

The construction of the Rapidway necessitates the widening of the existing roadway corridor and the relocation of many of the existing services including the hydro distribution lines. Accordingly, in February 2009, York Region Rapid Transit Corporation (YRRTC) and PowerStream released a consultant report (Giffels Associates Limited/IBI Group) that investigated the technical options and impacts of relocating the existing hydro lines using overhead pole line construction or underground plant. The report also examined in detail the potential mechanisms for funding the incremental costs to undergrounding the hydro lines in key urban sections of the Rapidway.

On March 26, 2009, Regional Council received Report No.4 of the Rapid Transit Public/Private Partnership Steering Committee on the matter entitled "Opportunities for Financing the Underground relocation of Power Transmission Lines Along the Viva Rapidways". A copy of this report is included as Attachment No.1 to this report.

…/3

The incremental cost to underground the hydro lines in key urban locations in Vaughan was estimated at over $46 million

Based on input from Vaughan staff, the 2009 hydro relocation impact study examined three specific segments along the Rapidway in Vaughan that were considered to be the most desirable locations for hydro undergrounding. These three segments were:

- Highway 7 from 200 metres east of Creditstone to Ansley Grove Road (2.7 km)
- Highway 7 from Pine Valley Drive to 500 metres west of Kipling Avenue (2.0 km)
- Centre Street from Bathurst Street to Dufferin Street (1.9 km)

Based on the findings of the study, the incremental cost associated with burying the hydro lines in the above noted segments was estimated at approximately $46 million. This estimate was based on the assumption that the capital cost of undergrounding hydro is seven times more expensive than overhead construction ($1.0 million/km verses $7.0 million/km).

A full suite of funding options were examined as part of the hydro line relocation study

The 2009 IBI Group hydro line relocation study examined eight potential funding sources and mechanisms for the incremental cost associated with undergrounding the hydro lines. In addition, the City of Markham recently investigated three further funding options including cost sharing agreements between key stakeholders. A summary of these potential funding mechanisms is provided in Attachment No.2 to this report.

YRRTC is proceeding based on an overhead pole line construction

Based on the findings of the 2009 IBI Group hydro line relocation study, and the lack of identified funding for the incremental cost of burring the hydro transmission lines, YRRTC is proceeding to relocate the existing hydro lines along the Rapidway corridor using overhead pole line construction.

Construction of the H2-VMC VivaNext Rapidway in Vaughan is scheduled to commence in early Summer 2013

The first stage of the VivaNext Rapidway in Vaughan extends along Highway 7 from approximately Edgeley Boulevard to Bowes Road, and is referred to as the H2-VMC segment. This phase of the project is scheduled to be completed concurrently with the opening of the Toronto-York Spadina Subway Extension in 2016.

The design of the H2-VMC segment is almost complete. YRRTC staff has advised that the construction of the road and Rapidway works in H2-VMC will be carried out in three stages due to property and construction coordination considerations. The three stages and their respective tentative construction start date are as follows:

Stage 1: Highway 7 from Jane Street to CN Bridge (June 2013)
Stage 2: Highway 7 from CN Bridge to Bowes Road (September 2013)
Stage 3: Highway 7 from Jane Street to Edgeley Boulevard (June 2014, coordinated with the subway construction)

One of the first steps in the construction program is the relocation of the existing utilities starting with the hydro lines.

Segments of the existing hydro pole lines in the VMC are key elements of the electrical distribution system

Based on a recent meeting with PowerStream, staff was informed that the primary hydro system servicing the VMC area extends along Jane Street and then travels easterly along the north side of Highway 7. This primary system comprise of five main circuits. A smaller two circuit 27.6 KV system extends along the north side of Highway 7 west of Jane Street to beyond Highway 400.

Underground the existing hydro lines along Highway 7 east of Jane Street can no longer be accommodated in the VivaNext project, without significant delays, and associated additional delay costs

Based on the VivaNext Rapidway project schedule, PowerStream has completed the design of the hydro pole relocation for the first stage of the project, which is Highway 7 from Jane Street to CN Bridge. The relocation of these hydro poles is expected to start in the next couple of months. Because of the number of existing circuits on this section of the corridor and to maintain minimum safety clearance requirements, the hydro lines on Highway 7 east of Jane Street are proposed to be split and relocated on both the north and south sides of the road. The hydro lines will be relocated onto new wood poles, which will be approximately 90 feet in height.

Given the advanced stage of this work, YRRTC staff has advised that converting to an undergrounding option for this segment of Highway 7 will result in a minimum nine month delay in the project and expose YRRTC to the potential for contractor delay claims ranging between $2.0 and $5.0 million. In addition, the funding source for the incremental cost to underground the hydro lines, estimated at approximately $10 million, would need to be identified immediately.

Accordingly, undergrounding the hydro lines along Highway 7 east of Jane Street cannot be done at this time without significantly delaying the Rapidway project and incurring considerable additional expense.

A window of opportunity exists to pursue the undergrounding of the hydro lines on Highway 7 west of Jane Street.

The design of the hydro relocation for Stage 3 of the Rapidway project (Highway 7 from Jane Street to Edgeley Boulevard) is still in the preliminary stages. Given the relocation of the hydro poles cannot commence until the construction of the subway within the Highway 7 corridor is substantially completed in the summer of 2014, there is an opportunity to explore the undergrounding option in this segment of Highway 7 further.

PowerStream staff has advised that the current plan is to relocate the existing hydro lines, consisting of two 27.6 KV circuits, on the north side of Highway 7 and make provisions for an additional two circuits when needed in the future to service the development in the VMC. In addition, the TYSSE project has already committed to pay the incremental cost of undergrounding the hydro lines within subway corridor. Accordingly, the current relocation plan is to have a pole line on the north side of Highway 7 from Jane Street to Millway Avenue, underground hydro across the subway corridor, and then a pole line westerly beyond the subway corridor as shown on Attachment No.3

Based on a cursory review, PowerStream staff believes it is technically feasible to underground the entire line west of Jane Street within the corridor currently set aside for the pole line. After accounting for the funds that have already been committed by YRRTC and PowerStream for the planned hydro pole line relocation, the additional cost to underground this system is roughly estimated at $5.0 million.

One of Vaughan's city building objectives continues to be that hydro lines along the Rapidway in the VMC be undergrounded

There are many urban design benefits of undergrounding the hydro lines including visual aesthetics, less cluttered streetscapes and pedestrian zones, and eliminating the need for substantial horizontal/vertical safety clearances between aerial hydro lines and adjacent structures/trees. Accordingly, one of Vaughan's city building objectives is to have the hydro lines buried in the VMC to provide a streetscape that is compatible with a downtown urban core environment.

Underground hydro may reduce the building setbacks along Highway 7 and provide a streetscape that is conducive to urban downtown.

According to electrical safety codes, a minimum clearance of 3.0m must be maintained between an aerial hydro lines and an adjacent building as shown on Attachment No.4. If the hydro lines were undergrounded then this clearance requirement would no longer apply.

The proposed alignment of the hydro pole line varies along Highway 7 as does the location of adjacent buildings. If the hydro lines were buried, it is possible that some buildings could be set closer to Highway 7 resulting in the potential for larger building foot prints and a better streetscape. Accordingly, the adjacent landowners may be willing to pay the incremental cost of undergrounding the hydro to derive these benefits.

Markham and Newmarket are also reviewing the undergrounding of hydro along the Rapidway

Both the City of Markham and the Town of Newmarket are currently reviewing the opportunities to underground the hydro lines along their respective segments of the Rapidway. In their review to date, funding the incremental cost of undergrounding has been the biggest challenge. The Town of Newmarket is currently looking at protecting a corridor along the Rapidway to facilitate the undergrounding of the hydro in the future.

The undergrounding of hydro in the VMC requires further review

Given the construction staging of the Rapidway, a window of opportunity exists to pursue the underground the hydro along Highway 7 west of Jane but it requires additional technical review and an adequate source of funding. Accordingly, staff is recommending that further consultation take place between City staff and the various stakeholders, and that a supplementary report be brought forward to the VMC Sub-Committee meeting in June 2013.

Going forward, York Region should be requested to protect a corridor of sufficient space along the Rapidway in the Regional Centres and Corridors to provide for the undergrounding of the hydro lines in the future to the satisfaction of the City and PowerStream.

Relationship to Vaughan Vision 2020

In consideration of the strategic priorities related to Vaughan Vision 2020, the recommendations of this report will assist in:

- The pursuit of excellence in service delivery;
- Planning and managing growth, and economic vitality; and
- The demonstration of leadership and promotion of effective governance.

Specific Strategic Plan Initiatives applicable to the recommendations made in this report include Vaughan's corporate priorities to support and plan high capacity transit at strategic locations throughout the City. Accordingly, this report is consistent with the priorities previously set by Council.

Regional Implications

York Region Rapid Transit Corporation is the proponent of the H2-VMC Rapidway project. The undergrounding of utilities is consistent with the Region of York Official Plan policies so the Region should provide sufficient space in their right-of-ways to accommodate undergrounding within Regional Centres and Corridors.

Conclusion

York Region Rapid Transit Corporation (YRRTC) and PowerStream released a consultant report (Giffels Associates Limited/IBI Group) that investigated the technical option and impacts of relocating the existing hydro lines using overhead pole line construction or underground plant. Based on the findings of this study and the substantial cost associated with undergrounding hydro systems, YRRTC has proceeded with the design of the Rapidway using overhead pole line construction.

Given the advanced stage of the design and construction of the Rapidway project, it is not feasible to underground the existing hydro lines along Highway 7 east of Jane Street without seriously impacting the schedule of the Rapidway project and exposing the City and YRRTC to substantial contractor delay claims.

However, there is an opportunity to explore the undergrounding, and options for the incremental funding required, of the hydro line along the north side of Highway 7 west of Jane Street within the limits of the VMC. Should Council wish staff to pursue this opportunity further, then the recommendations of this report should be adopted.

Attachments

Attachment 1: Report No 4. of the Rapid Transit Public/Private Partnership Steering Committee, adopted by Regional Council on March 26, 2009 Location Plan
Attachment 2: Summary of Funding Mechanisms
Attachment 3: Hydro location Plan
Attachment 4: Plan showing electrical safety clearance requirements
Attachment 5: Communication C4, presentation material.

Report Prepared by:

Andrew Pearce, Director of Development/Transportation Engineering, Ext 8255

(A copy of the attachments referred to in the foregoing have been forwarded to each Member of Council and a copy thereof is also on file in the office of the City Clerk.)

PRIORITIES AND KEY INITIATIVES COMMITTEE **APRIL 15, 2013**

UNDERGROUND RELOCATION OF HYDRO TRANSMISSION LINES
VIVA RAPIDWAY PROJECT – H2 VMC SEGMENT
WARD 4

The City Clerk, on behalf of the Vaughan Metropolitan Centre Sub-committee, forwards the following recommendations from its meeting of April 11, 2013:

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Recommendation

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Contribution to Sustainability

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Markham and Newmarket are also reviewing the undergrounding of hydro along the Rapidway

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The undergrounding of hydro in the VMC requires further review

Given the construction staging of the Rapidway, a window of opportunity exists to pursue the underground the hydro along Highway 7 west of Jane but it requires additional technical review and an adequate source of funding. Accordingly, staff is recommending that further consultation take place between City staff and the various stakeholders, and that a supplementary report be brought forward to the VMC Sub-Committee meeting in June 2013.

Going forward, York Region should be requested to protect a corridor of sufficient space along the Rapidway in the Regional Centres and Corridors to provide for the undergrounding of the hydro lines in the future to the satisfaction of the City and PowerStream.

Relationship to Vaughan Vision 2020

In consideration of the strategic priorities related to Vaughan Vision 2020, the recommendations of this report will assist in:

- The pursuit of excellence in service delivery;
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Specific Strategic Plan Initiatives applicable to the recommendations made in this report include Vaughan's corporate priorities to support and plan high capacity transit at

strategic locations throughout the City. Accordingly, this report is consistent with the priorities previously set by Council.

Regional Implications

York Region Rapid Transit Corporation is the proponent of the H2-VMC Rapidway project. The undergrounding of utilities is consistent with the Region of York Official Plan policies so the Region should provide sufficient space in their right-of-ways to accommodate undergrounding within Regional Centres and Corridors.

Conclusion

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Given the advanced stage of the design and construction of the Rapidway project, it is not feasible to underground the existing hydro lines along Highway 7 east of Jane Street without seriously impacting the schedule of the Rapidway project and exposing the City and YRRTC to substantial contractor delay claims.

However, there is an opportunity to explore the undergrounding, and options for the incremental funding required, of the hydro line along the north side of Highway 7 west of Jane Street within the limits of the VMC. Should Council wish staff to pursue this opportunity further, then the recommendations of this report should be adopted.

Attachments

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Report prepared by:

John Britto, Assistant City Clerk

Respectfully submitted,

Jeffrey A. Abrams, City Clerk

4

OPPORTUNITIES FOR FINANCING THE UNDERGROUND RELOCATION OF POWER TRANSMISSION LINES ALONG THE VIVA RAPIDWAYS

The Rapid Transit Public/Private Partnership Steering Committee recommends the following report dated February 26, 2009, from the Vice-President, York Region Rapid Transit Corporation be referred back to staff to allow senior staff to consult on the findings with the Chief Administrative Officers and Commissioners in the City of Vaughan, and Towns of Richmond Hill, Markham and Newmarket and that staff report back to a future meeting of the Committee.

1. RECOMMENDATIONS

It is recommended that:

1. The Regional Clerk circulate this report to local municipalities for their review and comment.

2. Staff report back to Council on the outcome of the municipal comments and provide recommendations as to next steps on the hydro line relocation strategy along the Viva rapidway corridors.

2. PURPOSE

This report provides background and some of the supporting analysis of a study jointly led by the York Region Rapid Transit Corporation and PowerStream and undertaken by Giffels Associates and their associated consulting team to determine the opportunities for alternative sources of financing for the underground relocation of the power transmission lines along those Viva rapidways that lie within the PowerStream boundaries.

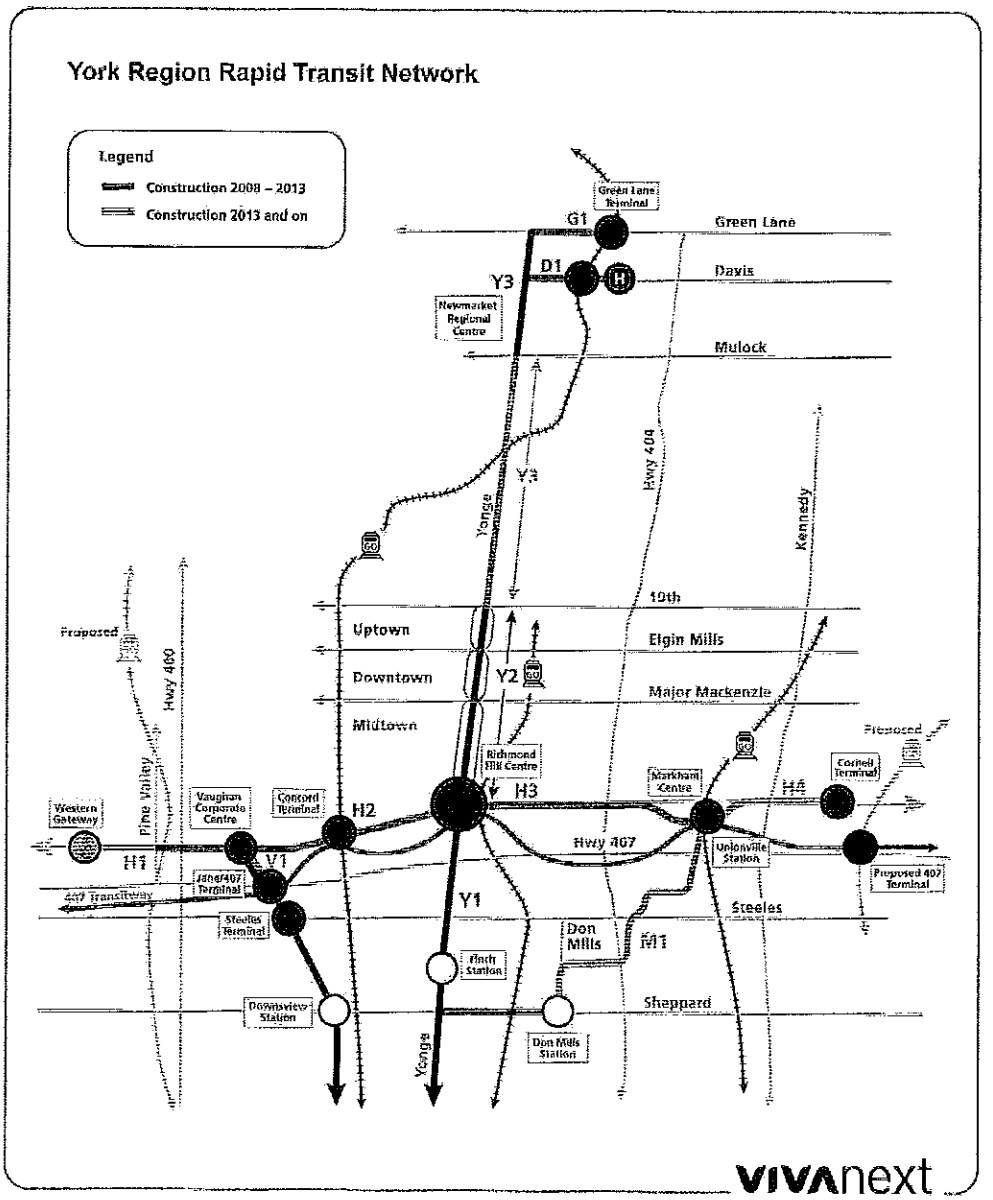
While the study excludes the Newmarket segments of rapidways, the findings of this report are equally applicable to any electrical distribution company.

The study did not consider the implementation of rapidways along the section of Yonge St. between Highway 7 and Steeles, since it is now proposed that this section will be served by an extension to the Yonge-University-Spadina Subway, with an extension from Finch station to the Richmond Hill Centre. The subway may provide other opportunities for undergrounding along the Yonge corridor that would be the subject of a future report.

3. BACKGROUND

Viva Phase 1 rapid transit runs today in mixed traffic in four key corridors. As shown in Figure 1 vivaNext includes the construction of 67 kilometres of surface rapid transit in these same corridors, integrated with the extension of the Yonge Street and Spadina subway lines north to the Richmond Hill Centre and Vaughan Corporate Centre.

Figure 1
York Region Rapid Transit Network – vivaNext



In June 2008, the York Region Rapid Transit Corporation and PowerStream Inc. commissioned a study to guide the planning of power plant relocations to accommodate road widening for vivaNext. The study focused on analysis of potential mechanisms for funding the incremental costs to install electrical power distribution lines and equipment underground (hereafter referred to as "undergrounding") in lieu of overhead construction. The study explored numerous avenues of law, regulations, governing body rulings, industry practice and precedents related to funding the installation of underground distribution systems. The results of that study are discussed in Section 4.

4. ANALYSIS AND OPTIONS

The Giffels Study assessed a range of relocation options in consideration of financial, regulatory, legal and political impacts

A Request for Proposals was issued in March 2008, requesting proposals for a study to guide the planning of power transmission relocations resulting from the road widening necessary to accommodate the rapidways. Several proponents responded and after review and evaluation a project team led by Giffels Associates Ltd./IBI Group, in consultation with Navigant Consulting, and Gowling Lafleur Henderson LLP were selected to conduct the study, and a contract was awarded at the end of June 2008.

The study focused on the following areas:

1. Technical analysis of the options available to PowerStream for plant relocation at each of 11 identified sections of the planned rapidways, and comparing the costs of undergrounding at each location with undergrounding only at key areas.

2. Financial impacts: an assessment of the capital requirements and funding strategies for PowerStream to relocate plant to accommodate the vivaNext system and the Region's Growth Management strategy and urban design policies and guidelines.

3. Regulatory impacts: an assessment of whether or through what strategies the capital costs could be approved by the Ontario Energy Board (OEB) for inclusion in the PowerStream rate base, and how a by-law requiring undergrounding would be viewed by the OEB in such application.

4. Legal impacts: an assessment and opinion of Ontario's Places to Grow Act, 2005, and other available regulations or mechanisms that could be used as strategies to develop funding sources for undergrounding.

5. Political impacts: including an assessment of municipal desire for undergrounding, and a report on any prior decisions of the Ontario Energy Board on the same or similar proposals from gas or electricity distributors.

The study initially excluded the Newmarket area, which is not supplied by PowerStream, but rather by Newmarket Hydro. An addendum to the original study to include recommendations for the rapid transit corridors in Newmarket is underway.

Funding for undergrounding hydro lines is not included as part of provincial support for vivaNext

The budget prepared and submitted to Metrolinx for the rapidway construction assumes "like for like" relocation with power transmission lines that are relocated to remain above ground. In this study it is not anticipated that provincial money allocated for transit would fund undergrounding, and it was assumed that no other provincial money would be available.

Key stakeholders were consulted during the study

The consulting team consulted a number of key stakeholders during the study, including the Ontario Energy Board, York Region, local municipalities, Hydro One Networks Inc., and the coalition of Large Distributors and developers.

Municipalities were asked to identify their priority sections for undergrounding and these have been mapped against corresponding plans for rapidways

Municipalities were interviewed to determine their desire for undergrounding, and priority sections of Highway 7 and Yonge St. were identified where the municipalities most desired the undergrounding of electrical distribution facilities. These sections were evaluated against those sections identified for road widening for the Viva rapidways.

The sections identified and the corresponding segments of rapidways are shown in Table 1. The table also shows the estimated incremental costs by section and by municipality for the undergrounding when compared to above ground relocation.

VivaNext does not preclude future burial of hydro lines

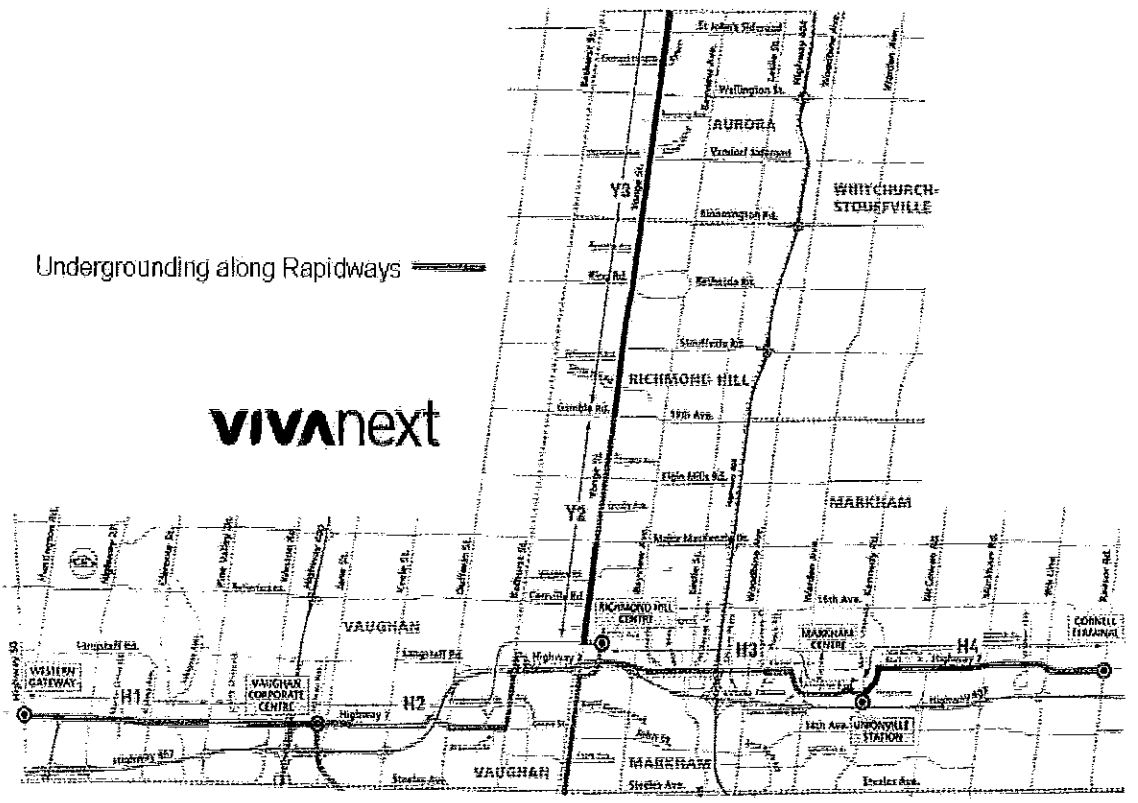
The vivaNext rapidways project is moving forward on the basis of not burying hydro lines. However, it should be noted that the construction of viva rapidways does not preclude the possibility of burying hydro transmission lines along rapidway corridors in the future.

Table 1
Municipal Preferences and alignment with Rapidways

Areas of undergrounding requested by municipalities		Distance	Corresponding to Rapidways	Incremental costs for undergrounding	
		km.	km.	$M	$M
Town of Markham	H3 - Woodbine Ave to South Town Centre Blvd.	1.6	1.6	4.42	9.94
	H4 - 9th Line to Reesor Rd.	2	2	5.52	
City of Vaughan	H2 - Pine Valley Drive to 500 m. west of Kipling Ave.	2.5	1.9	11.40	39.60
	H2 - 200 m. east of Creditstone Rd. to Ansley Grove Rd.	3.3	2.7	16.20	
	H2 - Centre St - Dufferin St. to Bathurst St.	2	2	12.00	
Town of Aurora	Y3 - 1 km. south of St John's Side Rd. to 0.5 km. north of Wellington Rd.	1.5	1.5	6.57	6.57
Town of Richmond Hill	H3 - Bayview Ave. to Valleymede Dr.	1.2	0.9	2.48	22.98
	Y2 - Trayborn Dr. to Elgin Mills Rd.	0.5	0.5	5.50	
	Y2 - Highway 7 to Major Mackenzie Dr.	4	4	22.00	
		18.6	17.1	86.09	86.09

The segments corresponding to rapidways are illustrated in Figure 2 below.

Figure 2
Municipal Preferences and Alignment with Rapidways



Certain clearance requirements are required between the transmission lines and any built form

The technical review included the Electrical Safety Association (ESA) regulations and the Ontario Highway Safety Manual. The ESA requires a clearance of 5.5m from the centreline of the pole to any adjacent building to account for:

- 1 metre separation of power cable from pole
- 1.5 metre potential sway of power cable
- 3 metre safety clearance from power cable

The Ontario Highway Safety Manual requires that where the speed limit is 50 kph, and the roadway is bounded by a curb, then the hydro pole should be a minimum 0.5 metres from the edge of the road. Where the posted speed limit is 60-70 kph, then the separation must be a minimum 3 metres.

These setbacks contemplate that it is possible for the first storey of a building to be built right up to the edge of the boulevard and that anything above the first storey would require an additional setback to provide the clearance necessary from the energised transmission line to accommodate the clearances noted above.

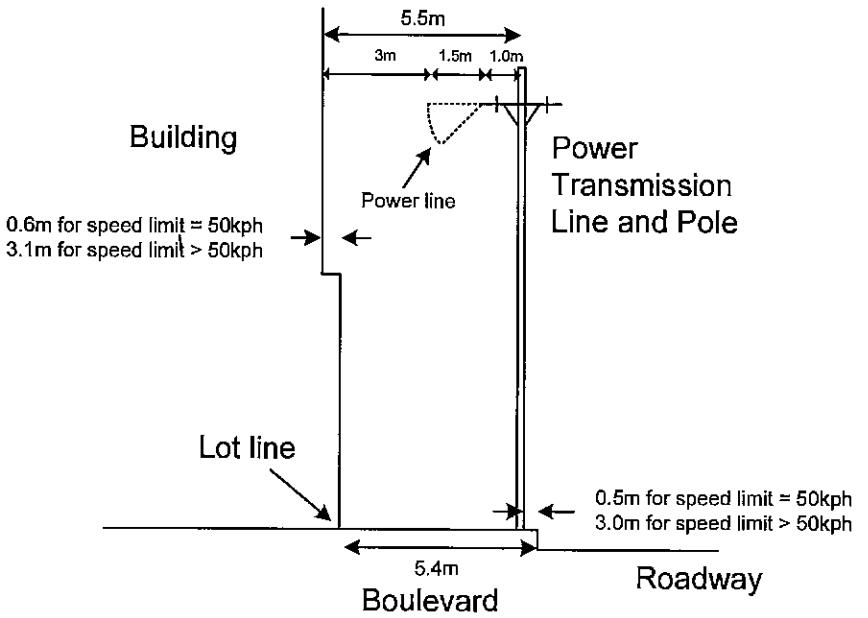
For a 50 kph posted speed limit the poles will require a setback from the curb of 0.5 metres, and any structure above the first storey will require a further setback of 5.5 metres from the poles.

Applying this standard to the rapid transit corridors with a boulevard of 5.4 metres would mean that anything above the first storey would have to be set back a further 0.6 metres from the edge of the boulevard to ensure adequate safety clearance limits.

If the posted speed is increased above 50 kph, then the distance would extend a further 2.5 metres between the curb and the pole, pushing any structure above the first storey back a further 2.5 metres (0.6m + 2.5m = 3.1m).

Based on existing conditions along the majority of the rapid transit corridors with some possible exceptions on Davis Drive the report concludes that an overhead relocation is viable.

Figure 3
Power line clearances from curb and building fronts



Staff are concerned that the implications of this built form arrangement along the rapid transit corridors may not be consistent with the urban density and density objectives of the landowners and local municipalities and will review this with the local municipalities.

The report indicates that incremental costs for undergrounding are unlikely to be accepted into the rate base by the Ontario Energy Board

The consultant team could not find a precedent to support the inclusion of the cost of undergrounding in the Ontario Energy Board (OEB) rate base. Inclusion of such capital improvements by the OEB are subject to a test of prudency. While the OEB would be expected to pass a rate increase for above ground relocations, the report indicates that, unless it can be demonstrated to be technically necessary, that a rate increase for undergrounding would not likely be accepted.

The study looked at the planned sequence and schedule of works, and the costs to underground the distribution plant along the priority sections

The following table shows the impacts to the PowerStream rate base over a sample of years between 2009 and 2025 where:

a) Scenario 1 represents system wide above ground replacement.

b) Scenario 2 includes undergrounding of priority sections with the incremental cost included in the rate base.

c) Scenario 3 is the same as 2 but with the municipalities funding the undergrounding.

All scenarios include the York Region Rapid Transit Corporation paying the same amount for the underground portions as it would have paid had they been overhead.

		2009	2013	2017	2021	2025
Scenario 1 (like-for-like replacement)	Total Rate Impact (c/kWh)	0.003	0.030	0.047	0.040	0.034
	Residential bill impact ($/mo)	$0.02	$0.24	$0.38	$0.33	$0.28
Revised Scenario 2 *(High Priority Sections)*	Total Rate Impact (c/kWh)	0.003	0.097	0.137	0.123	0.110
	Residential bill impact ($/mo)	$0.02	$0.79	$1.12	$1.00	$0.89
Revised Scenario 3 *(High Priority Sections)*	Total Rate Impact (c/kWh)	0.003	0.054	0.077	0.065	0.054
	Residential bill impact ($/mo)	$0.02	$0.44	$0.63	$0.53	$0.44

A variety of funding sources were examined for their potential application to the cost of undergrounding

Seven funding sources in addition to the OEB were identified as potential sources of funding for the undergrounding. It would be appropriate to go over the findings with the local municipalities with respect to these funding sources and report back to Council on the results.

5. FINANCIAL IMPLICATIONS

The construction of the rapidways includes the cost for relocating hydro lines, if required, as overhead lines. The report indicates that it would expect that for scenarios where funding is secured for undergrounding, where it is not required as a result of existing buildings, that the rapid transit budget for overhead to overhead relocation would be available to be applied to the undergrounding budget. The report does not provide any certainty as to the funding source for undergrounding at this time.

6. LOCAL MUNICIPAL IMPACT

Viva is being closely coordinated with local planning and economic development activities along the rapid transit corridors. Regional staff will review the content of the Consultant's report with local municipal staff.

7. CONCLUSION

The Giffels report is a significant and lengthy document. The significance of the findings need to be discussed at length with the local municipalities as the affected stakeholders prior to confirming our concurrence with its findings. It is recommended that staff be allowed to share the findings of the draft report with the affected stakeholders and report back on the outcome of these discussions.

For additional information, please contact Mary-Frances Turner, Vice-President, York Region Rapid Transit Corporation at (905) 886-6767 ext. 2226.

The Senior Management Group has reviewed this report.

Source: Report to Development Services Committee, Town of Markham January 17, 2012

FUNDING MECHANISMS AND VIABILITY

Sources of Information:

1. IBI Group, "York Region Power Plant Relocation Impact Study Report", final report submitted to York Region, Dated February 19, 2009.
2. Gowlings LLP, Legal Opinion, dated February 13, 2009.
3. York Region, "Opportunities for Financing the Underground Relocation of Power Transmission Lines Along the VIVA Rapidways", Report No. 4 of the Rapid Transit Public / Private Partnership Steering Committee received at Regional Council Meeting of March 26, 2009.

FUNDING MECHANISM	HOW IT WORKS	VIABILITY
PowerStream ratebasing on incremental costs	Funding by PowerStream through its overall rates; requires the OEB to accept incremental costs in the rate base.	OEB would not approve as PowerStream would have difficulty proving that there are technical or financial reasons for undergrounding.
PowerStream "Rate Rider"	Requires the Town to enact a by-law requiring PowerStream to put all or part of relocated assets underground; the "rate rider" is an extra charge applied only to those customers where the undergrounding occurs.	There is a chance that OEB might approve, but would order that PowerStream customers in that jurisdiction must pay for undergrounding outside of the rate base; also, in order to prompt a "rate rider", expenditures must be driven by a specific need and they must be the most cost-effective alternative for ratepayers.
Funding directly by PowerStream	PowerStream would pay for the undergrounding but would not receive any reimbursement through rates; the cost would be borne by the shareholders through lower profits and lower dividends.	Must be approved by PowerStream's Board of Directors; non-benefiting partners would likely oppose.
Funding through Municipal Tax Base	Make undergrounding a Council priority and fund through tax revenues.	Town Council has many priorities and may not wish to spend tax revenues on underground power distribution assets.
....continued on next page....		

FUNDING MECHANISM	HOW IT WORKS	VIABILITY
Funding by Town Development Levies (Development Charges)	Place lot levies on developers to help pay for the increased infrastructure costs; developers, and eventually homebuyers, pay the cost.	Development Charges Act does not allow the inclusion of a new service in development charges.
Funding through a Municipal Special Levy	Aimed at capturing the benefits that accrue to the adjoining landowners.	Requires acceptance by adjoining landowners; businesses could anticipate that the enhanced streetscape will attract more business and increase the value of their holdings.
Funding directly by YRRTC	YRRTC budget may contain sufficient funds to pay for underground relocation.	The money allocated for transit will not fund undergrounding, as it is a "like-for-like" relocation with overhead power transmission lines to remain above ground. However, it is felt that if funding is secured by local municipalities for undergrounding, the rapid transit budget for overhead to overhead relocation would be available to be applied to the undergrounding budget.
Funding directly by the Province	The Province might fund through "Places to Grow" Act or other provincial initiative either directly or through allocation to YRRTC.	Provincial money allocated for transit will not fund undergrounding and no other provincial funding is available.
Innovative funding options (ex: creating Community Improvement Area powers or Business Improvement Area powers through the Municipal Act and Planning Act)	The Municipal Act and the Planning Act allow the designation of a Business or Community Improvement Area for beautification purposes and then allow imposing a levy to recover the costs of beautification.	High degree of risk due to project and approval timing for the CIPA or BIA; must be in line with the Official Plan; requires landowner acquiescence.
Municipal By-Law changes to force developers to build to a minimum front-yard set-back or right to the property line.	If developers must build tight to the lot line, it forces a technical reason for undergrounding of transmission lines; this would compel PowerStream and developers to underground lines. PowerStream charges 100% to the Developer for the undergrounding. Space must be allocated for above ground pad mounted equipment.	Viability depends upon the developer's willingness to pay the costs of undergrounding. A technical underground solution will not be possible if space is not allocated for above ground pad mounted equipment.

Cost-sharing Agreement between key stakeholders	All stakeholders, including those abutting the undergrounding would work out an agreement to pay the costs up front.	Would reduce the potential burden on any one stakeholder and reduce risk for any decision to proceed.

Attachment No. 3
Hydro Network Location - VMC

North

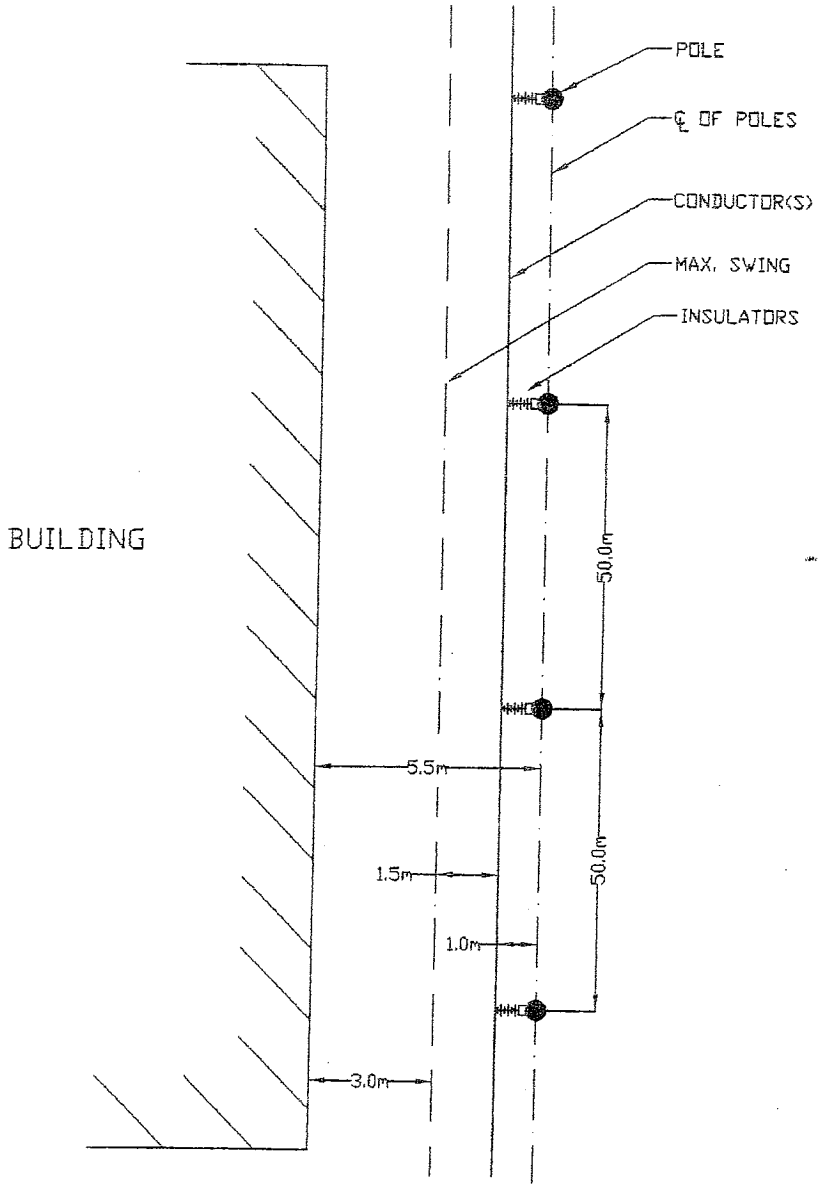
Existing Hydro Pole Line to remain

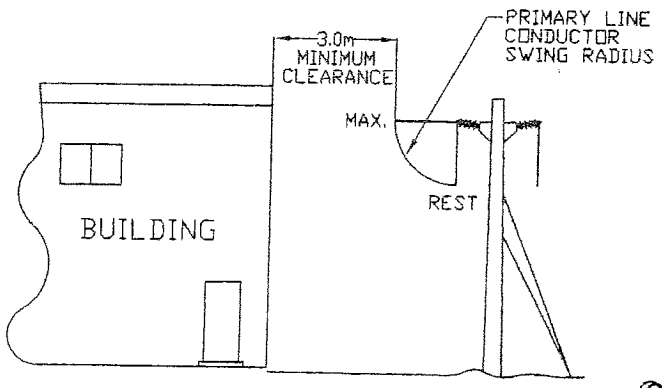
Existing Hydro Pole Line to be relocated

Prop. New Hydro Pole Line

Proposed Underground Hydro

Attachment 4





Oct. 01 '08

Minimum Primary Line Conductor Clearances to Buildings
(Rule 75-028(2) of the OESC)

N.T.S.

UNDERGROUND RELOCATION OF HYDRO TRANSMISSION LINES
VIVA RAPIDWAY PROJECT – H2 VMC SEGMENT

VAUGHAN METROPOLITAN CENTRE SUB-COMMITTEE MEETING APRIL 11, 2013

Presentation Overview
Undergrounding Hydro

- Background
- Location of Hydro Lines in VMC
- Construction Staging of Rapidway Project
- Hydro relocation – East of Jane
- Hydro relocation – West of Jane
- Questions

VivaNext Rapidway Project

- H2-VMC - Highway 7 from Edgely Boulevard to approximately Bowes Road.
- scheduled to be completed concurrently with the opening of the Toronto-York Spadina Subway Extension in 2016.

VAUGHAN

Hydro Line Relocation Study

February 2009, York Region Rapid Transit Corporation and PowerStream released report (Giffels Associates Limited/IBI Group) that investigated:

- the technical options and impacts of relocating the existing hydro lines using overhead pole line construction or underground plant.

- potential mechanisms for funding the incremental costs to undergrounding were reviewed

Undergrounding Report reviewed three urban areas in Vaughan:

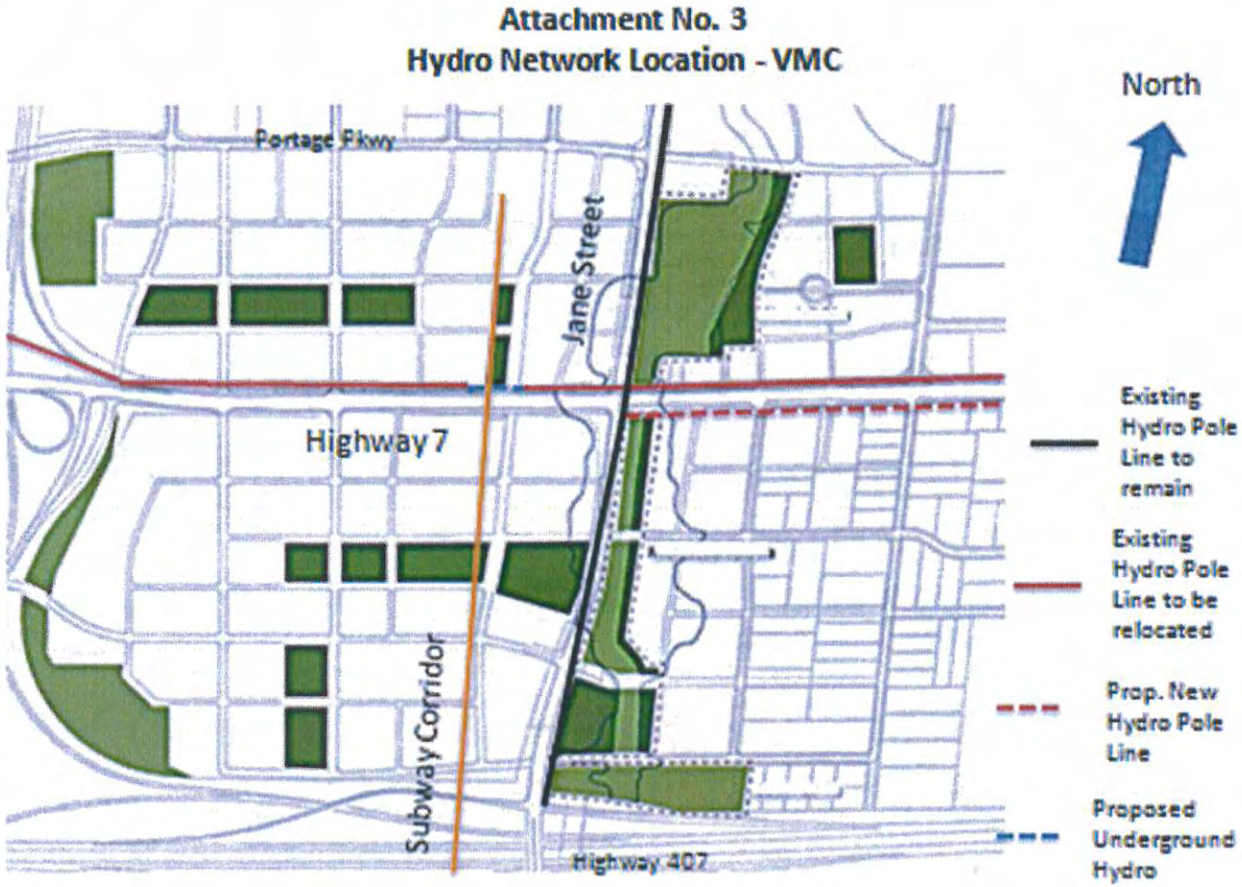
- Highway 7 from Creditstone Road to Ainsley Grove Road (2.7 km)
- Highway 7 from Pine Valley Drive to west of Kipling Avenue (2.0 km)
- Centre Street from Bathurst Street to Dufferin Street (1.9 km)

Incremental cost of undergrounding the hydro in these three locations was estimated at $46 million

YRRTC is proceeding with overhead pole line construction for Rapidway

- Based on the technical findings of the 2009 IBI Group hydro line relocation study
- lack of identified funding for the incremental cost of burying the hydro transmission lines

Hydro System Location in VMC



VAUGHAN

Construction of H2-VMC Rapidway is being staged

- Stage 1: Highway 7 from Jane Street to CN Bridge (June 2013)
- Stage 2: Highway 7 from CN Bridge to Bowes Road (September 2013)
- Stage 3: Highway 7 from Jane Street to Edgley Boulevard (June 2014, coordinated with the subway construction)

- Utility location is first step in construction

Impacts to undergrounding hydro along Highway 7 east of Jane Street are extreme

- Delay the Rapidway project by at least 9 months
- Expose YRRTC to potential contractor delay claims ranging between $2.0 and $5.0 million.
- No available funding source for the incremental cost to underground the hydro lines, estimated at approximately $10 million

Opportunity exists to pursue the undergrounding of the hydro lines on Highway 7 west of Jane Street

- Stage 3 of the Rapidway project (Highway 7 from Jane Street to Edgley Boulevard) is still in the preliminary stages
- Hydro relocates wouldn't start until June 2014
- Undergrounding costs approximately $7.0 million
- Hydro to be underground in TYSSE corridor
- Potential funding sources including cost sharing agreements between key stakeholders

Recommendations:

- That staff work with to pursue the undergrounding of the hydro transmission lines along Highway 7 and Jane Street in the VMC;
- Staff explore third party funding for the undergrounding of the hydro transmission lines and report back to the Vaughan Metropolitan Centre Sub-Committee
- York Region be requested to protect sufficient space along the VivaNext Rapidways within Regional Centres and Corridors to provide for the undergrounding of the hydro and utility lines in the future

Questions?

VAUGHAN