



**FOR INQUIRIES: PLEASE QUOTE ITEM & REPORT NO.**

April 29, 2013

Mr. Denis Kelly, Regional Clerk  
The Regional Municipality of York  
17250 Yonge Street, Box 147  
Newmarket, ON L3Y 6Z1

**REGION OF YORK  
CLERK'S OFFICE**

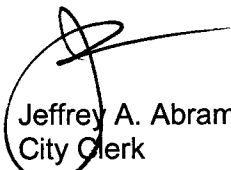
**FILE No. - P20**

Dear Mr. Kelly:

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

Attached for your information is **Item 4, Report No. 3**, of the Priorities and Key Initiatives Committee regarding the above-noted matter which was adopted without amendment by the Council of the City of Vaughan at its meeting of April 23, 2013.

Sincerely,

  
Jeffrey A. Abrams  
City Clerk



Attachment:

Extract

Attachments are available in the City Clerk's Office and the City's website at [www.vaughan.ca](http://www.vaughan.ca) under City Council/Agendas, Minutes and Extracts

JAA/as

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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### EXTRACT FROM COUNCIL MEETING MINUTES OF APRIL 23, 2013

#### Item 4, Priorities Report No. 3 – Page 2

##### **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.

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#### Item 4, Priorities Report No. 3 – Page 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 versus \$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**

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#### Item 4, Priorities Report No. 3 – Page 4

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**

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#### Item 4, Priorities Report No. 3 – Page 5

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.

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#### Item 4, Priorities Report No. 3 – Page 6

#### **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.)